

INDIA

Reliance Industries

31 March 2009

RIL IN Outperform

Stock price as of 30 Mar 09	Rs	1,515.70
12-month target	Rs	1,675.00
Upside/downside	%	+10.5
Valuation	Rs	1,675.00
- Sum of Parts		

GICS sector		energy
Market cap	Rs bn	2,385
30-day avg turnover	US\$m	220.0
Market cap	US\$m	47,166
Number shares on issue	m	1,574

Investment fundamentals

Year end 31 Mar		2008A	2009E	2010E	2011E
Total revenue	bn	1,371.5	1,567.2	1,938.8	2,169.2
EBITDA	bn	231.4	234.7	388.9	409.1
EBITDA growth	%	15.0	1.4	65.7	5.2
EBIT	bn	181.4	185.6	305.9	321.5
EBIT Growth	%	19.1	2.3	64.8	5.1
Reported profit	bn	195.2	148.5	252.2	273.7
Adjusted profit	bn	147.9	148.5	252.2	273.7
EPS rep	Rs	124.07	90.43	153.54	166.60
EPS adj	Rs	93.99	90.43	153.54	166.60
EPS adj growth	%	13.1	-3.8	69.8	8.5
PE adj	x	16.1	16.8	9.9	9.1
Total DPS	Rs	12.13	12.30	20.89	22.66
Total div yield	%	0.8	0.8	1.4	1.5
ROE	%	19.2	14.0	19.4	18.8
EV/EBITDA	x	12.3	12.5	7.6	7.2
Net debt/equity	%	51.6	35.5	34.9	18.1
Price/book	x	2.8	2.0	1.9	1.6

RIL IN rel SENSEX performance, & rec history



Source: FactSet, Macquarie Research, March 2009 (all figures in INR unless noted)

Link to our recent Oil & Gas *Yatra* report
"Next Gen Opportunity"

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Countdown to first gas

Event

- In line with our recent Oil *Yatra* (tour) 'Next Gen opportunity' takeaways, the countdown to RIL's first gas flows has begun. RIL has signed the Gas Sales and Purchase Agreements (GSPA) with 15 fertiliser units for supply of gas to be produced from the KG-D6 block. This will be followed by the signing of the GSPA with the existing gas-based power producers. RIL is expected to start gas production in the next few days and fuller supplies will start by mid-April.

Impact

- Fertiliser GSPA paves way for sale of first gas.** The fertiliser companies had raised certain objections to RIL's draft GSPA regarding the take-or-pay clause, term of the contract, currency of payment etc. Almost all of these issues were resolved amicably; following which RIL signed GSAs with 12 fertiliser companies for supply of ~15mmscmd of gas at 15 urea facilities.
- GSPA with power plants to follow.** The Empowered Group of Ministers have allocated top priority to the existing gas-based urea plants, followed by LPG plants, existing gas-based power plants and city gas for allocation of KG-D6 gas. As KG-D6 gas is lean, during the ramp up of production to 40mmscmd, the power sector would get higher priority than the LPG sector. We expect RIL to sign GSPA with the power plants as KG-D6 production is expected to increase from initial 10mmscmd to 40mmscmd by July 2009. Also RIL itself is already geared to offtake and is lobbying hard for nearly 20mmscmd at its existing refinery and petrochemical facilities.
- Large gas deficit in medium term.** During our recent Oil and Gas *Yatra*, the Fertiliser Association said the fertiliser sector has 40mmscmd of an additional requirement. In addition, two power majors, NTPC (NATP IN, Rs184, NR) and Reliance Power (RPWR IN, Rs101, NR), alone have the ability to offtake an additional 50mmscmd of gas, which compares with RIL's planned production of 80mmscmd. Estimates of 10mmscmd of city gas distribution demand from 20 cities would be understated given longer-term plans for 230 cities.
- Tip of the iceberg.** During our *Yatra*, the Director General of Hydrocarbons (DGH) demonstrated that RIL's KG-D6's start-up is only the tip of the iceberg and there is a very large potential on the east coast. Currently, there are 11 seismic vessels working in the east coast and this will be followed by drilling when the blocks enter the subsequent phases. Initial data from deepwater blocks on the west coast also looks very promising. The hydrocarbon signatures on India's east coast look similar to Qatar's.

Earnings revision

- No change.

Price catalyst

- 12-month price target: Rs1,675.00 based on a Sum of Parts methodology.
- Catalyst: New oil and gas finds and enhanced clarity on organised retail.

Action and recommendation

- RIL has a large portfolio of highly prospective blocks and its exploratory success rate is the best amongst peers. We estimate RIL's profits to rise 70% in FY10E, purely from volume growth, despite an assumed cyclical downturn.

Please refer to the important disclosures and analyst certification on inside back cover of this document, or on our website www.macquarie.com.au/research/disclosures.

Fig 1 Timeline of key events

Date	Event
02-Feb-09	Bombay High Court lifts stay on sale of gas
28-Mar-09	GSPA signed with Fertiliser companies
15-Apr-09	First sale of KG-D6 gas
May-09	GSPA likely to be signed with Power companies
Jun-09	GSPA likely to be signed with City Gas companies
Jul-09	KG-D6 production to ramp upto 40mmscmd
Dec-09	First well likely to be drilled in KG-D9 block maybe as early as 2QCY09
Dec-09	Completion of 2D and 3D seismic studies in Mahanadi D4 block
Sep-10	KG-D6 production to ramp upto 80mmscmd, perhaps earlier

Source: Macquarie Research, March 2009

Fertiliser GSPA paves way for sale of first gas

RIL's GSPA with the fertiliser companies involve supply of 15mmscmd of natural gas from KG-D6 block to 15 urea units across the country.

The following fertiliser companies will receive the gas from next month:

1. Nagarjuna Fertilisers and Chemicals (NFCL IN, Rs18, NR) – Kakinada
2. Rashtriya Chemical and Fertilisers (RCF IN, Rs38, NR) – Trombay and Thal
3. IFFCO (Not Listed) – Aonla, Kalol, Phulpur
4. KRIBHCO (Not Listed) – Hazira
5. Gujarat State Fertiliser Company (GSFC IN, Rs88, NR) – Baroda
6. Gujarat Narmada Valley Fertiliser (GNFC IN, Rs60, NR) – Bharuch
7. Tata Chemicals (TTCH IN, Rs140, NR) – Babrala
8. National Fertilisers (NFL IN, Rs34, NR) – Vijaypur
9. Chambal Fertilisers and Chemicals (CHMB IN, Rs42, NR) – Gadepan
10. KRIBHCO-Shyam Fertilisers (Not Listed) – Shahjahanpur
11. Indo Gulf Fertilisers (ABNL IN, Rs434, NR) – Jagdishpur
12. Shriram Fertilisers and Chemicals (DCMS IN, Rs23, NR) – Kota

Deepak Fertilisers' (DFPC IN, Rs57, NR) demand for 0.178mmscmd and BVFC's (Not Listed) 0.23mmcmd claim were rejected by the EGoM as the initial gas was to go only to urea-making units.

