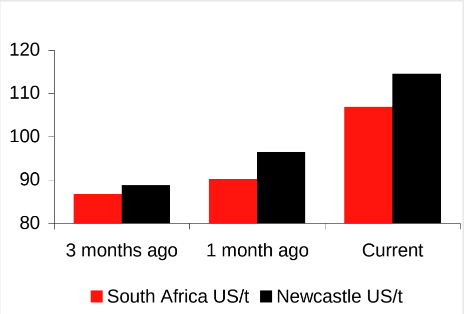
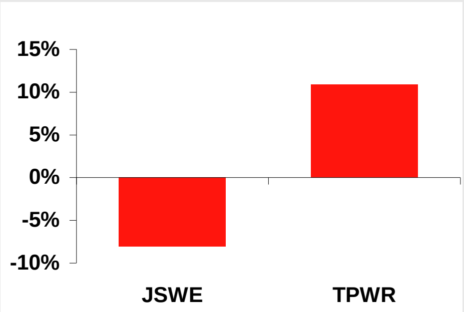
## INDIA

### Thermal coal prices rise (FOB US$/t)




Source: Macquarie Research, November 2010

### Valuation sens. from +20% thermal price




Source: Macquarie Research, November 2010

### Stock Performance – Indo coal plays

| | 1 month | 6 month |
|---|---|---|
| INDY IJ | 8% | 38% |
| BUMI IJ | 10% | 8% |
| ADRO IJ | 14% | 21% |
| UNTR IJ | 11% | 26% |
| ITMG IJ | 9% | 32% |
| **Indonesian Coal Plays** | **10%** | **25%** |
| **TPWR IN** | **-5%** | **1%** |

Note: Prices as of 16 November 2010.

Source: Bloomberg, Macquarie Research, November 2010

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17 November 2010

# Indian Utilities - thermal rocks

## TPWR net winner, JSWE net loser

### Event

- Over the past month, spot thermal coal prices from South Africa and Newcastle have risen ~20% and our Commodities team does not expect prices to fall in the near term.
- Among the Indian utilities, we believe that Tata Power (TPWR IN, Rs.1345, Outperform, TP: Rs.1627) is a net beneficiary of higher thermal coal prices, with 10–15% NPAT upside should thermal prices be 20% above our forecasts, while JSW Energy (JSW IN, Rs.116, Underperform, TP: Rs.105) will likely be negatively affected due to its net import requirement.

### Impact

- **TPWR benefits, JSWE suffers:** On our forecasts, TPWR will have an 18mtpa net long thermal coal price position to FY18, while JSW Energy will be net buyers of 3.4mtpa of coal from FY12. Based on this positioning, a 20% increase in thermal coal prices could boost TPWR's NPAT by 10–15%, while JSW Energy's NPAT could slip by around the same amount.
- **FOB thermal spot prices rise 20% over the past month** for both Richards Bay and Newcastle prices, primarily driven by tightening supply from Indonesia, Colombia and Australia due to heavy rainfall.
- **Our Commodities team does not expect downside in the short term, , driven by the following:**
  - ⇒ Exports to China have been stronger than expected in the past few months, and there has been some increase in Chinese interest in the past few weeks. Chinese domestic prices are rising, with the downside appearing limited.
  - ⇒ Wet weather is causing significant problems in Indonesia and Colombia with reports of delays. Wet weather in Australia is also causing some problems.
  - ⇒ Spot pricing has rallied since mid-August, and contract pricing into Japan has been better than expected. Encouragingly, API#2 pricing has been the strongest performer, suggesting Europe is not the deadweight it was at the start of the year. We expect prices to strengthen heading into 2011; current JFY contract forecast is $105/t, although we think there is clear upside risk given today's prices.
- **TPWR underperformance:** While the Indonesia coal plays have on average risen 25% in the past six months and 10% in the past month, TPWR has only risen 1% over six months and is down 5% over the past month, not capturing the increased bullishness in thermal coal prices.

