



Rating  
**Buy**

Asia  
China

Resources  
Metals & Mining

Company  
**China Shenhua Energy**

|                     |                      |                 |                |
|---------------------|----------------------|-----------------|----------------|
| Reuters<br>1088.HK  | Bloomberg<br>1088 HK | Exchange<br>HSI | Ticker<br>1088 |
| ADR Ticker<br>CSUAY | ISIN<br>US16942A3023 |                 |                |

Date  
6 October 2017

Company Update

|                            |               |
|----------------------------|---------------|
| Price at 4 Oct 2017 (HKD)  | 19.86         |
| Price target - 12mth (HKD) | 28.50         |
| 52-week range (HKD)        | 20.40 - 14.30 |
| HANG SENG INDEX            | 28,379        |

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## Mispriced good assets; we upgrade TP and reiterate Buy

**We view Shenhua as mispriced – seeing strong upside potential**

Over the past decade, Shenhua has delivered an average ROE of 16%, 6% at its trough in 2015. In the next three years, we expect Shenhua to deliver ROE of between 13%-16% and FCF yield of 20% (RMB60bn of free cash per year). At the current implied PB multiple of 1x, we see strong reasons to argue that market is not awarding Shenhua fair valuations. In this report, we provide an in-depth analysis of its strong track record and why we think its superior performance is sustainable. We raise our TP to HKD28.5, by applying a 1.5x PB multiple to 2018 BVPS. Reiterating Buy.

**Great asset quality across all segments**

With a highly integrated business model, Shenhua is able to enjoy high efficiency throughout the value chain. It currently has c.300mt of low-cost coal production and high-quality coal reserves, c.54GW of installed capacity for thermal IPPs, c.350bt km of company-owned railway volume, and 200mt-plus of port turnover ability. Comparing horizontally with its peers and on a standalone basis, Shenhua's assets outperform. Its ROIC in past years also outperformed peers by 3-8ppts for the most part. In our view, Shenhua's management has performed reliably well in improving operational efficiency and in the selection of assets to be loaded on to the listco.

**What's next? Potential upside has been underestimated**

With the ability to generate RMB60bn of free cash flow per year, Shenhua's net debt, at RMB6bn (as of end-1H17), looks small. We believe Shenhua will rapidly build up cash, possibly choosing between a higher payout and asset acquisition. The merger between the Shenhua parentco and GD Power parent co enables the Shenhua listco to have a wide selection of assets for acquisition/injection. Our analysis suggests that even if Shenhua were to invest in projects with ROIC at 2015 downturn levels, the acquisition would yield accretive returns for its shareholders. Note that Shenhua's ROIC in past years has ranged from 7-19%. We believe its FCF upside potential has been understated. We do not rule out upside surprises, considering potential activities by Shenhua to use its piles of free cash.

**Reaffirming Buy; policy is a major risk**

As mentioned in our previous note, *Higher for longer, reiterate Buy on coal sector*, published on 26 July, we believe that limited capex has been invested to increase coal supply in China. Thus, although the China government wants to keep coal prices low, demand/supply tightness could keep prices high in the next two years. Assuming an RMB600/t coal price in 2018, Shenhua would trade at 6.5x 2018E PE and 1x 2018E PB. The company would yield 5% cash if it maintains its payout at 40% (per historical practice). If it increases the payout to 60%, yield could easily go above 7%. We believe Shenhua offers deep value and we reaffirm our Buy call. We raise our target price by 7% to HKD28.5, adopting a consistent 1.5x PB, but rolling over to 2018E BVPS, implying 43% upside potential. We believe the market mispriced Shenhua due to a combination of concerns including the coal/thermal power industry's outlook and Shenhua's low beta nature. However, we believe earnings, dividends, and potential asset injections will play out as catalysts to correct the misprice. The major risk to our thesis relates to China's policies on SOE reform.

Key changes

TP 26.50 to 28.50 ↑ 7.5%

Source: Deutsche Bank

Price/price relative



| Performance (%) | 1m  | 3m   | 12m  |
|-----------------|-----|------|------|
| Absolute        | 1.4 | 16.8 | 30.8 |
| HANG SENG INDEX | 2.3 | 11.8 | 19.8 |

Source: Deutsche Bank

Deutsche Bank AG/Hong Kong

Deutsche Bank does and seeks to do business with companies covered in its rDistributed on: 06/10/2017 11:01:01 GMT be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 083/04/2017.



Model updated: 28 September 2017

Running the numbers

Asia  
 China  
 Metals & Mining

China Shenhua Energy

Reuters: 1088.HK Bloomberg: 1088 HK

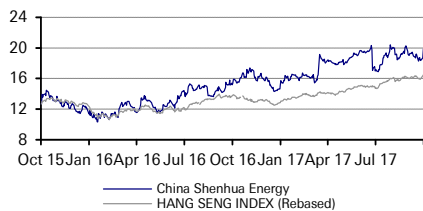
Buy

Price (4 Oct 17) HKD 19.86  
 Target Price HKD 28.50  
 52 Week range HKD 14.30 - 20.40  
 Market Cap (m) HKDm 395,015  
 USDm 50,587

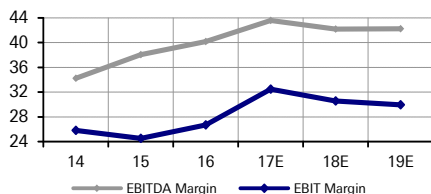
Company Profile

China Shenhua Energy is an integrated coal-based energy company focusing on the coal and power business in China. The Company also owns and operates an integrated coal transportation network consisting of dedicated rail lines and port facilities.

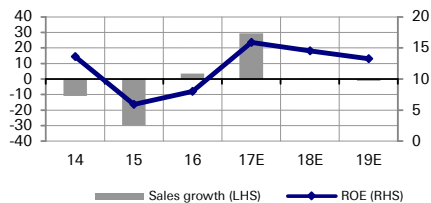
Price Performance



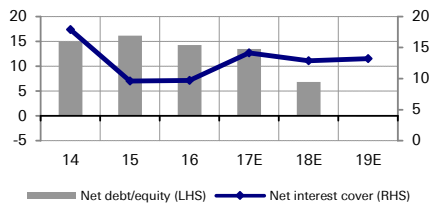
Margin Trends



Growth & Profitability



Solvency



Fiscal year end 31-Dec

Financial Summary

|                             | 2014    | 2015    | 2016    | 2017E   | 2018E   | 2019E   |
|-----------------------------|---------|---------|---------|---------|---------|---------|
| DB EPS (CNY)                | 1.98    | 0.89    | 1.23    | 2.49    | 2.30    | 2.22    |
| Reported EPS (CNY)          | 1.98    | 0.89    | 1.23    | 2.49    | 2.30    | 2.22    |
| DPS (CNY)                   | 0.74    | 0.32    | 2.97    | 1.50    | 1.38    | 1.33    |
| BVPS (CNY)                  | 15.1    | 15.0    | 15.9    | 15.5    | 16.3    | 17.1    |
| Weighted average shares (m) | 19,890  | 19,890  | 19,890  | 19,890  | 19,890  | 19,890  |
| Average market cap (CNYm)   | 344,194 | 269,984 | 233,694 | 336,294 | 336,294 | 336,294 |
| Enterprise value (CNYm)     | 456,734 | 387,674 | 349,567 | 458,376 | 444,598 | 425,859 |

Valuation Metrics

|                    |      |      |      |      |      |      |
|--------------------|------|------|------|------|------|------|
| P/E (DB) (x)       | 8.8  | 15.3 | 9.5  | 6.8  | 7.3  | 7.6  |
| P/E (Reported) (x) | 8.8  | 15.3 | 9.5  | 6.8  | 7.3  | 7.6  |
| P/BV (x)           | 1.21 | 0.66 | 0.78 | 1.09 | 1.04 | 0.99 |
| FCF Yield (%)      | 6.8  | 9.5  | 22.9 | 20.1 | 17.6 | 18.2 |
| Dividend Yield (%) | 4.3  | 2.4  | 25.3 | 8.9  | 8.2  | 7.9  |
| EV/Sales (x)       | 1.8  | 2.2  | 1.9  | 1.9  | 1.9  | 1.8  |
| EV/EBITDA (x)      | 5.3  | 5.8  | 4.7  | 4.4  | 4.4  | 4.3  |
| EV/EBIT (x)        | 7.0  | 8.9  | 7.2  | 6.0  | 6.1  | 6.1  |

Income Statement (CNYm)

|                                     |         |         |         |         |         |         |
|-------------------------------------|---------|---------|---------|---------|---------|---------|
| Sales revenue                       | 253,081 | 177,069 | 183,127 | 236,846 | 237,158 | 234,448 |
| Gross profit                        | 96,315  | 77,718  | 83,005  | 116,183 | 113,257 | 112,035 |
| EBITDA                              | 86,686  | 67,420  | 73,610  | 103,203 | 100,045 | 99,094  |
| Depreciation                        | 21,343  | 23,990  | 24,721  | 26,198  | 27,544  | 28,891  |
| Amortisation                        | 0       | 0       | 0       | 0       | 0       | 0       |
| EBIT                                | 65,343  | 43,430  | 48,889  | 77,006  | 72,501  | 70,203  |
| Net interest income/(expense)       | -3,656  | -4,515  | -5,025  | -5,444  | -5,624  | -5,306  |
| Associates/affiliates               | 410     | 428     | 237     | 237     | 237     | 237     |
| Exceptionals/extraordinaries        | 0       | 0       | 0       | 0       | 0       | 0       |
| Other pre-tax income/(expense)      | -250    | -4,823  | -3,210  | 0       | 0       | 0       |
| Profit before tax                   | 61,847  | 34,520  | 40,891  | 71,798  | 67,113  | 65,134  |
| Income tax expense                  | 12,784  | 9,561   | 9,283   | 12,924  | 11,409  | 11,398  |
| Minorities                          | 9,762   | 7,310   | 7,060   | 9,269   | 9,881   | 9,643   |
| Other post-tax income/(expense)     | 0       | 0       | 0       | 0       | 0       | 0       |
| Net profit                          | 39,301  | 17,649  | 24,548  | 49,606  | 45,823  | 44,093  |
| DB adjustments (including dilution) | 0       | 0       | 0       | 0       | 0       | 0       |
| DB Net profit                       | 39,301  | 17,649  | 24,548  | 49,606  | 45,823  | 44,093  |

Cash Flow (CNYm)

|                                      |         |         |         |         |         |         |
|--------------------------------------|---------|---------|---------|---------|---------|---------|
| Cash flow from operations            | 67,511  | 55,406  | 81,883  | 96,667  | 85,646  | 87,782  |
| Net Capex                            | -44,268 | -29,685 | -28,264 | -29,090 | -26,600 | -26,600 |
| Free cash flow                       | 23,243  | 25,721  | 53,619  | 67,577  | 59,046  | 61,182  |
| Equity raised/(bought back)          | 0       | 0       | 0       | 0       | 0       | 0       |
| Dividends paid                       | -18,100 | -22,061 | -12,546 | -59,073 | -29,763 | -27,494 |
| Net inc/(dec) in borrowings          | 20,662  | 18,687  | -1,017  | 12,000  | 6,000   | 0       |
| Other investing/financing cash flows | -24,523 | -11,706 | 98      | 0       | 0       | 0       |
| Net cash flow                        | 1,282   | 10,641  | 40,154  | 20,504  | 35,283  | 33,688  |
| Change in working capital            | 2,117   | -5,084  | 14,512  | -6,151  | 3,226   | 150     |

Balance Sheet (CNYm)

|                              |         |         |         |         |         |         |
|------------------------------|---------|---------|---------|---------|---------|---------|
| Cash and other liquid assets | 43,508  | 47,850  | 50,757  | 65,817  | 95,475  | 120,858 |
| Tangible fixed assets        | 371,250 | 372,936 | 373,005 | 375,897 | 374,953 | 372,662 |
| Goodwill/intangible assets   | 3,752   | 5,140   | 5,362   | 5,362   | 5,362   | 5,362   |
| Associates/investments       | 6,811   | 6,908   | 6,942   | 6,942   | 6,942   | 6,942   |
| Other assets                 | 125,551 | 126,957 | 140,663 | 149,271 | 150,894 | 150,471 |
| Total assets                 | 550,872 | 559,791 | 576,729 | 603,289 | 633,626 | 656,295 |
| Interest bearing debt        | 97,987  | 106,595 | 105,578 | 117,578 | 123,578 | 120,578 |
| Other liabilities            | 87,315  | 89,275  | 86,182  | 100,941 | 99,337  | 98,764  |
| Total liabilities            | 185,302 | 195,870 | 191,760 | 218,519 | 222,915 | 219,342 |
| Shareholders' equity         | 300,698 | 298,068 | 316,975 | 307,508 | 323,567 | 340,166 |
| Minorities                   | 64,872  | 65,853  | 67,994  | 77,263  | 87,144  | 96,787  |
| Total shareholders' equity   | 365,570 | 363,921 | 384,969 | 384,770 | 410,711 | 436,953 |
| Net debt                     | 54,479  | 58,745  | 54,821  | 51,761  | 28,103  | -280    |

Key Company Metrics

|                        |       |       |       |       |      |      |
|------------------------|-------|-------|-------|-------|------|------|
| Sales growth (%)       | -10.8 | -30.0 | 3.4   | 29.3  | 0.1  | -1.1 |
| DB EPS growth (%)      | -14.5 | -55.1 | 39.1  | 102.1 | -7.6 | -3.8 |
| EBITDA Margin (%)      | 34.3  | 38.1  | 40.2  | 43.6  | 42.2 | 42.3 |
| EBIT Margin (%)        | 25.8  | 24.5  | 26.7  | 32.5  | 30.6 | 29.9 |
| Payout ratio (%)       | 37.5  | 36.1  | 240.6 | 60.0  | 60.0 | 60.0 |
| ROE (%)                | 13.6  | 5.9   | 8.0   | 15.9  | 14.5 | 13.3 |
| Capex/sales (%)        | 17.5  | 16.8  | 15.4  | 12.3  | 11.2 | 11.3 |
| Capex/depreciation (x) | 2.1   | 1.2   | 1.1   | 1.1   | 1.0  | 0.9  |
| Net debt/equity (%)    | 14.9  | 16.1  | 14.2  | 13.5  | 6.8  | -0.1 |
| Net interest cover (x) | 17.9  | 9.6   | 9.7   | 14.1  | 12.9 | 13.2 |

Source: Company data, Deutsche Bank estimates

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Table Of Contents

|   |           |
|---|-----------|
| <b>Executive Summary</b> .....  | <b>6</b>  |
| Shenhua remains the top cash generator .....  | 6         |
| Shenhua delivers a consistent ROIC premium against peers .....                                      | 6         |
| Resilient earnings quality in power and railway segment.....  | 7         |
| Substantial upside risks resulting from rich FCF.....   | 8         |
| <b>Investment thesis</b> .....  | <b>9</b>  |
| Outlook .....   | 9         |
| Valuation.....  | 9         |
| Risks .....   | 9         |
| <b>Great asset quality across all segments</b> .....  | <b>10</b> |
| Vertically-integrated coal producer.....  | 10        |
| Rich cash flow generator and high dividend distributor .....  | 12        |
| Platform built on asset injections and capital expenditure .....                                    | 19        |
| Coal: dominant player with abundant reserves .....  | 21        |
| Power: promising dark spread and gearing benefit .....  | 24        |
| Railway: significant transportation volume improvement and spare capacity to lift earnings.....     | 26        |
| <b>Paving the way for integration, embracing alternative opportunities</b> .....                    | <b>28</b> |
| National Energy Investment Group and a JV formulated in August 2017 .....                           | 28        |
| Paving the way for SOE IPPs' integration, allowing alternatives to unlock value going forward ..... | 30        |
| <b>Substantial upside risks resulting from its rich FCF</b> .....                                   | <b>33</b> |
| Several scenarios and substantial upside risks.....   | 33        |



| Table of Exhibits   |    |
|---|----|
| Figure 1: 22 Listed Chinese coal company FCF amount and FCF yield .....   | 6  |
| Figure 2: ROIC analysis for Chinese coal sector .....   | 7  |
| Figure 3: IPP Unit net margin Shenhua vs. Huaneng.....  | 7  |
| Figure 4: Railway EBIT margin Daqin vs. Shenhua .....   | 7  |
| Figure 5: Pro-forma target price, financial matrix for China Shenhua under various scenarios .....                            | 8  |
| Figure 6: Highly vertically-integrated business value chain .....   | 10 |
| Figure 7: Major mining areas, power plants and ports of Shenhua .....   | 10 |
| Figure 8: Shenhua-owned railway assets in operation have a capacity of c1,600mtpa.....  | 11 |
| Figure 9: 22 listed Chinese coal companies' FCF and FCF yield .....   | 13 |
| Figure 10: Three H-share coal names – % of EBITDA/total EBITDA (22 listed companies) and free cash flow conversion ratio..... | 14 |
| Figure 11: Net gearing ratio vs. coal price .....   | 14 |
| Figure 12: Net debt/EBITDA multiples vs. QHD coal price.....  | 15 |
| Figure 13: Historical ROE comparison for Shenhua, China Coal, Yanzhou .....   | 16 |
| Figure 14: ROIC analysis of China coal sector .....   | 16 |
| Figure 15: Dividend per share comparison for Shenhua, China Coal and Yanzhou.....   | 17 |
| Figure 16: Dividend distribution/ year-end market cap .....   | 17 |
| Figure 17: Dividend distribution history of three major H-share coal producers .....  | 17 |
| Figure 18: Shenhua EBITDA margin vs. peers and industry average.....  | 18 |
| Figure 19: Shenhua EBITDA contribution by segment.....  | 18 |
| Figure 20: Shenhua asset injection from 2006 to 2015 .....  | 19 |
| Figure 21: Shenhua power segment installed capacity expansion from 2004 to 2016.....  | 19 |
| Figure 22: Project Guojiawan (郭家湾) IRR sensitivity.....   | 20 |
| Figure 23: Project Huangyuchuan (黄玉川) IRR sensitivity .....   | 20 |
| Figure 24: Shenhua capex by segment.....  | 21 |
| Figure 25: Shenhua capex segmental breakdown .....  | 21 |
| Figure 26: Shenhua coal assets marketable reserve life .....  | 22 |
| Figure 27: Shenhua coal assets recoverable reserve life .....   | 22 |
| Figure 28: Shenhua Coal annual production evolution and 11mt new capacity expected in 2017/2018 .....                         | 22 |
| Figure 29: Shenhua coal volume vs. QHD5500k price.....  | 23 |
| Figure 30: Shenhua coal sales volume split.....   | 23 |
| Figure 31: Segment EBITDA and QHD 5500k price (Rmb/t) .....   | 23 |
| Figure 32: Annual utilization hours comparison .....  | 24 |
| Figure 33: Shenhua power segment cost breakdown (per kwh) .....   | 24 |
| Figure 34: Huaneng Power spread (2010-18E) – a proxy for thermal power profitability in China.....                            | 25 |
| Figure 35: Shenhua Power segment spread evolution (2010-18E) .....  | 25 |
| Figure 36: Shenhua power segment EBIT margin sensitivity test: tariffs vs. fuel cost.....                                     | 25 |
| Figure 37: Dark spread comparison: Shenhua vs. Huaneng .....  | 25 |
| Figure 38: Unit net margin Shenhua vs. Huaneng .....  | 25 |
| Figure 39: Net gearing and interest coverage comparison .....   | 25 |
| Figure 40: Shenhua railway capacity evolution (bt km) .....   | 26 |
| Figure 41: Railway transportation volume (bt km) .....  | 26 |
| Figure 42: Transportation volume Shenhua vs. Daqin .....  | 27 |
| Figure 43: GP/t km analysis for Shenhua railway segment.....  | 27 |
| Figure 44: EBITDA margin Daqin vs. Shenhua .....  | 27 |
| Figure 45: EBIT margin Daqin vs. Shenhua .....  | 27 |
| Figure 46: New Joint Venture thermal capacity and key financials .....  | 29 |
| Figure 47: Contributing assets' valuation/return matrix for Shenhua and GD Power .....  | 29 |
| Figure 48: China Shenhua Energy injected assets' details and return on equity .....   | 29 |



