

China Power & Coal Monthly

2018 Outlook: Solid power consumption supported the coal price

| | Ticker | Rec | Mkt cap | | Price | PT | Up/ dn (%) | EPS Growth (%) | | P/B (x) | | ROE (%) | |
|------------------------------|---------|------|---------|-----|-------|-------|---------------|----------------|-------|---------|-----|---------|------|
| | | | (US\$m) | Ccy | | | | 17E | 18E | 17E | 18E | 17E | 18E |
| China Resources Power | 836 HK | Buy | 8,995 | HKD | 14.62 | 16.00 | 9.4 | (45.8) | 65.8 | 1.0 | 1.0 | 6.8 | 11.2 |
| Huaneng Power | 902 HK | Buy | 13,619 | HKD | 5.14 | 6.00 | 16.7 | (75.5) | 225.3 | 0.8 | 0.7 | 2.8 | 8.4 |
| Datang Power | 991 HK | Buy | 7,773 | HKD | 2.60 | 3.30 | 26.9 | (36.9) | 77.3 | 0.7 | 0.6 | 6.5 | 9.8 |
| Huadian Power | 1071 HK | Hold | 5,510 | HKD | 3.09 | 3.35 | 8.4 | (86.7) | 546.9 | 0.6 | 0.5 | 1.0 | 7.6 |
| China Power | 2380 HK | Hold | 2,772 | HKD | 2.21 | 2.80 | 26.7 | (58.3) | 87.6 | 0.6 | 0.5 | 4.3 | 8.6 |
| Shenhua | 1088 HK | NR | 76,333 | HKD | 23.80 | N.R. | N.R. | 83.8 | (9.2) | 1.2 | 1.1 | 14.4 | 13.0 |
| China Coal | 1898 HK | NR | 11,134 | HKD | 4.03 | N.R. | N.R. | 138.1 | (9.4) | 0.5 | 0.5 | 5.0 | 4.4 |
| Yanzhou Coal | 1171 HK | NR | 11,466 | HKD | 13.56 | N.R. | N.R. | 276.3 | (5.9) | 1.2 | 1.1 | 15.1 | 13.3 |

Source: Bloomberg, Company data, CSCI Research (prices as of 26 January 2018)

- Looking forward into 2018, we forecast China's power consumption will grow steadily by c.6.0% YoY in 2018, on the ground of the Chinese Academy of Social Sciences' (CASS) projection of China's GDP to expand by 6.7% in 2018.
- Meanwhile, we estimate China's coal output will rise by c.2.9% YoY in 2018, almost flat as compared with a 3.2% YoY increase in 2017, given that capacity reduction remains to be the main goal for the industry. Against this backdrop, we expect the coal price will fluctuate between RMB600-630/t mostly in 2018.
- The market is waiting for the NDRC to announce the on-grid tariff hike for coal-fired power, which is supposed to be disclosed on the last day of 2017. Thus, we would choose to revisit our sector ratings after the announcement. For the time being, we will maintain our BUY rating on Huaneng Power (902.HK), CR Power (836.HK) and Datang Power (991.HK), and also maintain our HOLD rating on China Power (2380.HK) and Huadian Power (1071.HK).

Strong economic growth drove power consumption in 2017. China's economy grew steadily in 2017, posting GDP growth of 6.9% YoY. China's PMI stayed well above 51% for the year, suggesting robust development of the manufacturing sector. In-line with economic growth, social power consumption has grown at a steady pace, posting an increase of 6.6% in 2017, faster than a 5.0% rise in 2016.

Tight supply and strong demand incentivised coal price to stay +RMB600/t in 2017. The Chinese government has continued to deepen supply-side structural reforms in 2017 and slashed more than 150mnt for the year. In line with that, coal output recorded a single-digit growth rate of 3.2% in 2017. On the demand side, coal-fired power generation was stronger than expected due to certain unexpected circumstances (e.g.: tepid hydro power generation, the suspension of "coal-to-gas" switch projects).

Solid growth of power consumption in 2018. We forecast power consumption growth to reach c.6.0% YoY for the year, supported by CASS and the IMF's projections of 6.7% and 6.6%, respectively. On the back of the solid power consumption growth projection, we estimate coal-fired power generation will grow by 3.5% YoY in 2018. Against this backdrop, we forecast China's coal output will rise by c.2.9% YoY in 2018, flat versus 2017, given that capacity reduction remains to be the main goal for the industry.