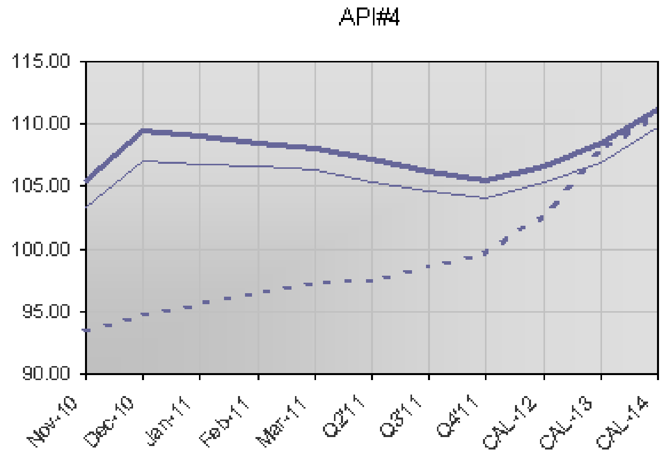
### Outlook

- We retain our Outperform call on Tata Power, given that the share price does not appear to have captured the recent uptick in thermal coal prices. We remain cautious on JSW Energy, due to a further potential margin squeeze from rising coal prices and softening merchant power prices.

## Thermal coal prices rise ~20% over the past month

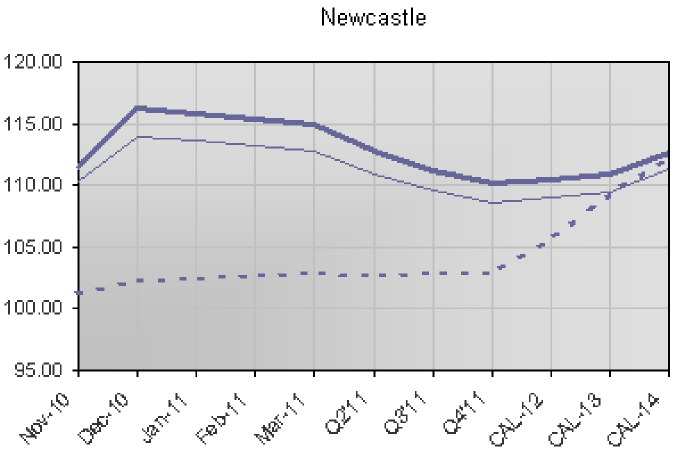
- Over the past month, there has been a significant increase in thermal coal prices, with spot prices up ~ 20% for both Richards Bay and Newcastle FOB coal. There has also been a material increase along the forward curve to the end of 2011. While the Indonesia coal plays have moved up 25% in the last six months and 10% in the past month, there has been negligible performance from Tata Power (Outperform) – the biggest net beneficiary among the Indian utilities.

**Fig 1 South Africa FOB prices rise along the curve…**




Note: BOLD LINE = Today, THIN LINE = Previous Day, DOTTED LINE = Previous Month
Source: Bloomberg, Macquarie Research, November 2010

**Fig 2 …with a similar trend for Newcastle FOB**

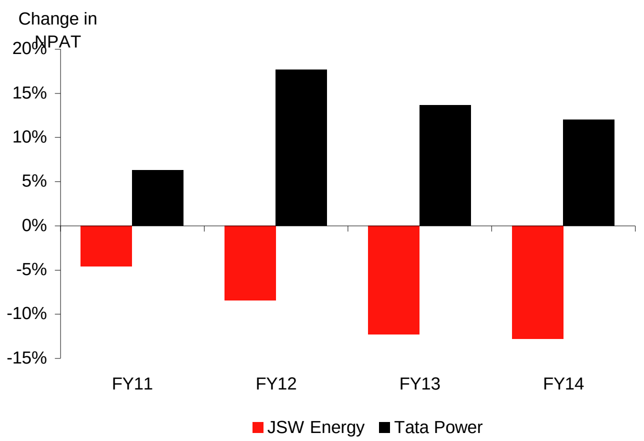



Note: BOLD LINE = Today, THIN LINE = Previous Day, DOTTED LINE = Previous Month
Source: Bloomberg, Macquarie Research, November 2010