Table of Exhibits (Cont'd)

|  |    |
|--|----|
| Figure 49: GD Power injected assets' details and return on equity .....                                      | 30 |
| Figure 50: Combination of Shenhua Group and GD Group key financial indicators (FY16).....                    | 31 |
| Figure 51: Combination of Shenhua Group and GD Group key operating indicators (FY16).....                    | 31 |
| Figure 52: Total Assets comparison of National Investment Group against other major IPPs (as of FY16).....   | 31 |
| Figure 53: SH Group and GD Group IPP capacity combination analysis (based on FY16 operation indicators)..... | 31 |
| Figure 54: SH Group and GD Group contribution analysis .....   | 32 |
| Figure 55: SH Group and GD Group contribution analysis .....   | 32 |
| Figure 56: Base case key assumptions .....   | 33 |
| Figure 57: Assumptions for investment in new projects (Scenarios I, II & III)...                             | 34 |
| Figure 58: Pro-forma target price, financial matrix for China Shenhua under various scenarios .....          | 34 |
| Figure 59: TP (HKD) sensitivity under Scenario I (2018E) .....   | 35 |
| Figure 60: TP (HKD) sensitivity under Scenario I (2019E) .....   | 35 |
| Figure 61: TP (HKD) sensitivity under Scenario II (2018E) .....  | 35 |
| Figure 62: TP (HKD) sensitivity under Scenario II (2019E) .....  | 35 |
| Figure 63: TP (HKD) sensitivity under Scenario III (2018E) .....   | 35 |
| Figure 64: TP (HKD) sensitivity under Scenario III (2019E) .....   | 35 |
| Figure 65: China Shenhua PB band .....   | 35 |
| Figure 66: Shenhua coal segment asset list .....   | 36 |
| Figure 67: Shenhua power segment asset list .....  | 37 |
| Figure 68: Shenhua power segments construction-in-progress projects.....                                     | 38 |
| Figure 69: Shenhua railway segment asset list.....   | 38 |
| Figure 70: Shenhua port segment assets .....   | 38 |

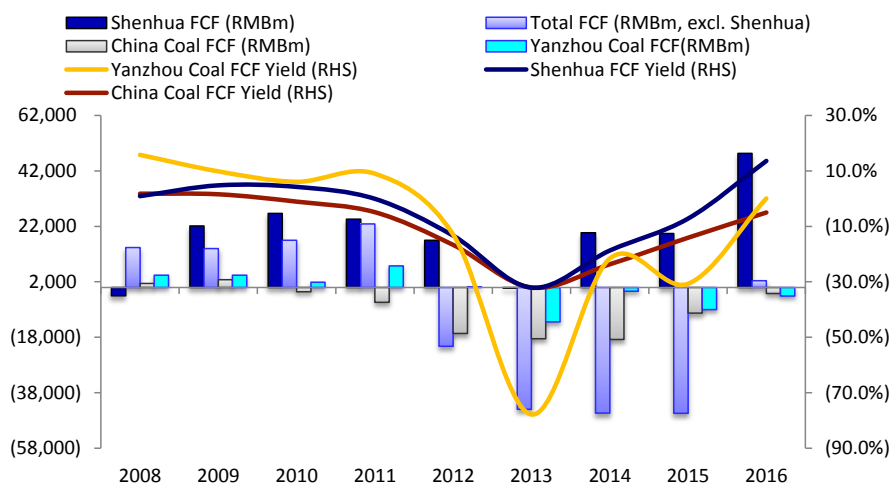


# Executive Summary

## Shenhua remains the top cash generator

- Shenhua remains the top cash generator in the Chinese coal sector, during both coal price trough and peak periods over the past decades.
- With its strong cash generation ability, we expect Shenhua will be able to deliver up to 20% FCF yield (or RMB60bn of free cash per year) in the coming three years.
- With substantial free cash piling up and net gearing dropping off to single digits, we believe Shenhua will be forced to either raise the dividend payout ratio or undertake asset acquisitions. And the merger between Shenhua and GD Power parent co. will provide more options for future asset injections.

Figure 1: 22 Listed Chinese coal company FCF amount and FCF yield



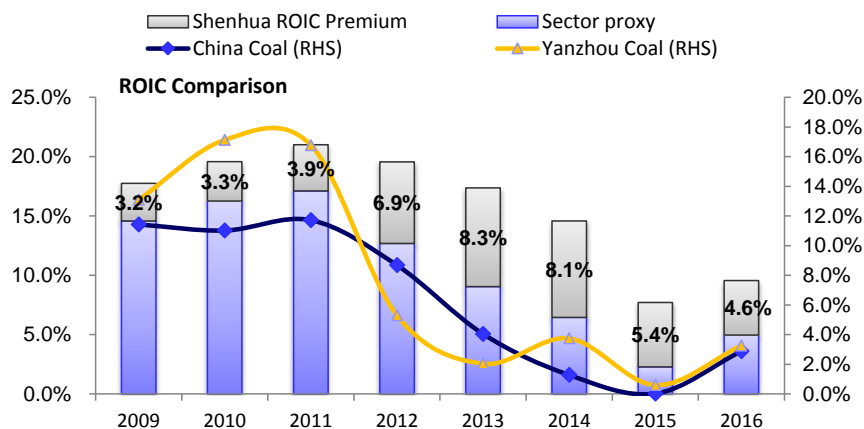
*Note*  
 :1. Total FCF represents aggregate amount of FCF for 22 Chinese coal listed companies excluding Shenhua.  
 2. Companies in scope are: 1) Shenhua 1088.HK; 2) China Coal 1898.HK; 3) Yanzhou 1171.HK; 4) Yitai 3948.HK; 5) Fushan 0639.HK; 6) Datong Coal 601001.CH; 7) Shaanxi Coal Industry 601225.CH; 8) Lu'an 601699.CH; 9) Huolinhe 002128.CH; 10) Xishan 000983.CH; 11) Yangquan 600348.CH; 12) Jingyuan 000552.CH; 13) Dayou 600403.CH; 14) Kailuan Energy 600997.CH; 15) Haohua 601101.CH; 16) Pingmei 601666.CH; 17) Shanghai Energy 600508.CH; 18) Jizhong Energy 000937.CH; 19) Hengyuan 600971.CH; 20) Anyuan 600397.CH; 21) Pingzhuang 000780.CH; and 22) Zhengmei 600121.CH  
 3. FCF yield=annual free cash flow/market cap at year end  
 Source: Deutsche Bank, Bloomberg Finance LP

## Shenhua delivers a consistent ROIC premium against peers

- Stable ROIC premium: Shenhua delivered a c.3% to 8% ROIC premium over the industry average from 2009 to 2016. In reality, Shenhua's ROIC in past years has been in the range of 7-19%.
- According to our analysis, even assuming Shenhua invests into projects with a ROIC at 2015 downturn levels, the acquisition should still yield accretive returns to Shenhua's shareholders.



Figure 2: ROIC analysis for Chinese coal sector

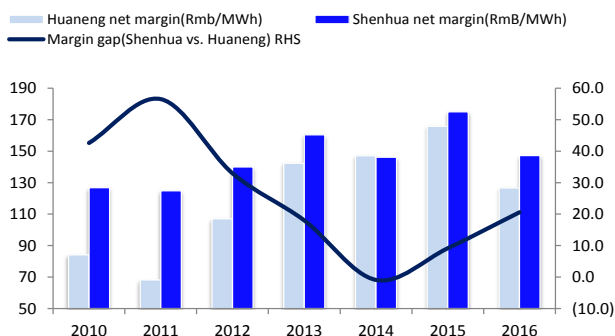


Note: Sector proxy derives from dividing accumulated annual operating income over accumulated invested capital yearend balance for the 22 companies from 2009 to 2016  
 Source: Deutsche Bank, Bloomberg Finance LP

### Resilient earnings quality in power and railway segment

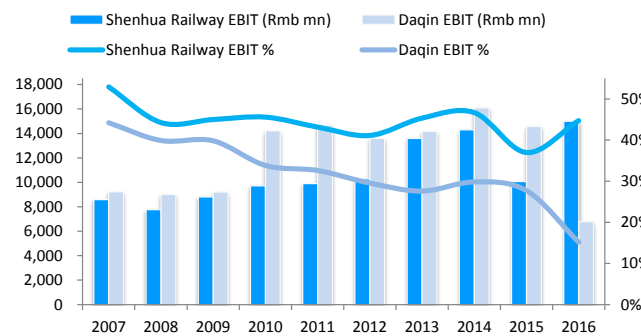
- Benefiting from its highly vertically-integrated business model, Shenhua's power segment delivers an impressive unit net margin premium against that of Huaneng. We believe the low leverage of Shenhua itself could also contribute to save finance cost.
- Shenhua's railway segment has experienced significant transportation volume improvement. Its earning ability has been demonstrated by its enlarged EBIT margin premium over that of Daqin, one of the most important coal railway companies in China. We believe Shenhua's self-owned railway could enjoy further earnings increases as its spare capacity could come on stream to transport for third-party coal producers.

Figure 3: IPP Unit net margin Shenhua vs. Huaneng



Source: Deutsche Bank, Wind, Company Data

Figure 4: Railway EBIT margin Daqin vs. Shenhua



Source: Deutsche Bank, Wind, Company Data



## Substantial upside risks resulting from rich FCF

- Shenhua has substantial upside risks, modeling various potential asset acquisition scenarios summarized in Figure 5. We believe China Shenhua's share price should have the potential to reach the HKD30 range rolling into 2018.
- The share price could even be lifted to HKD31.3 under Scenario III by further leveraging up Equity/Debt split to 30%/70%, and investing good project with ROIC of 16.5%.

Figure 5: Pro-forma target price, financial matrix for China Shenhua under various scenarios

| Scenarios  | Potential<br>TP(HKD) | Upside<br>% | Assumptions |       | Financial Matrix |       | Target Price Methodology |                      |       |
|--|----------------------|-------------|-------------|-------|------------------|-------|--------------------------|----------------------|-------|
|  |                      |             | Item        | Ratio | Item             | 2018E | 2019E                    | Item                 | 2018E |
| <b>Base Case</b>   |                      |             |             |       |                  |       |                          |                      |       |
| No asset injection,<br>increase payout<br>ratio from 40% to<br>60% | 28.55                | 43%         | ROIC        | na.   | Company ROAE     | 14.5% | 7.6%                     | Estimatedf BVPS(Rmb) | 16.27 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 7.9%  | 13.3%                    | Targe PBx            | 1.50x |
|  |                      |             | D/E ratio   | na.   | Net gearing      | 6.8%  | -0.1%                    |                      |       |
| <b>Scenario I</b>  |                      |             |             |       |                  |       |                          |                      |       |
| Poor Asset<br>Acquisition  | 26.60                | 34%         | ROIC        | 4.0%  | Company ROAE     | 14.1% | 7.6%                     | Estimatedf BVPS(Rmb) | 16.24 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 7.9%  | 12.9%                    | Targe PBx            | 1.40x |
|  |                      |             | D/E ratio   | 1.00x | Net gearing      | 28.7% | 9.0%                     |                      |       |
| <b>Scenario II</b>   |                      |             |             |       |                  |       |                          |                      |       |
| Asset Acquisition<br>with ROIC at 2015<br>downturn                 | 28.55                | 43%         | ROIC        | 6.5%  | Company ROAE     | 14.5% | 7.8%                     | Estimatedf BVPS(Rmb) | 16.27 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 8.1%  | 13.3%                    | Targe PBx            | 1.50x |
|  |                      |             | D/E ratio   | 1.00x | Net gearing      | 28.1% | 8.7%                     |                      |       |
| <b>Scenario III</b>  |                      |             |             |       |                  |       |                          |                      |       |
| Asset Acquisition<br>with ROIC at<br>historical 5 year<br>average  | 29.61                | 49%         | ROIC        | 12.0% | Company ROAE     | 15.4% | 8.4%                     | Estimatedf BVPS(Rmb) | 16.33 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 8.7%  | 14.1%                    | Targe PBx            | 1.55x |
|  |                      |             | D/E ratio   | 1.00x | Net gearing      | 26.9% | 8.1%                     |                      |       |

Notes: Target price is set based on 2018DBe performance; dividend yield is calculated by estimated DPS against share price as of 4 October 2017.  
 Source: Deutsche Bank estimates





# Investment thesis

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## Outlook

China Shenhua remains our favorite Chinese coal sector play. We believe it should significantly benefit from a likely higher coal price in the next three years and lower cash cost. We anticipate stable high returns (c.15% ROEs in the next three years) and a consistent 18%-plus FCF yield (in the next three years). In addition, recent power tariff adjustments imply that Shenhua may be able to improve ASP in its power generation business. With the ability to generate RMB60bn of cash per year, Shenhua's net debt, at RMB6bn, looks small (as of end-1H17). We believe it will be able to build up cash rapidly, possibly choosing between higher payouts and asset acquisitions. The merger between Shenhua parentco and GD Power parentco provides Shenhua listco with a wide selection of assets for acquisition/injection. Note that Shenhua's ROIC in previous years has ranged from 6-19%. We believe Shenhua's FCF upside potential has been understated. Upside surprises cannot be ruled out, not when one considers the action Shenhua may take to use its piles of free cash. We reaffirm our Buy call.

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## Valuation

We base our target price on a PB/ROE valuation method, applying 1.5x 2018E PB. A stable forward-looking ROAE leads us to upgrade our target price. We believe ROE is highly relevant to its PB and see a consistently strong ROE at c.15% in the next three years. We expect a dividend payout ratio of 60% in the next three years (not company guidance), given consistent 18%+ FCF yields. Our PB multiple of 1.5x reflects Shenhua's past PB levels when its ROEs were at c.15%.

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## Risks

Sector-specific downside risks: significant China macro policy changes resulting in quicker-than-expected cost hikes in the next three years and lower-than-expected coal ASPs in 2017-2019.

Company-specific downside risks: a lower-than-expected utilization rate of electricity power generators; lower-than-expected coal sales volumes; and lower-than-expected power tariffs.



# Great asset quality across all segments

## Vertically-integrated coal producer

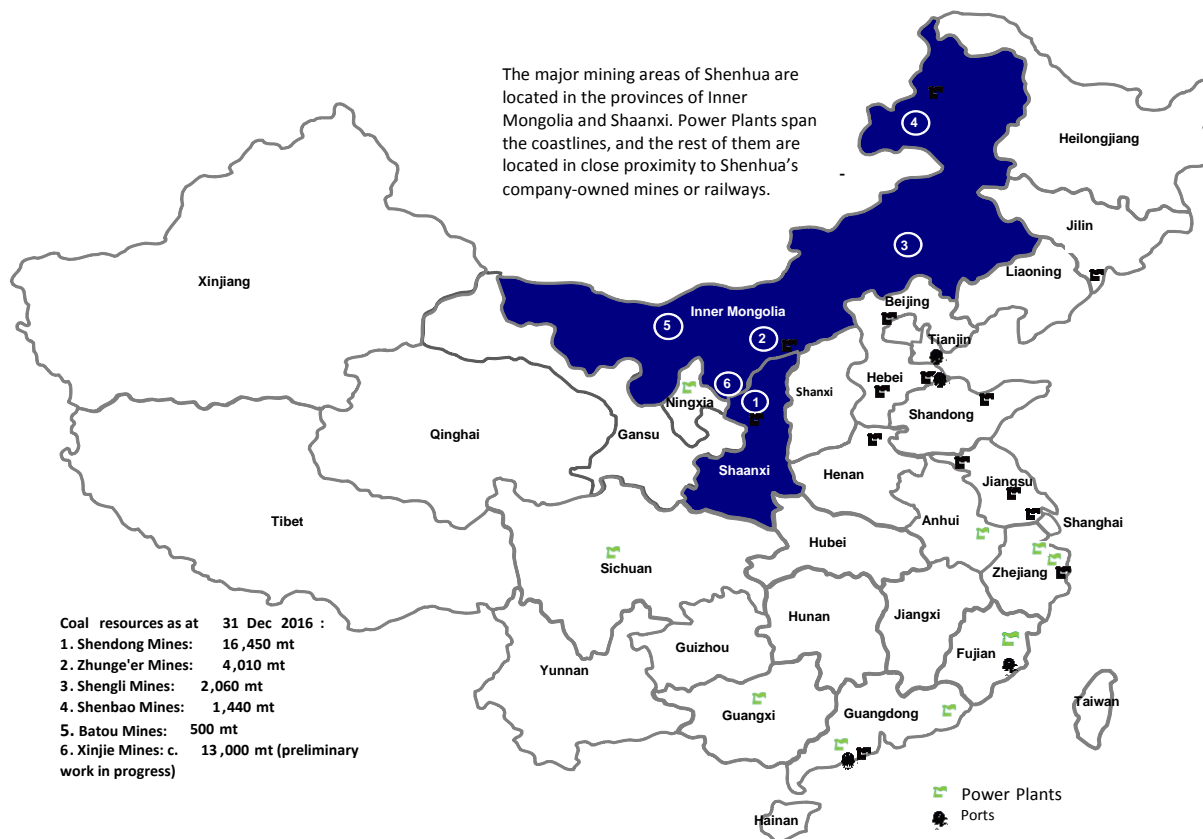
With a highly-integrated business model connecting coal production, transportation, to power generation and coal chemicals, Shenhua is able to enjoy high efficiencies and cost benefits by sharing resources throughout the value chain. Figure 6 shows the production or capacity volume of each division as of 2016 year-end.