Fertiliser companies' concerns resolved amicably

The revised GSPA addressed most of the contentious issues of the original draft raised by the fertiliser companies worked up.

- According to the new GSPA, if a fertiliser company does not take its allocated gas quota for one unit, the next unit of the same company will have the first right over the quota. RIL will have no right over the unused quota, unlike what was stated in the earlier draft.
- The second important change is with regards to the take-or-pay clause of the gas. This makes the fertiliser company the owner of gas at Kakinada itself. It is now the transport companies GAIL (GAIL IN, Rs233, OP, TP:Rs266) and RGTIL that will have to pay for any delay due to technical faults and not the fertiliser units unlike what was initially suggested.
- Also, the fertiliser companies will not lose if there is a shortfall in production. The gas will be distributed on a pro rata basis within the fertiliser sector first against RIL's initial argument of reserving it for RIL and associates.

Pipeline infrastructure supports initial production

Fertiliser companies also signed gas transportation agreements with Reliance Gas Transportation Infrastructure Ltd (RGTIL), a Reliance Group company. The East-West pipeline built by RGTIL would be used to transport gas from D6 block to fertiliser units by inter-connecting with pipelines belonging to GAIL and Gujarat State Petronet (GUJS IN, Rs37, NR).

- KG-D6 gas will come onshore at Kakinada (Andhra Pradesh) from where it will be transported to Bharuch (Gujarat) through a 1,386-km pipeline laid by RGTIL. In Gujarat, RGTIL will use the pipeline network of GSPL to take the gas to end-consumers as well as connect to GAIL's Hazira-Vijaypur-Jagdishpur pipeline.
- On the HBJ pipeline, NFL will get 0.65mmscmd, Chambal Fertiliser 1.15mmscmd, KRIBHCO Shahjahanpur 0.978mmscmd, Tata's Babrala plant 0.88mmscmd, Indo Gulf Fertiliser's Jagdishpur plant 0.48mmscmd, Shriram Fertilisers' Kota plant 0.62mmscmd, IFFCO's Aonla and Phulpur units in Uttar Pradesh 1.75 and 0.52mmscmd respectively.
- Among non-HBJ customers, KRIBHCO Hazira unit will get 1.37mmscmd, Gujarat State Fertilisers & Chemicals' Baroda plant 0.72mmscmd, Rashtriya Chemical Fertilisers' Trombay unit 0.95mmscmd and Thal 2.1mmscmd, Nagarjuna Fertiliser 1.55mmscmd, GNFC 0.342mmscmd and IFFCO's Kalol plant would get 1.3mmscmd of gas respectively.

Gas to reach fertiliser plants at a cost of US\$5.3-6.2/mm btu

- RIL will sell gas to the fertiliser companies at US\$4.20/mm btu as per the contract. However, the actual cost of the KG basin gas to the fertiliser companies would be higher due to the additional transportation charge, which would be levied depending on the distance and the terms of contract with the gas transporting firms such as GAIL and GSPL.
- GAIL will charge US\$0.14-0.60/mm btu for providing the last-mile connectivity to consumers through its pipeline network. GSPL's pipeline will be used for transporting its gas through Gujarat.
- RIL has lowered the margin it would charge on selling the gas to US\$0.135/mm btu from the proposed US\$0.15/mm btu even though its proposed margin was lower than GAIL's US\$0.17/mm btu.
- For instance, the delivered price, including taxes and transportation charges, of the RIL gas in Andhra Pradesh would be US\$5.34/mm btu while in Maharashtra it would cost US\$5.87/mm btu. In Gujarat, it would cost US\$5.87/mm btu, and along the Hazira-Vijaypur-Jagdishpur (HVJ) pipeline US\$6.21/mm btu.

KG-D6 gas price is affordable for the fertiliser sector

We estimate that the delivered gas price of US\$6.0/mmbtu will be affordable for the fertiliser sector.

Fig 2 Comparative cost of production of urea in India and abroad

Item	Average cost (15 years) of urea production (US\$/t)	
	India	Abroad
Variable Cost		
Natural Gas (US\$1/mmbtu)	20.7	20.7
Fixed Cost		
Utilities	3.6	3.6
Bags	6.2	6.2
Labour and overheads	12.8	32.1
Maintenance and insurance	16	20.6
CRC	89.6	102.4
Subtotal (FC)	128.2	164.9
Total (VC + FC)	148.9	185.6
Additional Cost for consumption in India		
Ocean Freight		20
Port handling and Bagging etc		15
Subtotal		35
Total	148.9	220.6

Source: Fertiliser Ministry, Macquarie Research, March 2009

US\$1/mmbtu increase in gas price leads to US\$21/t increase in urea cost of production**Fig 3 Sensitivity of cost of production in India with changes in gas prices**

Natural Gas Price (US\$/mmbtu)	Cost of Urea Production in India (US\$/t)	Cost of Urea Production Abroad (US\$/t)
1.0	148.9	185.6
2.0	169.6	206.3
3.0	190.3	227.0
4.0	211.0	247.7
5.0	231.7	268.4
6.0	252.4	289.1

Source: Fertiliser Ministry, Macquarie Research, March 2009

GSPA with power plants to follow as production increases

The Empowered Group of Ministers (EGoM) have allocated top priority to the existing gas-based urea plants, followed by LPG plants, existing gas-based power plants and city gas for allocation of KG-D6 gas. As KG-D6 gas is lean, during the ramp up of production to 40mmscmd, the power sector would get higher priority than the LPG sector. We expect RIL to sign GSPA with the power plants as KG-D6 production is expected to increase from the initial 10mmscmd to 40mmscmd by July 2009.

