Macquarie
Equities Research

The Global Utilities Specialist

INDIA

RPWR IN		Underperform
Price 18 Feb 10		Rs141.45
12-month target	**Rs**	**117.00**
Upside/Downside	**%**	**-17.3**
Valuation	**Rs**	**116.79**
- DCF (WACC 10.4%, beta 1.0, ERP 6.5%, RFR 7.5%)		
GICS sector		**Utilities**
Market cap	**Rsm**	**339,027**
30-day avg turnover	**US$m**	**7.1**
Market cap	**US$m**	**7,353**
Number shares on issue	**m**	**2,397**

Investment fundamentals

Year end 31 Mar		2010E	2011E	2012E	2013E
Total revenue	m	0	12,042	16,808	50,214
EBITDA	m	-1000	5,642	8,934	28,917
Reported profit	m	7,239	5,789	4,961	5,182
Adjusted profit	m	7,239	5,789	4,961	5,182
EPS rep	Rs	3.02	2.42	2.07	2.16
EPS rep growth	%	nmf	-20.0	-14.3	4.5
EPS adj	Rs	3.02	2.42	2.07	2.16
EPS adj growth	%	nmf	-20.0	-14.3	4.5
PER rep	x	46.8	58.6	68.3	65.4
PER adj	x	46.8	58.6	68.3	65.4
Total DPS	Rs	0.00	0.00	0.00	0.00
Total div yield	%	0.0	0.0	0.0	0.0
ROA	%	-0.6	1.5	1.6	3.1
ROE	%	5.1	3.9	3.2	2.8
EV/EBITDA	x	-390.1	69.1	43.7	13.5
Net debt/equity	%	35.1	109.1	212.9	258.4
P/BV	x	2.3	2.2	2.1	1.6

Source: FactSet, Macquarie Research, February 2010
(all figures in INR unless noted)

Jeff Evans
91 22 6653 3053 jeff.evans@macquarie.com

19 February 2010

Reliance Power

Pricing-in blue sky

Large power portfolio, but long way to go

We initiate on Reliance Power (RPWR) with an Underperform rating and a Rs117/share target price. Considering that RPWR has spent only ~5% of the potential capex required to roll out its large 33,780MW growth pipeline and that financial closure has been achieved for only 17% of its projects, we believe there is still a long way to go regarding execution. At the current share price, we believe that the market is factoring in around 50% of the upside from RPWR's growth projects, which are still subject to some material risks.

Risk at Dadri – too many unknowns

The risks for the 7,480MW Dadri Gas Project, RPWR's largest project, have been increasing. The land for the project might be acquired by previous owners following a High Court ruling, the gas supply hinges on a Supreme Court decision and no power offtake is in place. In the short term, the biggest risk to our Underperform call is a successful outcome for RPWR in the gas dispute between Reliance Natural Resources and Reliance Industries. Even after factoring in 50% of the value of the project, we prefer to have some clarity on this before attributing more value – even if that means missing out on some high-risk upside.

UMPPs – margin risk from limited cost pass-through

The tariff structure of RPWR's ultra mega power projects (UMPPs) allows little or no pass-through of the tariff for either inflation or energy costs. Thus, higher-than-expected inflation or energy costs could eat away at earnings margins. At Sasan and Tilaiya, the operating costs depend on the mining costs of the captive coal blocks (the latter does not yet have a mining plan), while Krishnapatnam has not yet secured a firm imported fuel supply.

Why pay for large coal production ramp-up now?

The main driver of value for the Sasan and Tilaiya UMPPs comes from the captive coal blocks allocated to them. Based on our numbers, each UMPP will require around 15–16mtpa of coal supply. Coal production will need to exceed this to commercialise the excess coal in higher-ROE projects (Chitrangi and Tilaiya upside) when the UMPPs are at full capacity. We make conservative assumptions for coal quality and would prefer to see the mines closer to production before investors pay for the upside from such a large-scale operation.

Price target – Rs117/share; we prefer NTPC, Adani Power

In essence, RPWR is highly exposed to execution risk in the Indian power sector. While the company might successfully navigate its way through the risks that lie ahead, we do not suggest that investors pay for this upside now, and we initiate with a price target of Rs117/share, derived from our risk-weighted DCF valuation.

In our view, NTPC (NATP IN) offers safer exposure to the Indian power growth story. We think it has the ability to pass through costs and is in a strong position to fund growth (US$3.5bn cash, ~US$6bn undrawn facilities). For a higher risk/return power play, we prefer Adani Power (ADANI IN), which has most of its growth projects coming into operation over a shorter period and has greater leverage to merchant power prices.

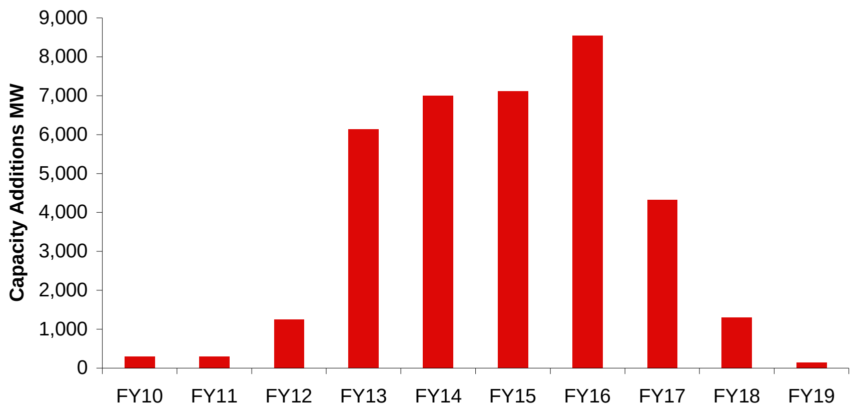
Inside

Reliance Power

Company profile

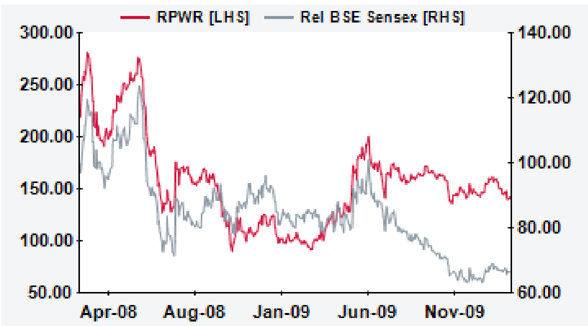
- Reliance Power has the largest project pipeline of the listed private power developers (33,780MW) in India. Its project pipeline is boosted by three ultra mega power projects (UMPPs) – Sasan, Tilaiya and Krishnapatnam – that total around 11,920MW. This capacity has no exposure to merchant power prices and tariffs are predominantly fixed.
- In addition, RPWR is proposing another 3,960MW coal-fired power project, Chitrangi, to be built adjacent to Sasan, to take advantage of cheap coal from the Ultra Mega Power Projects (UMPPs) allocated captive coal block. In terms of gas-fired production, RPWR is attempting to build a large 7,480MW gas-fired project at Dadri, fuelled by KG-D6 gas. The cost of this gas is under dispute in the Supreme Court between the Ambani brothers – Mukesh and Anil (leading Reliance Industries and Reliance ADA Group, respectively). RPWR also has a number of hydro projects in the pipeline that total around 4,620MW.
- RPWR is tightly held by its promoters – 45% by Reliance Infrastructure and 40% by AAA Project Ventures Private Limited (AAPVPL) – both of which are part of the Reliance ADA group. Retail investors represent around two-thirds of the free float and institutional investors one-third. Therefore, the stock is quite tightly held by low-turnover promoters and retail investors.

Fig 1 Rolling out capacity – a long-term story



Source: Macquarie Research, February 2010

Fig 2 RPWR IN rel BSE Sensex performance



All figures in INR

Source: FactSet, Macquarie Research, February 2010

Pricing-in blue sky

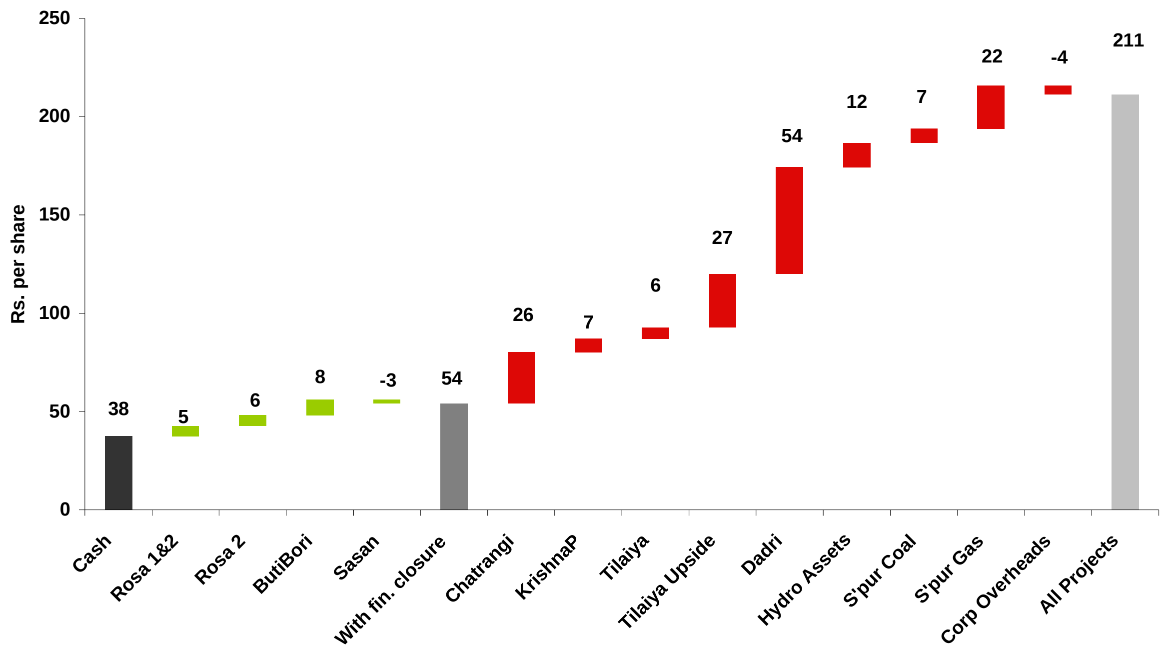
…while execution risk remains

In our view, the stock factors in much of the upside expected to come from growth projects, considering the risks

We initiate on RPWR with an Underperform rating and a Rs117/share target price. Considering that Reliance Power (RPWR) has spent only ~5% of the potential capex required to roll out its large 33,780MW growth pipeline and that financial closure has been achieved for only 17% of its projects, we believe there is still a long way to go regarding execution. At the current share price, we believe the market is already factoring in that around 50% of the upside should come from its growth projects, which are still subject to some material risks.

The chart below highlights why we struggle with RPWR's valuation. Only around Rs54/share is supported by projects that have financial closure, plus existing cash/investments on the balance sheet. The share price, at Rs141/share, implies that around 50% of the upside from growth projects has already been priced-in. Although RPWR might successfully navigate its way through the risks that lie ahead, we think accumulating the stock at these prices is too much of a risk.

Fig 3 RPWR – unrisked DCF



Source: Macquarie Research, February 2010

The chart also highlights that valuation upside may be driven by a few major projects: Dadri, Chitrangi and Tilaiya Upside (assuming a 4,000MW plant can be built using excess coal from the Tilaiya UMPP captive coal blocks).

In this note, we attempt to focus on three key risks that concern us:

⇒ The Dadri Project – risk concerns gas supply, cost and land.

⇒ Chitrangi and Tilaiya Upside – value based on a huge coal production ramp-up.

⇒ Margin risk from the UMPPs – especially Krishnapatnam.

Risk at Dadri – too many unknowns

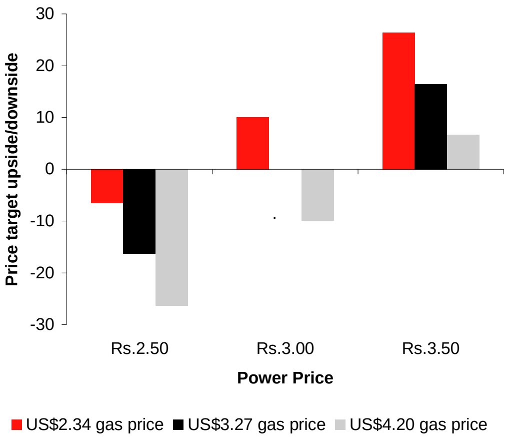
From a valuation perspective, the swing factors for Dadri are substantial, with neither a PPA nor fuel supply locked in

We are not comfortable with fully valuing the project ahead of the outstanding risks – namely, the settlement of the KG-D6 gas price and disputes over land acquisition. Our concerns are whether the project will happen and at what cost. We await an outcome on these variables before backing the story. We highlight:

- **Land for the project is still at risk.** Although the company assumes that it will still utilise the land at Dadri, there is a chance that previous land owners could reacquire the land and an alternative site would need to be found. At best, finding an alternative site or experiencing a drawn-out court case could delay the project.
- **No buyer, no gas.** From a valuation perspective, the swing factors are significant, with neither a power purchase agreement (PPA) nor fuel supply locked in. In our valuation for Dadri, we assume a gas price of US$3.27/mmbtu and a tariff of Rs3.00/kWh. Assuming RPWR gets the gas, the price could fall in the range of US$2.34–4.20/mmbtu, which could swing our valuation by around 35% on either side of our base case. In addition, no power offtake agreement is in place; we estimate that the weighted average power price could be Rs2.50–3.50/kWh, which could swing Dadri's valuation by 60% on either side of our base case.
- **Currency exposure:** With gas costs expected to be denominated in US dollars and revenues in Indian rupees, Dadri could be negatively affected by US dollar appreciation against the rupee. Our currency forecasts factor in a strong appreciation in the rupee over the next few years. Putting spot currency through our assumptions reduces our target price by around Rs10/share.

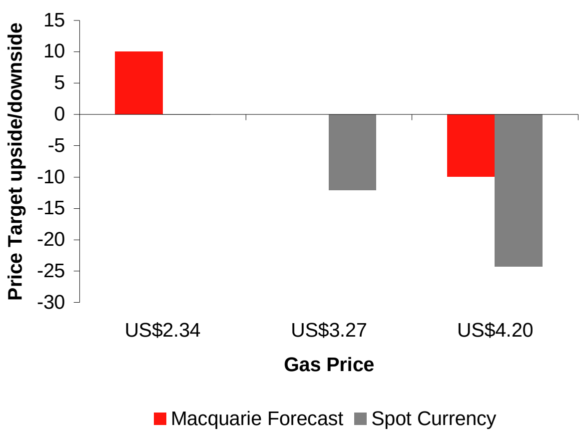
The charts below highlight a ±Rs25/share swing to our target price from unknown variables regarding Dadri.

Fig 4 Target price – power and gas price sensitivity



Source: Macquarie Research, February 2010

Fig 5 Target price – Dadri gas price and currency



Source: Macquarie Research, February 2010

Chitrangi and Tilaiya Upside – reliant on strong coal production ramp-up

We would like to see RPWR commence coal production on schedule and meet the requirements of the UMPPs before we allocate greater value to Chitrangi and Tilaiya Upside

The main driver of value for the Sasan and Tilaiya UMPPs stems from the allocated captive coal blocks that came with them. Any excess coal produced from the blocks is expected to be commercialised through power sales by additional non-UMPP power plant projects (Chitrangi and Tilaiya Upside). However, we note the following.