Figure 6: Highly vertically-integrated business value chain



Source: Deutsche Bank, Company Data

Figure 7: Major mining areas, power plants and ports of Shenhua



Source: Deutsche Bank, Company Data



- Coal:** Shenhua produced c.290mt of commercial coal in 2016, representing 8.6% of China's total coal production volume. Its mining assets are mainly located in the Inner Mongolia and Shaanxi provinces, including Shendong Mines, Zhunge'er Mines, Shengli Mines, Baorixile Mines and Baotou Mines.
- Power:** Figure 7 depicts the general distribution of Shenhua's power plants. The company possesses 26 thermal power plants, mainly spanning coastal lines in the east and south areas, with the remaining plants located in close proximity to Shenhua's company-owned mines or railways. As of year-end 2016, total power plants' installed capacity reached 56GW and power output dispatch came in at 221bn kWh. Attributable accumulated capacity for construction-in-progress projects amounted to 15.3GW, representing more than 25% of capacity add-on versus current capacity. New capacity is expected to ramp-up in the next 1-2 years.
- Railway:** As shown in Figure 8, Shenhua currently owns nine rail lines in operation, with accumulated railway length of c.2,110km and capacity of c.1,200 mtpa. Railway infrastructure was primarily built for the purpose of transporting commercial coal from its coal mines in inner land to Bohai Sea ports. In 2016, transportation turnover on company-owned railways reached 245bn (t-km). The current construction-in-progress project refers to the Huangda railway (210km), which spans the Hebei and Shandong provinces, with new capacity planned at 40mtpa and the expected completion in 2018.

Figure 8: Shenhua-owned railway assets in operation have a capacity of c1,600mtpa



Source: Deutsche Bank, Company Data

- Ports & Shipping:** Having its own ports enables Shenhua to ship coal from the northern area to other seaborne regions. In 2016, seaborne coal at Huanghua port, Shenhua Tianjin Coal Dock and Shenhua Zhuhai Coal Dock reached 200mt, accounting for 90% of overall sold seaborne coal volume. In addition, the number of fleets owned by Shenhua soared from only four in 2009 to 42 in 2016, enabling it to ship 60.7mt (up 16.1% YoY) of seaborne coal for its coal segment in 2016.



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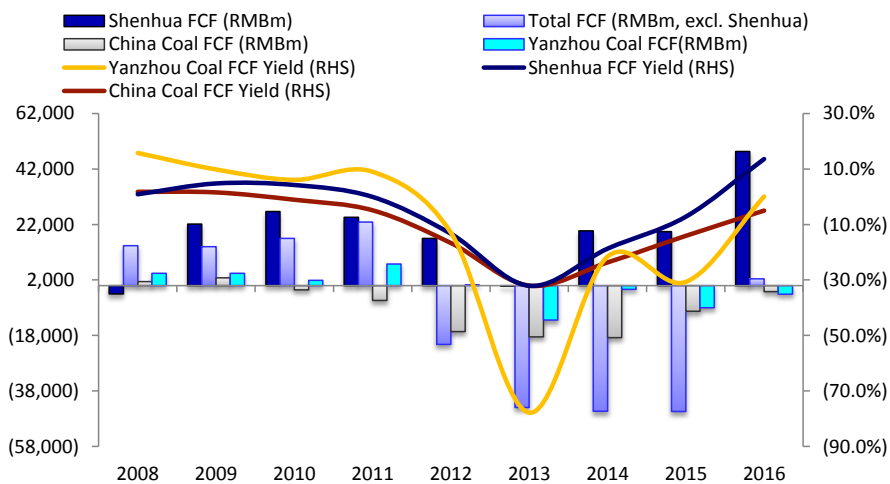
## Rich cash flow generator and high dividend distributor

Shenhua behaves as an industry role model in several aspects that we have evaluated, ranging from FCF generation capability, leverage, return matrix (ROIC, ROE), and dividend distribution behavior. We tend to find possible dynamics in combining 22 representative H-share and A-share listed coal names based on their production volumes. Our analysis justifies Shenhua as a strong Buy.

- **Cash generation:** Shenhua remains a top cash generator in China's coal sector.
  - It has been the top cash generator in the coal sector, during both coal price troughs and peaks. As shown in Figure 9, from 2011 to 2015, the overall industry cash flow proxy (by summarizing 22 listed companies' free cash flows) deteriorated and turned seriously negative due to the downturn in commodities. However, Shenhua managed to maintain positive FCF during the same period.
  - In 2016, it delivered an impressive FCF of RMB48bn, while the other two major players, China Coal and Yanzhou Coal, still struggled hard to recover from poorly-performing negative cash flow from the previous four years.
  - Higher FCF yield among H-share peers: the FCF yield (by dividing annual free cash flow with year-end company market cap) of Shenhua was historically less volatile than that of China Coal and Yanzhou. Shenhua also managed to deliver a higher FCF yield of c.18% in 2016, whereas yields for China Coal and Yanzhou were still negative and hardly touched 0%.



Figure 9: 22 listed Chinese coal companies' FCF and FCF yield

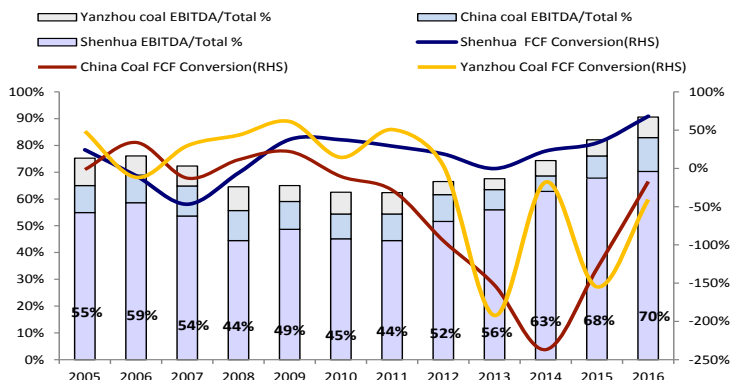


Note: 1. Total FCF represents aggregate amount of FCF for the 22 companies excluding Shenhua.  
 2. Companies in scope are: 1) Shenhua 1088.HK; 2) China Coal 1898.HK; 3) Yanzhou 1171.HK; 4) Yitai 3948.HK; 5) Fushan 0639.HK; 6) Datong Coal 601001.CH; 7) Shaanxi Coal Industry 601225.CH; 8) Lu'an 601699.CH; 9) Huolinhe 002128.CH; 10) Xishan 000983.CH; 11) Yangquan 600348.CH; 12) Jingyuan 000552.CH; 13) Dayou 600403.CH; 14) Kailuan Energy 600997.CH; 15) Haohua 601101.CH; 16) Pingmei 601666.CH; 17) Shanghai Energy 600508.CH; 18) Jizhong Energy 000937.CH; 19) Hengyuan 600971.CH; 20) Anyuan 600397.CH; 21) Pingzhuang 000780.CH; and 22) Zhengmei 600121.CH  
 3. FCF yield = annual free cash flow / market cap at year end  
 Source: Deutsche Bank, Bloomberg Finance LP

- The top player with the highest FCF conversion ability. Figure 10 illustrates that Shenhua possesses impressive stable cash conversion ability, by dividing FCF over EBITDA.
- Note that from 2011 to 2015, when QHD prices lost almost 50% from RMB819/t to RMB415/t, Shenhua managed to generate positive FCF. FCF conversion climbed to 33% in 2015, and quickly doubled to 68% in 2016 when QHD prices recovered to c.RMB470/t in 2016.
- With a positive QHD price forecast at RMB609/t for full-year 2017, we believe Shenhua has the ability to improve the ratio, given that it has the highest EBITDA margin historically among Chinese listed coal companies, disciplined capex and working capital management.



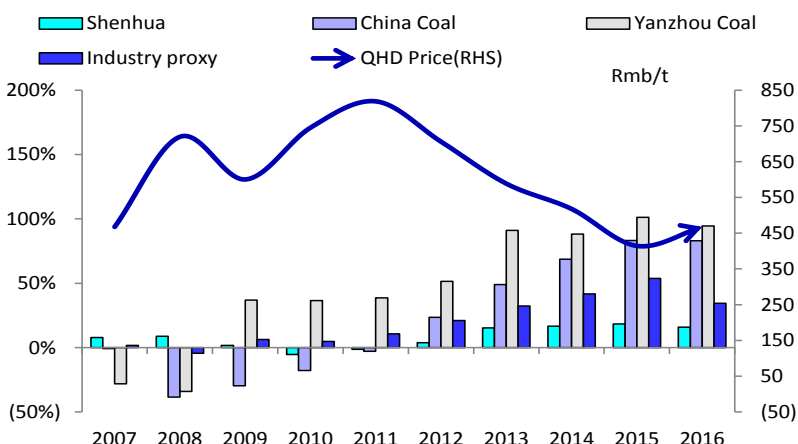
Figure 10: Three H-share coal names – % of EBITDA/total EBITDA (22 listed companies) and free cash flow conversion ratio comparison



Note Free cash flow conversion ratio=Free cash flow/EBITDA, total EBITDA refers to sum of 22 selected companies' EBITDA  
 Source: Deutsche Bank, Bloomberg Finance LP

- **Leverage:** The coal sector saw a higher fluctuation of leverage as it is vulnerable to commodity price volatilities. Coal price changes could be sensitively transferred to earnings quality, thereby influencing net book value.
- The change in benchmark coal price was largely in a negative correlation with the leverage level, as illustrated in Figure 11. When coal prices experienced a downturn from 2010, average industry net gearing rose from 6% in 2010 to 57% in 2015, before dropping to 39% when coal prices recovered.

Figure 11: Net gearing ratio vs. coal price



Note: Industry proxy gearing ratio refers to combined net debt/combined equity of the 22 listed companies for the same period end  
 Source: Deutsche Bank, Bloomberg Finance LP, Sxcoal

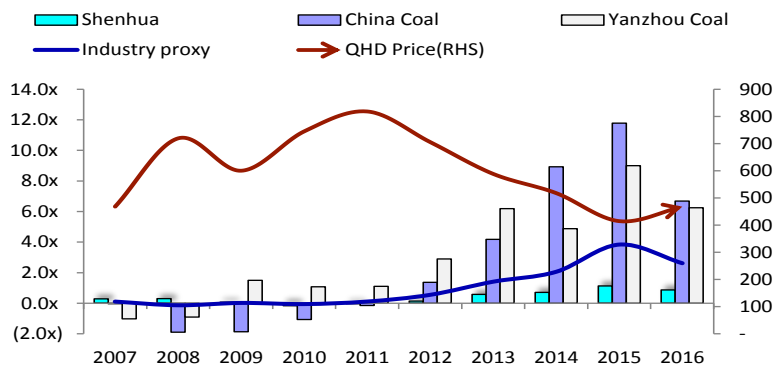
- The same relation is manifested in net debt/EBITDA multiples (Figure 12). The industry's net debt/EBITDA proxy rose from c. (0.1 x) in 2008 to 3.8x in 2015, then declined to 2.6x in 2016. China Coal and Yanzhou Coal experienced much higher vulnerability due



to their higher leverage ratio than the industry average during the coal price downturn.

- China Shenhua was able to stay at a stable leverage level with historical (the last 10 years) net gearing capped below 20% and a net debt/EBITDA multiple lower than 1.1x, demonstrating its strong resilience.

Figure 12: Net debt/EBITDA multiples vs. QHD coal price



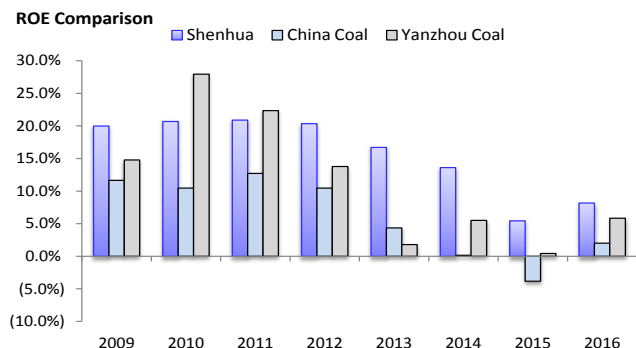
Note: Industry proxy comes by dividing aggregated net debt with aggregated EBITDA of the 22 listed companies over the same period  
 Source: Deutsche Bank, Bloomberg Finance LP, Sxcoal

Return matrix:

- Constantly higher ROE compared to China Coal and Yanzhou, despite having the lowest leverage ratio, which further demonstrates its core earnings strength.
- Higher ROE potential as Shenhua could utilize its balance sheet to lift its leverage ratio, while still enjoying fairly low effective interest rates, given its sovereign credit rating.
- Stable ROIC premium: Shenhua's ROIC was at a c.3% to 8% premium over the industry average from 2009 to 2016. From 2012 to 2016, its ROIC was almost double that of China Coal and Yanzhou Coal.

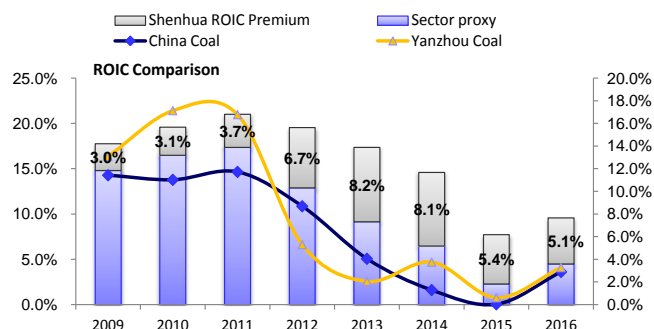


Figure 13: Historical ROE comparison for Shenhua, China Coal, Yanzhou



Source: Deutsche Bank, Company Data

Figure 14: ROIC analysis of China coal sector



Note: Sector proxy derives from dividing accumulated annual operating income over accumulated invested capital yearend balance for the 22 companies from 2009 to 2016  
 Source: Deutsche Bank, Bloomberg Finance LP

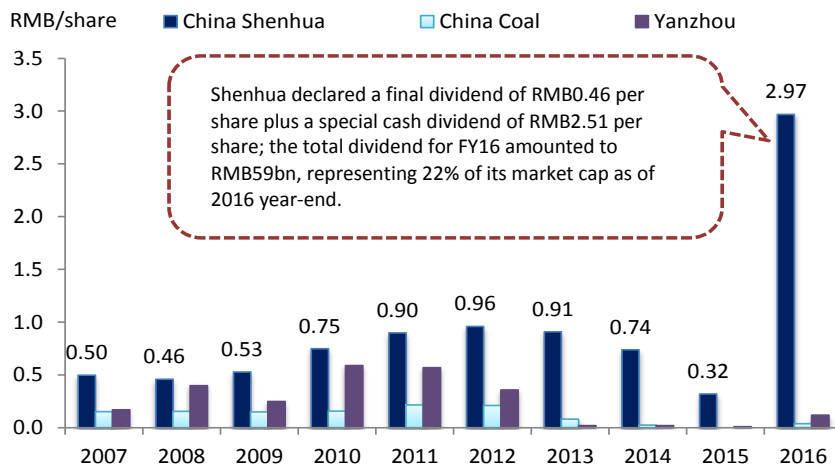
- Dividend distribution:** Figure 15 depicts the DPS level of China Shenhua, China Coal and Yanzhou Coal over the last 10 years. Shenhua's DPS has always been higher than its peers', demonstrating its generosity in delivering cash value to shareholders.
- Figure 17 compares the historical dividend payout of three H-share major coal players. Historically, China Shenhua kept its regular annual cash dividend payout ratio at around 40% NPAT, higher than that of China Coal and Yanzhou Coal. The stunning special dividend of RMB2.51 per share was paid out in mid-year 2017, representing c.22% of its FY16 market share.

The special cash distribution has surprised the capital market, as overall cash dividends account for c.22% of its end-2016 market share. We believe this conveys an important message that Shenhua's management is willing to generate concrete returns for shareholders. We believe this special dividend will prompt investors to assess Shenhua's high FCF fairly and unlock the valuation.





Figure 15: Dividend per share comparison for Shenhua, China Coal and Yanzhou



Source: Deutsche Bank, Bloomberg Finance LP, Company Data

Figure 16: Dividend distribution/ year-end market cap

| Div/Market Cap(%) | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016  |
|-------------------|------|------|------|------|------|------|-------|
| China Shenhua     | 3.0% | 3.5% | 3.7% | 5.6% | 3.7% | 2.3% | 22.7% |
| China Coal        | 1.5% | 2.6% | 2.8% | 1.9% | 0.4% | 0.0% | 1.2%  |
| Yanzhou Coal      | 2.9% | 3.3% | 2.5% | 0.4% | 0.2% | 0.1% | 2.5%  |

Source: Deutsche Bank, Bloomberg Finance LP

Figure 17: Dividend distribution history of three major H-share coal producers

| Company                              | Dividend Per Share(CNY) | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014   | 2015  | 2016   |
|--------------------------------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|
| China Shenhua                        | Final Dividend          | 0.18  | 0.46  | 0.53  | 0.75  | 0.90  | 0.96  | 0.91  | 0.74   | 0.32  | 0.46   |
|                                      | Special Cash            | 0.32  | -     | -     | -     | -     | -     | -     | -      | -     | 2.51   |
|                                      | Total Gross DPS         | 0.50  | 0.46  | 0.53  | 0.75  | 0.90  | 0.96  | 0.91  | 0.74   | 0.32  | 2.97   |
|                                      | Payout Ratio (Ordinary) | 17.5% | 35.2% | 33.2% | 38.4% | 39.8% | 38.4% | 40.2% | 37.5%  | 39.4% | 36.7%  |
| Payout Ratio (Ordinary+Special Cash) |                         | 48.3% | 35.2% | 33.2% | 38.4% | 39.8% | 38.4% | 40.2% | 37.5%  | 39.4% | 237.1% |
| China Coal                           | Final Dividend          | 0.15  | 0.15  | 0.15  | 0.16  | 0.22  | 0.21  | 0.08  | 0.02   | -     | 0.04   |
|                                      | Payout Ratio (Ordinary) | 29.6% | 28.7% | 26.8% | 27.8% | 28.6% | 31.5% | 28.2% | 226.6% | 0.0%  | 30.1%  |
| Yanzhou                              | Final Dividend          | 0.17  | 0.40  | 0.25  | 0.59  | 0.57  | 0.36  | 0.02  | 0.02   | 0.01  | 0.12   |
|                                      | Payout Ratio (Ordinary) | 26.0% | 31.1% | 29.9% | 31.3% | 31.4% | 29.2% | 12.7% | 4.5%   | 9.6%  | 23.7%  |

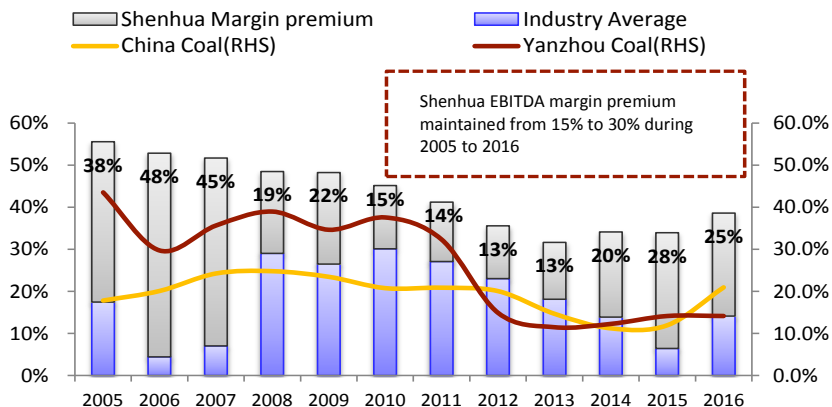
Source: Deutsche Bank, Bloomberg Finance LP

■ Earnings quality

- A consistent EBITDA margin premium over the industry average, by c.15%-30% from 2005 to 2016. While China Coal delivered relatively poor EBITDA margin of below 20% and Yanzhou experienced fluctuating margin which trended down to 15% in 2016, Shenhua delivered stable high margin of more than 30% and captured over 50% of the absolute combined amount of the 22 listed companies.