- EGoM have allocated 3.0mmscmd of gas to existing gas-based LPG plants. Since the gas is lean, an arrangement in this regard is being evolved by the petroleum ministry in consultation with ONGC and GAIL. This would in no way affect supplies to the other sectors.
- EGoM had decided that of the 40mmscmd of gas to be produced from KG-D6, a maximum quantity of 5.0mmscmd would be supplied to city gas distribution (CGD) projects. According to the priority decided by EGoM, supply to the CGD sector would commence when total supply reaches 35mmscmd, which is likely by July 2009. The total requirement of natural gas of CGD entities for PNG and CNG by July 2009 might be around 1.0mmscmd.
- The balance 4.0mmscmd will be supplied to the power sector for the time being. This extra gas would be supplied to existing gas-based power plants, including captive power plants. This gas supply would help to bridge the difference on account of lower calorific value and could also be supplied to other power plants, including captive power plants.
- The production from KG-D6 is expected to start in April 2009, and is likely to be ramped up to the level of 40mmscmd by July 2009. The period from April to July is the peak summer months when consumption of power shoots up. Furthermore, there is substantial power requirement due to the Kharif season. In view of this, the period from April to July would have a very high requirement of power. During the ramp up of KG D6 production to 40mmscmd, the power sector should be given priority above the LPG sector. There will be no change in priority of power sector vis-à-vis the fertilizers sector.
- The existing gas-based power plants in Andhra Pradesh will get the priority over the power plants outside the state. Ratnagiri Power (Dabhol) has already been allocated gas. We believe NTPC and GVK Power (GVKP IN, Rs22, OP, TP: Rs27, covered by Inderjeet Bhatia) to be prime beneficiary of KG-D6 gas.

KG-D6 gas price is affordable for the sector

We estimate that the delivered gas price of US\$6.0/mmbtu will be affordable for the power sector. Our calculations are based on the following assumptions:

- Though domestic coal is ideally suited for power generation, power demand may outpace the domestic coal output.
- Recent biddings for power plants have set a benchmark power tariff.

Fig 4 Benchmark tariff based on recent biddings for power plants

Power Plant	Quoted power tariff
Bids for imported coal based 4000MW power plant	Rs2.26–2.96 per unit
Essar winning bid for imported coal based 1000MW power plant in Jamnagar	Rs2.40 per unit

Source: Reliance Industries, Macquarie Research, March 2009

- Widely accepted affordable power generation cost of Rs2.50 per unit.

- To achieve the same power tariff, the affordable delivered gas price is around US\$6/mmbtu.

Fig 5 Delivered gas price of US\$6/mmbtu affordable for power sector

Parameter	Assumption
Capex	Rs2.75 Cr/MW
PLF	90%
Debt equity	70:30
Long-term debt	10% pa
Return on Equity	14%
Tenure	20 years
Fixed tariff levelled	Rs0.70/unit
Affordable variable cost to achieve total cost of Rs2.50	Rs1.8/unit
Heat Rate	1550-1650 Kcal/Kwh
Gas Price	\$6-6.4/mmbtu

Source: Reliance Industries, Macquarie Research, March 2009

Fig 6 Net back price based on imported coal-based power plant is US\$6/mmbtu

Description	Unit	Value
CIF price of coal	US\$/t	60
Customs duty @5%	US\$/t	3
Handling charges	US\$/t	5
Delivered price of coal	US\$/t	68
CV of coal	kcal/kg	5500
Delivered Price	US\$/mmbtu	3.1
Variable Cost Coal	Rs/kWh	1.29
Capital cost margin coal vs gas	Rs/kWh	0.3
Affordable gas price	US\$/mmbtu	6.0
Premium for lower carbon emissions		??

Source: Reliance Industries, Macquarie Research, March 2009

Gas utilisation policy

In view of the current deficit in the availability of natural gas in the country, the first priority has been given to existing plants to ensure utilisation of capacity already created and to obtain faster monetization of natural gas.

Second, wherever possible, liquid fuels in energy-intensive industries should be replaced by natural gas at the earliest possible time for environmental and economic reasons. Third, existing plants should meet the requirements of de-bottlenecking and expansions at existing locations.

The following priority order for existing plants has been announced by the government.

1. **Existing gas-based urea plants**, which are now getting gas below their full requirement, would be supplied gas to enable full-capacity utilisation.

There are currently 22 fertiliser plants in the country that have the ability to use natural gas. The combined production capacity of these plants is 16.6mmtpa. Due to shortfalls in gas availability in the country, these plants use costlier alternate fuels like naphtha and fuel oil. Against the requirement of 39.4mmscmd, the current supply to these plants is around 30.2mmscmd, resulting in a shortfall of 9.2mmscmd.

In addition to gas-based fertiliser plants, there are five naphtha and three fuel oil-based plants. The gas requirements of these plants are 6.8mmscmd and 3mmscmd, respectively.

Furthermore, there are seven closed fertiliser units, which can produce an additional 7mmtpa of urea. The gas requirement of these plants is expected to be around 14mmscmd.

2. **LPG plants** would be supplied a maximum quantity of 3.0mmscmd.

At present, there is a shortage in meeting the requirement of LPG for domestic use. About 25% of plants' requirements are met by imports. This is expected to rise in the coming years because of continuing enrolment and almost static production levels. Therefore, the next priority should be given to existing LPG extraction plants.

The present total natural gas requirement for petrochemicals is estimated at 13–15mmscmd, of which around 5mmscmd is current supply. The current shortfall is thus around 8–10mmscmd.

3. **Power plants.** Supplies to power plants could include up to 18mmscmd of natural gas, which is the partial requirement of gas-based power plants that are lying idle/underutilised and that are likely to be commissioned during FY09, and liquid fuel plants, which are now running on liquid fuel and could switch over to natural gas.

Over the years, several gas-based power plants have been built in the country. Some of these plants are either lying idle or are using expensive alternative fuels because of limited availability of natural gas.

The demand for gas from existing gas-based power plants, including Ratnagiri and RRVUN, Dholpur, is around 66.93mmscmd, and the current supply is around 37mmscmd, resulting in current unmet demand of around 30mmscmd.

4. **City gas distribution.** A maximum quantity of 5.0mmscmd would be made available to city gas distribution projects for the supply of piped natural gas (PNG) to households and compressed natural gas (CNG) in the transport sector.

The supply of city gas as a clean and cheap fuel for domestic purpose uses has become a vital necessity for the urban dwellers. Currently, PNG is supplied to 790,000 domestic households, 1,289 commercial customers and 74 industrial customers. Also, there are 409 CNG stations set up in the country.

At present, the country has 12 cities with populations of more than 2.5m each. All cities with a population of more than 2.5m are supposed to be connected within three years. Furthermore, for cities with a population of 1.0–2.5m, connection will be phased in.