## Indian utility impacts: TPWR benefits, JSW Energy suffers

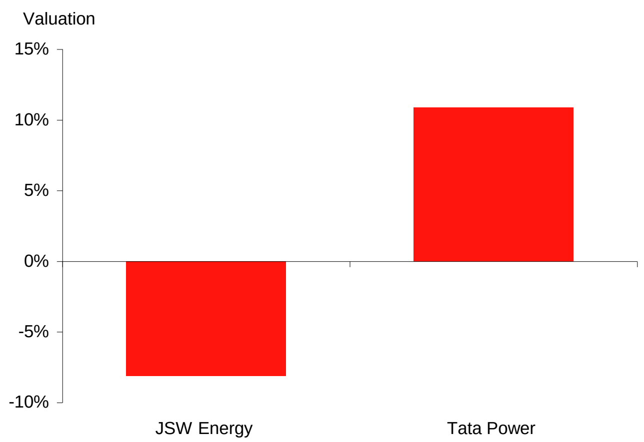
- In the Indian utility space, TPWR and JSW Energy are the two most exposed to thermal coal prices, although with opposite impacts. TPWR is a net beneficiary from rising prices due to its 26% equity stake (post Olympus transaction) in the KPC and Arutmin assets in Indonesia, while JSW Energy requires ~3.4mtpa from FY12 on our numbers due to its reliance on spot market coal imports for both its Vijayanagar (860MW) and Ratnagiri (1,200MW) power projects.
- As shown in the charts below, a 20% increase in thermal coal prices could boost TPWR's NPAT by 10–15% while JSW Energy's NPAT could slip by around the same amount.

**Fig 3 NPAT sensitivity: 20% change in thermal coal**




Source: Macquarie Research, November 2010

**Fig 4 Valuation sensitivity: 20% change in thermal coal**




Source: Macquarie Research, November 2010

## Import positions: TPWR 18mtpa net long, JSW Energy 3.4mtpa short

- We highlight below, after netting out the imported fuel requirement of the 4,000MW Mundra Power Project and its respective contracts with Bumi, that TPWR is 18mtpa net long to thermal coal prices to FY18.