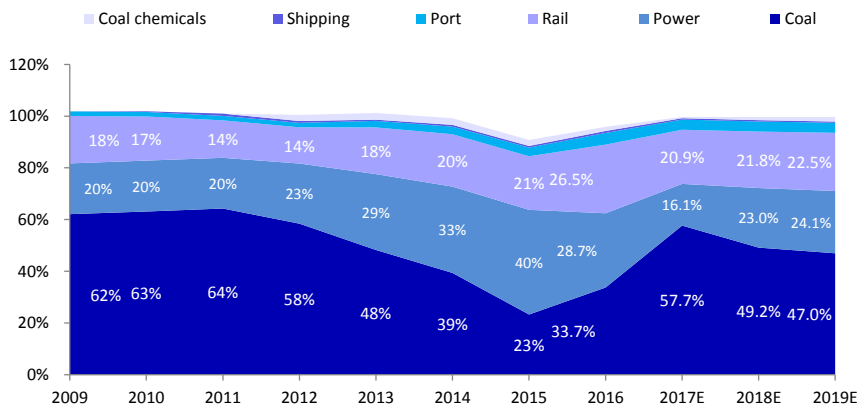
Figure 18: Shenhua EBITDA margin vs. peers and industry average



Note: Industry average EBITDA margin derived from dividing combined EBITDA with combined revenues of the 22 companies over past 11 years  
 Source: Deutsche Bank, Bloomberg Finance LP

- The market perceives Shenhua as a pure coal producer, but in reality, its vertically-integrated business model equips the company with the ability to hedge commodity price volatility risks. Coal and power could complement each other during coal price troughs and peaks. This gives Shenhua a natural hedging ability to defend commodity volatilities compared to other pure coal players such as China coal and Yanzhou coal.
- Since its public listing in 2005, Shenhua has been evolving from being solely a coal producer to an enterprise with balanced EBITDA contribution from different segments, as illustrated in Figure 19. The coal segment's EBITDA contribution dropped from 62% in year 2009 to 23% in 2015, then picked up to 33.7% in 2016, whereas the power segment's EBITDA contribution expanded from 20% in 2009 to 40% in 2015.

Figure 19: Shenhua EBITDA contribution by segment



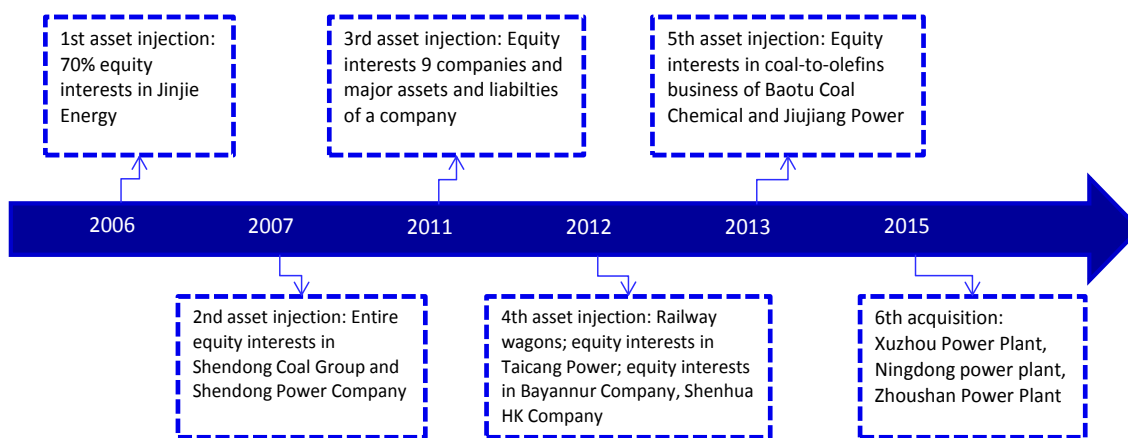
Source: Deutsche Bank, Company Data



## Platform built on asset injections and capital expenditure

As shown in Figure 20, since its listing on the HKEX in 2005, Shenhua has experienced six episodes of high-quality asset injections or acquisitions.

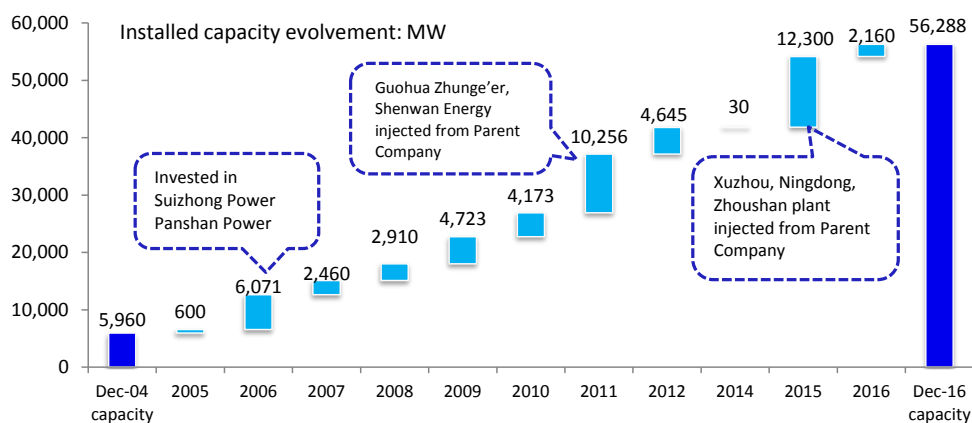
Figure 20: Shenhua asset injection from 2006 to 2015



Source: Deutsche Bank, company Data

- The company established its current coal production platform through three built-on acquisitions: 1) injected 70% holding of Jinjie Energy (capacity 18mtpa): to Shenhua listed co through Shenhua Group (deal value USD144m) in 2006; 2) acquired 100% equity interests in Shendong Coal in 2007 (capacity c.128mtpa); and 3) acquired Baorixile 56.61% shares, Baotou Energy's 100% shares and Chaijiagou Mine's 100% shares in end-2010.
- The power segment also expanded largely by asset injection from the parent company as well as built-on continuous capital expenditure.

Figure 21: Shenhua power segment installed capacity expansion from 2004 to 2016



Source: Deutsche Bank, Bloomberg Finance LP



- **Decent IRR upside potential:** we have conducted an internal rate of return analysis for its recent two coal projects, i.e. Huangyuchuan Mine (capacity 10mtpa ramped-up in 2013) and Guojiawan Mine (capacity 8mt, ramp-up in 2017).
- Assuming a funding structure of 65% debt and 35% equity with a 3-year construction period, and forecasting the future 30 year cash flows, the IRRs of these two projects could surpass management's acknowledged IRR hurdle of c. 10% to 12%.
- Project IRRs are most sensitive to coal ex-mine ASPs and cash cost. Figure 22 and Figure 23 shows the IRR returns subject to various ASPs and cost scenarios. Given our conservative ASP assumptions and confidence in the company's exceptional cost control capability, we expect IRRs to be boosted reasonably higher with coal price upside potential.
  - Project Guojiawan (郭家湾): Guojiawan Mine is located in Shaanxi Yulin. It has a designed capacity of 8mt pa. Construction commenced in 2013, with a complementary coal dressing plant (10mt). Total designed investment is RMB4.67bn, with planned equity injection of RMB1.4bn.
  - Project Huangyuchuan (黄玉川): Huangyuchuan Mine is located in Inner Mongolia, with a designed capacity of 10mt and mine service life of 86 years. Total project investment planned is Rmb2.4bn.

Figure 22: Project Guojiawan (郭家湾) IRR sensitivity

| ASP vs. Cash Cost |       | ASP ex-mine |       |       |       |       |
|-------------------|-------|-------------|-------|-------|-------|-------|
| 16.0%             |       | 240         | 250   | 260   | 270   | 280   |
| cash cost         | 150.0 | 9.1%        | 17.9% | 24.9% | 29.8% | 34.1% |
|                   | 155.0 | na.         | 13.6% | 21.4% | 27.3% | 31.9% |
|                   | 160.0 | na.         | 8.3%  | 17.3% | 24.5% | 29.4% |
|                   | 165.0 | na.         | na.   | 13.0% | 20.9% | 27.0% |
|                   | 170.0 | na.         | na.   | 7.5%  | 16.8% | 24.0% |

Note: ASP VAT excluded, benchmark price Shaanxi Yulin 5500kex-mine, adopt historical 10 year avg.  
 Source: Deutsche Bank, Wood Mac

Figure 23: Project Huangyuchuan (黄玉川) IRR sensitivity

| ASP vs. Cash Cost |       | ASP ex-mine |       |       |       |       |
|-------------------|-------|-------------|-------|-------|-------|-------|
| 15.1%             |       | 205         | 210   | 215   | 220   | 225   |
| cash cost         | 130.0 | 15.9%       | 21.7% | 26.5% | 30.0% | 33.4% |
|                   | 135.0 | 8.2%        | 15.4% | 21.3% | 26.2% | 29.7% |
|                   | 140.0 | na.         | 7.6%  | 15.1% | 20.8% | 25.9% |
|                   | 145.0 | na.         | na.   | 6.9%  | 14.6% | 20.4% |
|                   | 150.0 | na.         | na.   | na.   | 6.0%  | 14.2% |

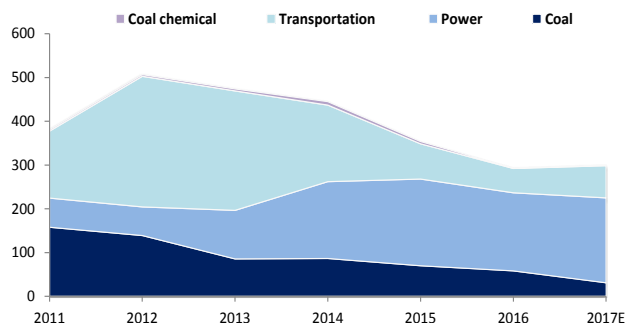
Note: ASP VAT excluded, benchmark price Ordos 5500K ex-mine, adopt historical 10 year avg.  
 Source: Deutsche Bank, Wood Mac

Figure 24 and Figure 25 illustrate the company's capital expenditure evolution through major business segments in the past six years. Capex for the coal segment has continued to decrease. Currently, the coal production-to-capacity ratio is at 88%. We expect limited new capacity to be added in the short term due to the company's capital expenditure plans (c.RMB3bn in 2017) for the small size coal sector, as well as China's structural supply-side reform to resolve overcapacity.

The power segment still enjoys expanded capex. Expected capex for the segment in 2017 accounts for c.65% of the total amount (c. RMB30bn). The investment is justified, in our view, given its potential reasonable returns in future, which we discuss in the following section.

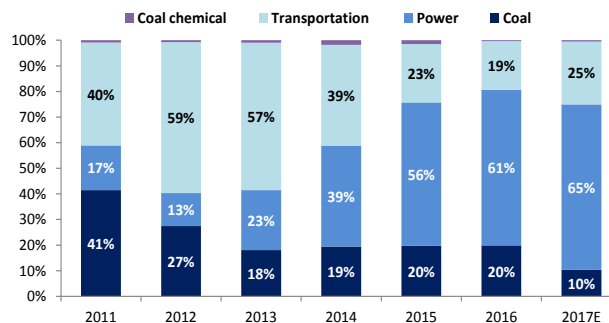


Figure 24: Shenhua capex by segment



Source: Deutsche Bank estimates, Company Data

Figure 25: Shenhua capex segmental breakdown



Source: Deutsche Bank estimates, Company Data

## Coal: dominant player with abundant reserves

As of end-2016, Shenhua had domestic control of over 24,010mt of coal resources (under PRC standards) for the five mining areas (currently in production), with Shendong Mines occupying c.69% of total resources. Shendong Mines produced commercial coal with the highest calorific value of c.5,500kcal/kg amongst Shenhua mines. The other mines are Zhunge'er Mines, Shengli Mines, Baorixile Mines and Batou Mines.

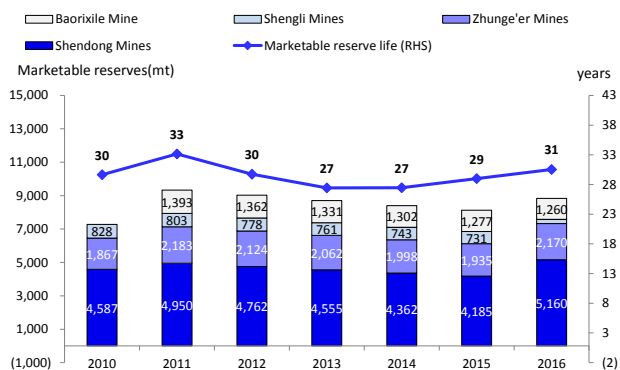
Alongside Shendong Mines, Xinjie Taigemiao (新街台阁庙) exploration area is under preliminary work in progress with coal resources of c.14,400mt and expected capacity of c.62mtpa. Coal products are expected to be transported through the Bazhun railway, Baoshen railway and Dazhun railway. The NDRC approved the Xinjie project exploration in 2008, and approved the overall project plan in August 2017. However, a timeline for commencement of the construction remains unclear.

Shenhua also explores overseas resources with the Australian Water Mark Project Phase I (resources c.1,000mt), which is waiting to commence construction upon obtaining environmental approval and a mining license from the New South Wales government. The exploration area is well located with a major railway connecting to Newcastle port and the project is expected to be financed with 40% equity and 60% debt.

As shown in Figure 26 and Figure 27, through dividing marketable reserves (JORC standards) and recoverable reserves (PRC standards) by the company's annual commercial coal production, the average reserve-to-life ratio comes to c.30 years and c. 50 years, respectively, indicating sufficient meaningful coal resources possessed by the company.

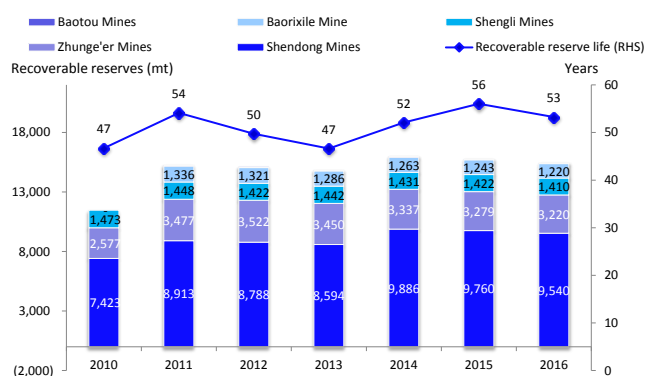


Figure 26: Shenhua coal assets marketable reserve life



Source: Deutsche Bank, Company Data as of Dec-16

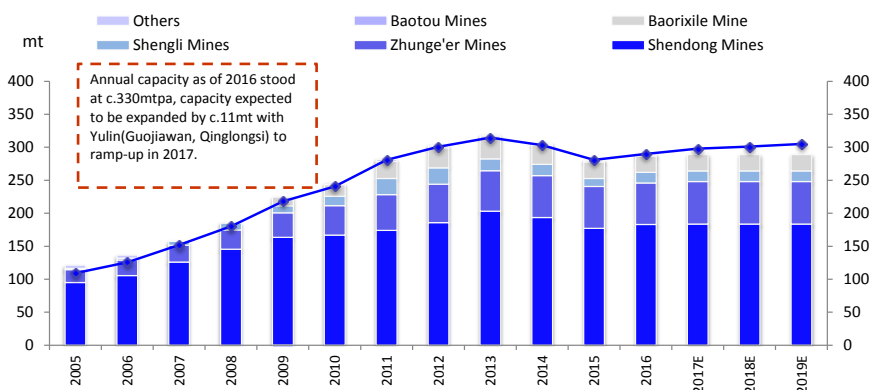
Figure 27: Shenhua coal assets recoverable reserve life



Source: Deutsche Bank, Company Data as of Dec-16

As shown in Figure 28, Shenhua currently produces c.8.5% of China's total coal production volume, and is by far the dominant player in the sector. It produced c.290mt of commercial coal in 2016 and 151mt in 1H2017. Current coal production capacity for the company per year is c.330mt. The Group's production has experienced rapid growth, due to continued asset injection from its parent Shenhua Group since its public listing in 2005. In 2013, coal production peaked at c. 314.8mt with a CAGR of 14.1% from 2005 to 2013. We expect the company to produce c.300mt in 2017/2018 with two new projects in Shaanxi Yulin, i.e., Qinglongsi and Guojiawan, which are expected to ramp-up this year by adding new capacity of c.11mt.

Figure 28: Shenhua Coal annual production evolution and 11mt new capacity expected in 2017/2018



Source: Deutsche Bank, Company Data

Price realization potential and flexibility in changing product mix

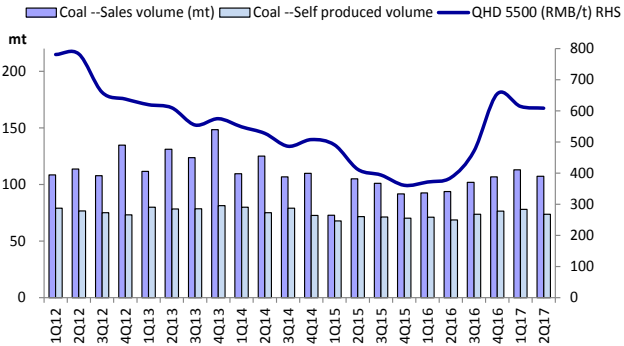
Figure 21 shows historical sales volume was dragged by coal price volatility, although production volume was kept at a relatively stable level. Management tends to maximize coal profitability by seizing positive price opportunities and securing reasonable externally-purchased coal volume.