Along with the industry consolidation, Chinese government's measures have become increasingly important and effective in constraining the coal price movement. On such basis, we forecast the QHD5,500k coal price to remain at the current level going forward, fluctuating between RMB600-630/t in 2018, within the healthy range as stipulated up by the government.

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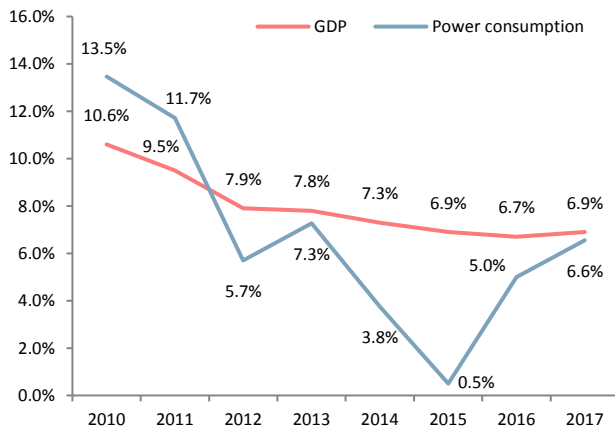
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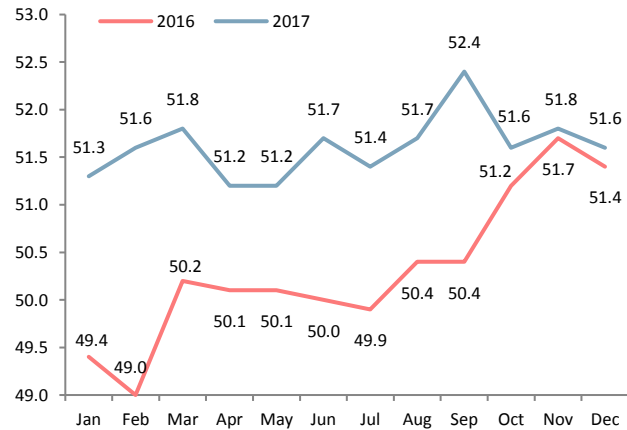
2017 Review

Strong economic growth drove power consumption

China's economy grew steadily in 2017, posting GDP growth of 6.9% YoY. In-line with economic growth, social power consumption has grown at a steady pace, posting an increase of 6.6% in 2017, faster than a 5.0% rise in 2016.

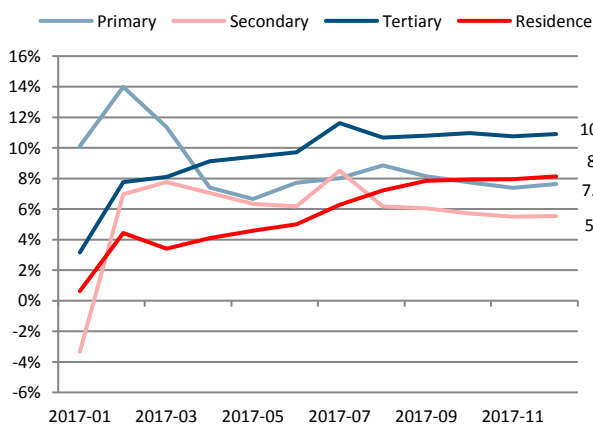
Figure 1: GDP & power consumption (YoY%)


Source: NBS, NEA, CSCI Research

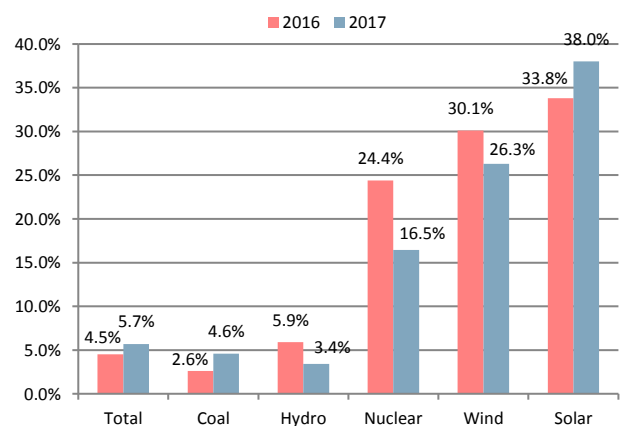
Figure 2: PMI


Source: Wind, CSCI Research

China's PMI stayed well above 51% for the year, suggesting robust development of the manufacturing sector. In line with that, power consumption from the secondary industry grew by 5.5% YoY, speeding up from the 2.9% YoY growth in 2016. In addition, power consumption from other industries also recorded solid growth, with the first industry posting +7.3% growth, the tertiary industry +10.7% and residence +7.8%.