5. **Refineries.** Any additional gas available, beyond categories 1–4 above, would be supplied to the refineries.

Refineries are currently using costly alternatives like crude oil/fuel oil for processing and to burn naphtha for hydrogen production. Expansion of refineries is being constrained due to environmental concerns. Use of gas in refineries would help refiners to meet environmental norms and economical capacity expansion. Use of gas would likely result in reduced losses to PSU refineries, resulting in savings in government subsidies.

The total liquid fuel consumption in the PSU refineries is estimated at 640t per month. Most of the liquid fuel used in refineries is fuel oil. However, naphtha is also used in refineries for the generation of hydrogen and for power. The estimated total liquid fuel consumption in the PSU refineries, both for fuel and hydrogen generation, translates to around 24mmscmd of natural gas. Against this, the current supply is only 2.0mmscmd.

6. **Other industries.** The existing industries that use natural gas have to be given importance over greenfield projects in other sectors, according to the utilisation policy.

An important industry in this regard is sponge iron. Although 80% of sponge iron production in the world is from gas-based plants, only about 30% of such production is in India. Gas-based sponge iron plants use natural gas as a feedstock for reducing iron oxide to iron. The current sponge iron plants are getting around 50% of their requirement of natural gas. Similarly, ceramic plants use natural gas. Usage of natural gas is energy efficient and environment friendly.

Once gas demand from existing units has been satisfied, gas should be utilized in the following order of priority for new greenfield expansion plants.

7. **Greenfield fertiliser plants.** At present, there is a gap of 6mmtpa between urea demand and indigenous production of urea. With the present production capacities, the gap is projected to grow to 11mmtpa by 2011/12. The demand-supply gap is likely to increase further after 2011/12. Large dependence on imports for meeting the urea requirement in the country is not desirable, because it has an inflationary effect on international prices, which are largely dependent on the prevailing demand-supply position. Due to the sharp increase in international prices, the country has been paying a high price for its import dependence in the past few years.

The expected demand for greenfield gas-based fertilizer plants is projected to be around 16mmscmd for a capacity of around 8mmtpa for eight units. That demand is expected to occur by 2011/12.

8. **Greenfield petrochemical plants.** Around 15–17mmscmd of additional demand is expected from the petrochemicals sector.

9. **City gas distribution.** The expected demand from CGD is estimated at 7.9mmscmd as PNG and 13.4mmscmd as CNG.

10. **New refineries.**

11. **New power plants.** In addition to the existing gas-based power plants, around 4,266MW gas-based plants are expected to be added by FY12. The gas requirement for those plants is expected to be around 24mmscmd. Additional projects that have been identified and that can be taken up for execution in the XI/XII Plan – subject to availability of natural gas – are around 13,000MW, requiring about 62mmscmd of natural gas.

Large gas deficit in medium term

- Gas demand significantly exceeds supply, especially in the medium term, as technical challenges prevent early monetisation of ONGC & GSPL's large gas finds. The Fertiliser Association (FAI) has placed existing demand from fertiliser companies at 50mmscmd; two power majors, NTPC and Reliance Power, alone have the ability to offtake an additional 50mmscmd of production, which compares with RIL's planned production of 80mmscmd.
- For the longer term, views differ significantly with gas buyers highlighting large upstream potential while suppliers and transmission companies suggesting drastically under-estimated demand.
- We believe that supply shortfalls in the gas sector might persist through the medium term, but we think the gap will increasingly decrease and be more manageable with the help of short-term imports.
- Over the long term, the demand-supply gap may decrease materially as the new domestic discoveries come online. This would also put pressure on LNG re-gasification margins because the short-term/spot LNG could become uncompetitive.
- Once supply is assured and demand has been saturated, new demand may grow more in tandem with the economic growth rate, but slightly higher than the other energy sources, thus increasing the overall share of gas in the economy.

Gas to rise to 12% of India's total energy mix in FY30E

- Gas currently represents just 9% of India's energy basket, which is below the global average of 21%. Based on the Indian government's Integrated Energy policy estimates, gas will contribute to 12% of the total energy basket in FY30E, which would still be below the projected global average of 23%.

Fig 7 Gas to contribute 12% of India's energy consumption by 2030E

	Coal	Gas	Oil	Bio-mass & waste	Nuclear	Hydro	Other renewable
Global Energy Mix - 2004	25%	21%	35%	10%	6%	2%	1%
Global Energy Mix - 2030	26%	23%	32%	10%	5%	2%	2%
India Energy Mix - 2004	50%	9%	36%	0%	2%	3%	0%
Global Energy Mix - 2004	51%	12%	29%	0%	6%	2%	0%