- **Production risk:** Based on our forecasts, the Sasan and Tilaiya UMPPs will each consume around 15–16mtpa of coal. Therefore, when these projects are at full capacity, the captive coal blocks of each UMPP will need to produce at least 15mtpa before they have enough coal to start allocating to the higher-ROE projects of Chitrangi and Tilaiya Upside. First production from Sasan is not expected until end-2011, and we would prefer to see the mines closer to production before suggesting that investors pay for the upside of such a large-scale operation.
- **Coal quality risk.** We estimate a lower gross calorific value (GCV) for the coal at the Sasan and Tilaiya blocks (around 4,000kcal/kg) than the company estimates (4,400–4,700kcal/kg). The chart below shows the implied GCV of coal used by power plants from coal sourced from the same region as the Sasan blocks – closer to our estimates.

Fig 6 GCV of thermal power plants with linkage to NCL

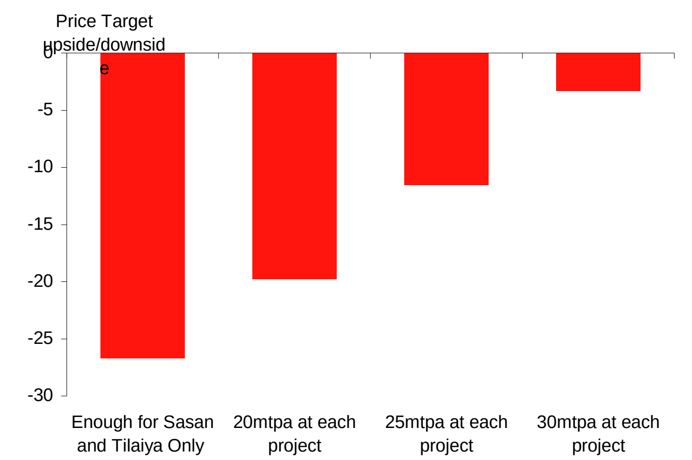
	Capacity (MW)	Gross Calorific Value (kcal/kg)
Singrauli	2,000	3,819
Vindhyacha	1,000	4,095
Rihand	1,000	3,694
Average		**3,869**

Source: CERC, Macquarie Research, February 2010

- **Neither project has yet achieved financial closure.** Power plant equipment for Chitrangi is expected to be ordered this quarter, while the mining plan for the Tilaiya blocks is still in progress. Therefore, risks around coal quality and potential production rates remain high.

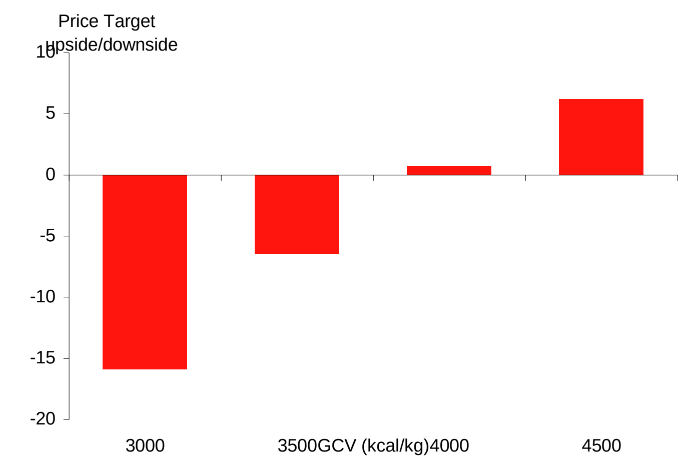
In summary, we would like to see RPWR commence production on schedule and meet the requirements of the UMPPs before we allocate greater value to the Chitrangi and Tilaiya Upside projects. We risk-weight these projects in our valuation, but, in our view, there is still downside risk based on the market's expectations of coal production rates and coal quality. These could both have a material effect on the company's valuation, as shown below.

Fig 7 Price target sensitivity – coal production



Source: Macquarie Research, February 2010

Fig 8 Price target sensitivity – Sasan+Tilaiya GCV



Source: Macquarie Research, February 2010

Margin risk for UMPPs

The tariff structure of RPWR's UMPPs allows little or no pass-through in the tariff for either inflation or energy costs

In our view, UMPP earnings are subject to margin pressure because of their inability to pass-through costs to customers – especially for Krishnapatnam, which has yet to lock-in a firm imported fuel source. In addition, the UMPPs offer no exposure to merchant power prices. The low 'variable' component of RPWR's UMPP tariffs is shown below.

Fig 9 UMPP tariff structure – proportion of tariff that is variable

UMPP	Capacity charge	Energy charge
Sasan	1%	0%
Krishnapatnam	17%	0%
Tilaiya	22%	13%

% of respective charge in third year of operation

Source: CERC, Macquarie Research, December 2009

RPWR has concessions in Indonesia to mine coal, but from what our industry sources there say, we doubt that these concessions will be developed. Therefore, the company might have to either acquire more coal assets or contract coal from an alternative source (international pricing). We subsequently assume higher coal costs than the company expects.

Risks to our investment view…

In the short term, the biggest risk to our Underperform call is a successful outcome for RPWR in the gas dispute between Reliance Natural Resources Limited (RNRL) and Reliance Industries – ie, that RPWR gets access to the KG-D6 gas at a price around Rs2.34–3.70/mmbtu.

Currently, we have factored part of the value for Dadri (50% risk-weighted) into our target price and we prefer to have some clarity on this before attributing more value – even if that means missing out on some high-risk upside. Nonetheless, it is the key risk to our recommendation.

Other factors that would help us develop a more-favourable view of the stock:

- Fuel supply locked-in for the 4,000MW Krishnapatnam UMPP at a favourable price.
- Financial closure for projects utilising excess UMPP coal – Chitrangi and Tilaiya Upside.
- Coal production, with coal calorific values exceeding 4,000kcal/kg, ramped up to meet the requirements of both Sasan and Chitrangi.

Some of these outcomes won't be known for some time, and we thus expect the market to continue to discount the value of these projects.

RPWR highly exposed to execution risk; we prefer NTPC, Adani

In essence, RPWR is highly exposed to execution risk in the Indian power sector, while having a limited exposure to merchant power prices. In our view, NTPC (NATP IN, Rs205.05, Outperform, TP: Rs258.00) offers safer exposure to the Indian power growth story, based on its ability to pass-through costs and its strong funding position (US$6bn committed undrawn debt facilities and US$3.6bn cash). For a higher risk/return power play, we prefer Adani Power (ADANI IN, Rs107.05, Outperform, TP: Rs122.00), which has most of its growth projects coming into operation over a shorter period and which is more exposed to merchant power prices.

Risks

Execution risk: This covers a wide scope of activities that are at risk when a company develops a power plant. The main risks up to the point of financial closure are acquiring land, gaining environmental approvals and securing water and fuel supplies. Until these activities are completed, the risk of a power project not going ahead is high.

Counterparty risk: Since the implementation of the Electricity Act (2003), State Electricity Boards (SEBs) have not defaulted on paying generators. Each state often has several SEBs, which differ in financial health. As power demand increases, subsidies for domestic and agricultural customers increase, while power prices also rise. This squeezes the financial position of some SEBs. RPWR has some exposure to higher-risk states such as Uttar Pradesh (Rosa I and Rosa II), Jharkhard, Bihar and Uttar Pradesh (Tilaiya).

Operational risk: Operationally, power generation assets are riskier than many other forms of infrastructure, such as roads and power transmission/distribution. Unscheduled downtime can create both a loss of earnings and a greater capex requirement. Although these are impossible to forecast, we have kept all of our plant load factor (PLF) forecasts at 90% or below.

Regulatory risk: A number of RPWR assets are regulated. Thus, both the central regulator (CERC) and state regulators decide the price that the assets can charge for providing power to the company’s customers, which affects asset earnings. These returns are typically reassessed every five years. The CERC will implement new regulatory returns for the FY15–19 period. We factor in a decline in ROE from the current 15.5% to 14% in the next period.

Commodity price risk: Revenues of some assets are dependent on ‘merchant’ prices, which are extremely volatile and do not ensure any consistency in revenue streams. On the cost side, some plants such as Krishnapatnam could be exposed to coal price movements. Changes in these prices could reduce the margin made by the generator. We highlight margin squeeze as a risk in this note.

Financial risk: The use of debt to finance power plants in India is high among independent power producers (IPPs) – typically around the 75–80% mark. This is higher than the 70% gearing structure assumed by the central regulator. It magnifies the earnings effect of higher costs or lower revenues on investment returns.

Interest rate risk: Much of RPWR’s interest costs are based on a margin to the benchmark prime lending rate (BPLR) of a particular bank in the syndicate. We expect the RBI to start tightening interest rates in 2010. While movement in policy rates might not immediately feed through to increases in BPLRs, it is a signal. Rises in interest rates are likely to go straight through to earnings on non-regulated plants (most of RPWR’s portfolio).

Governance risk: RPWR is part of the Reliance ADA group. The group is the parent of several subsidiaries such as RNRL and Reliance Infrastructure. While this structure could create opportunities in procurement and access to upstream resources, the pricing for such transactions in the future could shift value from one entity to another.

Currency risk: RPWR might be exposed to currency fluctuations. A proportion of its capex is denominated in US dollars, as will be some anticipated gas and coal costs. With revenues being denominated in Indian rupees, costs in US dollars and with no use of currency hedging, RPWR could be negatively affected by an appreciation in the US dollar.

Chinese equipment: Like many IPPs in India, RPWR is expected to source the majority of its boiler-turbine-generator (BTG) equipment from China. There is market concern that Chinese equipment might not deliver adequate operational performance (lower PLF). In our view, this concern is overdone, with recent installations from JSW Energy and Adani Power running at PLFs of over 90%.

Price target – Rs117/share

Risky portfolio – key projects still have a way to go

We have used DCF as our primary valuation tool for RPWR as near-term earnings fail to capture the value of its longer-term projects. While RPWR has a growth portfolio of 33,780MW, most of this capacity is in the infancy stages of development, where no financial closure has been reached or limited capital invested.

We have therefore risk-weighted the growth projects for which no capital has been invested and financial closure hasn't been achieved yet. Our DCF valuation is shown below.

Fig 10 RPWR – risk-weighted DCF valuation

		Asset equity value	% Asset owned	Equity value	Probability	Equity value (risk-weighted)
Rosa 1	Rs Cr	1,242	100%	1,242	100%	1,242
Rosa 2	Rs Cr	1,323	100%	1,323	100%	1,323
Butibori	Rs Cr	2,568	74%	1,900	100%	1,900
Sasan (UMPP)	Rs Cr	-485	100%	-485	100%	-485
Chatrangi	Rs Cr	6,235	100%	6,235	60%	3,741
Krishnapatnam (UMPP)	Rs Cr	1,633	100%	1,633	100%	1,633
Tilaiya (UMPP)	Rs Cr	1,386	100%	1,386	100%	1,386
Tilaiya Upside	Rs Cr	6,512	100%	6,512	20%	1,302
Dadri Gas	Rs Cr	13,041	100%	13,041	50%	6,520
Shahpur Coal	Rs Cr	1,702	100%	1,702	0%	0
Shahpur Gas	Rs Cr	5,270	100%	5,270	0%	0
Hydro Assets	Rs Cr	2,967	100%	2,967	50%	1,483
Corporate Overheads	Rs Cr	-1,045	100%	-1,045	100%	-1,045
Asset Equity Value	**Rs Cr**	**42,349**		**41,681**		**19,001**
Forecast Cash at 31 March 2010	Rs Cr			8,992		8,992
Total Equity Value	**Rs Cr**			**50,673**		**27,993**
No. Shares	m			2,397		2,397
Per share	**Rs**			**211**		**117**

Source: Macquarie Research, February 2010

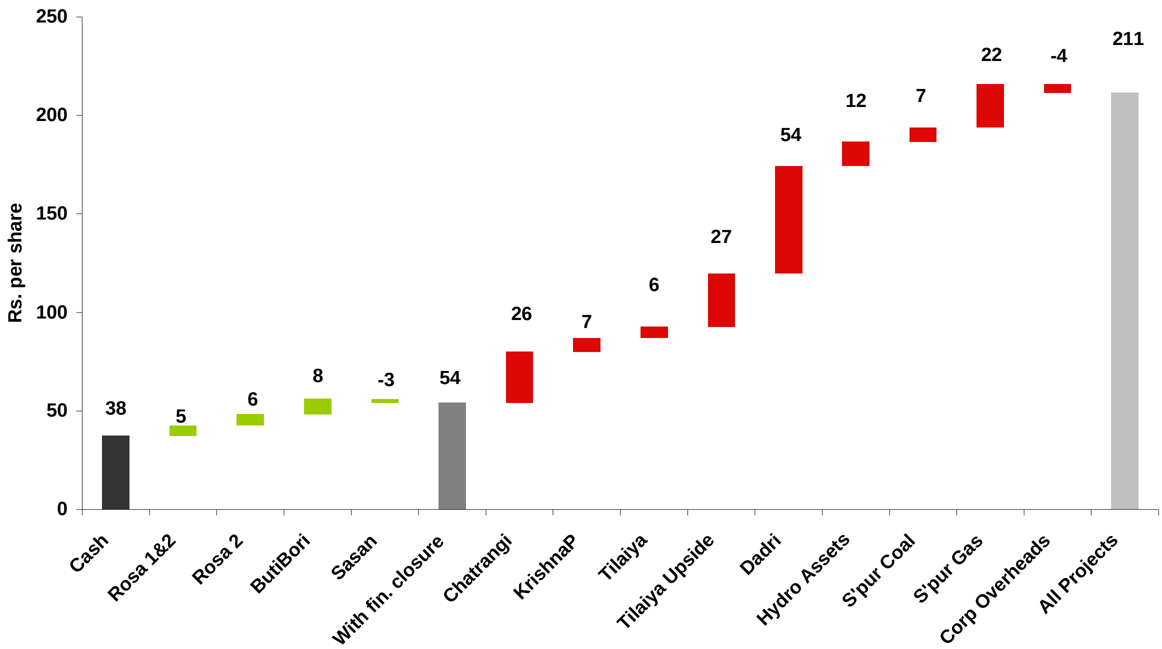
We have applied a cost of equity of 14% to discount cashflows available to equity holders. Given the status of the projects (not yet in operation), we apply a higher cost of equity for RPWR than the 12–12.5% we do for companies such as NTPC and Tata Power (TPWR IN, Rs1,250.50, OP, TP Rs1,625.00).