### Fig 5 Tata Power: net long around 18mtpa thermal coal to FY18

| BASE CASE | | FY11 | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 | FY18 | FY19 | FY20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **STEP 1 - COAL SHORT POSITION FROM BUMI CONTRACT AND MUNDRA PPA REQUIREMENTS** | | | | | | | | | | | |
| **Bumi Coal Contract** | | | | | | | | | | | |
| Annual Coal Volume | Mt | 0 | 2 | 9 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| +/- % | % | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| Maximum Coal Volume | Mt | 0 | 2 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| **Coal Price Exposure** | | | | | | | | | | | |
| Fixed cost | % | | 25% | 25% | 25% | 25% | 25% | 25% | 0% | 0% | 0% |
| Pass-through cost | % | | 75% | 75% | 75% | 75% | 75% | 75% | 100% | 100% | 100% |
| **Volumes Exposed** | | | | | | | | | | | |
| Fixed cost volume (A) | Mt | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 |
| Cost pass-through volume (B) | Mt | 0 | 1 | 8 | 9 | 9 | 9 | 9 | 12 | 12 | 12 |
| **Mundra PPA** | | | | | | | | | | | |
| Required Coal | Mt | 0 | 2 | 10 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| **Coal Price Exposure** | | | | | | | | | | | |
| Fixed cost | % | | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% | 55% |
| Pass-through cost | % | | 45% | 45% | 45% | 45% | 45% | 45% | 45% | 45% | 45% |
| **Volumes Exposed** | | | | | | | | | | | |
| Fixed cost volume (E) | Mt | 0 | 1 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Cost pass-through volume (F) | Mt | 0 | 1 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| **SHORT POSITION CREATED** | | | | | | | | | | | |
| Fixed cost volume exposure (E-A) | Mt | 0.0 | 0.5 | 2.8 | 3.3 | 3.3 | 3.3 | 3.3 | 6.3 | 6.3 | 6.3 |
| Variable costs passed onto TPWR (B-F) | Mt | 0.0 | 0.6 | 3.3 | 3.9 | 3.9 | 3.9 | 3.9 | 7.0 | 7.0 | 7.0 |
| **SHORT POSITION FROM CONTRACTS** | **Mt** | **0.0** | **1.1** | **6.1** | **7.2** | **7.2** | **7.2** | **7.2** | **13.3** | **13.3** | **13.3** |
| **STEP 2 - EQUITY COAL OFF-SETTING RISK AND CREATING LONG POSITION** | | | | | | | | | | | |
| **Equity Coal - Base Case (60mtpa to 100mtpa)** | | | | | | | | | | | |
| Annual Production | Mt | 63 | 75 | 88 | 96 | 100 | 100 | 100 | 100 | 100 | 100 |
| Stake | % | 25.7% | 25.7% | 25.7% | 25.7% | 25.7% | 25.7% | 25.7% | 25.7% | 25.7% | 25.7% |
| **LONG POSITION FROM EQUITY COAL** | **Mt** | **16.2** | **19.3** | **22.4** | **24.7** | **25.7** | **25.7** | **25.7** | **25.7** | **25.7** | **25.7** |
| **STEP 3 - NET POSITION** | | | | | | | | | | | |
| Add: Long Position from Equity Coal | Mt | 16.2 | 19.3 | 22.4 | 24.7 | 25.7 | 25.7 | 25.7 | 25.7 | 25.7 | 25.7 |
| Less: Short Position from Contracts | Mt | 0.0 | 1.1 | 6.1 | 7.2 | 7.2 | 7.2 | 7.2 | 13.3 | 13.3 | 13.3 |
| **NET LONG POSITION** | **Mt** | **16.2** | **18.2** | **16.3** | **17.5** | **18.4** | **18.4** | **18.4** | **12.4** | **12.4** | **12.4** |

Source: Company data, Macquarie Research, November 2010

- JSW Energy requires around 3.4mtpa of imported coal from the spot market, on our numbers, in the absence of an operating coal mine acquisition. This is driven by the fuel requirements of the 860MW Vijayanagar Power Project and the 1,200MW Ratnagiri Power Project.

### Fig 6 JSW Energy fuel sources

| | | 2011E | 2012E | 2013E | 2014E | 2015E |
|---|---|---|---|---|---|---|
| **Coal Source** | | | | | | |
| Lignite mines | mt | 1.6 | 6.9 | 7.5 | 7.5 | 7.5 |
| Indonesia - Sungai Belati | mt | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| South African mine | mt | 0.5 | 1.0 | 1.0 | 1.0 | 1.0 |
| Spot market | mt | 1.6 | 3.4 | 3.4 | 3.4 | 3.4 |
| **Total** | **mt** | **5.7** | **13.3** | **13.9** | **13.9** | **13.9** |
| **Non-lignite Imported Coal Cost (at port)** | | | | | | |
| Sungai Belati | US$/t | 55 | 55 | 56 | 57 | 57 |
| South Africa | US$/t | 89 | 93 | 98 | 102 | 107 |
| Spot Market | US$/t | 110 | 117 | 113 | 105 | 103 |
| **Weighted average coal cost** | **US$/t** | **80** | **94** | **93** | **89** | **90** |