Meanwhile, the company still enjoys positive price realization potential as illustrated in Figure 22. The price gap between Shenhua's ASP and the



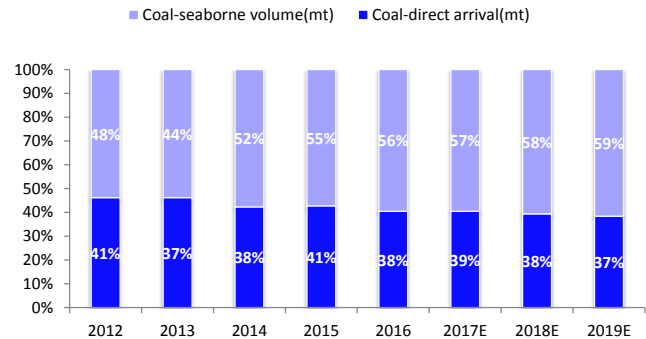
QHD5500kal price tends to widen when prices go up. In addition, the company has been continuously increasing sea-borne coal sales volume mix (from 48% in 2012 to 56% in 2016), as it enjoys higher margins (shown in Figure 23 and Figure 24). Hence, we believe in the company's future price realization as it changes its product mix and pricing strategy to align with the positive coal price outlook.

Figure 29: Shenhua coal volume vs. QHD5500k price



Source: Deutsche Bank, Wind, Bloomberg Finance LP

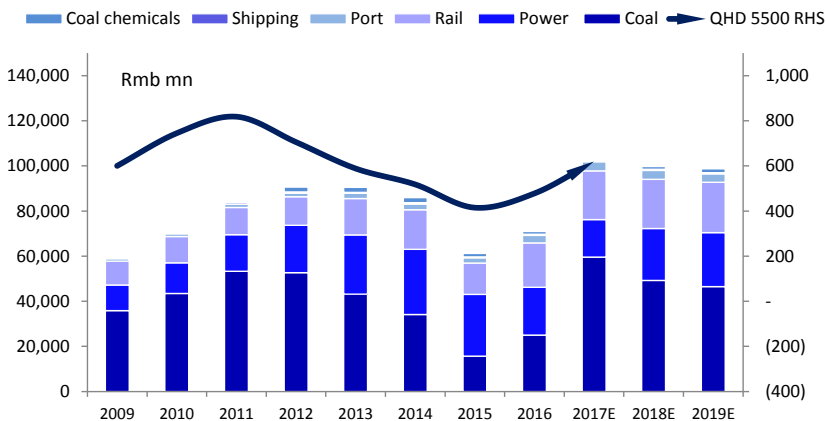
Figure 30: Shenhua coal sales volume split



Source: Deutsche Bank estimates, Company Data

As shown in Figure 31, the company's overall EBITDA volatility is in line with the benchmark coal prices. In view of the better coal price outlook in 2017E, we expect the coal segment's EBITDA contribution to improve significantly (from 34% in 2016 to 58% in 2017). In addition, with better working capital management capability and limited coal capital expenditure planned in 2017, we believe its cash generation ability will further improve in 2017.

Figure 31: Segment EBITDA and QHD 5500k price (Rmb/t)



Source: Deutsche Bank estimates, Wind

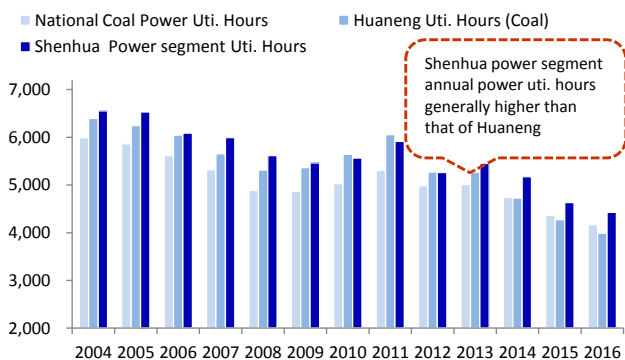


## Power: promising dark spread and gearing benefit

We have conducted a comparison analysis by benchmarking Shenhua to representative H-share listed coal power company Huaneng International [902.HK].

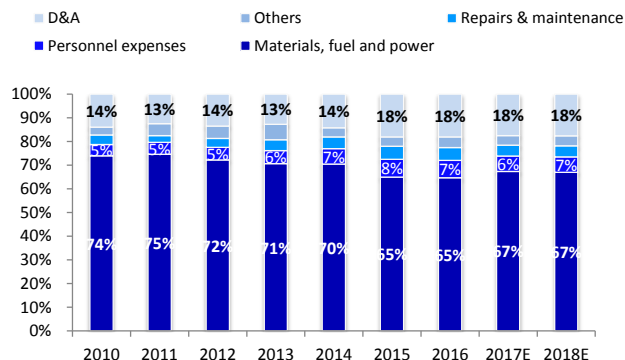
- Shenhua's annual utilization hours are consistently higher than the national average coal power plant utilization hours, as shown in Figure 32. Since 2013, its annual utilization hours have surpassed that of Huaneng International, by 3.5%, 9.5%, 8.3%, and 11.1% in 2013, 2014, 2015, and 2016, respectively.
- Figure 33 shows the unit cost structure for Shenhua power plants. Unit fuel cost represents over 65% of total unit cost, in line with the Chinese IPP industry average. As the most sensitive factor affecting profitability, we have conducted a spread comparison analysis for Shenhua and Huaneng as shown in Figure 34 and Figure 35.

Figure 32: Annual utilization hours comparison



Source: Deutsche Bank, Wind

Figure 33: Shenhua power segment cost breakdown (per kwh)



Source: Deutsche Bank estimates, Company Data

- Impressively, the dark spreads for Shenhua's power segment are in general similar to those of Huaneng (in 2016 it surpassed Huaneng by RMB13 per MWh, see Figure 37). Its power ASP is c.RMB20/t and given that power is supplied by its coal segment, it leads to a higher spread.
- Unit net margin after interest expense enables Shenhua to stand out in earnings comparison (Figure 38), thanks to its much lower gearing ratio and higher interest coverage multiple (by c.9x in 2016 against Huaneng's 3x).
- Although both have an almost similar effective interest rate within a range of 4.75%-5.1%, Shenhua could benefit from a lower gearing (translating to a higher bottom line), as Shenhua has room for new plant expenditure and higher returns could be justified.





Figure 34: Huaneng Power spread (2010-18E) – a proxy for thermal power profitability in China

| (Rmb/MWh)                         | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E |
|-----------------------------------|------|------|------|------|------|------|------|-------|-------|
| Unit Coal-fired Tariff(VAT excl.) | 352  | 363  | 388  | 386  | 376  | 366  | 326  | 319   | 313   |
| Unit Fuel Cost (Coal)             | 247  | 270  | 250  | 219  | 201  | 174  | 177  | 155   | 155   |
| Dark Spread Margin (A)            | 105  | 93   | 138  | 167  | 175  | 192  | 149  | 164   | 158   |
| Unit Interest Expense (B)         | 21   | 25   | 31   | 25   | 28   | 26   | 22   | 23    | 24    |
| Net Margin(A-B)                   | 84   | 68   | 107  | 142  | 147  | 166  | 127  | 141   | 134   |

Source: Deutsche Bank estimates, Company Data

Figure 35: Shenhua Power segment spread evolution (2010-18E)

| (Rmb/MWh)                         | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E |
|-----------------------------------|------|------|------|------|------|------|------|-------|-------|
| Unit Coal-fired Tariff(VAT excl.) | 334  | 341  | 361  | 361  | 350  | 331  | 307  | 304   | 304   |
| Unit Fuel Cost (Coal)             | 197  | 208  | 213  | 194  | 193  | 142  | 145  | 151   | 143   |
| Dark Spread Margin(A)             | 137  | 133  | 148  | 167  | 157  | 189  | 162  | 153   | 161   |
| Unit Interest expense(B)          | 10   | 8    | 8    | 6    | 10   | 14   | 15   | 17    | 17    |
| Net margin(A-B)                   | 127  | 125  | 140  | 160  | 146  | 175  | 147  | 136   | 143   |

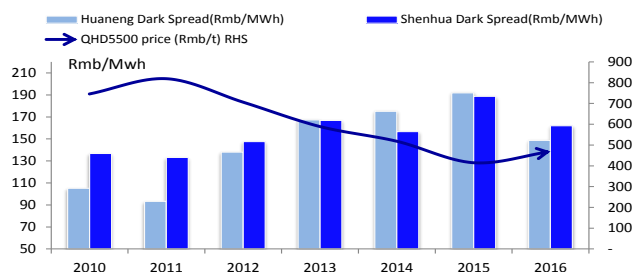
Source: Deutsche Bank estimates, Company Data

Figure 36: Shenhua power segment EBIT margin sensitivity test: tariffs vs. fuel cost

| EBIT Margin        | Tariff(Rmb MWh) |       |       |      |      |      |
|--------------------|-----------------|-------|-------|------|------|------|
|                    | 8.6%            | 285   | 295   | 305  | 315  | 325  |
| Fuel cost(Rmb/kwh) | 0.115           | 20%   | 23%   | 25%  | 27%  | 29%  |
|                    | 0.135           | 14%   | 16%   | 19%  | 21%  | 23%  |
|                    | 0.155           | 7%    | 10%   | 12%  | 15%  | 17%  |
|                    | 0.175           | 0%    | 3%    | 6%   | 9%   | 11%  |
|                    | 0.195           | (7%)  | (3%)  | (0%) | 3%   | 5%   |
|                    | 0.215           | (14%) | (10%) | (7%) | (4%) | (1%) |

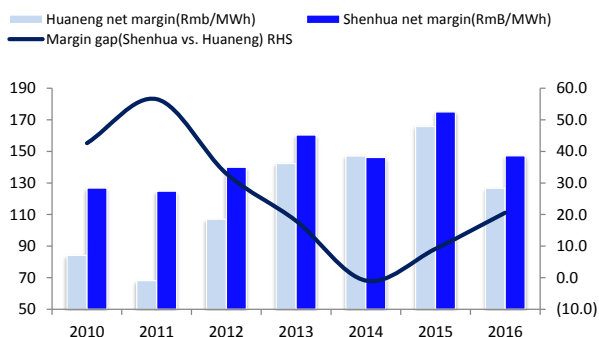
Source: Deutsche Bank, Company Data

Figure 37: Dark spread comparison: Shenhua vs. Huaneng



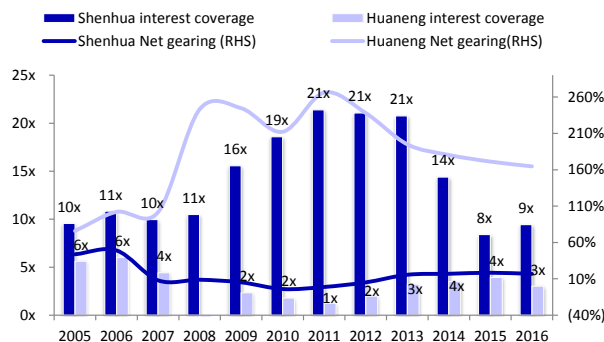
Source: Deutsche Bank, Company Data

Figure 38: Unit net margin Shenhua vs. Huaneng



Source: Deutsche Bank, Company Data

Figure 39: Net gearing and interest coverage comparison



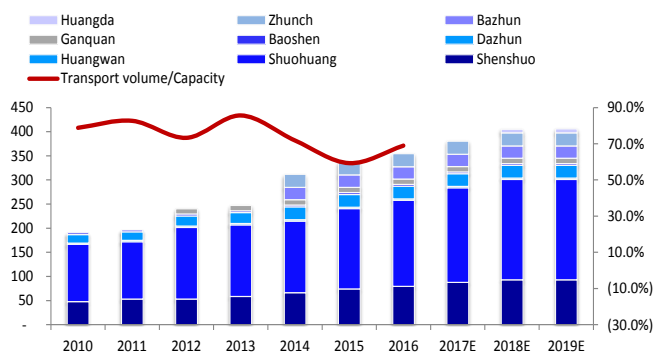
Source: Deutsche Bank, Bloomberg Finance LP



## Railway: significant transportation volume improvement and spare capacity to lift earnings

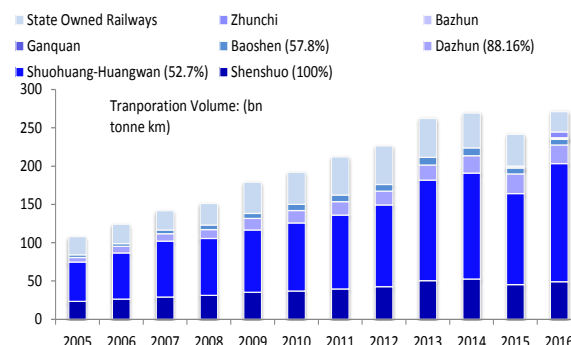
- It is crucial that coal can be transported from inner land to seaborne ports or directly to IPP plants. Shenhua's nine lines of company-owned railway give it a unique advantage in resolving transportation bottlenecks.
- As shown in Figure 40, through acquisition and ongoing capital expenditure, Shenhua's railway capacity had expanded from only c.180bt km in 2010 to c. 350bt km as of end-2016. The current construction-in-progress project refers to the Huangda railway (210km) spanning across Hebei and Shandong provinces, with new capacity planned at 40mtpa and completion expected in 2018.
- In 2016, its railway coal turnover reached 245bt km, representing c.70% of current capacity, at an historical low level. This should enable China Shenhua to further leverage its spare capacity to transport third-party coal, in turn lifting its earnings by charging higher fare rates on third parties.

Figure 40: Shenhua railway capacity evolution (bt km)



Source: Deutsche Bank estimates, Wind, Company Data

Figure 41: Railway transportation volume (bt km)

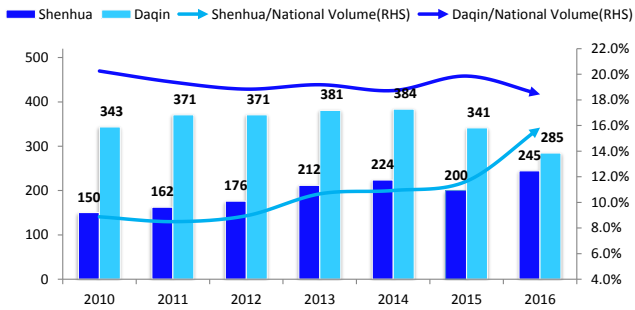


Source: Deutsche Bank, Wind, Company Data

- Below is a summary of our findings through benchmarking the statistics of Daqin Railway, one of the most important coal transportation railways in China.
  - The coal transportation volume gap between the Shenhua-owned railway and Daqin Railway narrowed in 2016, when Daqin Railway transported c. 18% of total coal volume transported by railways in China, and Shenhua transported c.16%.
  - Higher earnings quality. As shown in Figure 42 and Figure 43, an EBITDA and EBIT margin comparison shows a clear advantage for Shenhua against the Daqin line, and its margin premium over the Daqin line has widened over the past 10 years. We believe the Shenhua-owned railway will enjoy further earnings increases as its spare capacity comes on stream to transport goods for third-party coal producers.

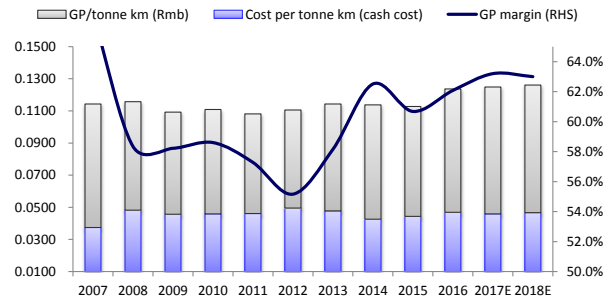


Figure 42: Transportation volume Shenhua vs. Daqin



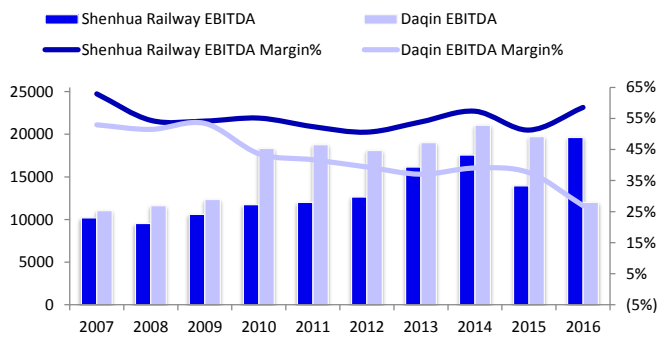
Source: Deutsche Bank, NBS

Figure 43: GP/t km analysis for Shenhua railway segment



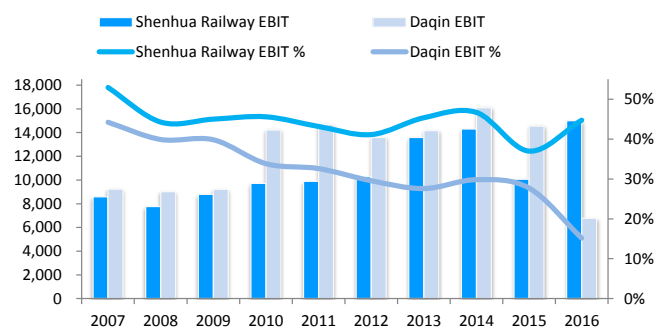
Source: Deutsche Bank estimates, Company Data

Figure 44: EBITDA margin Daqin vs. Shenhua



Source: Deutsche Bank, Wind, Company Data

Figure 45: EBIT margin Daqin vs. Shenhua



Source: Deutsche Bank, Wind, Company Data



# Paving the way for integration, embracing alternative opportunities

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## National Energy Investment Group and a JV formulated in August 2017

- On 28 August 2017, details of the Shenhua and Guodian merger were finally made known to the capital market, and represented the start of SOE reforms for IPPs and coal producers' vertical integration.
- Shenhua and GD Power announced details of a merger – to establish a JV and a shareholding split of 56% (GD) and 44% (Shenhua). Shenhua and GD Power will each inject their thermal power assets into the new JV as capital investments and GD will be the controlling entity.
- Shenhua will have 18 thermal power assets with an estimated book value (as of end-1H17) of RMB25.3bn to be injected into the new JV. In this transaction, Shenhua's 18 assets are valued at RMB29.3bn, c.1.16x book value. Relatively, GD Power contributed 22 thermal power assets with book value of RMB29.1bn. In the transaction, GD's assets are valued at RMB37.4bn, c. 1.28x book value.
- According to previous years' profits disclosed by Shenhua and GD, Shenhua's average annualized ROA (based on 1H17 profits) of contributed assets should be about 1.5% and ROE at c.2.1%, while GD's average ROA should be c.1.4% and ROE at c.2.6%. However, GD's assets will be valued at 1.28x book value, higher than the 1.16x book value of Shenhua's assets.
- The transaction is not that favorable to Shenhua, in our view. Nevertheless, Shenhua's to-be-contributed assets only account for c.8% of Shenhua listco's book value (ex-minority) and only c.1% of Shenhua listco's total 1H17 NPAT at RMB26.2bn. Thus, we believe this transaction's dilutive effect on Shenhua's overall returns and asset quality would be well contained.