Some points to note:

1. **Risk weighting has been based on what milestones have been achieved:** A number of power plant developers and financiers have expressed to us that "land acquisition is the biggest hurdle for power plant developers". We have subsequently not valued projects without the required land firmly in place – such as Shahpur. In addition to land, environmental approvals, forestry clearances, fuel and water supply, and equipment supply can all act to either delay or prevent a project from going ahead. All of these factors are high-risk in India. In our view, it is prudent to value only the majority of a project once financial closure has been achieved. We have been relatively bullish in our valuation assumptions for RPWR, partly valuing its growth pipeline even where financial closures aren't in place, as some of the initial milestones have been achieved.
2. **We assume 100% probability of UMPPs going ahead:** This is because we expect them to receive a high level of central government support. Note however, that these projects do not add a lot of value to RPWR. Far more value is created from the higher-risk power projects that utilise coal produced from the captive coal blocks or on uncertain gas supply. There is downside risk to this assumption. If UMPPs are delayed, for example, RPWR would be required to pay penalties, which we have not worked into our forecasts.

The chart below highlights why we struggle with the RPWR valuation. Only around Rs54/share is supported by projects with financial closure and existing cash/investments on the balance sheet. The share price, at around Rs141/share, implies that ~50% of the total upside has been priced in. While RPWR might successfully navigate its way through the risks that lie ahead, we would advise against accumulating the stock at these prices given the uncertainty.

Fig 11 RPWR – project unrisked DCF



Source: Macquarie Research, February 2010

The chart also highlights the importance of three main projects:

- **Dadri:** This massive gas-fired project is projected to reach 7,480MW in capacity. Our key concerns are that neither land, gas supply nor offtake agreements have been locked in.
- **Chitrangi:** An additional 3,960MW of coal-fired capacity is to be built adjacent to Sasan in order to commercialise excess coal from the coal blocks allocated to the UMPP. This would require a very strong ramp-up of coal production from the Sasan blocks. While RPWR might achieve this, we will remain cautious regarding coal quality and production rates until production commences.
- **Tilaiya Upside:** We use the term 'Tilaiya Upside' to refer to the potential power project that could use excess coal from the captive coal blocks allocated to the Tilaiya UMPP – the same model used for Sasan/Chitrangi. With a mining plan currently underway, production rates and coal quality remain at risk.

Earnings multiples – they don't say much about value

We have not used earnings multiples to value RPWR because the bulk of its capacity additions are expected to come online in FY13–17, so maintainable earnings won't be reached until around FY17 or later. However, this does highlight that the company is more a longer-term earnings play. We would prefer to wait until some of the risks around the projects have dissipated and there is more certainty around earnings forecasts.

The table below highlights our key multiple forecasts over the next five years.

Fig 12 RPWR metrics

	FY11E	FY12E	FY13E	FY14E	FY15E
Trading multiples					
PER	58.7x	69.1x	71.2x	12.0x	6.4x
Discounted to FY11	58.7x	78.8x	92.6x	17.7x	10.7x
EV/EBITDA	85.1x	76.9x	31.3x	12.1x	7.9x
P/BV	2.3x	2.1x	1.8x	1.5x	1.3x
FCF Yield (ex-expansion capex)	2%	2%	3%	13%	23%

Source: Macquarie Research, February 2010

The short-term multiples are high relative to those of utility/power peers in the Indian market, as shown below.

Fig 13 Comparable multiples

	Price		Mkt cap	PER		EPS Growth		EV/EBITDA		P/BV	
	(Rs)	Rec	(US$bn)	FY11E	FY12E	FY12E	FY13E	FY11E	FY12E	FY11E	FY12E
INDIA											
CESC	394	Not Rated	1.1	10.3x	9.8x	5%	NA	7.9x	8.6x	1.0x	1.0x
GVK Power and Infrastructure	44	Outperform	1.5	18.4x	14.0x	32%	NA	12.5x	10.0x	2.2x	1.9x
Jaiprakash Power Ventures	67	Not Rated	3.1	10.4x	7.6x	37%	NA	9.2x	7.8x	1.5x	1.2x
Jindal Steel and Power	635	Outperform	13.0	13.2x	11.9x	11%	26%	10.3x	9.0x	3.9x	3.0x
Indiabulls Power	31	Not Rated	1.4	NA	NA	NA	NA	NA	NA	NA	NA
Lanco	50	Not Rated	2.6	11.9x	9.2x	30%	73%	8.4x	7.6x	2.5x	2.0x
NHPC	32	Not Rated	8.7	21.6x	17.0x	27%	39%	11.8x	10.1x	1.6x	1.4x
NTPC	202	Outperform	36.4	17.2x	16.5x	4%	19%	11.2x	10.7x	2.4x	2.3x
Power Grid Corporation	105	Not Rated	9.7	17.8x	16.2x	10%	41%	10.8x	9.9x	2.4x	2.2x
Power Trading Corporation	106	Not Rated	0.7	26.4x	17.5x	51%	NA	35.9x	18.7x	1.5x	1.4x
Tata Power	1240	Outperform	6.7	15.8x	12.4x	28%	25%	10.2x	8.5x	2.2x	2.0x
Torrent Power	296	Not Rated	3.1	10.0x	NA	NA	NA	7.0x	NA	2.9x	NA
JSW Energy	107	Not Rated	3.8	NA	NA	NA	NA	NA	NA	NA	NA
Reliance Power	142	Underperform	7.4	66.2x	80.7x	-18%	-2%	84.9x	76.3x	2.3x	2.1x
Adani Power	108	Outperform	0.0	28.2x	10.3x	174%	45%	10.8x	4.3x	3.7x	2.7x
Utility/Power Sector Average				**20.7x**	**18.7x**	**30%**	**33%**	**17.5x**	**15.3x**	**2.3x**	**2.0x**
Average ex RPWR/PTC				**16.4x**	**13.2x**	**33%**	**38%**	**10.4x**	**9.4x**	**2.4x**	**2.0x**
Regulated, large-cap PSU Average				18.9x	16.6x	14%	33%	11.3x	10.2x	2.1x	2.0x
Mid-cap average				12.2x	10.1x	26%	73%	9.0x	8.5x	2.0x	1.5x
Developer Average				35.9x	34.3x	56%	23%	35.3x	29.9x	3.3x	2.6x
Aggregate											
Average Utility/Power				16.4x	13.2x	33%	38%	10.4x	9.4x	2.4x	2.0x
India Average				12.9x				8.1x		2.1x	
Asia x JP				11.9x		34%		6.8x		1.7x	

Prices on 16 February 2010
Source: Bloomberg, Macquarie Research, February 2010

Macquarie earnings vs consensus – we're low

Our earnings forecasts are below market. In our view, our numbers are still bullish as we've included the earnings of all growth projects except for Shahpur Coal and Shahpur Gas. Relative to the market, we make the following assumptions:

- **Delays:** We have factored in delay for some of the growth projects – three months for Chitrangi and 12 months for Dadri.
- **Merchant power prices:** We understand that our merchant power price forecasts might be lower than company forecasts, which could mean lower earnings – particularly in the medium term.
- **Calorific value of Sasan/Tilaiya coal:** We have assumed that GCV will be 10% lower than company guidance, based on figures for coal qualities in surrounding areas.
- **Coal cost for Krishnapatnam (KP):** We are doubtful of RPWR developing its Indonesian concessions. With thermal coal prices rising, RPWR might need to pay a higher amount for imported coal than was assumed when it set its tariff.
- **Not including Shahpur:** We have not included earnings from the Shahpur gas or coal projects in our earnings forecasts because they are still in the early development stages.
- **Regulated tariff decline:** We assume, in line with our NTPC forecasts, that the rate of return for regulated generation will fall from 15.5% to 14% over the next regulatory period.

Fig 14 Forecasts vs consensus

	FY11E	FY12E	FY13E	FY14E
NPAT				
Macquarie	5,789	4,961	5,182	33,699
Consensus	5,412	6,340	16,772	37,521
Variance	378	-1,379	-11,590	-3,821
%	7%	-22%	-69%	-10%

Source: Bloomberg, Macquarie Research, February 2010

Assumptions

Some of our key operational assumptions are shown below.

Fig 15 Operational assumptions

	Capacity (MW)	First operation	PLF	Fuel cost (Rs/t, US/t,US/mm mbtu)	Heat rate (kg/kWh)	Calorific value (kcal/kg)
Rosa I	600	31 Dec 09	90%	1,600	2,300	4,000
Rosa II	600	31 Dec 11	90%	1,600	2,300	4,000
Butibori	600	31 Dec 11	90%	1,400	2,300	4,638
Sasan	3,960	31 Mar 12	90%	400	2,100	4,230
Chitrangi	3,960	31 Mar 13	85%	1,000	2,100	3,780
Tilaiya	3,960	31 May 15	90%	500	2,100	3,960
Tilaiya Upside	3,960	30 Jun 15	85%	500	2,100	3,960
K'patnam	4,000	30 Sep 13	80%	45	2,100	4,200
Dadri	7,480	31 Mar 13	85%	3.27	1,700	252,000
S'pur Gas	2,800	31 Mar 13	85%	3.27	1,700	252,000
S'pur Coal	1,200	30 Jun 14	85%	1,800	2,100	4,200

Source: Macquarie Research, February 2010

Some key financial assumptions are shown below.

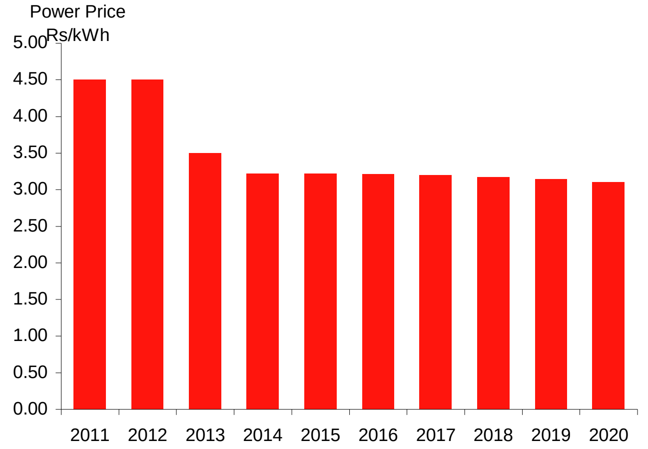
Fig 16 Financial assumptions

	Gearing	% Equity upfront	Interest cost	Debt repay period (yrs)	Asset life (yrs)	Terminal value
Rosa I	80%	25%	11%	12	25	20%
Rosa II	80%	25%	11%	12	25	20%
Butibori	80%	25%	10%	12	25	20%
Sasan	75%	25%	10%	15	25	20%
Chitrangi	75%	25%	10%	15	25	20%
Tilaiya	75%	25%	10%	15	25	20%
Tilaiya Upside	75%	25%	10%	15	25	20%
K'patnam	75%	25%	10%	15	25	20%
Dadri	75%	25%	11%	12	20	20%
S'pur Gas	75%	25%	11%	12	20	20%
S'pur Coal	75%	25%	10%	15	25	20%

Source: Macquarie Research, February 2010

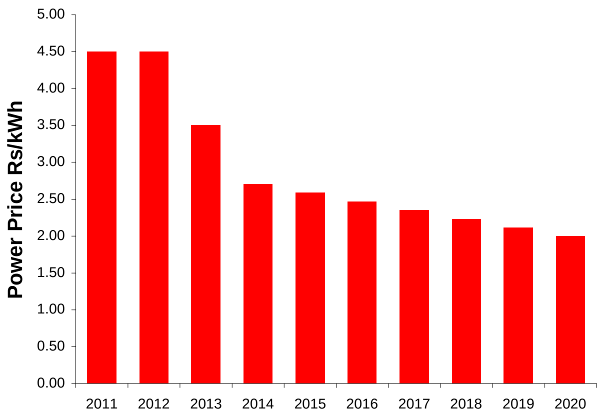
Our merchant power price assumptions are below.

Fig 17 Power price forecast (nominal)



Source: Macquarie Research, January 2010

Fig 18 Power price forecast (real)



Source: Macquarie Research, January 2010

Financial summary – a long-term story

We believe short-term financial forecasts do not reflect the earnings potential of RPWR. The company completed its IPO in FY08, raising Rs11,560 crore (~US$2.5bn). Of the equity raised, around 40% (Rs4,460 crore) had been invested up to December 2009. The remaining equity raised was invested mainly in fixed-interest investments. At the end of the last quarter, RPWR had around Rs9,439 crore in cash and liquid investments, which represents Rs39/share or ~25% of the current market cap.

Earnings in FY10 will be based on distribution payments from investments and bear no operational relevance, while quarterly earnings fluctuate based on the timing of coupon payments. As the capacity addition profile of RPWR is heightened over FY13–17, we expect earnings to grow materially over this time.

Fig 19 Financial summary

		FY11E	FY12E	FY13E	FY14E	FY15E
Capacity at year-end	MW	600	1,860	7,996	14,992	22,104
Generated Power	GWh	4,730	5,890	26,916	75,607	126,390
Saleable Power	GWh	4,352	5,449	25,264	71,534	119,939
Average Realised Power Price	Rs/kWh	2.77	3.08	1.99	2.22	2.43
Variable cost per unit	Rs/kWh	1.13	1.15	0.75	0.86	1.00
Profit and Loss						
Total Sales	Rs m	12,042	16,808	50,214	158,514	290,927
Growth	%	NA	40%	199%	216%	84%
EBITDA	**Rs m**	**5,642**	**8,934**	**28,917**	**92,655**	**163,596**
Margin	%	47%	53%	58%	58%	56%
Growth	%	NA	58%	224%	220%	77%
EBIT	Rs m	8,856	8,041	19,855	69,347	125,987
NPAT	**Rs m**	**5,789**	**4,961**	**5,182**	**33,699**	**65,295**
EPS	**Rs/share**	**2**	**2**	**2**	**12**	**22**
Growth	%	-20%	-15%	-3%	495%	88%
ROE	%	4%	3%	3%	14%	22%
Balance Sheet						
Total Assets	Rs m	332,097	510,551	751,985	989,365	1,234,890
Total Liabilities	Rs m	181,275	349,188	544,029	726,902	907,132
Total Equity	Rs m	150,821	161,362	207,956	262,463	327,758
Cashflow						
EBITDA	Rs m	5,642	8,934	28,917	92,655	163,596
Net Interest	Rs m	-2,095	-2,367	-12,747	-29,064	-47,663
Working Cap	Rs m	-546	-269	-1,644	-5,239	-5,831
Tax	Rs m	-971	-712	-1,925	-6,584	-13,029
Capex	Rs m	-178,510	-215,597	-247,747	-251,787	-261,837
Other	Rs m	4,798	1,091	0	0	0
Free cashflow	**Rs m**	**-171,683**	**-208,920**	**-235,147**	**-200,018**	**-164,764**
Free cashflow (ex-expansion capex)	**Rs m**	**6,827**	**6,676**	**12,600**	**51,769**	**97,073**
Trading Multiples						
PER	x	58.7x	69.1x	71.2x	12.0x	6.4x
Discounted to FY11	x	58.7x	78.8x	92.6x	17.7x	10.7x
EV/EBITDA	x	85.1x	76.9x	31.3x	12.1x	7.9x
P/BV	x	2.3x	2.1x	1.8x	1.5x	1.3x
FCF Yield (ex-expansion capex)	%	2%	2%	3%	13%	23%
Implied Multiples from Price Target						
PER	x	49.9x	58.8x	60.5x	10.2x	5.4x
Discounted to FY11	x	49.9x	67.0x	78.7x	15.1x	9.1x
EV/EBITDA	x	76.1x	70.8x	28.6x	10.9x	7.2x
P/BV	x	1.9x	1.8x	1.5x	1.3x	1.1x
FCF Yield (ex-expansion capex)	%	2%	2%	4%	15%	28%
Leverage						
Net Debt/Equity	x	0.9x	2.1x	2.6x	2.7x	2.7x
Interest Cover	x	5.0x	4.2x	2.3x	3.2x	3.4x
Net Debt / (Net Debt and Equity)	%	48%	68%	72%	73%	73%

Source: Company data, Macquarie Research, February 2010

In this note, we focus on three key risks that concern us:

1. Dadri Project – risk around gas supply, cost and land.
2. Chitrangi and Tilaiya Upside – value based on a huge coal production ramp-up.
3. Margin risk from the UMPPs – especially Krishnapatnam.