Source: Government data, Macquarie Research, March 2009

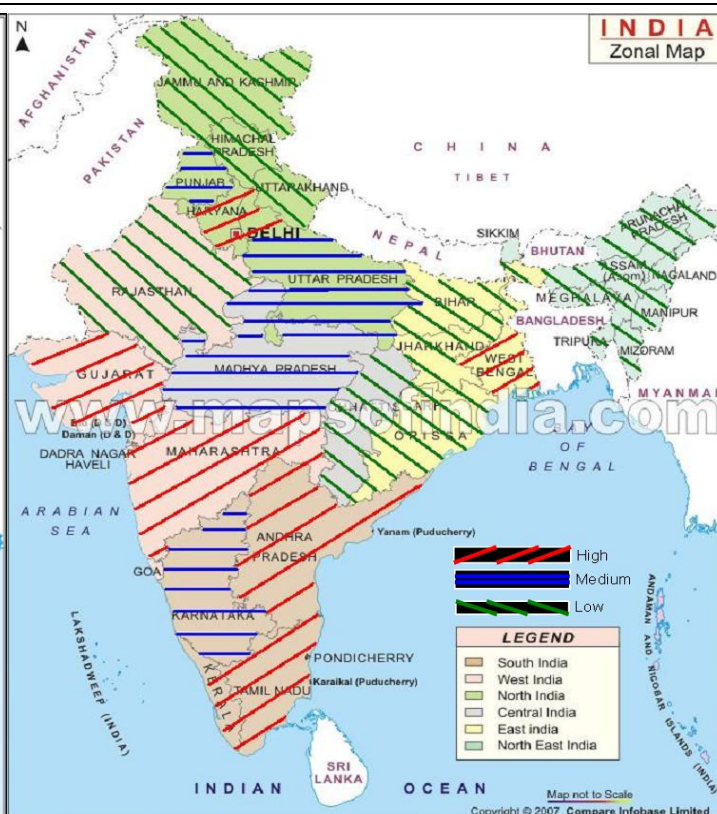
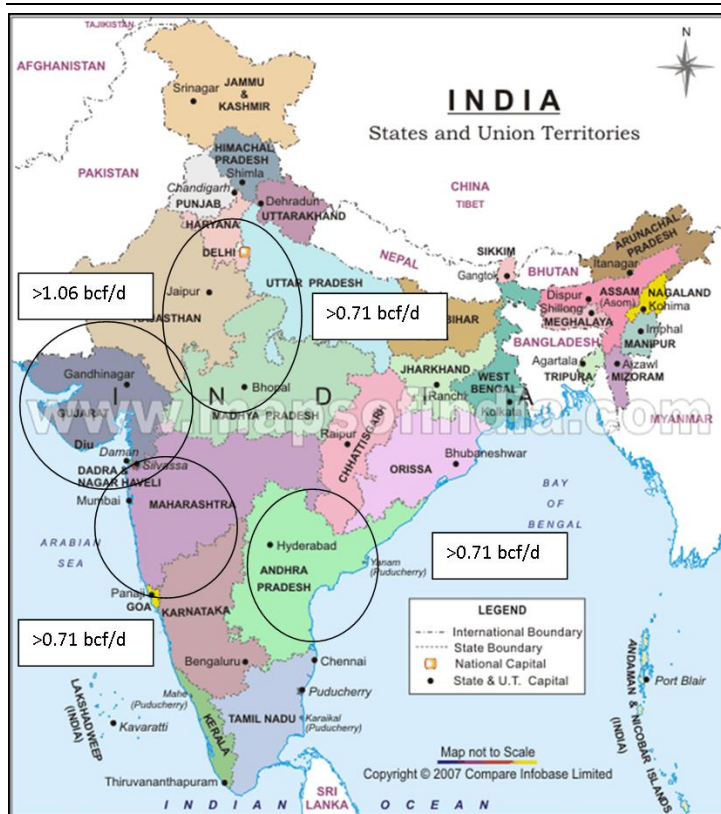
Gas markets are expanding

This phase of the market could be driven by the new gas supplies from Reliance Industries' KG-D6 block and increased LNG capacity. The prices are likely to be stable during this phase.

Market expansion at this time will depend considerably on additional new transportation capacity. Users may continue to be dominated by the fertiliser and power sectors. However, the industrial and city gas segments may begin to exert increasing influence on the gas market.

Work on the national grid should be in full swing with a national market on the horizon.

Fig 8 Pockets of large demand are closer to pipelines Fig 9 Regions of affordability of gas



Source: FGE, Macquarie Research, March 2009

Source: FGE, Macquarie Research, March 2009

National gas markets – 2012 and after

By 2012, the market may start resembling a national market, with at least the north, south and west fully connected by the pipeline networks. Prices should be more rational, stable, and with less variance and disparity.

Many new buyers will enter the market. These could include the merchant power plants or even utility power plants developed to serve peaking demand. We believe that, because of increasing prosperity and environmental awareness, the share of gas in the power sector will increase.

As India seeks to become more competitive in the manufacturing area, industrial consumers may look to gas as the preferred fuel option. Industrial energy consumers, especially those needing small or medium-sized captive power plants, may also view gas as the preferred option.

The emergence or expansion of gas distribution companies could make the retail segment a more significant factor and a major contributor to growth in consumption. The companies may primarily serve residential consumers, the automotive segment and small industrial users.

We believe the role of high-priced spot R-LNG in India’s gas markets will start to diminish, especially with more big gas discoveries.

Demand-supply outlook

Demand-supply projections for an immature market in transition – which is where the Indian natural gas market is currently – are fraught with considerable risk. The Ministry of Petroleum and Natural Gas has recently reduced its gas supply estimates for the next five years as projects other than RIL’s KG-D6 are expected to be delayed.

Fig 10 Gas supply outlook – KG-D6 gas to double domestic availability

Sources (mmscmd)	2007/08	2011/12	2016/17
ONGC (Firm + Indicative)	47.19	51.65	42.36
OIL	10	10	10
Pvt / JVs (As per DGH)	22.21	102.57	99.09
Projected Domestic Supply Conservative	79.4	164.22	151.45
Additional RIL	0	2	3.2
GSPC	0	4.5	4.5
Additional Gas Anticipated	0.00	13	7.7
Total Projected Supply Optimistic	79.4	177.72	159.15
LNG Supply Source (MMTPA)			
Dahej	6.5	12	12.5
Hazira	2.5	2.5	5
Dabhol	-	5	5
Kochi	-	2.5	5
Mangalore	-	1.25	2.5
Ennore	-	-	1.25
Total LNG Supply	9	23.25	31.25
Total LNG Supply (mmscmd)	31.5	81.38	109.38
Total Domestic Gas + LNG (Conservative)	110.9	245.6	260.83
Total Domestic Gas + LNG (Optimistic)	110.9	258.6	268.53

Source: MoPNG, Macquarie Research, March 2009

Fig 11 Gas demand outlook – power sector will be the biggest demand driver

Sector	2007/08	2011/12	2016/17
Fertilizers	41.02	79.36	95.36
Power	73.68	148.38	-
City Gas	12.08	15.83	23.26
Industrial	15	21.96	35.37
Petrochemical / Refineries / internal Consumption	25.37	33.25	46.63
Sponge Iron / Steel	6	27.86	-
Total	173.15	326.14	-

For the power, fertiliser and steel sector, projections are provided by the Ministry of Power, Department of Fertiliser and Ministry of Steel.

For the industrial sector, annual growth rate of 10% as per Department of Industrial Policy & Promotion.

For city gas and petrochemicals, growth rates of 8% and 7%, respectively, are considered.

Source: Macquarie Research, March 2009

Large untapped potential

- The total sedimentary area in India's east coast covers 299,000sq km. DGH estimates prognosticated resources in the east coast to be 48bn boe, of which gas would be 153tcf. A gross in-place reserve of 16tcf has been established so far. DGH expects the reserves to improve significantly as more wells are drilled. The drilling density (wells drilled per 1,000 sq km area) in the east coast is only 0.15 compared to more than 10 wells in Brazil.