Figure 46: New Joint Venture thermal capacity and key financials

| End 1H17                                | Shenhua asset contribution | GD asset contribution | Joint Venture |
|---|----------------------------|-----------------------|---------------|
| Consolidated Capacity (GW)              | 27.8                       | 29.7                  | 57.5          |
| Thermal power                           | 27.8                       | 29.7                  | 57.5          |
| 1H17 Financials (Rmb mn)                |                            |                       |               |
| Revenue                                 | 21,642                     | 26,667                | 48,308        |
| Net profit                              | 723                        | 743                   | 1,466         |
| Net profit attributable to shareholders | 311                        | 441                   | 752           |
| Total assets                            | 96,084                     | 106,054               |               |
| Total liabilities                       | 49,401                     | 58,891                |               |
| Total equity                            | 46,683                     | 47,163                |               |
| Liabilities/Asset                       | 51.40%                     | 55.50%                |               |

Source: Deutsche Bank, Company announcement

Figure 47: Contributing assets' valuation/return matrix for Shenhua and GD Power

| Rmb mn  | Book Value | Valuation | Premium | JV Holdings% | ROA  | ROA (recur.) | ROE  | ROE (recur.) | TL/TE |
|---------|------------|-----------|---------|--------------|------|--------------|------|--------------|-------|
| Shenhua | 25,263     | 29,274    | 1.16x   | 43.9%        | 1.5% | 1.4%         | 2.1% | 2.0%         | 1.06x |
| Guodian | 29,149     | 37,373    | 1.28x   | 56.1%        | 1.4% | 1.3%         | 2.6% | 2.3%         | 1.30x |

Source: Deutsche Bank, Company announcement

Figure 48: China Shenhua Energy injected assets' details and return on equity

| No.      | Injected Assets  | CN     | Shenhua Holding % | Common shareholder Equity book value | Common shareholder Equity estimated value | Premium /discount | Total Assets | Net profit | ROA   | Earnings Attr. to Common Shareholders | ROE    |
|----------|------------------|--------|-------------------|--------------------------------------|---|-------------------|--------------|------------|-------|---------------------------------------|--------|
| 1        | Taicang power    | 太仓发电   | 50.00%            | 1,371                                | 1,237                                     | (9.7%)            | 3,216        | 113        | 7.0%  | 56.3                                  | 8.2%   |
| 2        | Chenjiagang      | 陈家港发电  | 55.00%            | 913                                  | 285                                       | (68.8%)           | 5,380        | 63         | 2.4%  | 34.8                                  | 7.6%   |
| 3        | Xuzhou power     | 徐州发电   | 100.00%           | 2,511                                | 2,760                                     | 9.9%              | 5,851        | 0          | 0.0%  | 0.1                                   | 0.0%   |
| 4        | Hulunbeier       | 呼伦贝尔发电 | 80.00%            | 872                                  | 746                                       | (14.4%)           | 3,374        | 47         | 2.8%  | 37.4                                  | 8.6%   |
| 5        | Ningxia ningdong | 宁夏宁东发电 | 100.00%           | 322                                  | 339                                       | 5.2%              | 4,290        | -53        | na.   | (52.6)                                | na.    |
| 6        | Shenhua ningdong | 神华宁东发电 | 56.77%            | 217                                  | 297                                       | 36.7%             | 3,310        | -4         | na.   | (2.5)                                 | na.    |
| 7        | Zheneng          | 浙能发电   | 60.00%            | 3,527                                | 3,537                                     | 0.3%              | 11,784       | 349        | 5.9%  | 209.5                                 | 11.9%  |
| 8        | Zhoushan         | 舟山发电   | 51.00%            | 498                                  | 773                                       | 55.1%             | 2,809        | 30         | 2.1%  | 15.2                                  | 6.1%   |
| 9        | Yuyao gas        | 余姚燃气发电 | 80.00%            | 45                                   | 280                                       | 524.4%            | 1,195        | 66         | 11.1% | 53.1                                  | 236.7% |
| 10       | Guohua           | 国华国际电力 | 70.00%            | 4,307                                | 5,859                                     | 36.0%             | 19,241       | -3         | na.   | (2.3)                                 | na.    |
| 11       | Shenwan          | 神皖能源   | 51.00%            | 3,127                                | 4,807                                     | 53.7%             | 13,099       | 108        | 1.6%  | 55.1                                  | 2.6%   |
| 12       | Baode            | 保德发电   | 91.30%            | 163                                  | 106                                       | (35.1%)           | 838          | -43        | na.   | (39.3)                                | na.    |
| 13       | Hequ             | 河曲发电   | 80.00%            | 446                                  | 679                                       | 52.3%             | 2,750        | -34        | na.   | (27.3)                                | na.    |
| 14       | Wucaiwán         | 五彩湾发电  | 100.00%           | 1,445                                | 1,416                                     | (1.9%)            | 2,688        | 9          | 0.7%  | 8.8                                   | 1.2%   |
| 15       | Salaqi           | 萨拉齐电厂  | 100%              | 1,930                                | 2,047                                     | 6.0%              | 2,212        | -90        | na.   | (90.5)                                | na.    |
| 16       | Shangwan         | 上湾热电厂  | 100%              | 562                                  | 722                                       | 28.5%             | 1,033        | 25         | 4.9%  | 25.1                                  | 8.9%   |
| 17       | Midong           | 米东热电厂  | 100%              | 1,890                                | 1,874                                     | (0.9%)            | 1,989        | 2          | 0.2%  | 2.1                                   | 0.2%   |
| 18       | Jiahua           | 嘉华发电   | 20.00%            | 1,115                                | 1,509                                     | 35.34%            | 11,024       | 139        | 2.5%  | 27.8                                  | 5.0%   |
| Subtotal |                  |        |                   | 25,263                               | 29,274                                    |                   | 96,084       | 723        | 1.5%  | 311                                   | 2.1%   |

Source: Deutsche Bank, Company announcement



Figure 49: GD Power injected assets' details and return on equity

| No.      | Injected Assets | CN      | GD Power Holding % | Common shareholder Equity book value | Common shareholder Equity estimated value | Premium /discount | Total Assets | Net profit | ROA     | Earnings Attributable to Common Shareholders | ROE   |
|----------|-----------------|---------|--------------------|--------------------------------------|---|-------------------|--------------|------------|---------|--|-------|
| 1        | Jiangsu         | 江苏电力    | 100.00%            | 6,300.8                              | 9,685.5                                   | 53.7%             | 21,046.6     | 358.5      | 3.4%    | 358.5  | 7.1%  |
| 2        | GD Anhui        | 国电安徽    | 100.00%            | 2,376.8                              | 2,768.4                                   | 16.5%             | 10,453.2     | (150.9)    | (2.9%)  | (150.9)                                      | na.   |
| 3        | Xinjiang        | 新疆电力    | 100.00%            | 3,245.5                              | 2,762.6                                   | (14.9%)           | 15,495.2     | (89.8)     | (1.2%)  | (89.8)                                       | na.   |
| 4        | Datong          | 大同发电    | 60.00%             | 1,396.4                              | 1,448.7                                   | 3.7%              | 5,565.7      | 63.8       | 2.3%    | 38.3   | 5.3%  |
| 5        | Dongsheng       | 东胜热电    | 55.00%             | 362.5                                | 133.6                                     | (63.1%)           | 3,150.6      | 34.0       | 2.2%    | 18.7   | 10.9% |
| 6        | Zhuanghe        | 庄河发电    | 51.00%             | 406.2                                | 372.3                                     | (8.3%)            | 3,419.7      | (52.8)     | (3.1%)  | (26.9)                                       | na.   |
| 7        | Chaoyang        | 朝阳热电    | 100.00%            | 596.2                                | 701.9                                     | 17.7%             | 2,561.9      | 20.8       | 1.6%    | 20.8   | 5.9%  |
| 8        | Jianbi          | 谏壁发电    | 100.00%            | 752.5                                | 1,144.1                                   | 52.0%             | 1,293.3      | 46.1       | 7.1%    | 46.1   | 11.7% |
| 9        | Beilun 1        | 北仑第一发电  | 70.00%             | 1,272.3                              | 2,729.7                                   | 114.6%            | 2,184.4      | 85.4       | 7.8%    | 59.8   | 9.2%  |
| 10       | Beilun 3        | 北仑第三发电  | 50.00%             | 1,114.2                              | 1,312.9                                   | 17.8%             | 3,810.0      | 258.0      | 13.5%   | 129.0  | 23.2% |
| 11       | Shizuishan      | 宁夏石嘴山发电 | 50.00%             | 560.8                                | 889.9                                     | 58.7%             | 2,256.1      | (80.2)     | (7.1%)  | (40.1)                                       | na.   |
| 12       | Dawukou         | 大武口热电   | 60.00%             | 248.7                                | 154.1                                     | (38.1%)           | 2,205.4      | (97.5)     | (8.8%)  | (58.5)                                       | na.   |
| 13       | Nanxun          | 南谄天然气热电 | 100.00%            | 200.4                                | 176.1                                     | (12.1%)           | 799.0        | -          | na.     | na.  | na.   |
| 14       | Shizuishan 1    | 石嘴山第一发电 | 60.00%             | 241.2                                | 147.8                                     | (38.7%)           | 1,786.4      | (101.2)    | (11.3%) | (60.7)                                       | na.   |
| 15       | Jiuquan         | 酒泉发电    | 100.00%            | 475.6                                | 511.4                                     | 7.5%              | 2,706.0      | (38.8)     | (2.9%)  | (38.8)                                       | na.   |
| 16       | Waigaoqiao 2    | 外高桥第二发电 | 40.00%             | 1,733.0                              | 1,798.4                                   | 3.8%              | 4,880.5      | 202.1      | 8.3%    | 80.8   | 9.3%  |
| 17       | GD ningdong     | 国电宁东    | 51.00%             | 426.4                                | 466.3                                     | 9.4%              | 4,001.4      | -          | na.     | na.  | na.   |
| 18       | Zheneng beilun  | 浙能北仑    | 49.00%             | 1,672.9                              | 2,506.8                                   | 49.9%             | 3,795.1      | 131.5      | 6.9%    | 64.5   | 7.7%  |
| 19       | Zheneng leqing  | 浙能乐清    | 23.00%             | 533.9                                | 871.8                                     | 63.3%             | 6,762.3      | 82.6       | 2.4%    | 19.0   | 7.1%  |
| 20       | Datong 2        | 大同第二发电厂 | 100.0%             | 893.6                                | 2,638.9                                   | 195.3%            | 1,255.5      | 64.9       | 10.3%   | 64.9   | 14.5% |
| 21       | Dalian          | 大连开发区热电 | 100.0%             | 4,344.2                              | 4,100.3                                   | (5.6%)            | 4,595.8      | 0.5        | 0.0%    | 0.5  | 0.0%  |
| 22       | Dawukou branch  | 大武口分公司  | 100.0%             | (5.1)                                | 51.1                                      | (1102.7%)         | 253.8        | 5.7        | 4.5%    | 5.7  | na.   |
| Subtotal |                 |         |                    | 29,149                               | 37,373                                    | 28%               | 104,278      | 743        | 1.4%    | 441  | 2.6%  |

Source: Deutsche Bank, Company announcement

## Paving the way for SOE IPPs' integration, allowing alternatives to unlock value going forward

- The State Council has also approved the merger between Guodian Group and Shenhua Group into a newly-named State Energy Investment Corporate. With the merger, this new parent company of both GD Power and Shenhua Energy will be an energy giant with a combined assets base of c.Rmb1,776bn, substantially surpassing other IPP group asset sizes (see Figure 53).
- We believe the transaction enables Shenhua to achieve the Chinese government's goal of thermal IPP consolidation and vertical integration of the thermal power industry, while having the least impact on Shenhua listco's minority shareholders. As such, we recognize Shenhua's efforts to protect minority shareholders. Putting the parent group consolidation into a longer-term perspective, we believe the IPP consolidation will enable Shenhua to operate in a more concentrated industry. Meanwhile, the group parent will have more alternatives for future asset injection or capital market operations to unlock asset values. As such, we see the current outcome as constructive, benefitting investors.



Figure 50: Combination of Shenhua Group and GD Group key financial indicators (FY16)

| FY16 Rmb mn                  | Shenhua Group | Guodian Group | Total     | Shenhua Group% | GD Group% |
|------------------------------|---------------|---------------|-----------|----------------|-----------|
| Assets                       | 979,259       | 796,488       | 1,775,747 | 55.1%          | 44.9%     |
| Revenue                      | 247,940       | 178,528       | 426,468   | 58.1%          | 41.9%     |
| Opr profit                   | 36,056        | 13,100        | 49,156    | 73.4%          | 26.6%     |
| Liabilities                  | 463,749       | 650,863       | 1,114,612 | 41.6%          | 58.4%     |
| Equity                       | 515,510       | 145,625       | 661,135   | 78.0%          | 22.0%     |
| Total Liability/Total Assets | 47.4%         | 81.7%         | 62.8%     | na.            | na.       |

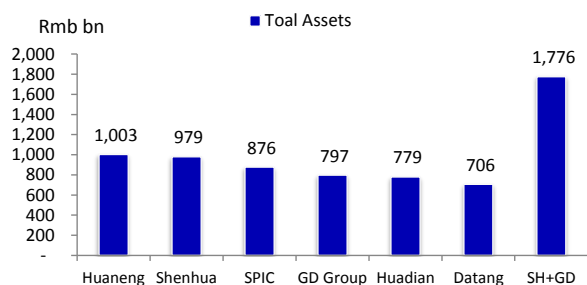
Note: Total number calculated via simple combination of Shenhua Group and Guodian Group financials as of year-end 2016.  
 Source: Deutsche Bank, Shenhua Group and GD Group FY16 Annual reports

Figure 51: Combination of Shenhua Group and GD Group key operating indicators (FY16)

| Group operation analysis FY16           | Shenhua Group | Guodian Group | Total | Shenhua Group% | GD Group% |
|---|---------------|---------------|-------|----------------|-----------|
| Coal Output(mt)                         | 420.0         | 58.7          | 478.7 | 87.7%          | 12.3%     |
| Total Installed Capacity(GW)            | 83.1          | 143.0         | 226.1 | 36.7%          | 63.3%     |
| Gross power generation (bn kwh)         | 330.3         | 505.2         | 835.5 | 39.5%          | 60.5%     |
| Thermal Installed Capacity(GW)          | 76            | 99.3          | 175.0 | 43.2%          | 56.8%     |
| Hydro Installed Capacity(GW)            | 0.15          | 16.6          | 16.7  | 0.9%           | 99.1%     |
| Wind Installed Capacity(GW)             | 6.99          | 25.8          | 32.8  | 21.3%          | 78.7%     |
| Solar Installed Capacity and Others(GW) | 0.21          | 1.3           | 1.5   | 13.8%          | 86.2%     |

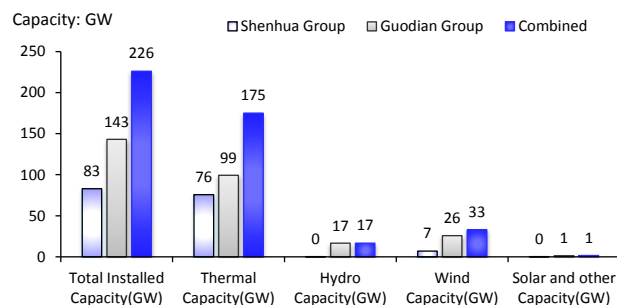
Note: Total number calculated via simple combination of Shenhua Group and Guodian Group operating indicators in FY16.  
 Source: Deutsche Bank, Shenhua Group and GD Group FY16 Annual reports, media news

Figure 52: Total Assets comparison of National Investment Group against other major IPPs (as of FY16)



Source: Deutsche Bank, Company Data, BJX

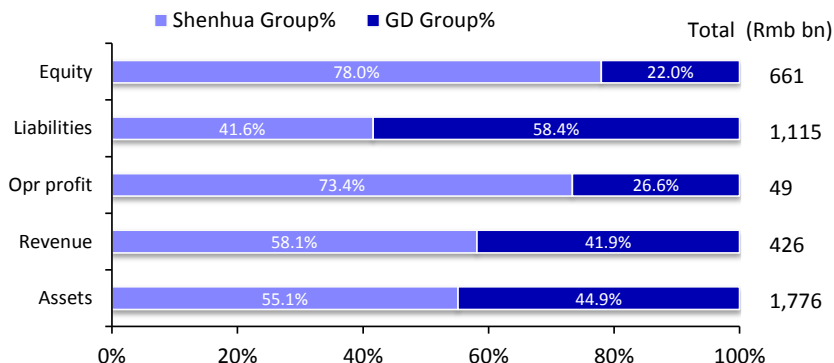
Figure 53: SH Group and GD Group IPP capacity combination analysis (based on FY16 operation indicators)



Source: Deutsche Bank, Company Data

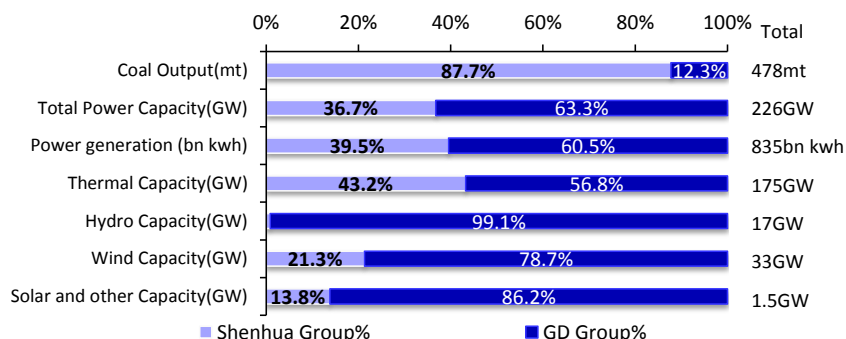


Figure 54: SH Group and GD Group contribution analysis  
 (based on FY16 Group financials)



Note: Total number calculated via simple combination of Shenhua Group and Guodian Group financials as of year-end 2016.  
 Source: Deutsche Bank, Company Data

Figure 55: SH Group and GD Group contribution analysis  
 (based on FY16 operation indicators)



Note: Total number calculated via simple combination of Shenhua Group and Guodian Group operating indicators in FY16.  
 Source: Deutsche Bank, Company Data





# Substantial upside risks resulting from its rich FCF

## Several scenarios and substantial upside risks

- China Shenhua has a very good track record. As we expect it to be a rich FCF generator with net gearing potentially dropping to a single digit in FY18/19, even assuming a 60% annual dividend payout, we believe that the merger at the parent group level in regard to the formation of National Energy Investment Group will offer China Shenhua listed co flexibility and provide alternative options when acquiring quality assets from the group in future.
- We have formulated three scenarios for China Shenhua to gauge its future growth/earnings potential:
  - Base case, i.e. maintains the status quo, and largely follows company guidance while assuming a 60% annual dividend cash payout ratio.
  - Scenario I: We assume the company leverages 50% of FY17 cash balance-on-book, as equity injection for poor-quality asset acquisition with ROIC at c.4%, and the equity/debt split would be 50%/50%. (See Figure 57 for detailed assumptions.)
  - Scenario II: We assume management would be able to use its 50% FY17 cash-on-book to invest in more profitable projects with estimated annual ROIC of 6.5%, which is in line with Shenhua's ROIC during the 2015 downturn. The equity/debt split is expected to stay unchanged at 50%/50%. (See Figure 57 for detailed assumptions.)
  - Scenario III: We assume management would be able to use its 50% FY17 cash-on-book to invest in better projects with estimated annual ROIC of 12.5%, which is the average return level from the past five years. The equity/debt split is expected to stay unchanged at 50%/50%. (See Figure 57 for detailed assumptions.)