Dadri – feisty farmers and several unknowns

From a valuation perspective, the swing factors for Dadri are significant with neither a PPA nor fuel supply locked in

We are not comfortable with fully valuing the project ahead of the outstanding risks – namely the settlement of the KG-D6 gas price and disputes over land acquisition. Our concerns are: 1) whether the project will happen; and 2) at what cost. We want to see an outcome on these variables before backing the story.

Gas price – uncertainty regarding a Supreme Court decision

The economics of the project are largely linked to the price that RPWR will have to pay for the gas, which is currently under dispute in the Supreme Court (the background is outlined in Appendix 4). A gas price of US$2.34–4.20 would swing the equity IRR by around 20%.

The two primary outstanding issues:

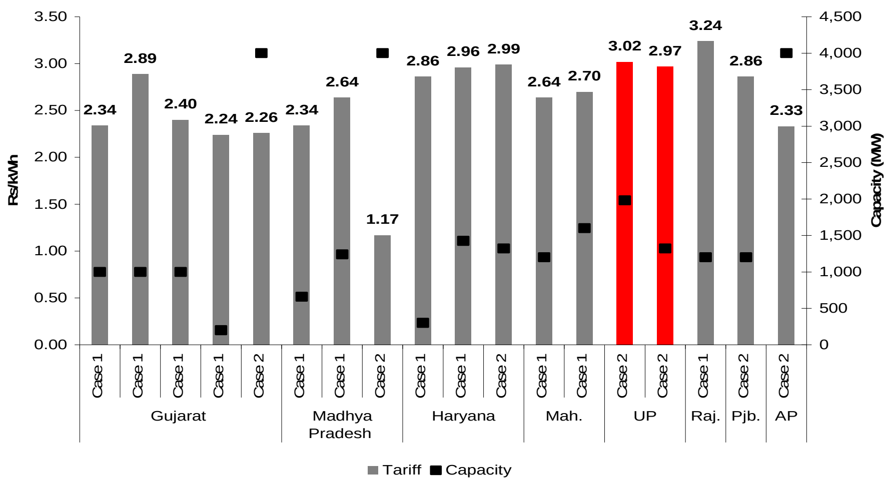
- What price will RNRL pay Reliance Industries (RIL) for the gas? The market is awaiting a Supreme Court decision on whether a 17-year contract for RNRL to acquire 28mmscmd of gas from RIL at US$2.34/mbbtu is binding. This gas is to be used to supply the Dadri Gas Project. RPWR expects a conclusion within the next couple of months. RIL is fighting for a wellhead gas price of US$4.20/mmbtu. **We assume that RNRL will pay US$3.27/mmbtu (wellhead) for the gas (mid-point)**.
- What will RPWR pay RNRL for the gas? Or in other words, what margin will RNRL take for buying the gas from RIL and selling the gas to RPWR? While RNRL might be just an intermediary in the ultimate gas transaction, it is likely in our view that RNRL shareholders will want to see some value being retained in RNRL. **We have assumed that RNRL will charge RPWR a 2% 'trading margin' for the gas.**

Offtake agreement – large volumes run risk of being discounted

The Dadri Gas Project proposes to be the world's largest gas-fired power project at 7,480MW. The large amount of base-load power coming up from the project will need to find a home in several states, and in our view, will be heavily backed by PPAs. The pricing for this power will be on a competitive cost basis compared with that for other fuels (including domestic coal).

Based on recent competitive bids in Uttar Pradesh, competitive tariffs have landed around the Rs3.00/kWh mark and that's what we've used as our base-case assumption. The risk to our forecast is that such large volumes could require a discount to be competitive – especially if project delays have the offtake competing with supply from new UMPPs.

Fig 20 Levelised competitive tariffs (Case 1 and Case 2)



Red bars indicate bids in Uttar Pradesh.

Source: KPMG, company data, Macquarie Research, January 2010

Dispute over Dadri land – at the least, it could create ongoing delay

In December 2009, the Allahabad High Court cancelled the Uttar Pradesh state government's allotment of land to RPWR for the Dadri project. We understand that 2,500 acres were required for the project, of which 2,100 acres have been acquired by the government and since transferred to RPWR. The court decision suggests that provisions to the Land Acquisition (Companies) Rules, 1963, were not followed, and it will allow farmers to return the compensation they received from RPWR and take back ownership of the land.

RPWR is appealing the decision in the Supreme Court, while farmers are reportedly trying to reacquire the land. RPWR highlights that other land could be allocated or acquired for the project, but this, at the least, would create further delay.

US$ costs, rupee revenues – value leveraged to currency moves

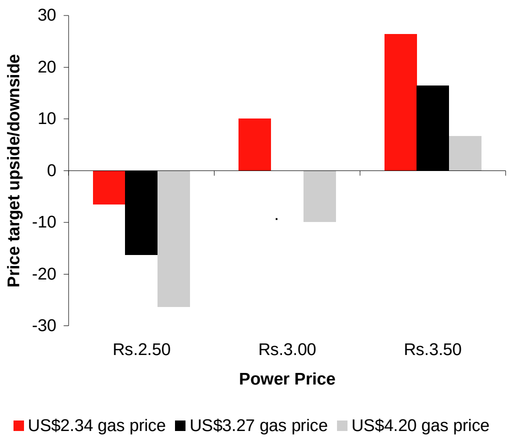
The value of the Dadri project, and the stock, will be highly exposed to currency movements

We expect that RPWR will have to acquire gas from RNRL based in US dollars. Therefore, with revenues denominated in Indian rupees and the bulk of operating costs in US dollars, the value of the Dadri project and the stock will be highly exposed to currency movements. Macquarie factors in a strong appreciation in the rupee against the US dollar over the next few years, which supports a strong valuation. Running spot currency through our assumptions reduces our price target by around Rs10/share.

Valuation sensitive to key unknowns

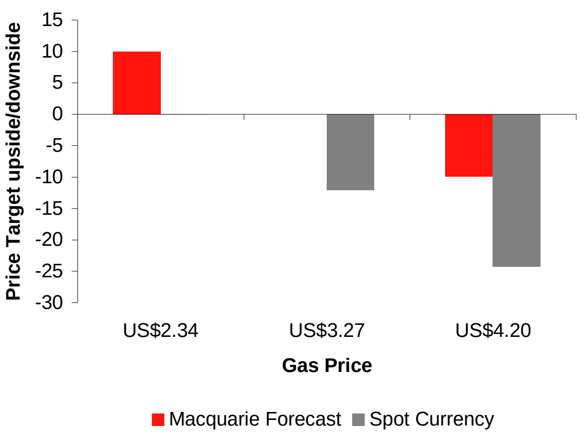
The charts below highlight a ±Rs25/share swing factor to our price target from unknown variables at Dadri.

Fig 21 Price target – power & gas price sensitivity



Source: Macquarie Research, February 2010

Fig 22 Price target – Dadri gas price and currency



Source: Macquarie Research, February 2010

Coal production – we prefer to wait and see

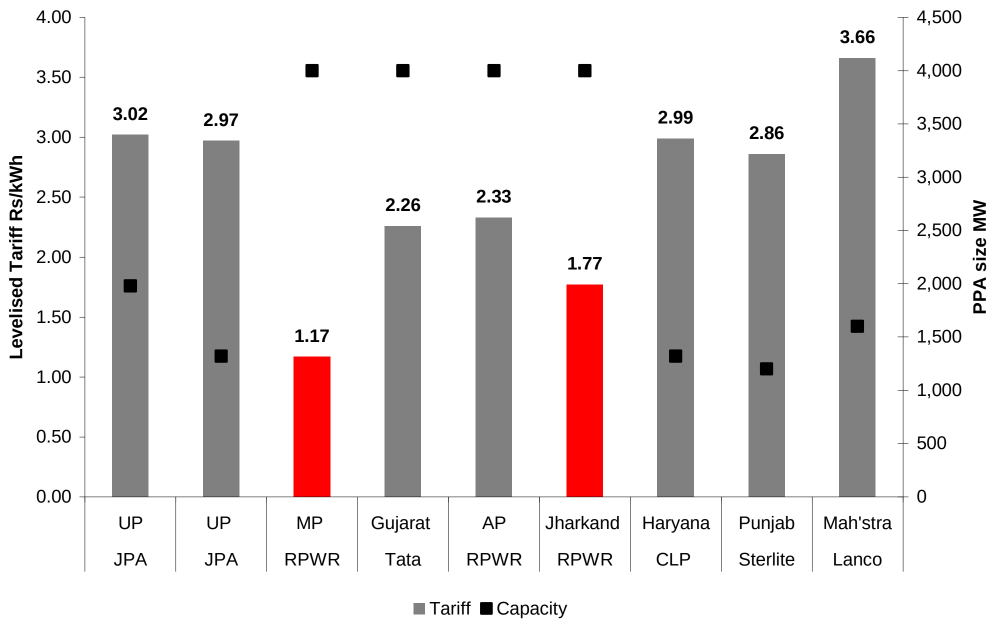
We believe it would be prudent to first witness RPWR's ability to ramp up coal production before we pay for the upside

We are in favour of the concept of RPWR capitalising on its allocated coal blocks. However, we believe it would be prudent to first witness RPWR's ability to ramp up coal production before we pay for the upside. High returns from Chitrangi and Tilaiya Upside will come only when these coal mines produce in excess of what is required by the UMPPs Sasan and Tilaiya (around 15mtpa each). Until production commences, there will be ongoing risk around production rates, timing, costs and coal quality.

Background: Low tariffs = Poor returns for UMPPs

RPWR won both the Sasan and Tilaiya UMPPs through a competitive Case 2 process by bidding very low tariffs compared with other Case 2 bids (below); additionally, there is no or limited ability to pass through costs (discussed later).

Fig 23 Case 2 bids: Sasan and Tilaiya – LOW



Red bars indicate Sasan (Rs1.17/kWh) and Tilaiya (Rs1.77/kWhj).
Source: KPMG, company data, Macquarie Research, January 2010

On a standalone basis, the Sasan and Tilaiya tariffs appear relatively unattractive

On a standalone basis, these tariffs appear relatively unattractive. Based on our valuation of Sasan, which still includes exceptionally low variable costs of Rs0.4/kWh (fuel plus opex), we get an equity IRR of 12% against a cost of equity of 14%. This is value-decretive to shareholders.

In the case of Tilaiya, we get an equity IRR of around 19%, which is value-accretive because of the higher tariff, but still subject to successful/timely mining of the low-cost coal source.

Value is in the captive coal blocks…

So where's the value? RPWR's low Case 2 tariff was factoring in additional upside from the captive coal blocks allocated to the projects. Together, the coal resources for Sasan and Tilaiya are estimated at around 2bn tonnes, with production which could double the requirements of both UMPPs (4,000MW each).

Companies cannot directly purchase coal blocks in India. Such blocks are allocated to private companies for development for a specific purpose (the developer can't sell the coal to just anyone they want). The process for such allocations has been opaque. We understand from our industry contacts that the government intends to start competitively bidding coal blocks (similar to the case for UMPPs) to developers. In essence, this is exactly what RPWR has done.

We understand that the coal blocks allocated to Sasan could produce around 25mtpa of coal, while Tilaiya could produce around 30mtpa – much more than the UMPPs require.

…while the coal can be sold only via competitively bid power

RPWR has two options for commercialising coal production in excess of the UMPP requirements:

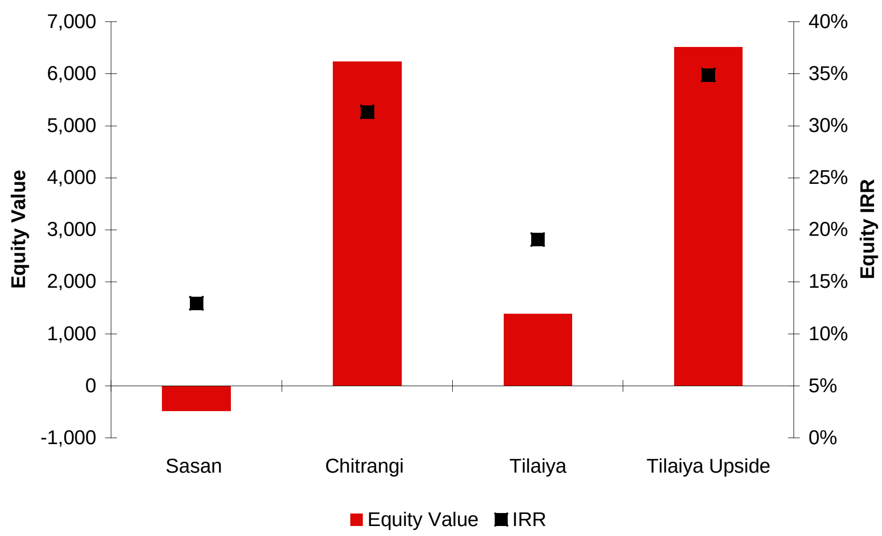
1. Resell the coal back to the government at a price decided by the government; or
2. Build another plant and use the excess coal to generate power.

It cannot sell the coal to third parties.

RPWR's low Case 2 tariff was factoring in additional upside from the captive coal blocks allocated to the projects

Not surprisingly, RPWR is proposing the latter option, and is intending to build the Chitrangi Power Plant (4,000MW), which already has a 1,320MW PPA in place at Rs2.45/kWh with Madhya Pradesh. Since most of the capital for coal mining would have been spent already to produce coal for Sasan, Chitrangi should benefit from a low marginal coal cost. On our valuation, Chitrangi could deliver an equity IRR of around 30–35%. In our view, this is how RPWR lobbed such a low, and winning, bid for Sasan and Tilaiya – it included some of the upside from building further plants and utilising excess coal.

Fig 24 Low value from UMPPs – it's the additional plants that make the $



Source: Macquarie Research, January 2010

The power sold from excess coal for UMPPs cannot be sold on short-term merchant markets. This puts a quasi 'value-cap' on the coal

In early 2009, the Delhi High Court dismissed a petition filed by Tata Power challenging RPWR's ability to use additional coal produced at the coal blocks allocated for the Sasan project for other projects. However, the High Court did include the condition that the excess coal be used for power sales under a competitive Case 1 bidding. ***Therefore, the power from excess coal cannot be sold on short-term merchant markets***. This puts a quasi 'value-cap' on the coal.