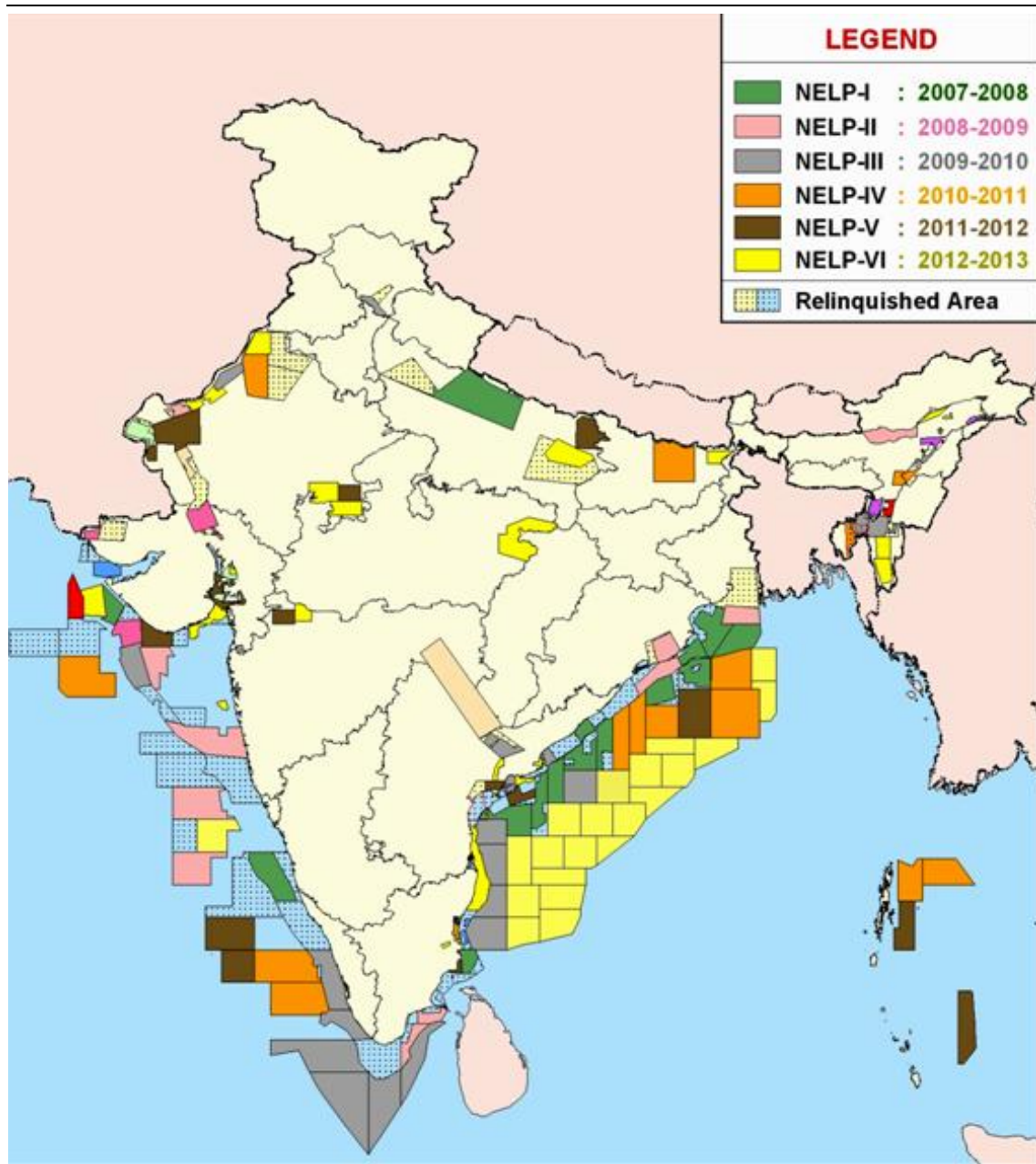
Fig 12 India's offshore drilling density is one of the lowest in the world

		Area under contract (sq km)	Exploratory wells	Well density (wells/1,000 sq km)
Deep Water	East Coast	478209	70	0.15
	West Coast	377023	67	0.18
	Total	855232	137	0.16
Shallow Water	East Coast	98715	79	0.8
	West Coast	19078	1034	54.2
	Total	289497	1113	3.84
Total Offshore		1144729	1250	1.09

Source: DGH, Macquarie Research, March 2009

- **Tip of the iceberg.** DGH believes that the anticipated oil & gas production from RIL's KG-D6 block is only the tip of the iceberg and there is a lot of potential on the east coast. Currently, there are 11 seismic vessels working in the east coast and this will be followed by drilling when the blocks enter the subsequent phases. Initial data from deepwater blocks on the west coast also looks very promising. The hydrocarbon signatures on India's east coast look similar to Qatar's.
- **D9 could be even larger than the D6 block.** The high resolution seismic data from the KG-D9 blocks indicates similar hydrocarbon bearing structures as KG-D6. The hydrocarbon signatures and anomalies in the KG-D9 block are pointing towards huge finds. A drilling success of 70%+ can be expected in KG-D9, which is similar to KG-D6 and compares with the ~10% average for deepwater wildcat block globally. KG-D9 may also bear more oil than KG-D6. Hardy expects to drill in KG-D9, perhaps as early as next quarter.
- **NELP gas will not be taxed.** DGH said that the confusion over the tax on gas produced from the NELP blocks will be cleared soon. The Prime Minister's office has agreed to grant the seven-year tax relief to NELP blocks and the announcement on the same will come before the launch of next round of NELP.
- **NELP blocks on the nascent stage of development.** Most of the blocks awarded under NELP are currently in Phase I of the exploratory programme. Phase I usually consists of 2D and 3D seismic surveys. NELP I and NELP II blocks entered the mandatory drilling phase in FY08 and FY09. NELP III to NELP VII will enter the drilling phase progressively over FY10-14. This means greater potential shall be unearthed as fields progress towards drilling.