Figure 3: Power consumption by industry (YoY%)


Source: Wind, CSCI Research

Figure 4: Power generation by source (YoY %)


Source: Wind, CSCI Research

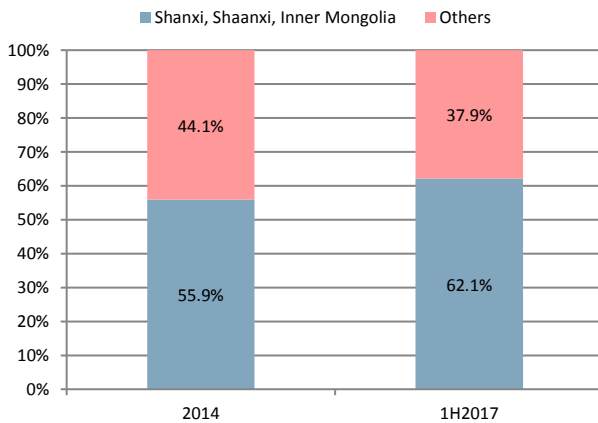
Tepid hydro power paved way for other power sources

Impacted by the water inflow decline, hydro power generation growth declined to 3.4% YoY in 2017 from 5.9% YoY in 2016. Meanwhile, other power sources posted double-digit generation growth rates, with nuclear power, wind power and solar power generation up 16.3%, 26.3% and 38% respectively. Thanks to hydro power's weakness, coal-fired power generation growth sped up to 4.6% YoY in 2017 from 2.6% YoY in 2016. All in all, the share of clean energy (ex. gas) in total power generation has inched up to 32.4% in 2017 from 31.7% in 2016, based on our estimate.

Coal mining capacity becomes more centralised

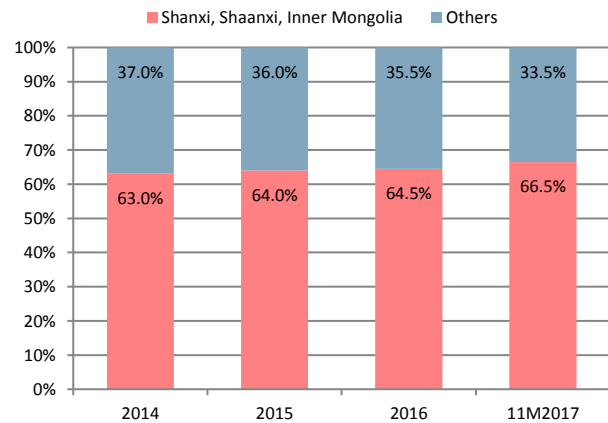
Following the 290mnt coal mining capacity reduction in 2016, the Chinese government has continued to intensify supply-side structural reforms in 2017. According to the NBS press briefing, more than 150mnt of capacity has been reduced by the end of 2017. Following consolidation of the coal industry, coal mining capacity has become centralised in Shanxi, Shaanxi, and Inner Mongolia. As of 30 June 2017, the three provinces' operational mining capacity reached 2,118mtpa, accounting for 62.1% of the total in China, versus 55.9% as of 30 August 2014.