…and risks remain until production is in full swing

We should note that RPWR has a mining plan for its Sasan coal mines and is currently developing one for Tilaiya. However, until production commences, the risks around timing, coal quality, production volumes and costs could fluctuate. Thus, allocating all the value for a large-scale, low-cost operation (theoretically), several years out from full production, is in our view, too bullish.

Timing risk and experience: According to our commodity specialists, commencing coal production should take at least 2–3 years, while delays in equipment ordering could increase the time needed. Ramping up a single mine to around 25mtpa – a large operation – is more likely a five-year story.

RPWR is using North American Coal Corporation (NACC) as mine development consultants and we understand some ex-Coal India staff have been recruited to the project. However, RPWR still has no direct track record in large-scale coal mining, which we expect will concern the market until the production ramp-up has commenced.

Coal quality: Although a mine plan for Sasan is in place, the quality of the coal will ultimately remain at risk until production starts. We understand that the company is aiming for a GCV of around 4,750kcal/kg for the coal mined for Sasan and 4,400kcal/kg for Tilaiya. We see downside risk to the energy content in the coal, which could lead to higher costs for power generation.

The Sasan coal will be mined from the Moher (402mt), Moher-Amlorhi (198mt) and Chhatrsal (150mt) fields. We understand that the Moher sub-basin contains thick coal seams, overlain and intercalated with sandstones and siltstones – which could lower the quality of the coal.

Three thermal coal-fired plants owned by NTPC operate in the same region as Sasan and are sourced from coal from the Northern Coal Fields (NCL), a subsidiary of Coal India (CIL), which has mining operations predominantly in the Moher sub-basin. The majority of NCL's coal is used for power generation (>90%). After sifting through CERC tariff orders, we find that tariffs for power plants using NCL coal seem to incorporate GCVs that average 3,900 kcal/kg – more in line with our forecasts.

Fig 25 GCV of thermal power plants with linkage to NCL

	Capacity (MW)	Gross calorific value (kcal/kg)
Singrauli	2,000	3,819
Vindhyacha	1,000	4,095
Rihand	1,000	3,694
Average		**3,869**

Source: CERC, Macquarie Research, February 2010

Production costs: We are following company guidance and using a mining cost of Rs500/t (US$11/t), which includes non-cash depreciation (we estimate around Rs100/t). One advantage of the Sasan mines is that they are located close to the power plant, which helps lower infrastructure costs. It's our belief, with such low mining costs already assumed in our valuation, that there is only room for downside.

No UMPP privileges: Neither the Chitrangi nor the Tilaiya Upside project is a UMPP. Therefore, they might not enjoy the same level of government support in terms of approvals, policy changes or any other execution hurdles that could arise.

UMPPs – risk of margin squeeze

In our view, the earnings of the UMPPs awarded to RPWR are risky because of the tight margins and the inability to pass through costs to customers – especially for Krishnapatnam, which has yet to lock in a firm fuel source. In addition, the UMPPs offer no exposure to merchant power prices.

UMPP fixed tariffs – limited or no cost pass-through…

UMPPs are awarded to a developer that has a competitive (low) tariff, while a UMPP has no exposure to merchant prices. The tariff is made up of both a capacity charge (meant to recover capex, opex, debt costs and a rate of return above the cost of equity) and an energy charge (meant to recover fuel costs).

In addition, the bidder for a UMPP must submit how much of each charge is fixed and how much will be escalated. For the capacity charge, the escalated component is linked to inflation, while for the energy charge, it is linked to fuel costs.

The tariff structure of RPWR's UMPPs allow little or no pass-through in the tariff for either inflation or energy costs

As highlighted below, the tariff structure of RPWR's UMPPs allow little or no pass-through in the tariff for either inflation or energy costs.

Fig 26 UMPP tariff structure – proportion of tariff that is variable

UMPP	Capacity charge	Energy charge
Sasan	1%	0%
Krishnapatnam	17%	0%
Tilaiya	22%	13%

% of respective charge in third year of operation

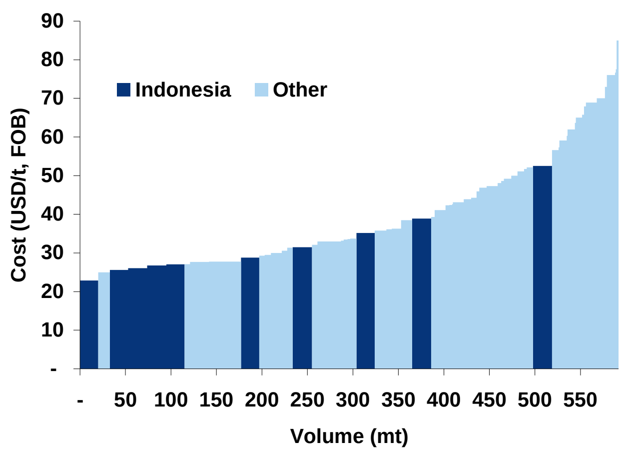
Source: CERC, Macquarie Research, December 2009

…while Krishnapatnam still has to secure its coal supply

In summary, the Krishnapatnam power project has locked in the tariff it will charge its customers, but not the price it will need to pay for the plant's coal requirements. The project is based on imported coal and doesn't yet have a fuel supply agreement locked in. The economics of Krishnapatnam could come under pressure. Every US$5/t change to our coal price assumption for the project would change our price target by Rs5/share.

RPWR has concessions in Indonesia to mine coal, but from what our industry sources there say, we believe the development of these concessions would be challenging. Therefore, the company might have to either acquire more coal assets or contract coal from an alternative source. The average cash cost of Indonesian coal is around US$35/t (cost curve below) – and that is from world-class operating assets.

Fig 27 Thermal cost curve – Indo coal costs average US$35/t



Source: Macquarie Research, February 2010

Adding on freight rates (we assume US$10–15/t) leads to a delivered coal price of at least US$45/t. We have given RPWR the benefit of the doubt in assuming that it can acquire coal for the project at this price. The risk is that RPWR will pay more for coal supply and that earnings margins will be squeezed.

Capital profile and financial risk

Capital hole in FY12–14 – funding is likely to be a timing issue

The market is clearly pricing in the probability of growth projects coming online. On our timing assumptions, if the larger growth projects go ahead, there will be a requirement for further capital in FY12–14. Operational cashflows in any material form would have only just commenced and would not be enough to fund the large capital expenditures – note that we do have lower earnings forecasts than the market.

Our cashflow forecast can be seen below based on all the projects (ex-Shahpur) happening.

Fig 28 Cashflow forecast

Cashflow (Rs m)	FY11E	FY12E	FY13E	FY14E	FY15E
Operating net cash	**6,827**	**6,676**	**12,600**	**51,769**	**97,073**
Purchase of fixed assets	-178,510	-215,597	-247,747	-251,787	-261,837
Sale of investments	58,142	24,238	0	0	0
Net cash from Investing	**-120,368**	**-191,359**	**-247,747**	**-251,787**	**-261,837**
Debt drawdown	120,368	169,853	199,927	192,715	197,878
Debt repayment	-2,059	-2,059	-6,192	-13,504	-22,700
POTENTIAL CAPITAL REQUIRED	0	5,580	41,412	20,807	0
Net cash for financing	**118,309**	**173,374**	**235,147**	**200,018**	**175,177**
Net Cashflow movement	4,768	-11,308	0	0	10,414

Source: Macquarie Research, February 2010

RPWR understands that such a capital requirement might be looming, but will wait until closer to the time before acting. This is prudent, in our view. Our cash forecast above is premised on all the projects going ahead. If projects are further delayed or do not proceed – one of the key risks to this stock – the need for capital would be reduced. Lastly, if such capital is required, it would be more a timing issue, so RPWR might have a range of funding options (bridge loan etc).

Highly geared – financial leverage and risk

RPWR plans to debt-finance around 75–80% of the total capex for its power projects. We estimate this is on the high side for anything other than a regulated plant, which has the ability to pass through capex, opex and debt costs. Most of the debt tranches have interest rates that are priced to a discount of the benchmark prime lending rate (BPLR) set by the respective lending bank. With Indian inflation ticking higher (despite being more supply-driven), we expect the RBI to start tightening interest rates in 2010. While movement in policy rates might not immediately feed through to increases in BPLRs, it is a signal and there is certainly risk of rising interest rates.

Rises in interest rates – except in the case of some regulated assets (Rosa 1 and partial capacity of Rosa 2 and Butibori) – would directly reduce RPWR earnings. The table below shows our forecast debt metrics.

Fig 29 Key debt metrics

	FY11E	FY12E	FY13E	FY14E	FY15E
Interest Cover					
EBITDA-tax/interest	3.8x	3.1x	2.1x	3.0x	3.2x
EBITDA/interest	5.0x	4.2x	2.3x	3.2x	3.4x
Balance Sheet					
Debt/(Debt+Equity)	54%	68%	72%	73%	73%
Net Debt/EBITDA	24.9x	38.5x	18.6x	7.7x	5.4x
Net Debt/Equity	0.9	2.1	2.6	2.7	2.7
Net Debt/Market Cap	0.4	1.0	1.5	1.8	2.1
Net Debt/(Net Debt + Equity)	48%	68%	72%	73%	73%

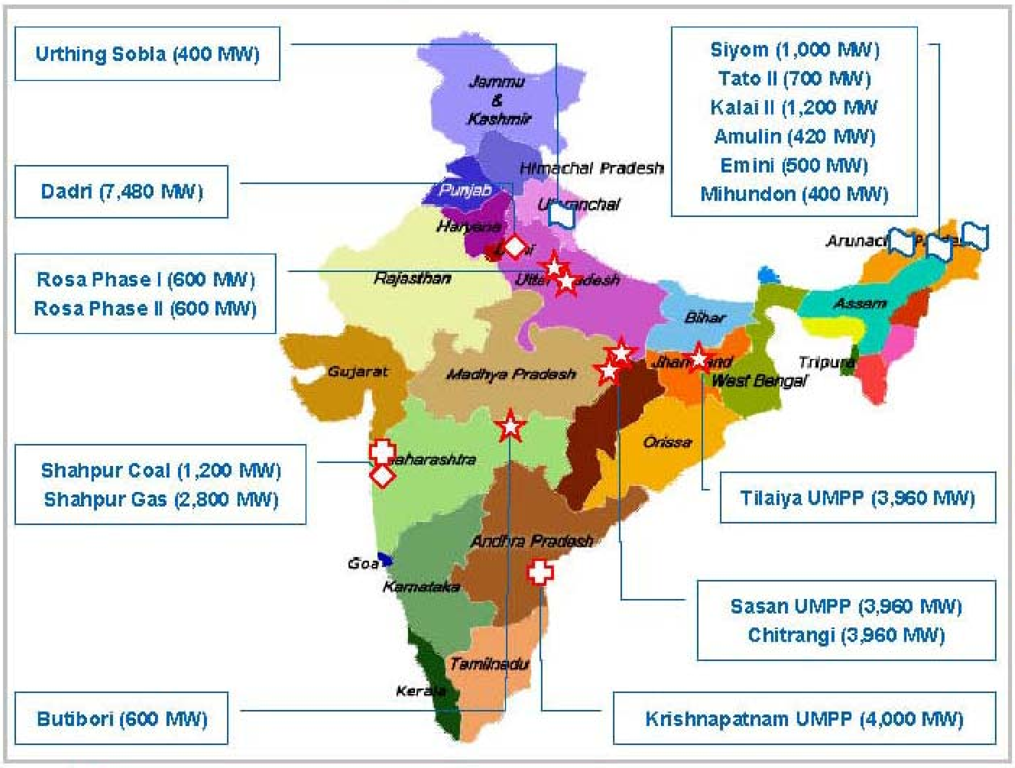
Source: Macquarie Research, February 2010

Appendix 1: Asset Map

Reliance Power has the largest project pipeline of the listed private power developers (33,780MW). This pipeline is boosted by three UMPPs – Sasan, Tilaiya and Krishnapatnam – that total around 11,920MW. This capacity is completely contracted and has no exposure to merchant power prices.

In addition, RPWR is proposing another 3,960MW coal-fired power project to be built adjacent to Sasan, to take advantage of cheap coal from the UMPPs' allocated captive coal block. Further down the pipeline, RPWR is attempting to build the massive 7,480MW gas-fired Dadri Project fuelled by KG-D6 gas. The cost of this gas is under dispute between the Ambani brothers – Mukesh and Anil. RPWR also has a number of hydro projects that total around 4,620MW.

Fig 30 Reliance Power – project portfolio



Type	Capacity
Domestic coal	13,680 MW
Imported coal	5,200 MW
Gas based	10,280 MW
Hydroelectric	4,620 MW

Regional Grid	Capacity
North	9,080 MW
West	12,520 MW
South	4,000 MW
East	3,960 MW
North East	4,220 MW

33,780 MW of power generation portfolio

Source: Company data, Macquarie Research, February 2010

Appendix 2: Project status

The table below provides an operational cheat-sheet outlining RPWR's projects.