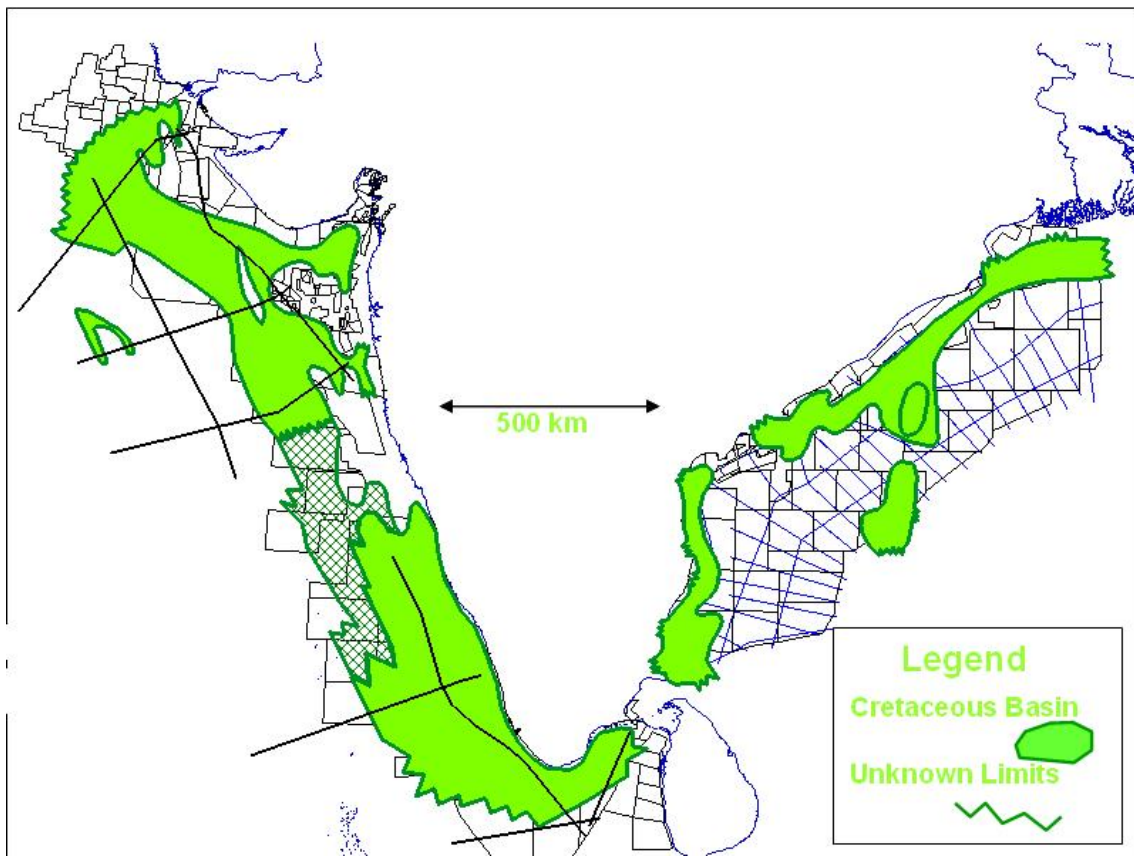
Fig 13 Expected future discoveries in NELP rounds



Source: DGH, March 2009

- **Oil potential in cretaceous sections.** The mid-Jurassic rifting in the Indian sub-continent resulted in a thinning of the crust and a cretaceous sag basin developed, containing thick (up to 5–12km) sediments. These basins are widely distributed on both the east and west coasts of India and are likely to contain source rocks in the oil window.

Fig 14 Potential for oil discoveries in the cretaceous sections



Source: DGH, March 2009

Reliance Industries Ltd (RIL IN, Outperform, Target price: Rs1,675.00)