Note: JSW Energy also receives coal from JSW Steel; however, we understand the transfer price equates to market prices.
Source: Macquarie Research, November 2010

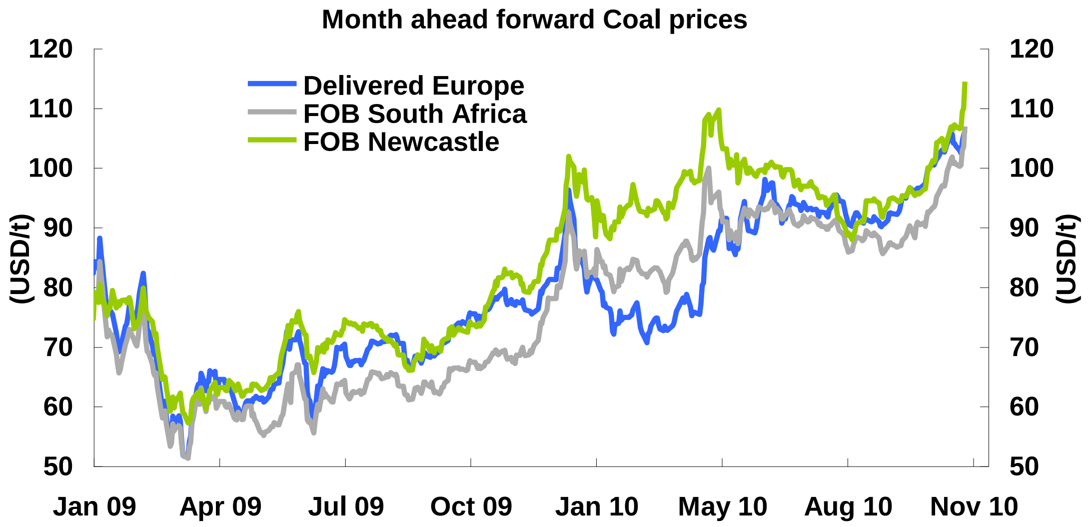
## Macquarie Commodities thermal coal price view –strength to remain

- Despite strong pricing growth over the past month, our Commodities team still believes thermal coal pricing will remain strong over the coming months, driven by the following:
  - ⇒ Exports to China have been stronger than expected in the past few months, and there has been some increase in Chinese interest in the past few weeks. Chinese domestic prices are rising, with the downside appearing limited.
  - ⇒ Wet weather is causing significant problems in Indonesia and Colombia with reports of delays. Wet weather in Australia is also causing some problems.
  - ⇒ Spot pricing has rallied since mid-August and contract pricing into Japan has been better than expected. Encouragingly, API#2 pricing has been the strongest performer, suggesting Europe is not the deadweight it was at the start of the year. We expect prices to strengthen heading into 2011; current JFY contract forecast is $105/t, although we think there is clear upside risk given today's prices.

## On a solid footing heading into 2011

- Thermal coal pricing has been solid in the past few months. Spot pricing has strengthened out of Newcastle after wavering in mid-August, with October-year contracts with the JPUs settled at the $97.75/t rate achieved in April. Pricing in Europe has been more robust after extreme weakness in 1H10, with the implied freight between ARA and Richards Bay now in positive territory.
- Trade volumes have generally been stronger than expected over the past few months. There have been concerns that Chinese imports would fade away as arbitrages closed, but they have been at a high level in the last three months and are annualising at 108mt for the year to date. Indian import volumes have also been healthy at 75–80mt annualised, although somewhat curiously, Richards Bay pricing has been relatively week.

**Fig 7 Divergence in coal pricing seen earlier in the year has closed**




Source: globalCOAL, Macquarie Research, November 2010

- Stock levels continue to come down in Europe, with stocks at UK power stations coming down by 0.5mt a month in 1H10. If this continues, stocks will be at 2007 levels by the end of the year. It seems likely then that European demand has probably reached its nadir and should pick up a bit in 4Q10, with API#2 pricing already noticeably stronger.
- Generally, we expect demand in Asia to remain strong heading into the end of the year. Chinese demand is facing the headwind of power restrictions to meet energy efficiency targets, while this is a significant offset to coal demand coming from the fall away of hydro generation. Indian imports should also continue to ramp up, with significantly more power generation due focused on imported coal set to come online in the next 12–18 months.