Fig 31 RPWR – project pipeline

	Rosa 1	Rosa 2	ButiBori	Sasan	Chatrangi	KrishnaP	Tilaiya	Dadri	Shahapur	Shahapur	Tato II	Siyom	Urthing Soba	AP Projects
Capacity	600	600	600	3960	3960	4,000	3,960	7,480	2,800	1,200	700	1,000	400	2,520
	2x300MW	2x300MW	2x300MW	6x660MW							4x175MW	4x250MW	4x100MW	
Type	Coal based subcritical	Coal based subcritical	Domestic coal based subcritical	Pithead coal supercritical technology based	Domestic coal based supercritical	Imported coal based supercritical	Pithead coal, supercritical technology based	Gas based CCGT technology	Gas based CCGT technology	Import Coal supercritical	Run of river	Run of river	Run of river	
Location	Distt. Shahjahanpur, Uttar Pradesh	Distt. Shahjahanpur, Uttar Pradesh	MIDC Butibori, Nagpur dist, Maharashtra	Sasan, Distt. Singrauli, Madhya Pradesh	Chitrangi, Distt. Singrauli, Madhya Pradesh	Distt. Nellore, Andhra Pradesh	Tilaiya village, Distt: Hazaribagh, Jharkhand	Dhirubhai Ambani Energy City, Near Dadri, Ghaziabad District, Uttar Pradesh	Distt. Raigad, Maharashtra	Distt. Raigad, Maharashtra	Siyom river, Distt. W Siang, Arunachal Pradesh	Siyom river, Distt. W Siang, Arunachal Pradesh	Dhauliganga river, Distt. Pitthorgarh, Uttarkhand	
Land Status	Secured	Sufficient land available in Phase I to accommodate Phase II	225 acres (under possession) Water linkage: MIDC, Butibori	Land acquisition in progress	3,509 acres (2,561 acres government land) Acquisition process in progress	2625 acres (acquisition almost completed)	Acquisition in progress	2,500 acres (2,100 acres in possession)	2,630 acres (acquisition in progress)	2,630 acres (acquisition in progress)	Submitted to CEA in May 09	NHPC DPR being updated	DPR being prepared	
Water Status	Secured	Sufficient water resources available in Phase I to accommodate Phase II	Water linkage: MIDC, Butibori	Water from Govind Vallabh Pant Sagar	In principle allocation obtained for water	Water supply: Sea water (clearance obtained)	Other clearances being processed	Water supply: Upper Ganga Canal	Water supply: Nogathane Wier	Water supply: Nogathane Wier				
Environmental Clearance	Obtained	Obtained	Obtained	Obtained. Coal awaiting notification	Being processed; EC to be obtained shortly		Environmental Clearance obtained for power plant area; Other clearances being processed	All clearances including EC obtained	All clearances including EC obtained	All clearances including EC obtained	Defence clearance obtained	EC and Defence clearance obtained	Clearances being processed	Applied to Ministry of Power for obtaining Defence Clearance
EPC/BTG contract	Shanghai Electric Consortium	Shanghai Electric Consortium	EPC -Reliance Infrastructure Limited. BTG –Shanghai Electric Company	EPC -Reliance Infrastructure Limited. BTG –Shanghai Electric Company	Expecting to re-order from Sasan suppliers	Flexibility to choose unit configuration accorded. Contracts under final stages of evaluation	Not ordered	ICB conducted and pre bid clarification meeting held. All major suppliers bought bid documents	ICB conducted and pre bid clarification meeting held. All major suppliers bought bid documents	ICB conducted and pre bid clarification meeting held. All major suppliers bought bid documents	Detailed Project Report (DRP) Consultant: SNC Lavalin. Submitted to CEA in May 09	DPR Consultant: Halcrow , UK	DPR Consultant: SMEC, Australia	Action initiated for hiring consultant for EIA/EMP studies
Fuel supply	Coal linkages from Ashoka mines (CCL). Transportation agreement with Indian Railways	Coal linkage awarded from Central Coalfields	Linkage allocated from Western Coalfields for 300 MW. Transport by Indian Railways and own railway sidings	3 pithead mines with total reserves +750 MT	Captive Coal Blocks/ Coal linkage	Imported coal	Kerendhari 'B' & 'C' blocks of North Karanpura mines (reserves: over 1.3 billion tonnes)	Natural gas from KG Basin D-6 blocks of RIL. Various options of pipelines being studied		Natural gas from KG Basin D-6 blocks of RIL. Gas transport through East West Pipeline				
Financing	FC achieved; IDBI Bank lead lender	FC achieved (DER 80:20); IDBI Bank lead lender	FC achieved (DER 80:20); Axis Bank lead lender	FC achieved (DER 75:25); SBI lead lender. 14 all domestic institutions	Information Memorandum launched. In principle approvals obtained for part requirement	FC to be achieved soon; IDBI Bank and PFC lead lenders. Sanctions obtained for majority of debt requirement								SPVs incorporated for the projects
Off-take	25 year cost plus tariff based PPA with UPPCL	25 year cost plus PPA with UPPCL for 300 MW - Merchant sale in North India for300 MW	Industrial (Group captive) consumers > 51% of Unit I Balance: Merchant power sale/medium term PPAs	25 year PPA with 14 procurers from 7 states at levelized tariff of Rs 1.19/kwh	1,241 MW to MPPTCL at Rs 2.45/unit (Case I bid) Balance: Case I bids/merchant power sale	25 year PPA with 11 procurers from 4 states at a levelized tariff of Rs 2.33/kwh	25 year PPA with 18 procurers from 10 states at a levelized tariff of Rs 1.77/unit	North India (Punjab, Rajasthan, Haryana & Delhi)	Mumbai distribution region, Gujarat, Maharashtra	Mumbai distribution region, Gujarat, Maharashtra	To discoms on cost plus tariff	To discoms on cost plus tariff	Merchant power sale	
Power Evacuation	From Shahjahanpur substation (by UPPCL)	Evacuation by open access through PGCIL network												
Unit start	Unit I online, Unit 2 2010	FY 2011-12	FY2011-12	First unit: FY2011-12 Subsequent units at a gap of 3 months each	FY2013-15	First unit (September 2013) & Project (October 2015)	First Unit: May 2015 (69 months) Project: May 2017 (93 months)	First stream: 15-24 months from securing gas supply		Gas based project: First stream: 15 to 24 months from securing gas supply	FY2015-16	FY2016-17	FY2016-17	

Source: Company data, Macquarie Research, February 2010

In addition:

- **Rosa 1 (600MW):** The first 300MW unit became operational at end-December 2009, with the second unit expected in the first half of 2010. Remember, this project is a regulated plant and therefore has no exposure to merchant pricing. UI charges made throughout the ramp-up phase are matched against regulated returns.
- **Rosa 2 (600MW):** All approvals are in place and the project is under construction. All major milestones with respect to Rosa 2 (including coal linkage, award of the EPC contract and financial closure) have been achieved, and construction is in progress. The first unit is to be in operation by March 2012.
- **Butibori (600MW):** The first phase (300MW) has achieved financial closure and is under construction, with the boiler foundation in place. RPWR expects the plant to come online as scheduled in March 2012. The second phase (300MW) has in-principle linkage with CIL, though it is still awaiting formal agreement and financial closure. Equipment orders have been placed and work is expected to commence shortly. Construction time should be around 30 months.
- **Sasan (3,960MW):** It is in the post-financial closure stage and is under construction. It is in the process of site levelling and constructing chimney and boiler foundations. The target is to have two units operating by March 2012. The company notes that the civil works are running on schedule.
- **Sasan Mines (750MT reserves):** The land has been acquired, and the environmental and mine plan approvals (25mtpa) are in place. We understand RPWR has finalised orders for draglines and shovels, and is final negotiations for dump trucks (around 240t). It expects to start digging the open-cut mine in mid-2010. The anticipated strip ratio is 4:1 and mineable reserves amount to 750mt (25mtpa). Coal production is targeted for end-2011.

- **Chitrangi (4,000MW):** It currently has a 1,320MW PPA with Madhya Pradesh. It expects to use coal from the Sasan mine for its plants. It is restricted to selling the power generated from the Sasan mine coal through the PPA and not merchants. It is applying for a coal linkage to allow merchant power sales from Chitrangi. Construction for the plant has not been ordered yet (it expects to re-order from the same suppliers used by Sasan), while an environmental impact study has been submitted.
- **Dadri (7,480MW):** One critical issue with Dadri is the gas supply agreement between RIL and RNRL, which has played out in the Supreme Court – we expect a decision within the next month. Land issues also remain unresolved, with RPWR attempting to overturn the decision made by the Allahabad High Court (to allow farmers at Dadri to re-acquire the land they sold to RPWR) in the Supreme Court.
- **Krishnapatnam (3,960MW):** The biggest issue is fuel supply, as a fuel supply agreement has not been locked in yet. RPWR has said that the initial site levelling work is almost complete, and it expects to take up the piling and foundations work shortly. It notes that the plant will be commissioned in 2013 as scheduled.
- **Tilaiya (4,000MW):** It is in the preliminary stages. The UMPP was transferred to RPWR in August 2009. Land acquisition for the project is progressing, with the advance possession of the private land required for the main plant area having taken place already.
- **Tilaiya Coal (1,300MT reserves):** The mine plan is in process. This is crucial for a preliminary understanding of how much coal is usable out of the 1,300MT reserve base, and of the costs and quality of the coal. The mine plan for the Sasan blocks came through quite quickly (around seven months). We expect the mine plan for Tilaiya to come through in 2010.
- **Shahpur Coal and Shahpur Gas:** The projects are in the process of land acquisition. We are not factoring them into our valuation as they are still in the early stages.
- **Hydro projects (3,300MW):** Land acquisition and environmental approval are in place for the projects, but none has advanced to the stage of financial closure. The Siyom (1,000MW) run-of-river hydro plant has submitted its detailed project report (DPR). It is aiming for financial closure in FY11 and to commence operations in 2014.

Appendix 3: Financial forecasts

Fig 32 Financial Forecasts

Profit and Loss (Rs m)	**FY11E**	**FY12E**	**FY13E**	**FY14E**	**FY15E**	**FY16E**	**FY17E**	**FY18E**	**FY19E**	**FY20E**
Net Sales	12,042	16,808	50,214	158,514	290,927	404,924	496,341	526,184	537,316	538,872
Total Expenses	6,401	7,874	21,297	65,859	127,332	178,358	203,184	211,878	217,128	221,793
EBITDA	**5,642**	**8,934**	**28,917**	**92,655**	**163,596**	**226,566**	**293,157**	**314,306**	**320,187**	**317,080**
Depreciation	1,583	1,984	9,062	23,308	37,608	51,642	68,556	74,909	77,750	77,750
Operating EBIT	4,058	6,950	19,855	69,347	125,987	174,924	224,601	239,398	242,438	239,330
Dividend Income	4,798	1,091	0	0	0	0	0	0	0	0
EBIT	**8,856**	**8,041**	**19,855**	**69,347**	**125,987**	**174,924**	**224,601**	**239,398**	**242,438**	**239,330**
Interest Received	377	615	50	50	50	571	3,755	9,205	15,674	22,808
Interest Expense	2,472	2,983	12,797	29,114	47,713	66,128	85,822	88,782	85,911	78,771
EBT	**6,761**	**5,674**	**7,108**	**40,283**	**78,324**	**109,366**	**142,534**	**159,821**	**172,201**	**183,368**
Total Tax	971	712	1,925	6,584	13,029	18,293	23,918	26,844	28,935	30,819
NPAT	5,789	4,961	5,182	33,699	65,295	91,073	118,616	132,977	143,266	152,549
Normalised NPAT	**5,789**	**4,961**	**5,182**	**33,699**	**65,295**	**91,073**	**118,616**	**132,977**	**143,266**	**152,549**

Balance Sheet (Rs m)	**FY11E**	**FY12E**	**FY13E**	**FY14E**	**FY15E**	**FY16E**	**FY17E**	**FY18E**	**FY19E**	**FY20E**
Cash and Bank Balances	12,308	1,000	1,000	1,000	11,414	75,103	184,097	313,489	456,168	611,929
Current Assets	15,295	4,375	7,124	16,025	37,323	110,291	226,889	358,734	502,327	658,096
PPE	292,563	506,176	744,861	973,339	1,197,568	1,276,262	1,261,173	1,208,265	1,142,515	1,064,765
Investments	24,238	0	0	0	0	0	0	0	0	0
Non Current Assets	316,801	506,176	744,861	973,339	1,197,568	1,276,262	1,261,173	1,208,265	1,142,515	1,064,765
Total Assets	**332,097**	**510,551**	**751,985**	**989,365**	**1,234,890**	**1,386,553**	**1,488,062**	**1,566,998**	**1,644,842**	**1,722,861**
Current Liabilities	4,453	4,572	5,677	9,340	14,393	18,547	20,627	21,342	21,773	22,107
Debt	176,822	344,616	538,351	717,562	892,739	949,175	929,987	875,232	809,378	734,515
Total Liabilities	**181,275**	**349,188**	**544,029**	**726,902**	**907,132**	**967,721**	**950,614**	**896,573**	**831,151**	**756,621**
Net Assets	150,821	161,363	207,957	262,463	327,758	418,832	537,448	670,425	813,691	966,240
Share Capital	23,968	29,548	70,960	91,767	91,767	91,767	91,767	91,767	91,767	91,767
Reserves and Surplus	126,853	131,814	136,997	170,696	235,991	327,065	445,681	578,658	721,924	874,473
Total Equity	**150,821**	**161,362**	**207,956**	**262,463**	**327,758**	**418,831**	**537,447**	**670,425**	**813,691**	**966,239**

Cashflow (Rs m)	**FY11E**	**FY12E**	**FY13E**	**FY14E**	**FY15E**	**FY16E**	**FY17E**	**FY18E**	**FY19E**	**FY20E**
EBT	6,761	5,674	7,108	40,283	78,324	109,366	142,534	159,821	172,201	183,368
Add: Book Depreciation	1,583	1,984	9,062	23,308	37,608	51,642	68,556	74,909	77,750	77,750
Working Capital	-546	-269	-1,644	-5,239	-5,831	-5,125	-5,524	-1,738	-483	327
Tax Paid	-971	-712	-1,925	-6,584	-13,029	-18,293	-23,918	-26,844	-28,935	-30,819
Operating net cash	**6,827**	**6,676**	**12,600**	**51,769**	**97,073**	**137,591**	**181,648**	**206,147**	**220,532**	**230,625**
Purchase of fixed assets	-178,510	-215,597	-247,747	-251,787	-261,837	-130,337	-53,467	-22,000	-12,000	0
Sale of investments	58,142	24,238	0	0	0	0	0	0	0	0
Net cash from Investing	**-120,368**	**-191,359**	**-247,747**	**-251,787**	**-261,837**	**-130,337**	**-53,467**	**-22,000**	**-12,000**	**0**
Debt drawdown	120,368	169,853	199,927	192,715	197,878	97,753	40,100	16,500	9,000	0
Debt repayment	-2,059	-2,059	-6,192	-13,504	-22,700	-41,317	-59,288	-71,255	-74,854	-74,864
Proceeds from equity issue	0	5,580	41,412	20,807	0	0	0	0	0	0
Net cash for financing	**118,309**	**173,374**	**235,147**	**200,018**	**175,177**	**56,435**	**-19,188**	**-54,755**	**-65,854**	**-74,864**
Net Cash Flow movement	**4,768**	**-11,308**	**0**	**0**	**10,414**	**63,690**	**108,993**	**129,392**	**142,679**	**155,761**

Source: Macquarie Research, February 2010

Appendix 4: Reliance Power and Group

Reliance ADA group

The Reliance ADA group manages diverse companies in the telecommunications, financial services, media and entertainment, infrastructure, energy and other sectors. Its group companies include Reliance Communications Limited, one of the largest wireless carriers in India in terms of coverage and capacity; Reliance Capital Limited, one of the largest private-sector financial services companies in India, with more than Rs65bn in assets under management; and AdLabs Films Limited, a movie and entertainment company. The group power sector companies include Reliance Energy Limited, Reliance Natural Resources Limited, Reliance Energy Transmission Limited and Reliance Energy Trading Limited. Reliance Power has strong linkages and arrangements with companies of the Reliance ADA group, including Reliance Energy, Reliance Natural Resources and Reliance Energy Transmission.

We expect group companies to provide, among other services, EPC services, fuel sourcing and power evacuation for certain projects. Reliance Power also has and expects to enter into offtake arrangements with certain of its affiliates, including Reliance Energy and Reliance Energy Trading.

Reliance Energy

Reliance Energy is one of the largest private-sector power distributors and power generation companies in India. It has power generation projects with a combined installed capacity of 941MW in Andhra Pradesh, Karnataka and Goa. In FY07, it distributed more than 7.4bn units of electricity to over 2.6m customers across India. It also has an EPC order book of Rs55bn, having been involved in the development of 43 power sector projects in the past 10 years. It is also involved in the transmission and trading of power through its affiliates, Reliance Energy Transmission and Reliance Energy Trading, respectively.

Reliance Natural Resources

Reliance Natural Resources is engaged in the sourcing, supply and transportation of gas, coal and liquid fuels. It holds rights to 28mmscmd of gas in the KG Basin under the terms of a gas supply master agreement with Reliance Industries Limited. It also leads a consortium (which includes Reliance Energy) that owns the rights to four blocks over a 3,251 sq km area for the exploration and production of coal-bed methane (CBM), which made it the second-largest CBM exploration company in terms of acreage as of 25 April 2007. During the fiscal year ended March 31, 2007, it supplied more than 500,000 metric tonnes of imported coal to Reliance Energy’s Dahanu power station.