Figure 5: Three provinces' capacity % China's total



Source: NDRC, CSCI Research

Figure 6: Three provinces' output % China's total



Source: Wind, CSCI Research

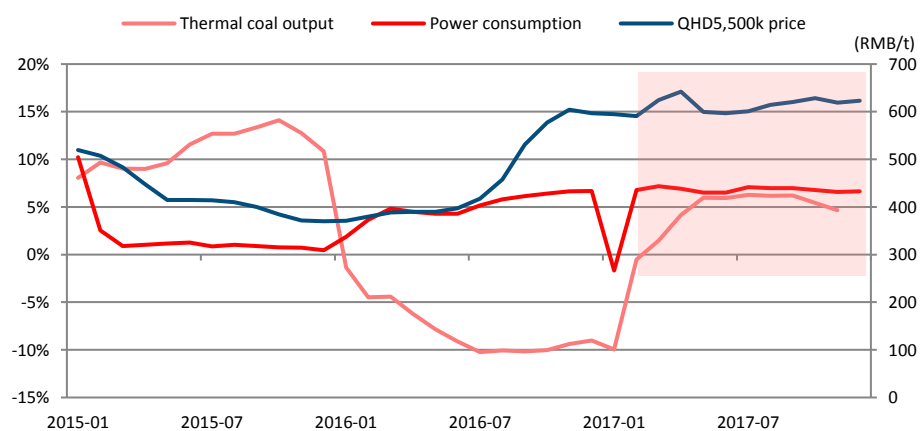
Low single-digit growth of coal supply

China's coal output and imported coal recorded a single-digit growth rate of 3.2% and 6.1% to 3,445mnt and 271mnt in 2017, respectively. In sum, China's total coal supply slightly increased by 3.4% YoY. Though the coal supply achieved a distinguished recovery from -7.6% YoY in 2016, we believe it has lagged slightly behind downstream demand growth, if taking into account that coal-fired power generation has increased by 4.6% YoY over the same period. Particularly, during the peak power consumption season, the imbalance between supply and demand supported the coal price to stay elevated.

In 2017, we think the coal supply moderately lagged behind the downstream demand, which supported the coal price to stay above RMB600/t.

Going forward, we expect the coal price will linger at the existing level, if the coal supply-demand balance is unchanged.

Figure 7: Lagged coal output supported coal price stay above RMB600/t



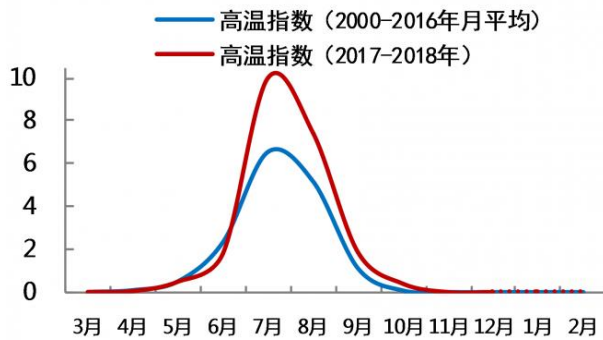
Source: Wind, CSCI Research

Stronger-than-expected coal demand

We believe two events have primarily attributed to the stronger-than-expected coal demand in 2017.

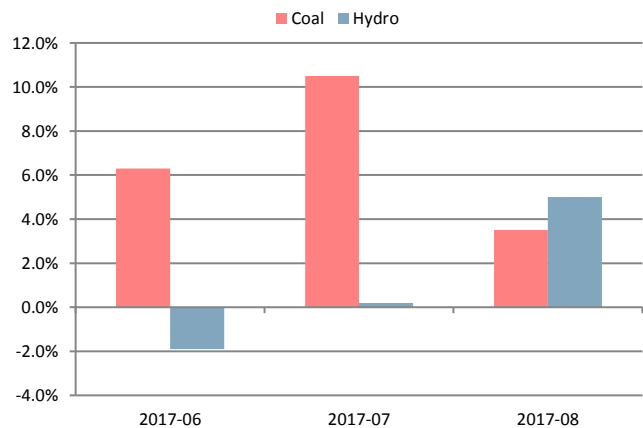
- China's temperature was higher than the average of previous years in June and July 2017, which has sparked record high power consumption. Meanwhile, the water inflow was unexpectedly weaker than usual which has boosted coal-fired power generation to largely increase by 6.3% YoY and 10.5% YoY in June and July, respectively, which in turn drove up the coal price from the annual bottom of RMB565/t on 15 June 2017 back to above RMB615/t on 31 July 2017.