- We think the thermal coal market will be in deficit next year. Supply out of Australia has been better in the past few months, although, at an annualised rate of 145mt in July, it is still performing relatively poorly. Indonesia has been beset by rain for most of what is supposed to be the dry season, although port data suggest they still exported as much coal as they did in 4Q09. Richards Bay has been more haphazard, with shipments failing to get meaningfully above last year's level.

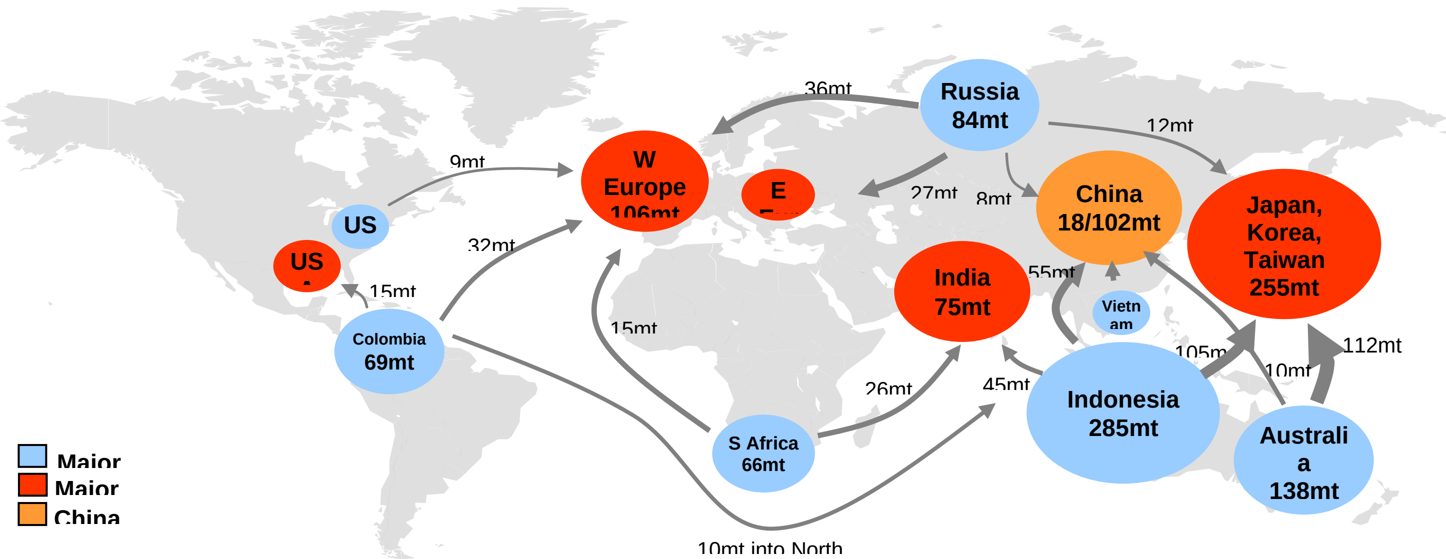
**Fig 8 Seaborne thermal coal demand and supply**