Figure 56: Base case key assumptions

| Base case assumptions           | Unit        | 2015   | 2016   | 2017E  | 2018E  | 2019E  |
|---------------------------------|-------------|--------|--------|--------|--------|--------|
| QHD price (5500kcal, VAT incl.) | Rmb/t       | 415    | 481    | 620    | 600    | 580    |
| Self-production coal volume     | Mt          | 281    | 290    | 298    | 301    | 305    |
| Coal production cost per tonne  | Rmb/t       | 123    | 110    | 108    | 107    | 106    |
| Power dispatched                | bn kWh      | 210    | 221    | 223    | 247    | 247    |
| Power tariffs                   | Rmb/kWh     | 0.331  | 0.307  | 0.310  | 0.321  | 0.321  |
| Power cost per kWh              | Rmb/kWh     | 0.219  | 0.224  | 0.254  | 0.245  | 0.245  |
| Railway transportation volume   | bn tonne km | 241.4  | 271.2  | 289.3  | 290.4  | 293.6  |
| Total capex                     | Rmb mn      | 29,685 | 28,264 | 29,090 | 26,600 | 26,600 |
| Dividend payout ratio           | %           | 36%    | 237%   | 60%    | 60%    | 60%    |

Source: Deutsche Bank estimates, Company Data



Figure 57: Assumptions for investment in new projects (Scenarios I, II & III)

| Rmb mn                        | Scenario I | Scenario II | Scenario III |
|-------------------------------|------------|-------------|--------------|
| Cash on book as of FY17       | 65,817     | 65,817      | 65,817       |
| % of cash invested in project | 50%        | 50%         | 50%          |
| Equity invested               | 32,908     | 32,908      | 32,908       |
| Debt/Invested Capital         | 50%        | 50%         | 50%          |
| Debt/Equity                   | 100%       | 100%        | 100%         |
| Debt raised                   | 32,908     | 32,908      | 32,908       |
| Invested Capital              | 65,817     | 65,817      | 65,817       |
| Project ROIC                  | 4.0%       | 6.5%        | 12.0%        |
| Project ROE                   | 4.25%      | 9.25%       | 20.25%       |
| Interest rate on cash         | 1.5%       | 1.5%        | 1.5%         |
| Interest rate on debt         | 5.0%       | 5.0%        | 5.0%         |

Source: Deutsche Bank estimates

- As shown in Figure 58, after modeling potential asset acquisition opportunities, ROAE for FY18 could rise from 14.5% to 15.5% under Scenario 3. Using a PB/ROAE valuation methodology, we believe China Shenhua's share price has the potential to reach HKD30 heading into 2018.
- The share price has the potential to rise to HKD31.3 under Scenario III if it leverages further, bringing the equity/debt split to 30%/70% and investing in projects with ROIC of 16.5%. (Detailed sensitivity test please refer to Figure 59-Figure 64.)

Figure 58: Pro-forma target price, financial matrix for China Shenhua under various scenarios

| Scenarios  | Potential<br>TP(HKD) | Upside<br>% | Assumptions |       | Financial Matrix |       | Target Price Methodology |                       |       |
|--|----------------------|-------------|-------------|-------|------------------|-------|--------------------------|-----------------------|-------|
|  |                      |             | Item        | Ratio | Item             | 2018E | 2019E                    | Item                  | 2018E |
| <b>Base Case</b>   |                      |             |             |       |                  |       |                          |                       |       |
| No asset injection,<br>increase payout<br>ratio from 40% to<br>60% | 28.55                | 43%         | ROIC        | na.   | Company ROAE     | 14.5% | 7.6%                     | Estimated f BVPS(Rmb) | 16.27 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 7.9%  | 13.3%                    | Target PBx            | 1.50x |
|  |                      |             | D/E ratio   | na.   | Net gearing      | 6.8%  | -0.1%                    |                       |       |
| <b>Scenario I</b>  |                      |             |             |       |                  |       |                          |                       |       |
| Poor Asset<br>Acquisition  | 26.60                | 34%         | ROIC        | 4.0%  | Company ROAE     | 14.1% | 7.6%                     | Estimated f BVPS(Rmb) | 16.24 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 7.9%  | 12.9%                    | Target PBx            | 1.40x |
|  |                      |             | D/E ratio   | 1.00x | Net gearing      | 28.7% | 9.0%                     |                       |       |
| <b>Scenario II</b>   |                      |             |             |       |                  |       |                          |                       |       |
| Asset Acquisition<br>with ROIC at 2015<br>downturn                 | 28.55                | 43%         | ROIC        | 6.5%  | Company ROAE     | 14.5% | 7.8%                     | Estimated f BVPS(Rmb) | 16.27 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 8.1%  | 13.3%                    | Target PBx            | 1.50x |
|  |                      |             | D/E ratio   | 1.00x | Net gearing      | 28.1% | 8.7%                     |                       |       |
| <b>Scenario III</b>  |                      |             |             |       |                  |       |                          |                       |       |
| Asset Acquisition<br>with ROIC at<br>historical 5 year<br>average  | 29.61                | 49%         | ROIC        | 12.0% | Company ROAE     | 15.4% | 8.4%                     | Estimated f BVPS(Rmb) | 16.33 |
|  |                      |             | Div. payout | 60.0% | Div yield        | 8.7%  | 14.1%                    | Target PBx            | 1.55x |
|  |                      |             | D/E ratio   | 1.00x | Net gearing      | 26.9% | 8.1%                     |                       |       |

Notes: Target price is based on 2018E performance; dividend yield is calculated by estimated DPS against share price as of 4 October 2017.  
Source: Deutsche Bank estimates



Figure 59: TP (HKD) sensitivity under Scenario I (2018E)

| Debt/Total Capital | Target Price(HKD) | Project ROIC |       |       |       |       |
|--------------------|-------------------|--------------|-------|-------|-------|-------|
|                    | 26.60             | 2.00%        | 3.00% | 4.00% | 4.50% | 5.00% |
| 30%                | 26.60             | 26.61        | 26.62 | 26.63 | 26.64 | 26.64 |
| 40%                | 26.59             | 26.60        | 26.61 | 26.62 | 26.63 | 26.63 |
| 50%                | 26.57             | 26.59        | 26.60 | 26.61 | 26.62 | 26.62 |
| 60%                | 26.54             | 26.56        | 26.59 | 26.60 | 26.61 | 26.61 |
| 70%                | 26.50             | 26.53        | 26.56 | 26.57 | 26.59 | 26.59 |

Source: Deutsche Bank estimates

Figure 60: TP (HKD) sensitivity under Scenario I (2019E)

| Debt/Total Capital | Target Price(HKD) | Project ROIC |       |       |       |       |
|--------------------|-------------------|--------------|-------|-------|-------|-------|
|                    | 27.98             | 2.00%        | 3.00% | 4.00% | 4.50% | 5.00% |
| 30%                | 27.97             | 27.98        | 27.99 | 28.00 | 28.00 | 28.00 |
| 40%                | 27.95             | 27.97        | 27.98 | 27.99 | 28.00 | 28.00 |
| 50%                | 27.94             | 27.95        | 27.97 | 27.98 | 27.99 | 27.99 |
| 60%                | 27.91             | 27.93        | 27.95 | 27.97 | 27.98 | 27.98 |
| 70%                | 27.87             | 27.90        | 27.93 | 27.94 | 27.96 | 27.96 |

Source: Deutsche Bank estimates

Figure 61: TP (HKD) sensitivity under Scenario II (2018E)

| Debt/Total Capital | Target Price(HKD) | Project ROIC |       |       |       |       |
|--------------------|-------------------|--------------|-------|-------|-------|-------|
|                    | 28.55             | 5.50%        | 6.00% | 6.50% | 7.00% | 7.50% |
| 30%                | 28.55             | 28.55        | 28.56 | 28.57 | 28.57 | 28.57 |
| 40%                | 28.54             | 28.55        | 28.56 | 28.56 | 28.57 | 28.57 |
| 50%                | 28.53             | 28.54        | 28.55 | 28.56 | 28.57 | 28.57 |
| 60%                | 28.52             | 28.53        | 28.54 | 28.56 | 28.57 | 28.57 |
| 70%                | 28.50             | 28.52        | 28.53 | 28.55 | 28.57 | 28.57 |

Source: Deutsche Bank estimates

Figure 62: TP (HKD) sensitivity under Scenario II (2019E)

| Debt/Total Capital | Target Price(HKD) | Project ROIC |       |       |       |       |
|--------------------|-------------------|--------------|-------|-------|-------|-------|
|                    | 30.02             | 5.50%        | 6.00% | 6.50% | 7.00% | 7.50% |
| 30%                | 30.01             | 30.02        | 30.02 | 30.03 | 30.04 | 30.04 |
| 40%                | 30.01             | 30.01        | 30.02 | 30.03 | 30.04 | 30.04 |
| 50%                | 30.00             | 30.01        | 30.02 | 30.03 | 30.04 | 30.04 |
| 60%                | 29.99             | 30.00        | 30.01 | 30.02 | 30.03 | 30.03 |
| 70%                | 29.97             | 29.98        | 30.00 | 30.02 | 30.03 | 30.03 |

Source: Deutsche Bank estimates

Figure 63: TP (HKD) sensitivity under Scenario III (2018E)

| Debt/Total Capital | Target Price(HKD) | Project ROIC |        |        |        |        |
|--------------------|-------------------|--------------|--------|--------|--------|--------|
|                    | 29.62             | 8.50%        | 10.50% | 12.50% | 14.50% | 16.50% |
| 30%                | 29.54             | 29.57        | 29.60  | 29.62  | 29.65  | 29.65  |
| 40%                | 29.54             | 29.57        | 29.61  | 29.64  | 29.67  | 29.67  |
| 50%                | 29.54             | 29.58        | 29.62  | 29.66  | 29.70  | 29.70  |
| 60%                | 29.55             | 29.59        | 29.64  | 29.69  | 29.74  | 29.74  |
| 70%                | 29.55             | 29.62        | 29.68  | 29.75  | 29.81  | 29.81  |

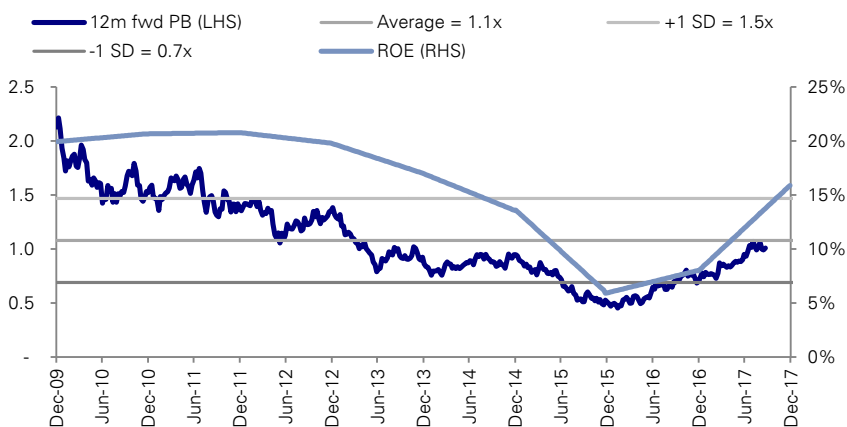
Source: Deutsche Bank

Figure 64: TP (HKD) sensitivity under Scenario III (2019E)

| Debt/Total Capital | Target Price(HKD) | Project ROIC |        |        |        |        |
|--------------------|-------------------|--------------|--------|--------|--------|--------|
|                    | 31.14             | 8.50%        | 10.50% | 12.50% | 14.50% | 16.50% |
| 30%                | 31.05             | 31.08        | 31.11  | 31.14  | 31.17  | 31.17  |
| 40%                | 31.05             | 31.09        | 31.12  | 31.15  | 31.19  | 31.19  |
| 50%                | 31.06             | 31.10        | 31.14  | 31.17  | 31.21  | 31.21  |
| 60%                | 31.06             | 31.11        | 31.16  | 31.21  | 31.26  | 31.26  |
| 70%                | 31.07             | 31.13        | 31.20  | 31.26  | 31.33  | 31.33  |

Source: Deutsche Bank

Figure 65: China Shenhua PB band



Source: Deutsche Bank estimates, Bloomberg Finance LP



Figure 66: Shenhua coal segment asset list

| Mines in Production                             |                 | Holding(%)   |         |                |       |           |         | Capacity   |
|---|-----------------|--------------|---------|----------------|-------|-----------|---------|------------|
| Mine  | Mines Region    | Dec-16       | Name    | Location       | OC/UG | Coal type | Kcal    | 2016(mtpa) |
| <b>Shendong Coal Group(100%)</b>                |                 | <b>100%</b>  |         |                |       |           |         |            |
| Bulianta  | Shendong Mines  | 100%         | 补连塔     | Inner Mongolia | UG    | Thermal   | c.5,500 | 28.0       |
| Daliuta - Huojitu                               | Shendong Mines  | 100%         | 大柳塔-活雞兔 | Shaanxi        | UG    | Thermal   | c.5,500 | 33.0       |
| Yujialian                                       | Shendong Mines  | 100%         | 榆家梁     | Shaanxi        | UG    | Thermal   | c.5,500 | 16.3       |
| Shangwan  | Shendong Mines  | 100%         | 上湾      | Inner Mongolia | UG    | Thermal   | c.5,500 | 14.0       |
| Halagou   | Shendong Mines  | 100%         | 哈拉沟     | Shaanxi        | UG    | Thermal   | c.5,500 | 16.0       |
| Baode (Kangjiatan)                              | Shendong Mines  | 100%         | 保德(康家滩) | Shanxi         | UG    | Thermal   | c.5,500 | 5.0        |
| Shigetai  | Shendong Mines  | 100%         | 石圪台     | Shaanxi        | UG    | Thermal   | c.5,500 | 12.0       |
| Wulanmulu                                       | Shendong Mines  | 100%         | 乌兰木伦    | Inner Mongolia | UG    | Thermal   | c.5,500 | 4.0        |
| Buertai   | Shendong Mines  | 100%         | 布尔台     | Inner Mongolia | UG    | Thermal   | c.5,500 | 20.0       |
| Wanli No.1 mine(Chan                            | Shendong Mines  | 100%         | 万利一矿    | Inner Mongolia | UG    | Thermal   | c.5,500 | 10.0       |
| Liuta   | Shendong Mines  | 100%         | 柳塔      | Inner Mongolia | UG    | Thermal   | c.5,500 | 3.0        |
| Cuncaota No.1                                   | Shendong Mines  | 100%         | 寸草塔一矿   | Inner Mongolia | UG    | Thermal   | c.5,500 | 2.4        |
| Cuncaota No.2                                   | Shendong Mines  | 100%         | 寸草塔二矿   | Inner Mongolia | UG    | Thermal   | c.5,500 | 6.0        |
| Lijiahao Mine                                   | Baotu Mines     | 100%         | 李家壕     | Inner Mongolia | UG    | Thermal   | c.4,410 | 6.0        |
| Tanggonggou                                     | Shendong Mines  | 100%         | 唐公沟     | Inner Mongolia | UG    | Thermal   | c.5,500 | 1.5        |
| Others  |                 |              |         |                |       |           |         |            |
| <b>Jinjie Energy Company(60%)</b>               |                 | <b>70.0%</b> |         |                |       |           |         |            |
| Jinjie Mine                                     | Shendong Mines  | 70.0%        | 锦界      | Shaanxi        | UG    | Thermal   | c.5,500 | 18.0       |
| <b>Shaanxi Jihua Chaijiagou Mining Co., Ltd</b> |                 |              |         |                |       |           |         |            |
| Chaijiagou Mine                                 | Shendong Mines  | 95%          | 柴家沟     | Shaanxi        | UG    | Thermal   | c.5,500 | na.        |
| <b>Zhunge'er Energy Company(57.8%)</b>          |                 | <b>57.8%</b> |         |                |       |           |         |            |
| Heidaigou                                       | Zhunge'er Mines | 57.8%        | 黑岱沟     | Inner Mongolia | OC    | Thermal   | c.4,680 | 34.0       |
| <b>Ha'erwusu Branch</b>                         |                 |              |         |                |       |           |         |            |
| Ha'erwusu                                       | Zhunge'er Mines | na.          | 哈尔乌素    | Inner Mongolia | OC    | Thermal   | c.4,680 | 35.0       |
| <b>Shendong Power Company</b>                   |                 | <b>51%</b>   |         |                |       |           |         |            |
| Huangyuchuan                                    | Zhunge'er Mines | 51%          | 黄玉川     | Inner Mongolia | UG    | Thermal   | c.4,680 | 10.0       |
| <b>Beidian Shengli Energy(62.8%)</b>            |                 | <b>62.8%</b> |         |                |       |           |         |            |
| Shengli Mine                                    | Shengli Mines   | 62.8%        | 胜利      | Inner Mongolia | OC    | Thermal   | c.3,095 | 20.0       |
| <b>Shenbao Energy Company(56.6%)</b>            |                 | <b>56.6%</b> |         |                |       |           |         |            |
| Baorixile Mine                                  | Baorixile Mine  | 56.6%        | 露天矿     | Inner Mongolia | OC    | Thermal   | c.3,650 | 35.0       |
| <b>Baotou Energy Company(100%)</b>              |                 | <b>100%</b>  |         |                |       |           |         |            |
| Shuiquan Open-cut Mi                            | Baotu Mines     | 100%         | 水泉露天矿   | Inner Mongolia | OC    | Thermal   | c.4,410 | 1.2        |
| Adaohai Mine                                    | Baotu Mines     | 100%         | 阿刀亥     | Inner Mongolia | UG    | Coking    | c.4,410 | 0.9        |
| <b>Indonesia Coal Power</b>                     |                 |              |         |                |       |           |         |            |
| EMM Indonesia                                   |                 | 70%          |         | Indonesia      | OC    | Thermal   | na.     | na.        |