Profit & Loss					Profit & Loss						
		2004A	2005A	2006A	2007A			2008A	2009E	2010E	2011E
Revenue	m	520,253	665,977	830,248	1,137,700	Revenue	m	1,371,467	1,567,174	1,938,834	2,169,238
Gross Profit	m	144,218	168,638	221,503	298,901	Gross Profit	m	335,792	298,177	476,718	500,589
Cost of Goods Sold	m	376,035	497,339	608,745	838,800	Cost of Goods Sold	m	1,035,674	1,268,997	1,462,116	1,668,649
EBITDA	m	98,438	127,966	143,487	201,270	EBITDA	m	231,446	234,700	388,870	409,067
Depreciation	m	32,508	37,274	34,949	48,995	Depreciation	m	50,042	49,101	82,956	87,597
Amortisation of Goodwill	m	0	0	0	0	Amortisation of Goodwill	m	0	0	0	0
Other Amortisation	m	0	0	0	0	Other Amortisation	m	0	0	0	0
EBIT	m	65,929	90,692	108,537	152,276	EBIT	m	181,404	185,598	305,914	321,470
Net Interest Income	m	-9,197	-11,048	-4,426	-12,320	Net Interest Income	m	-10,865	-10,989	-34,603	-27,738
Associates	m	581	0	4,747	0	Associates	m	0	0	0	0
Exceptionals	m	0	306	-995	0	Exceptionals	m	47,335	0	0	0
Forex Gains / Losses	m	0	0	0	0	Forex Gains / Losses	m	0	0	0	0
Other Pre-Tax Income	m	5,788	11,305	2,380	6,540	Other Pre-Tax Income	m	12,235	3,940	5,470	5,982
Pre-Tax Profit	m	63,101	91,255	110,243	146,496	Pre-Tax Profit	m	230,108	178,549	276,781	299,715
Tax Expense	m	-11,411	-14,972	-16,295	-25,723	Tax Expense	m	-34,876	-30,012	-24,569	-26,044
Net Profit	m	51,690	76,282	93,948	120,773	Net Profit	m	195,232	148,536	252,211	273,671
Minority Interests	m	0	0	0	0	Minority Interests	m	-19	0	0	0
Reported Earnings	m	51,690	76,282	93,948	120,773	Reported Earnings	m	195,214	148,536	252,211	273,671
Adjusted Earnings	m	51,690	75,976	94,943	120,773	Adjusted Earnings	m	147,879	148,536	252,211	273,671
EPS (rep)		37.03	54.72	67.44	83.10	EPS (rep)		124.07	90.43	153.54	166.60
EPS (adj)		37.03	54.50	68.15	83.10	EPS (adj)		93.99	90.43	153.54	166.60
EPS Growth (adj)	%	29.12	47.17	25.05	21.94	EPS Growth (adj)	%	13.1	-3.8	69.8	8.5
PE (rep)	x	71.35	48.29	39.18	31.79	PE (rep)	x	12.2	16.8	9.9	9.1
PE (adj)	x	71.35	48.48	38.77	31.79	PE (adj)	x	16.1	16.8	9.9	9.1
Total DPS		5.00	8.59	11.42	14.85	Total DPS		12.13	12.30	20.89	22.66
Total Div Yield	%	0.2	0.3	0.4	0.6	Total Div Yield	%	0.8	0.8	1.4	1.5
Weighted Average Shares	m	1396	1394	1393	1453	Weighted Average Shares	m	1,573	1,643	1,643	1,643
Period End Shares	m	1396	1393	1393	1453	Period End Shares	m	1,573	1,643	1,643	1,643
Profit and Loss Ratios					Cashflow Analysis						
		2008A	2009E	2010E	2011E			2008A	2009E	2010E	2011E
Revenue Growth	%	20.5	14.3	23.7	11.9	EBITDA	m	231,446	234,700	388,870	409,067
EBITDA Growth	%	15.0	1.4	65.7	5.2	Tax Paid	m	-34,876	-30,012	-24,569	-26,044
EBIT Growth	%	19.1	2.3	64.8	5.1	Chgs in Working Cap	m	-92,208	88,979	-34,762	-18,021
Gross Profit Margin	%	24.5	19.0	24.6	23.1	Net Interest Paid	m	-10,865	-10,989	-34,603	-27,738
EBITDA Margin	%	16.9	15.0	20.1	18.9	Other	m	24,406	11,335	8,671	9,192
EBIT Margin	%	13.2	11.8	15.8	14.8	Operating Cashflow	m	117,903	294,012	303,607	346,457
Net Profit Margin	%	14.2	9.5	13.0	12.6	Acquisitions	m	-10,270	-156,574	0	0
Payout Ratio	%	12.9	13.6	13.6	12.6	Capex	m	-264,378	-353,226	-101,334	-97,647
EV/EBITDA	x	12.3	12.5	7.6	7.2	Asset Sales	m	0	0	0	0
EV/EBIT	x	15.7	15.9	9.6	9.2	Other	m	12,235	3,940	5,470	5,982
Balance Sheet Ratios						Investing Cashflow	m	-262,413	-505,861	-95,864	-91,665
ROE	%	19.2	14.0	19.4	18.8	Dividend (Ordinary)	m	-19,085	-20,205	-34,307	-37,226
ROA	%	11.8	9.5	13.8	13.7	Equity Raised	m	1,201	692	0	0
ROIC	%	14.9	11.4	16.2	16.3	Debt Movements	m	170,446	19,283	57,625	-135,586
Net Debt/Equity	%	51.6	35.5	34.9	18.1	Other	m	35,343	328,753	-125,884	19,742
Interest Cover	x	16.7	16.9	8.8	11.6	Financing Cashflow	m	187,906	328,524	-102,566	-153,070
Price/Book	x	2.8	2.0	1.9	1.6	Net Chg in Cash/Debt	m	43,396	116,675	105,177	101,722
Book Value per Share		543.5	773.8	812.9	956.4						
Balance Sheet					Balance Sheet						
		2008A	2009E	2010E	2011E			2008A	2009E	2010E	2011E
Cash	m	44,742	74,839	117,252	163,512	Cash	m	44,742	74,839	117,252	163,512
Receivables	m	60,683	78,392	100,132	111,451	Receivables	m	60,683	78,392	100,132	111,451
Inventories	m	191,261	137,610	145,405	164,402	Inventories	m	191,261	137,610	145,405	164,402
Investments	m	95,229	255,636	290,636	325,636	Investments	m	95,229	255,636	290,636	325,636
Fixed Assets	m	1,139,452	1,443,576	1,461,954	1,472,005	Fixed Assets	m	1,139,452	1,443,576	1,461,954	1,472,005
Intangibles	m	0	0	0	0	Intangibles	m	0	0	0	0
Other Assets	m	218,203	155,827	157,992	173,104	Other Assets	m	218,203	155,827	157,992	173,104
Total Assets	m	1,749,569	2,145,880	2,273,370	2,410,109	Total Assets	m	1,749,569	2,145,880	2,273,370	2,410,109
Payables	m	227,987	218,852	216,766	243,245	Payables	m	227,987	218,852	216,766	243,245
Short Term Debt	m	90,767	87,000	87,000	87,000	Short Term Debt	m	90,767	87,000	87,000	87,000
Long Term Debt	m	416,194	439,244	496,869	361,283	Long Term Debt	m	416,194	439,244	496,869	361,283
Provisions	m	34,492	29,926	29,926	29,926	Provisions	m	34,492	29,926	29,926	29,926
Other Liabilities	m	84,172	99,868	107,563	117,685	Other Liabilities	m	84,172	99,868	107,563	117,685
Total Liabilities	m	853,611	874,890	938,124	839,138	Total Liabilities	m	853,611	874,890	938,124	839,138
Shareholders' Funds	m	855,105	1,270,990	1,335,246	1,570,971	Shareholders' Funds	m	855,105	1,270,990	1,335,246	1,570,971
Minority Interests	m	40,886	0	0	0	Minority Interests	m	40,886	0	0	0
Other	m	-33	0	0	0	Other	m	-33	0	0	0
Total S/H Equity	m	895,958	1,270,990	1,335,246	1,570,971	Total S/H Equity	m	895,958	1,270,990	1,335,246	1,570,971
Total Liab & S/H Funds	m	1,749,569	2,145,880	2,273,370	2,410,109	Total Liab & S/H Funds	m	1,749,569	2,145,880	2,273,370	2,410,109

All figures in INR unless noted.

Source: Macquarie Research, March 2009

Important disclosures:

Recommendation definitions	Volatility index definition*	Financial definitions				
<p>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</p> <p>Macquarie – Asia/Europe Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%</p> <p>Macquarie First South - South Africa Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%</p> <p>Macquarie - Canada Outperform – return >5% in excess of benchmark return Neutral – return within 5% of benchmark return Underperform – return >5% below benchmark return</p> <p>Macquarie - USA Outperform (Buy) – return >5% in excess of benchmark return Neutral (Hold) – return within 5% of benchmark return Underperform (Sell)– return >5% below benchmark return</p> <p>Recommendations – 12 months</p> <p>Note: Quant recommendations may differ from Fundamental Analyst recommendations</p>	<p>Volatility index definition* This is calculated from the volatility of historical price movements.</p> <p>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.</p> <p>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.</p> <p>Medium – stock should be expected to move up or down at least 30–40% in a year.</p> <p>Low–medium – stock should be expected to move up or down at least 25–30% in a year.</p> <p>Low – stock should be expected to move up or down at least 15–25% in a year. * Applicable to Australian/NZ/Canada stocks only</p>	<p>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</p> <p>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</p> <p>All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).</p>				
Recommendation proportions – For quarter ending 31 December 2008						
	AU/NZ	Asia	RSA	USA	CA	EUR
Outperform	38.55%	50.61%	64.52%	53.13%	65.55%	43.00%
Neutral	41.82%	15.92%	25.81%	40.63%	27.73%	48.00%
Underperform	19.64%	33.47%	9.68%	6.25%	6.72%	9.00%

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Structured Products - Andrew Terlich (852) 3922 2013