Dispute with Reliance Industries

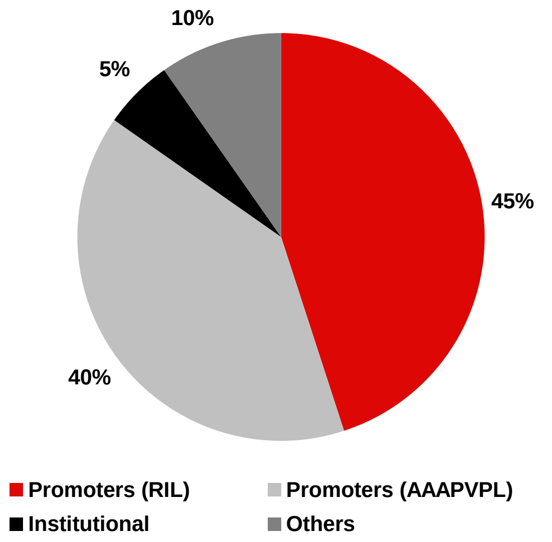
In September 2007, Reliance Natural Resources and Reliance Power entered into an MOU under which they agreed to enter into good faith negotiations for a definitive gas sale and transportation agreement (GSTA) for the provision of gas to the Shahpur Gas and Dadri projects, as well as other prospective gas-fired projects that Reliance Power might develop in the future. The terms and conditions of the GSTA would be negotiated on an arm’s length basis, and be competitive and consistent with prevailing market conditions.

Reliance Natural Resources has represented to RPWR that it has rights to 28mmscmd of gas in the KG Basin on a firm basis under the terms of a gas supply master agreement with Reliance Industries Limited, plus an additional 40% of the gas production from the KG Basin D6 Block over and above 40mmscmd, as well as 40% of gas production from other basins and blocks. Reliance Natural Resources has also represented that the expected option volume from KG Basin D6 Block, under the currently approved development plan, is 15mmscmd (this option volume is after a production of 65mmscmd of gas from this block, and therefore the availability of the option volume will depend on the extent to which actual production exceeds 65mmscmd). However, the gas supply master agreement is currently the subject of litigation between Reliance Natural Resources and Reliance Industries.

Appendix 5: Shareholders – 85% promoters

RPWR is tightly held by its promoters – 45% by Reliance Infrastructure and 40% by AAA Project Ventures Private Limited (AAPVPL). Of the free float, retail investors take up two-thirds and institutional investors one-third. Therefore, the stock is quite tightly held by low-turnover promoters and retail investors.

Fig 33 RPWR shareholders – promoters dominate (85%)



Source: Company data, Macquarie Research, February 2010

Reliance Power (RPWR IN, Underperform, Target Price: Rs117.00)

Quarterly Results		4Q/10E	1Q/11E	2Q/11E	3Q/11E
Revenue	**m**	**0**	**1,204**	**2,408**	**3,613**
Gross Profit	**m**	**0**	**669**	**1,337**	**2,006**
Cost of Goods Sold	m	0	536	1,071	1,607
EBITDA	**m**	**-257**	**564**	**1,128**	**1,692**
Depreciation	m	0	158	317	475
Amortisation of Goodwill	m	0	0	0	0
Other Amortisation	m	0	0	0	0
EBIT	**m**	**-257**	**406**	**812**	**1,217**
Net Interest Income	m	0	-210	-419	-629
Associates	m	0	0	0	0
Exceptionals	m	0	0	0	0
Forex Gains / Losses	m	0	0	0	0
Other Pre-Tax Income	m	1,790	480	960	1,439
Pre-Tax Profit	**m**	**1,533**	**676**	**1,352**	**2,028**
Tax Expense	m	-210	-97	-194	-291
Net Profit	**m**	**1,324**	**579**	**1,158**	**1,737**
Minority Interests	m	0	0	0	0
Reported Earnings	**m**	**1,324**	**579**	**1,158**	**1,737**
Adjusted Earnings	**m**	**1,324**	**579**	**1,158**	**1,737**
EPS (rep)		0.55	0.24	0.48	0.72
EPS (adj)		0.55	0.24	0.48	0.72
EPS Growth yoy (adj)	%	227.7	-78.0	-40.5	30.0
EBITDA Margin	%	nmf	46.8	46.8	46.8
EBIT Margin	%	nmf	33.7	33.7	33.7
Earnings Split	%	18.3	10.0	20.0	30.0
Revenue Growth	%	0.0	nmf	nmf	nmf
EBIT Growth	%	45.7	nmf	nmf	nmf

Profit and Loss Ratios		2010E	2011E	2012E	2013E
Revenue Growth	%	nmf	nmf	39.6	198.8
EBITDA Growth	%	nmf	nmf	58.4	223.7
EBIT Growth	%	nmf	nmf	71.3	185.7
Gross Profit Margin	%	nmf	55.5	59.6	59.9
EBITDA Margin	%	nmf	46.8	53.2	57.6
EBIT Margin	%	nmf	33.7	41.4	39.5
Net Profit Margin	%	nmf	48.1	29.5	10.3
Payout Ratio	%	0.0	0.0	0.0	0.0
EV/EBITDA	x	-392.8	69.6	44.0	13.6
EV/EBIT	x	-391.3	96.8	56.5	19.8
Balance Sheet Ratios					
ROE	%	5.1	3.9	3.2	2.8
ROA	%	-0.6	1.5	1.6	3.1
ROIC	%	-0.6	1.8	1.9	2.9
Net Debt/Equity	%	35.1	109.1	212.9	258.4
Interest Cover	x	nmf	1.9	2.9	1.6
Price/Book	x	2.4	2.3	2.1	1.6
Book Value per Share		60.5	62.9	67.3	86.8

Profit & Loss		2010E	2011E	2012E	2013E
Revenue	**m**	**0**	**12,042**	**16,808**	**50,214**
Gross Profit	**m**	**0**	**6,686**	**10,025**	**30,058**
Cost of Goods Sold	m	0	5,356	6,782	20,157
EBITDA	**m**	**-1,000**	**5,642**	**8,934**	**28,917**
Depreciation	m	4	1,583	1,984	9,062
Amortisation of Goodwill	m	0	0	0	0
Other Amortisation	m	0	0	0	0
EBIT	**m**	**-1,003**	**4,058**	**6,950**	**19,855**
Net Interest Income	m	0	-2,095	-2,367	-12,747
Associates	m	0	0	0	0
Exceptionals	m	0	0	0	0
Forex Gains / Losses	m	0	0	0	0
Other Pre-Tax Income	m	9,398	4,798	1,091	0
Pre-Tax Profit	**m**	**8,395**	**6,761**	**5,674**	**7,108**
Tax Expense	m	-1,157	-971	-712	-1,925
Net Profit	**m**	**7,239**	**5,789**	**4,961**	**5,182**
Minority Interests	m	0	0	0	0
Reported Earnings	**m**	**7,239**	**5,789**	**4,961**	**5,182**
Adjusted Earnings	**m**	**7,239**	**5,789**	**4,961**	**5,182**
EPS (rep)		3.02	2.42	2.07	2.16
EPS (adj)		3.02	2.42	2.07	2.16
EPS Growth (adj)	%	nmf	-20.0	-14.3	4.5
PE (rep)	x	47.2	59.0	68.9	65.9
PE (adj)	x	47.2	59.0	68.9	65.9
Total DPS		0.00	0.00	0.00	0.00
Total Div Yield	%	0.0	0.0	0.0	0.0
Weighted Average Shares	m	2,397	2,397	2,397	2,397
Period End Shares	m	2,397	2,397	2,397	2,397

Cashflow Analysis		2010E	2011E	2012E	2013E
EBITDA	**m**	**-1,000**	**5,642**	**8,934**	**28,917**
Tax Paid	m	-1,157	-971	-712	-1,925
Chgs in Working Cap	m	82	-546	-269	-1,644
Net Interest Paid	m	0	-2,095	-2,367	-12,747
Other	m	9,398	4,798	1,091	0
Operating Cashflow	**m**	**7,324**	**6,827**	**6,676**	**12,600**
Acquisitions	m	0	0	0	0
Capex	m	-65,980	-178,510	-215,597	-247,747
Asset Sales	m	0	0	0	0
Other	m	20,792	58,142	24,238	0
Investing Cashflow	**m**	**-45,188**	**-120,368**	**-191,359**	**-247,747**
Dividend (Ordinary)	m	0	0	0	0
Equity Raised	m	0	0	5,580	41,412
Debt Movements	m	45,188	118,309	167,794	193,735
Other	m	0	0	0	0
Financing Cashflow	**m**	**45,188**	**118,309**	**173,374**	**235,147**
Net Chg in Cash/Debt	**m**	**7,324**	**4,768**	**-11,308**	**0**
Free Cashflow	**m**	**-58,656**	**-171,683**	**-208,920**	**-235,147**

Balance Sheet		2010E	2011E	2012E	2013E
Cash	m	7,540	12,308	1,000	1,000
Receivables	m	1,893	1,893	1,893	1,893
Inventories	m	0	0	0	0
Investments	m	82,380	24,238	0	0
Fixed Assets	m	115,637	292,563	506,176	744,861
Intangibles	m	0	0	0	0
Other Assets	m	104	1,093	1,481	4,231
Total Assets	**m**	**207,554**	**332,097**	**510,551**	**751,985**
Payables	m	3,754	4,198	4,317	5,423
Short Term Debt	m	0	0	0	0
Long Term Debt	m	58,513	176,822	344,616	538,351
Provisions	m	255	255	255	255
Other Liabilities	m	0	0	0	0
Total Liabilities	**m**	**62,522**	**181,275**	**349,188**	**544,029**
Shareholders' Funds	m	145,032	150,821	161,362	207,956
Minority Interests	m	0	0	0	0
Other	m	0	0	0	0
Total S/H Equity	**m**	**145,032**	**150,821**	**161,362**	**207,956**
Total Liab & S/H Funds	**m**	**207,554**	**332,096**	**510,551**	**751,985**

All figures in INR unless noted.
Source: Company data, Macquarie Research, February 2010

Important disclosures:

Recommendation definitions

Macquarie - Australia/New Zealand
Outperform – return >5% in excess of benchmark return
Neutral – return within 5% of benchmark return
Underperform – return >5% below benchmark return

Macquarie – Asia/Europe
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie First South - South Africa
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie - Canada
Outperform – return >5% in excess of benchmark return
Neutral – return within 5% of benchmark return
Underperform – return >5% below benchmark return

Macquarie - USA
Outperform (Buy) – return >5% in excess of Russell 3000 index return
Neutral (Hold) – return within 5% of Russell 3000 index return
Underperform (Sell)– return >5% below Russell 3000 index return

Recommendations – 12 months

Note: Quant recommendations may differ from Fundamental Analyst recommendations

Volatility index definition*

This is calculated from the volatility of historical price movements.

Very high–highest risk – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.

High – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.

Medium – stock should be expected to move up or down at least 30–40% in a year.

Low–medium – stock should be expected to move up or down at least 25–30% in a year.

Low – stock should be expected to move up or down at least 15–25% in a year.
* Applicable to Australian/NZ/Canada stocks only

Financial definitions

All "Adjusted" data items have had the following adjustments made:
Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense
Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests

EPS = adjusted net profit / efpowa*
ROA = adjusted ebit / average total assets
ROA Banks/Insurance = adjusted net profit /average total assets
ROE = adjusted net profit / average shareholders funds
Gross cashflow = adjusted net profit + depreciation
*equivalent fully paid ordinary weighted average number of shares

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions – For quarter ending 31 December 2009

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	47.94%	60.52%	37.50%	43.42%	65.26%	41.60%	(for US coverage by MCUSA, 3.76% of stocks covered are investment banking clients)
Neutral	35.58%	18.70%	53.13%	49.06%	29.11%	36.80%	(for US coverage by MCUSA, 4.51% of stocks covered are investment banking clients)
Underperform	16.48%	20.79%	9.38%	7.52%	5.63%	21.60%	(for US coverage by MCUSA, 0.00% of stocks covered are investment banking clients)

Company Specific Disclosures:

Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures.

Analyst Certification:
The views expressed in this research accurately reflect the personal views of the analyst(s) about the subject securities or issuers and no part of the compensation of the analyst(s) was, is, or will be directly or indirectly related to the inclusion of specific recommendations or views in this research. The analyst principally responsible for the preparation of this research receives compensation based on overall revenues of Macquarie Group Ltd ABN 94 122 169 279 (AFSL No. 318062) (MGL) and its related entities (the Macquarie Group) and has taken reasonable care to achieve and maintain independence and objectivity in making any recommendations.

General Disclaimers:
Macquarie Securities (Australia) Ltd; Macquarie Capital (Europe) Ltd; Macquarie Capital Markets Canada Ltd; Macquarie Capital Markets North America Ltd; Macquarie Capital (USA) Inc; Macquarie Capital Securities Ltd; Macquarie Capital Securities (Singapore) Pte Ltd; Macquarie Securities (NZ) Ltd; and Macquarie First South Securities (Pty) Limited are not authorized deposit-taking institutions for the purposes of the Banking Act 1959 (Commonwealth of Australia), and their obligations do not represent deposits or other liabilities of Macquarie Bank Limited ABN 46 008 583 542 (MBL) or MGL. MBL does not guarantee or otherwise provide assurance in respect of the obligations of any of the above mentioned entities. MGL provides a guarantee to the Monetary Authority of Singapore in respect of the obligations and liabilities of Macquarie Capital Securities (Singapore) Pte Ltd for up to SGD 35 million. This research has been prepared for the general use of the wholesale clients of the Macquarie Group and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this research in any way. If you received it in error, please tell us immediately by return e-mail and delete the document. We do not guarantee the integrity of any e-mails or attached files and are not responsible for any changes made to them by any other person. MGL has established and implemented a conflicts policy at group level (which may be revised and updated from time to time) (the "Conflicts Policy") pursuant to regulatory requirements (including the FSA Rules) which sets out how we must seek to identify and manage all material conflicts of interest. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account your investment objectives, financial situation or particular needs. Before making an investment decision on the basis of this research, you need to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of your particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of the Macquarie Group accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise.