| Demand (mt) | 2008 | 2009 | 2010F | 2011F | 2012F | 2013F | 2014F | 2015F |
|---|---|---|---|---|---|---|---|---|
| Atlantic | 225 | 201 | 181 | 19 | 209 | 217 | 222 | 224 |
| China | 35 | 80 | 10 | 107 | 109 | 107 | 105 | 107 |
| India | 36 | 60 | 75 | 90 | 108 | 121 | 131 | 146 |
| Other Pacific | 316 | 312 | 335 | 348 | 360 | 376 | 39 | 401 |
| **Total Demand** | **612** | **653** | **696** | **742** | **787** | **821** | **850** | **878** |
| % change | 0.9% | 6.6% | 6.7% | 6.6% | 6.0% | 4.4% | 3.5% | 3.2% |
| **Supply (mt)** | | | | | | | | |
| Australia | 126 | 139 | 138 | 154 | 175 | 189 | 200 | 211 |
| Indonesia | 200 | 233 | 280 | 289 | 296 | 310 | 329 | 345 |
| China | 36 | 18 | 12 | 12 | 12 | 12 | 12 | 12 |
| South Africa | 62 | 65 | 66 | 68 | 76 | 76 | 76 | 76 |
| Russia | 72 | 82 | 84 | 91 | 95 | 97 | 97 | 97 |
| Colombia | 69 | 63 | 69 | 72 | 78 | 85 | 88 | 90 |
| Other | 48 | 52 | 48 | 45 | 47 | 50 | 53 | 54 |
| **Total Supply** | **612** | **653** | **697** | **731** | **778** | **818** | **854** | **884** |
| % change | 0.9% | 6.6% | 6.7% | 4.9% | 6.4% | 5.2% | 4.4% | 3.5% |
| **Notional Balance** | - | - | - | **-11** | **-8** | **-3** | **4** | **6** |
| **Price ($/t FOB)** | | | | | | | | |
| **JPU contract** | 125 | 70.0 | 98.0 | 105.0 | 100.0 | 90.0 | 88.0 | 92.0 |

Source: GTIS, Macquarie Research, November 2010

- In our view, JFY contracts will be set at $105/t next year, although contract pricing from the Newcastle benchmark is becoming a smaller proportion of the market. Lower CV coals from Indonesia have been the substantial incremental supply in the past 12 months, with this likely to become a larger part of the market going forward. Lower CV coals have generally priced at a varying energy-adjusted discount to the Newcastle price; however, given that demand out of China and India is more geared towards this coal, this discount could narrow and become more stable in the coming years. Any supply disruptions, be it due to weather or failing infrastructure, could cause the price to move sharply higher from our fairly conservative baseline assumptions.

**Fig 9 2010 seaborne market: 679mt and considerable change in trade flows**




Source: GTIS, Macquarie Research, November 2010

## Important disclosures:

### Recommendation definitions

**Macquarie - Australia/New Zealand**
Outperform – return >3% in excess of benchmark return
Neutral – return within 3% of benchmark return
Underperform – return >3% below benchmark return

Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield

**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

### 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

**Recommendations** – 12 months
**Note:** Quant recommendations may differ from Fundamental Analyst recommendations

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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 30 September 2010

| | AU/NZ | Asia | RSA | USA | CA | EUR | |
|---|---|---|---|---|---|---|---|
| Outperform | 51.06% | 64.41% | 55.07% | 46.58% | 66.99% | 50.00% | (for US coverage by MCUSA, 13.73% of stocks covered are investment banking clients) |
| Neutral | 34.15% | 17.31% | 36.23% | 48.40% | 28.71% | 36.81% | (for US coverage by MCUSA, 11.76% of stocks covered are investment banking clients) |
| Underperform | 14.79% | 18.28% | 8.70% | 5.02% | 4.31% | 13.19% | (for US coverage by MCUSA, 0.00% of stocks covered are investment banking clients) |

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# Asia Research

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| 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

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| Clive Wiggins (Japan) | (813) 3512 7856 |
| Dan Lucas (Japan) | (813) 3512 6050 |
| Michael Sohn (Korea) | (82 2) 3705 8644 |
| Linda Huang (Taiwan) | (8862) 2734 7521 |