Source: Deutsche Bank, Company Data

Figure 67: Shenhua power segment asset list

| Listed Co. | Powerplants   | 电厂        | Regional Power Grid                 | Location       | Gross Power generation<br>100m kWh | Total Power output dispatch<br>100m kWh | Avg utilization hours | Standard Coal consumption rate for poweroutput dispatch<br>g/kWh | FY 2016 tariff<br>RMB/mWh | Total installed capacity as of Dec-2015<br>MW | FY16 Installed Capacity<br>MW | Total installed capacity as of Dec-2016<br>MW | Share Holding % | Equity installed capacity as of Dec 2016<br>MW |
|------------|---|-----------|-------------------------------------|----------------|------------------------------------|---|-----------------------|--|---------------------------|---|-------------------------------|---|-----------------|--|
|            |   |           |                                     |                |                                    |   |                       |  |                           |   |                               |   |                 |  |
|            | Zhunge'er Power   | 准能電力      | North China                         | Inner Mongolia | 36.3                               | 32.1                                    | 3,784                 | 385  | 198                       | 960   |                               | 960   | 57.7%           | 554  |
|            | GuohuaZhunge'er   | 國華准格爾     | North China                         | Inner Mongolia | 48.4                               | 43.6                                    | 3,669                 | 314  | 207                       | 1,320   |                               | 1,320   | 48.4%           | 639  |
|            | GuohuaHulunbei'er Power                                 | 國華呼電      | NorthEast                           | Inner Mongolia | 46.4                               | 41.5                                    | 3,864                 | 328  | 229                       | 1,200   |                               | 1,200   | 80.0%           | 960  |
|            | Shendong Power  | 神東電力      | Northwest/NorthChina/               | Inner Mongolia | 297.1                              | 273.8                                   | 3,629                 | 340  | 251                       | 8,187   |                               | 8,187   | 92.0%           | 7,534  |
|            | Cangdong Power  | 滄東電力      | North China Power Grid              | Hebei          | 139.0                              | 132.4                                   | 5,515                 | 304  | 297                       | 2,520   |                               | 2,520   | 51.0%           | 1,285  |
|            | Sanhe Power   | 三河電力      | North China Power Grid              | Hebei          | 63.3                               | 58.9                                    | 4,870                 | 296  | 304                       | 1,300   |                               | 1,300   | 38.5%           | 501  |
|            | Dingzhou Power  | 定州電力      | North China Power Grid              | Hebei          | 137.5                              | 127.2                                   | 5,457                 | 317  | 301                       | 2,520   |                               | 2,520   | 40.5%           | 1,021  |
|            | Taishan Power   | 臺山電力      | South China Power Grid              | Guangdong      | 177.5                              | 165.9                                   | 3,550                 | 313  | 375                       | 5,000   |                               | 5,000   | 80.0%           | 4,000  |
|            | HuizhouThermal  | 惠州熱電      | South China Power Grid              | Guangdong      | 30.6                               | 27.7                                    | 4,642                 | 328  | 380                       | 660   |                               | 660   | 100.0%          | 660  |
|            | Zheneng Power   | 浙能電力      | East China Power Grid               | Zhejiang       | 198.8                              | 187.8                                   | 4,518                 | 303  | 342                       | 4,400   |                               | 4,400   | 60.0%           | 2,640  |
|            | Zhoushan Power  | 舟山電力      | East China Power Grid               | Zhejiang       | 43.6                               | 40.8                                    | 4,792                 | 342  | 347                       | 910   |                               | 910   | 51.0%           | 464  |
|            | Shenwan Energy  | 神皖能源      | East China Power Grid               | Anhui          | 214.8                              | 204.5                                   | 4,669                 | 301  | 301                       | 4,600   |                               | 4,600   | 51.0%           | 2,346  |
|            | Taicang Power   | 太倉電力      | East China Power Grid               | Jiangsu        | 66.0                               | 63.2                                    | 5,241                 | 298  | 315                       | 1,260   |                               | 1,260   | 50.0%           | 630  |
|            | Chenjiagang Power                                       | 陳家港電力     | East China Power Grid               | Jiangsu        | 68.8                               | 65.6                                    | 5,212                 | 288  | 310                       | 1,320   |                               | 1,320   | 55.0%           | 726  |
|            | Xuzhou Power  | 徐州電力      | East China Power Grid               | Jiangsu        | 103.9                              | 98.6                                    | 5,193                 | 289  | 313                       | 2,000   |                               | 2,000   | 100.0%          | 2,000  |
|            | Suizhong Power  | 綏中電力      | Northeast Power Grid                | Liaoning       | 164.1                              | 153.7                                   | 4,365                 | 311  | 300                       | 3,760   |                               | 3,760   | 50.0%           | 1,880  |
|            | Fujian Energy   | 福建能源      | EastChina Power Grid                | Fujian         | 105.1                              | 99.8                                    | 4,589                 | 308  | 304                       | 3,240   | (540)                         | 2,700   | 49.0%           | 1,324  |
|            | Jinjie Energy   | 錦界能源      | North China Power Grid              | Shan'anxi      | 147.5                              | 135.3                                   | 6,144                 | 325  | 244                       | 2,400   |                               | 2,400   | 70.0%           | 1,680  |
|            | Shenmu Power  | 神木電力      | North China Power Grid              | Shan'anxi      | 9.0                                | 7.9                                     | 4,094                 | 382  | 296                       | 220   |                               | 220   | 50.9%           | 112  |
|            | Shenhua Sichuan Energy                                  | 神華四川能源(煤) | Sichuan Power Grid                  | Sichuan        | 24.0                               | 21.6                                    | 1,901                 | 332  | 375                       | 1,260   |                               | 1,260   | 47.9%           | 604  |
|            | Mengjin Power   | 孟津電力      | Central China Power Grid            | Henan          | 44.4                               | 41.8                                    | 3,701                 | 308  | 307                       | 1,200   |                               | 1,200   | 51.0%           | 612  |
|            | Shouguang Power   | 壽光電力      | North China Power Grid              | Shandong       | 25.6                               | 24.1                                    | 5,034                 | 290  | 294                       |   | 2,000                         | 2,000   | 60.0%           | 1,200  |
|            | Panshan Power   | 盤山電力      | North China Power Grid              | Tianjin        | 52.9                               | 49.6                                    | 4,994                 | 314  | 331                       | 1,060   |                               | 1,060   | 45.5%           | 482  |
|            | Ningdong Power  | 寧東電力      | Northwest Power Grid                | Ningxia        | 34.2                               | 30.6                                    | 5,184                 | 359  | 205                       | 660   |                               | 660   | 100.0%          | 660  |
|            | Liuzhou Power   | 柳州電力      | Guangxi Power Grid                  | Guangxi        | 2.1                                | 1.9                                     | 3,095                 | 320  | 328                       |   | 700                           | 700   | 52.0%           | 364  |
|            | EMM Indonesia   | 南蘇EMM     | PLN                                 | Indonesia      | 16.4                               | 14.3                                    | 5,470                 | 369  | 476                       | 300   |                               | 300   | 70.0%           | 210  |
|            | <b>Total for coal-fired powerplants/weightedaverage</b> |           |                                     |                | <b>2,297.3</b>                     | <b>2,144.2</b>                          | <b>4,428</b>          | <b>315</b>   | <b>301</b>                | <b>52,257</b>                                 | <b>2,160</b>                  | <b>54,417</b>                                 |                 | <b>35,089.0</b>                                |
|            | <b>Other power plants</b>                               |           |                                     |                |                                    |   |                       |  |                           |   |                               |   |                 |  |
|            | ZhuhaiWindEnergy  | 珠海風能      | SouthChinaPowerGrid                 | Guangdong      | 0.3                                | 0.3                                     | 1,952                 |  | 596                       | 16  |                               | 16  | 75.0%           | 12.0   |
|            | ShenhuaSichuanEnergy (Hydropower)                       | 神華四川能源(水) | Sichuan Provincial Local Power Grid | Sichuan        | 6.7                                | 6.5                                     | 5,331                 |  | 223                       | 125   |                               | 125   | 38.4%           | 48.0   |
|            | BeijingGas-firedPower                                   | 北京燃氣      | North China Power Grid              | Beijing        | 40.1                               | 39.1                                    | 4,218                 | 211  | 509                       | 950   |                               | 950   | 100.0%          | 950.0  |
|            | YuyaoPower  | 華東電網 浙江   | East China Power Grid               | Zhejiang       | 16.0                               | 15.6                                    | 2,055                 | 231  | 608                       | 780   |                               | 780   | 80.0%           | 624.0  |
|            | <b>Grand Total</b>                                      |           |                                     |                | <b>2,360.4</b>                     | <b>2,205.7</b>                          | <b>17,984</b>         | <b>757</b>   | <b>2,237</b>              | <b>54,128</b>                                 | <b>2,160</b>                  | <b>56,288</b>                                 |                 | <b>36,723.0</b>                                |

Source: Deutsche Bank, Company Data





Figure 68: Shenhua power segments construction-in-progress projects

| Construction-in-progress   | CN                      | Province | Project Investment<br>RMB mn | Designed Capacity<br>MW | % of Completion<br>as of Dec-16 |
|----------------------------|-------------------------|----------|------------------------------|-------------------------|---------------------------------|
| Guohua Jiujiang Project    | 神华国华江西九江煤炭储备(中转)发电一体    | JiangXi  | 7,531                        | 2,000                   | 28.0%                           |
| Luoyuajwan Project         | 神华福建罗源湾储煤一体化发电厂工程       | Fujian   | 10,928                       | 2,000                   | 18.0%                           |
| Fuping Project             | 神东电力富平热电项目              | Shaanxi  | 2,942                        | 700                     | 57.0%                           |
| Guohua Beihai Project      | 神华国华广投北海2*1,000MW电厂新建工程 | Guangxi  | 7,563                        | 2,000                   | 9.0%                            |
| Bashu Project              | 神华巴蜀江油2台100万千瓦燃煤机组新建工   | Sichuan  | 7,112                        | 2,000                   | 12.0%                           |
| Ningdong expansion project | 国华宁东发电厂二期扩建工程           | Ningxia  | 4,691                        | 1,320                   | 51.0%                           |
| Shenwan Lujiang Project    | 神皖合肥庐江发电厂机组工程           | Anhui    | 4,797                        | 1,320                   | 12.0%                           |
| Guohua Yongzhou Project    | 神华国华湖南永州电厂新建工           | Hunan    | 7,426                        | 2,000                   | 7.0%                            |
| Fujian Hongshan Project    | 福建石狮鸿山热电厂二期工程           | Fujian   | 7,153                        | 2,000                   | 95.0%                           |
| <b>Total</b>               |                         |          | <b>60,143</b>                | <b>15,340</b>           |                                 |

Source: Deutsche Bank, Company Data

Figure 69: Shenhua railway segment asset list

| Rail line                             | CN   | Holdings | Operation Starts | Length (km)    | Equity Length (km) | 2016 capacity (mtpa)    | Throughput @ 90% utilization (km-mtpa) | 2016 Transport Turnover (bt km) |
|---------------------------------------|------|----------|------------------|----------------|--------------------|-------------------------|--|---------------------------------|
| <b>Self owned transported railway</b> |      |          |                  |                |                    |                         |  |                                 |
| Shenshuo (Shenmu-Shuozhou)            | 神朔铁路 | 100.0%   | 1996             | 266.0          | 266                | 300                     | 71,820                                 | 49.2                            |
| Shuohuang(Shuozhou-Huanghua)          | 朔黄铁路 | 52.7%    | 2000             | 594.0          | 313                | 300                     | 84,552                                 | 154.3                           |
| Huangwan(Huanghua - Wanjiagang)       | 黄万铁路 | 52.7%    | 2006             | 64.8           | 34                 | 42                      | 1,291                                  |                                 |
| Dazhun (Datong - Zhungeer)            | 大准铁路 | 90.0%    | 1997             | 264.0          | 238                | 100                     | 21,384                                 | 24.2                            |
| Baoshen (Baotou - Shendong)           | 包神铁路 | 88.2%    | 1989             | 170.0          | 150                | 22                      | 2,967                                  | 7.3                             |
| Ganquan (Ganqimaodu - Baotou)         | 甘泉铁路 | 88.5%    | 2012             | 367.0          | 325                | 30                      | 8,766                                  | 0.9                             |
| Bazhun (Batuta - Diandaigou)          | 巴准铁路 | 90.0%    | 2014             | 128.0          | 115                | 200                     | 20,736                                 | 1.2                             |
| Zhunchi (Waixigou - Shenchi)          | 准池铁路 | 85.0%    | 2015             | 180.0          | 153                | 150                     | 20,655                                 | 7.5                             |
| Tahan                                 | 塔韩铁路 | na.      | 2014             | 78.0           | na.                | 15                      | 1,053                                  | -                               |
| <b>Subtotal</b>                       |      |          |                  | <b>2,112</b>   | <b>1,594</b>       | <b>1,159</b>            | <b>233,225</b>                         | <b>245</b>                      |
| <b>Construction in-progress</b>       |      |          |                  |                |                    |                         |  |                                 |
| Rail line                             | CN   | Holdings | % of completion  | Length (km)    | Equity Length (km) | Planned Capacity (mtpa) | Commencement                           | Estimated Completion            |
| Huangda Railway (Under Construction)  | 黄大铁路 | 75.0%    | 34.0%            | 210.2          | 158                | 40.0                    | 2015                                   | 2018                            |
| Amo Railway(suspended)                | 阿莫铁路 | 75.0%    | Suspended        | 97.0           | 72.8               | 15.5                    | Suspended                              | Suspended                       |
| <b>Total</b>                          |      |          |                  | <b>2,419.0</b> | <b>1,824.0</b>     | <b>1,214.5</b>          |  |                                 |

Source: Deutsche Bank, Annual Report, Company Data

Figure 70: Shenhua port segment assets

| Port                      | CN    | Location | Operation Holding | FY16 Seaborne Coal start | Throughput(mt) |
|---------------------------|-------|----------|-------------------|--------------------------|----------------|
| Huanghua Port             | 黄骅港   | Hebei    | 70%               | 1992                     | 201.3          |
| Shenhua Tianjin Coal Dock | 天津煤码头 | Tianjin  | 55%               | 2007                     | 158.6          |
| Shenhua Zhuhai Coal Dock  | 珠海煤码头 | Zhuhai   | 40%               | 2012                     | 3.2            |

Source: Deutsche Bank, Company Data



*The author of this report would like to acknowledge the contribution made by Bella Peng.*



# Appendix 1

## Important Disclosures

\*Other information available upon request

### Disclosure checklist

| Company              | Ticker  | Recent price*        | Disclosure   |
|----------------------|---------|----------------------|--------------|
| China Shenhua Energy | 1088.HK | 19.86 (HKD) 4 Oct 17 | 6,9,13,14,15 |

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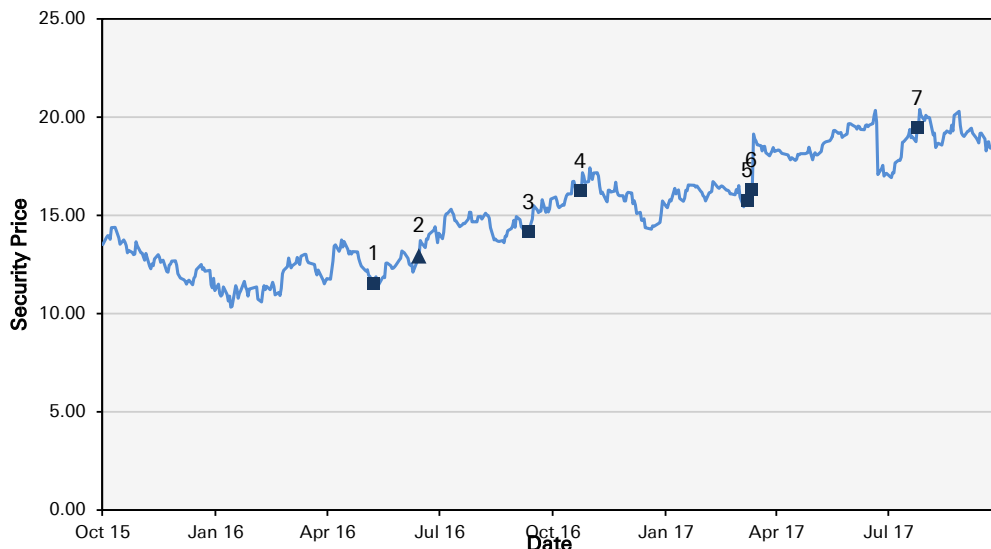
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Historical recommendations and target price: China Shenhua Energy (1088.HK)

(as of 10/4/2017)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

\*New Recommendation Structure as of September 9,2002

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|    |             |  |           |    |             |                                   |           |
|----|-------------|--|-----------|----|-------------|-----------------------------------|-----------|
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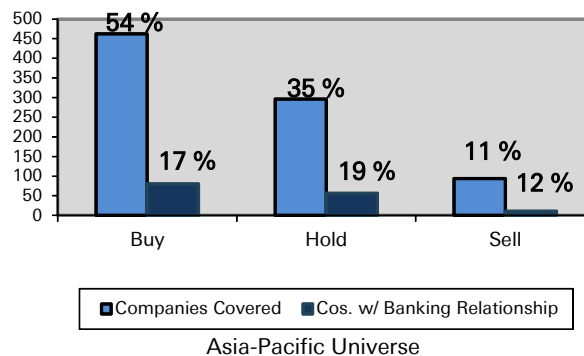
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