Country-Specific Disclaimers:
Australia: In Australia, research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947), a participating organisation of the Australian Securities Exchange. **New Zealand**: In New Zealand, research is issued and distributed by Macquarie Securities (NZ) Ltd, a NZX Firm. **Canada**: In Canada, research is prepared, approved and distributed by Macquarie Capital Markets Canada Ltd, a participating organisation of the Toronto Stock Exchange, TSX Venture Exchange & Montréal Exchange. Macquarie Capital Markets North America Ltd., which is a registered broker-dealer and member of FINRA, accepts responsibility for the contents of reports issued by Macquarie Capital Markets Canada Ltd in the United States and sent to US persons. Any person wishing to effect transactions in the securities described in the reports issued by Macquarie Capital Markets Canada Ltd should do so with Macquarie Capital Markets North America Ltd. The Research Distribution Policy of Macquarie Capital Markets Canada Ltd is to allow all clients that are entitled to have equal access to our research. **United Kingdom**: In the United Kingdom, research is issued and distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated by the Financial Services Authority (No. 193905). **Hong Kong**: In Hong Kong, research is issued and distributed by Macquarie Capital Securities Ltd, which is licensed and regulated by the Securities and Futures Commission. **Japan**: In Japan, research is issued and distributed by Macquarie Capital Securities (Japan) Limited, a member of the Tokyo Stock Exchange, Inc., Osaka Securities Exchange Co. Ltd, and Jasdaq Securities Exchange, Inc. (Financial Instruments Firm, Kanto Financial Bureau (kin-sho) No. 231, a member of Japan Securities Dealers Association and Financial Futures Association of Japan). **South Africa**: In South Africa, research is issued and distributed by Macquarie First South Securities (Pty) Limited, a member of the JSE Limited. **Singapore**: In Singapore, research is issued and distributed by Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services license

holder under the Securities and Futures Act to deal in securities and provide custodial services in Singapore. Pursuant to the Financial Advisers (Amendment) Regulations 2005, Macquarie Capital Securities (Singapore) Pte Ltd is exempt from complying with sections 25, 27 and 36 of the Financial Advisers Act. All Singapore-based recipients of research produced by Macquarie Capital (Europe) Limited, Macquarie Capital Markets Canada Ltd, Macquarie First South Securities (Pty) Limited and Macquarie Capital (USA) Inc. represent and warrant that they are institutional investors as defined in the Securities and Futures Act. **United States**: In the United States, research is issued and distributed by Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA. Macquarie Capital (USA) Inc, accepts responsibility for the content of each research report prepared by one of its non-US affiliates when the research report is distributed in the United States by Macquarie Capital (USA) Inc. Macquarie Capital (USA) Inc.'s affiliate's analysts are not registered as research analysts with FINRA, may not be associated persons of Macquarie Capital (USA) Inc., and therefore may not be subject to FINRA rule restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. Any persons receiving this report directly from Macquarie Capital (USA) Inc. and wishing to effect a transaction in any security described herein should do so with Macquarie Capital (USA) Inc. Important disclosure information regarding the subject companies covered in this report is available at www.macquarie.com/research/disclosures, or contact your registered representative at 1-888-MAC-STOCK, or write to the Supervisory Analysts, Research Department, Macquarie Securities, 125 W.55th Street, New York, NY 10019.

Auckland Tel: (649) 377 6433	**Bangkok** Tel: (662) 694 7999	**Calgary** Tel: (1 403) 218 6650	**Hong Kong** Tel: (852) 2823 3588	**Jakarta** Tel: (62 21) 515 1818	**Johannesburg** Tel: (2711) 583 2000	**Kuala Lumpur** Tel: (60 3) 2059 8833
London Tel: (44 20) 3037 4400	**Manila** Tel: (63 2) 857 0888	**Melbourne** Tel: (613) 9635 8139	**Montreal** Tel: (1 514) 925 2850	**Mumbai** Tel: (91 22) 6653 3000	**Perth** Tel: (618) 9224 0888	**Seoul** Tel: (82 2) 3705 8500
Shanghai Tel: (86 21) 6841 3355	**Singapore** Tel: (65) 6231 1111	**Sydney** Tel: (612) 8232 9555	**Taipei** Tel: (886 2) 2734 7500	**Tokyo** Tel: (81 3) 3512 7900	**Toronto** Tel: (1 416) 848 3500	**New York** Tel: (1 212) 231 2500

Available to clients on the world wide web at www.macquarieresearch.com and through Thomson Financial, FactSet, Reuters, Bloomberg, CapitalIQ and TheMarkets.com.

Macquarie
Equities Research

Asia Research

Head of Equity Research

John O'Connell (Global Co – Head)	(612) 8232 7544
David Rickards (Global Co – Head)	(44 20) 3037 4399
Chris Hunt (Asia – Head)	(852) 3922 1119
Tim Smart (Asia – Deputy Head)	(852) 3922 3565

Automobiles/Auto Parts

Leah Jiang (China)	(8621) 2412 9020
Clive Wiggins (Japan)	(813) 3512 7856
Dan Lucas (Japan)	(813) 3512 6050
ES Kwak (Korea)	(822) 3705 8644
Linda Huang (Taiwan)	(8862) 2734 7521

Banks and Non-Bank Financials

Ismael Pili (Asia)	(813) 3512 5979
Nick Lord (Asia)	(852) 3922 4774
Sarah Wu (China)	(852) 3922 4068
Jemmy Huang (Hong Kong, Taiwan)	(8862) 2734 7530
Mudit Painuly (India)	(9122) 6653 3044
Ferry Wong (Indonesia)	(6221) 515 7335
Chan Hwang (Korea)	(822) 3705 8643
Michael Na (Korea)	(822) 2095 7222
Chin Seng Tay (Malaysia, S'pore)	(65) 6231 2837
Nadine Javellana (Philippines)	(632) 857 0890
Matthew Smith (Taiwan)	(8862) 2734 7514
Alastair Macdonald (Thailand)	(662) 694 7741

Chemicals/Textiles

Christina Lee (Hong Kong)	(852) 3922 3571
Jal Irani (India)	(9122) 6653 3040
Shawn Park (Korea)	(822) 3705 8669
Sunaina Dhanuka (Malaysia)	(603) 2059 8993

Conglomerates

Gary Pinge (Asia)	(852) 3922 3557
Leah Jiang (China)	(8621) 2412 9020

Consumer

Mohan Singh (Asia)	(852) 3922 1111
Jessie Qian (China, Hong Kong)	(852) 3922 3568
Toby Williams (Japan)	(813) 3512 7392
HongSuk Na (Korea)	(822) 3705 8678
Edward Ong (Malaysia)	(603) 2059 8982
Alex Pomento (Philippines)	(632) 857 0899
Linda Huang (Taiwan)	(8862) 2734 7521

Emerging Leaders

Jake Lynch (Asia)	(8621) 2412 9007
Minoru Tayama (Japan)	(813) 3512 6058
Robert Burghart (Japan)	(813) 3512 7853

Industrials

Inderjeetsingh Bhatia (India)	(9122) 6653 3166
Christopher Cintavey (Japan)	(813) 3512 7432
Janet Lewis (Japan)	(813) 3512 7475
Chang Han Joo (Korea)	(822) 3705 8511
Sunaina Dhanuka (Malaysia)	(603) 2059 8993
David Gambrill (Thailand)	(662) 694 7753

Insurance

Mark Kellock (Asia)	(852) 3922 3567
Makarim Salman (Japan)	(813) 3512 7421

Media

Jessie Qian (China, Hong Kong)	(852) 3922 3568
Shubham Majumder (India)	(9122) 6653 3049
George Hogan (Japan)	(813) 3512 7851
Prem Jearajasingam (Malaysia)	(603) 2059 8989
Alex Pomento (Philippines)	(632) 857 0899

Oil and Gas

Laban Yu (Asia)	(852) 3922 4691
Christina Lee (Hong Kong)	(852) 3922 3571
Jal Irani (India)	(9122) 6653 3040
Polina Diyachkina (Japan)	(813) 3512 7886
Shawn Park (Korea)	(822) 3705 8669
Edward Ong (Malaysia)	(603) 2059 8982
Sunaina Dhanuka (Malaysia)	(603) 2059 8993
Linda Huang (Taiwan)	(8862) 2734 7521
Trevor Buchinski (Thailand)	(662) 694 7829

Pharmaceuticals

Christina Lee (Hong Kong)	(852) 3922 3571
Abhishek Singhal (India)	(9122) 6653 3052
Naomi Kumagai (Japan)	(813) 3512 7474

Property

Callum Bramah (Asia)	(852) 3922 4731
Eva Lee (China, Hong Kong)	(852) 3922 3573
Chris Cheng (China, Hong Kong)	(852) 3922 3581
Hiroshi Okubo (Japan)	(813) 3512 7433
Chang Han Joo (Korea)	(822) 3705 8511
Tuck Yin Soong (Singapore)	(65) 6231 2838
Elaine Cheong (Singapore)	(65) 6231 2839
Corinne Jian (Taiwan)	(8862) 2734 7522
Patti Tomaitrichitr (Thailand)	(662) 694 7727

Resources / Metals and Mining

Andrew Dale (Asia)	(852) 3922 3587
Xiao Li (China)	(852) 3922 4626
YeeMan Chin (China)	(852) 3922 3562
Christina Lee (Hong Kong)	(852) 3922 3571
Rakesh Arora (India)	(9122) 6653 3054
Adam Worthington (Indonesia)	(65) 6231 2981
Riaz Hyder (Indonesia)	(6221) 2598 8486
Polina Diyachkina (Japan)	(813) 3512 7886

Technology

Michael Bang (Asia)	(822) 3705 8659
Patrick Yau (Hong Kong)	(852) 3922 1264
Zona Chen (Hong Kong)	(852) 3922 3578
Nitin Mohta (India)	(9122) 6653 3050
Damian Thong (Japan)	(813) 3512 7877
David Gibson (Japan)	(813) 3512 7880
George Chang (Japan)	(813) 3512 7854
Michiko Kakiya (Japan)	(813) 3512 7868
Yukihiro Goto (Japan)	(813) 3512 5984
Daniel Kim (Korea)	(822) 3705 8641
Abraham Leu (Taiwan)	(8862) 2734 7511
Chia-Lin Lu (Taiwan)	(8862) 2734 7526
Daniel Chang (Taiwan)	(8862) 2734 7516
James Chiu (Taiwan)	(8862) 2734 7517
Jeffrey Su (Taiwan)	(8862) 2734 7512
Samson Yu (Taiwan)	(8862) 2734 7532

Telecoms

Shubham Majumder (Asia)	(9122) 6653 3049
Ramakrishna Maruvada (ASEAN)	(65) 6231 2842
Bin Liu (China)	(852) 3922 3634
Tim Smart (China)	(852) 3922 3565
Riaz Hyder (Indonesia)	(6221) 2598 8486
Nathan Ramler (Japan)	(813) 3512 7875
Prem Jearajasingam (Malaysia)	(603) 2059 8989

Transport & Infrastructure

Anderson Chow (Asia)	(852) 3922 4773
Jonathan Windham (Asia)	(852) 3922 5417
Wei Sim (China, Hong Kong)	(852) 3922 3598
Janet Lewis (Japan)	(813) 3512 7475
Chang Han Joo (Korea)	(822) 3705 8511
ES Kwak (Korea)	(822) 3705 8644
Sunaina Dhanuka (Malaysia)	(603) 2059 8993

Utilities

Adam Worthington (Asia)	(65) 6231 2981
Carol Cao (China, Hong Kong)	(852) 3922 4075
Jeff Evans (India)	(9122) 3356 3053
Prem Jearajasingam (Malaysia)	(603) 2059 8989
Alex Pomento (Philippines)	(632) 857 0899

Commodities

Jim Lennon	(4420) 3037 4271
Max Layton	(4420) 3037 4273
Bonnie Liu	(8621) 2412 9008
Rakesh Arora	(9122) 6653 3054

Data Services

Andrea Clohessy (Asia)	(852) 3922 4076
Eric Yeung	(852) 3922 4077

Economics

Richard Jerram (Asia)	(813) 3512 7855
Rajeev Malik (ASEAN, India)	(65) 6231 2841
Richard Gibbs (Australia)	(612) 8232 3935
Paul Cavey (China)	(852) 3922 3570

Quantitative

Martin Emery (Asia)	(852) 3922 3582
Viking Kwok (Asia)	(852) 3922 4735
George Platt (Australia)	(612) 8232 6539
Patrick Hansen (Japan)	(813) 3512 7876

Strategy/Country

Michael Kurtz (Asia)	(8621) 2412 9002
Daniel McCormack (Asia)	(852) 3922 4073
Mark Matthews (Asia)	(852) 3922 3585
Jal Irani (India)	(9122) 6653 3040
Ferry Wong (Indonesia)	(6221) 515 7335
David Gibson (Japan)	(813) 3512 7880
Peter Eadon-Clarke (Japan)	(813) 3512 7850
Chan Hwang (Korea)	(822) 3705 8643
Prem Jearajasingam (Malaysia)	(603) 2059 8989
Edward Ong (Malaysia)	(603) 2059 8982
Alex Pomento (Philippines)	(632) 857 0899
Tuck Yin Soong (ASEAN, Singapore)	(65) 6231 2838
Daniel Chang (Taiwan)	(8862) 2734 7516
Alastair Macdonald (Thailand)	(662) 694 7741

Find our research at

Macquarie:	www.macquarie.com.au/research
Thomson:	www.thomson.com/financial
Reuters:	www.knowledge.reuters.com
Bloomberg:	MAC GO
Factset:	http://www.factset.com/home.aspx
CapitalIQ	www.capitaliq.com
TheMarkets.com	www.themarkets.com

Email macresearch@macquarie.com for access

Sales

Regional Heads of Sales

Chris Gray (ASEAN)	(65) 6231 2888
Justin Crawford (Asia)	(852) 3922 2065
Peter Slater (Boston)	(1 617) 598 2502
Jeffrey Shiu (China & Hong Kong)	(852) 3922 2061
Thomas Renz (Geneva)	(41) 22 818 7712
Andrew Mouat (India)	(9122) 6653 3200
Stanley Dunda (Indonesia)	(6221) 515 1555
Kenneth Yap (Indonesia)	(6221) 515 1555
JJ Kim (Korea)	(822) 3705 8799
Jason Lee (Malaysia)	(603) 2059 8888
Gino C Rojas (Philippines)	(632) 857 0761
Greg Norton-Kidd (New York)	(1 212) 231 2527
Luke Sullivan (New York)	(1 212) 231 2507
Scot Mackie (New York)	(1 212) 231 2848

Regional Heads of Sales cont'd

Sheila Schroeder (San Francisco)	(1 415) 835 1235
Angus Kent (Thailand)	(662) 694 7601
Michael Newman (Tokyo)	(813) 3512 7920
Charles Nelson (UK/Europe)	(44) 20 3037 4832
Rob Fabbro (UK/Europe)	(44) 20 3037 4865
Nick Ainsworth (Generalist)	(852) 3922 2010

Sales Trading

Adam Zaki (Asia)	(852) 3922 2002
Mike Keen (Europe)	(44) 20 3037 4905
Yat Quan Tan (Hong Kong)	(852) 3922 2028
Stanley Dunda (Indonesia)	(6221) 515 1555
Michael Santos (Philippines)	(632) 857 0813
Dominic Shore (Thailand)	(662) 694 7707

Sales Trading cont'd

Mario Argyrides (Korea)	(822) 3705 8610
Edward Robinson (London)	(44) 20 3037 4902
Matthew Ryan (Singapore)	(65) 6231 2888
Isaac Huang (Taiwan)	(8862) 2734 7582
Phil Sellaroli (Tokyo)	(813) 3512 7837

Alternative Strategies

Convertibles - Roland Sharman	(852) 3922 2095
Depository Receipts - Robert Ansell	(852)3922 2094
Derivatives - Wayne Edelist	(852) 3922 2134
Futures - Tim Smith	(852) 3922 2113
Structured Products - Andrew Terlich	(852) 3922 2013