### Banks and Non-Bank Financials

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| Victor Wang (China) | (852) 3922 1479 |
| Alastair Macdonald (Japan) | (813) 3512 7476 |
| Mudit Painuly (India) | (9122) 6653 3044 |
| Suresh Ganapathy (India) | (9122) 6653 3042 |
| Ferry Wong (Indonesia) | (6221) 515 7335 |
| Chan Hwang (Korea) | (822) 3705 8643 |
| Alex Pomento (Philippines) | (632) 857 0899 |
| Matthew Smith (Malaysia, Singapore) | (65) 6231 2981 |
| Jemmy Huang (Taiwan) | (8862) 2734 7530 |
| Passakorn Linmaneechote (Thailand) | (662) 694 7728 |

### Conglomerates

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| Julian Bu (China, Hong Kong) | (852) 3922 3263 |
| Alex Pomento (Philippines) | (632) 857 0899 |

### Consumer and Gaming

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| Alex Pomento (Philippines) | (632) 857 0899 |
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| Amit Mishra (India) | (91) 22 6653 3051 |

### Emerging Leaders

| | |
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| Robert Burghart (Japan) | (813) 3512 7853 |
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### Industrials

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| Janet Lewis (Japan) | (813) 3512 7475 |
| Chang Han Joo (Korea) | (822) 3705 8511 |
| Sunaina Dhanuka (Malaysia) | (603) 2059 8993 |
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| David Gambrill (Thailand) | (662) 694 7753 |

### Insurance

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### Media and Internet

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### Oil, Gas and Petrochemicals

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| Tuck Yin Soong (Singapore) | (65) 6231 2838 |
| Elaine Cheong (Singapore) | (65) 6231 2839 |
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| Carol Cao (China, Hong Kong) | (852) 3922 4075 |
| Rakesh Arora (India) | (9122) 6653 3054 |
| Adam Worthington (Indonesia) | (852) 3922 4626 |
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| Jimmy Hsu (Taiwan) | (8862) 2734 7533 |

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| Paul Cavey (China) | (852) 3922 3570 |
| Renee Chen (Hong Kong, Taiwan) | (852) 3922 3597 |

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| Burke Lau (Asia) | (852) 3922 5494 |
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| Simon Rigney (Japan) | (813) 3512 7872 |

### Strategy/Country

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| Jiong Shao (China, Hong Kong) | (852) 3922 3566 |
| Rakesh Arora (India) | (9122) 6653 3054 |
| Ferry Wong (Indonesia) | (6221) 515 7335 |
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# Asia Sales

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| 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 |
| JJ Kim (Korea) | (822) 3705 8799 |
| Jason Lee (Malaysia) | (603) 2059 8888 |
| Chris Gould (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 |
| Eric Roles (New York) | (1 212) 231 2559 |
| Sheila Schroeder (San Francisco) | (1 415) 762 5001 |

### Regional Heads of Sales cont'd

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| Angus Kent (Thailand) | (662) 694 7601 |
| Michael Newman (Tokyo) | (813) 3512 7920 |
| Angus Innes (UK/Europe) | (44) 20 3037 4841 |
| Rob Fabbro (UK/Europe) | (44) 20 3037 4865 |
| Sean Alexander (Generalist) | (852) 3922 2101 |

### Regional Head of Distribution

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| Justin Crawford (Asia) | (852) 3922 2065 |

### Sales Trading

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| Yat Quan Tan (Hong Kong) | (852) 3922 2028 |
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| Mike Keen (Europe) | (44) 20 3037 4905 |

### Sales Trading cont'd

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| James Aitchison (Korea) | (822) 3705 9990 |
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| Dominic Shore (Thailand) | (662) 694 7707 |

### Alternative Strategies

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| Depository Receipts – Seung-Jin Lee | (65) 6231 1150 |
| Derivatives – Mark Holland | (852) 3922 2081 |
| Futures - Tim Smith | (852) 3922 2113 |
| Structured Products - Andrew Terlich | (852) 3922 2013 |