Figure 8: High temperature index



Source: National Climate Center, CSCI Research

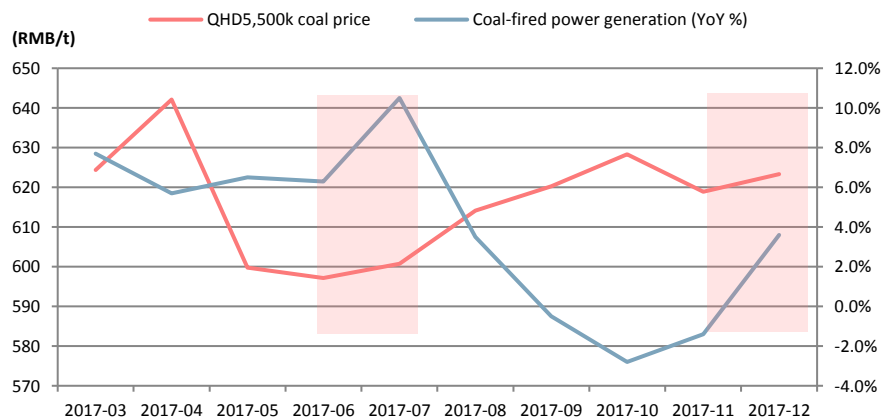
Figure 9: Hydro power vs. coal-fired power growth



Source: Wind, CSCI Research

- On 4 December 2017, the Ministry of Environmental Protection (MEP) released an urgent notice of “comprehensive coordination on non-centralised coal burning operations to guarantee winter heating”. The notice permitted the resumption of coal-heating in some “2+26” cities where coal-to-gas switch projects remained uncompleted. This has subsequently kicked off the coal price uptrend during the winter of 2017/18, with the coal spot price gradually having edged up by RMB10/t to RMB630/t within a short period between 4 and 22 Dec 2017.

Figure 10: Coal price rose on coal-fired power generation getting strong



Source: Wind, CSCI Research

2018 Outlook

Power consumption: Another year of solid growth

Based on the CASS and IMF's recent projections, China's economy will maintain its steady-growth momentum, gaining by c.6.7% in 2018. On such basis, we estimate power consumption will grow c.6.0% YoY, assuming that every kilowatt hour power consumption can generate c.RMB13 in GDP. Moreover, as the pillar of GDP growth, the secondary and tertiary industry will continue to drive social power consumption in 2018, with power consumption in the respective sector estimated to increase by c.4.7% YoY and 10.8% YoY for the year.

Figure 11: China's power consumption to grow at c.6.0% YoY in 2018

| | | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018F |
|--------------------------------|--------------|--------|--------|--------|--------|--------|--------|--------|--------|
| GDP - nominal | | 9.5% | 7.9% | 7.8% | 7.3% | 6.9% | 6.7% | 6.9% | 6.7% |
| Total power consumption | ('00 mn KWh) | 46,941 | 49,619 | 53,225 | 55,223 | 55,485 | 59,180 | 63,120 | 66,883 |
| Primary industry | ('00 mn KWh) | 1,012 | 1,000 | 1,011 | 994 | 1,020 | 1,075 | 1,157 | 1,211 |
| Secondary industry | ('00 mn KWh) | 35,221 | 36,696 | 39,180 | 40,637 | 40,033 | 42,099 | 44,433 | 46,531 |
| Tertiary industry | ('00 mn KWh) | 5,092 | 5,689 | 6,259 | 6,663 | 7,157 | 7,955 | 8,822 | 9,771 |
| Residence | ('00 mn KWh) | 5,615 | 6,233 | 6,775 | 6,929 | 7,275 | 8,052 | 8,707 | 9,369 |
| YoY Growth % | | | | | | | | | |
| Total power consumption | | 11.7% | 5.7% | 7.3% | 3.8% | 0.5% | 6.7% | 6.7% | 6.0% |
| Primary industry | | 3.6% | -1.2% | 1.0% | -1.7% | 2.6% | 5.4% | 7.6% | 4.7% |
| Secondary industry | | 11.9% | 4.2% | 6.8% | 3.7% | -1.5% | 5.2% | 5.5% | 4.7% |
| Tertiary industry | | 13.7% | 11.7% | 10.0% | 6.4% | 7.4% | 11.2% | 10.9% | 10.8% |
| Residence | | 10.1% | 11.0% | 8.7% | 2.3% | 5.0% | 10.7% | 8.1% | 7.6% |
| Structure % | | | | | | | | | |
| Primary industry | | 2.2% | 2.0% | 1.9% | 1.8% | 1.8% | 1.8% | 1.8% | 1.8% |
| Secondary industry | | 75.0% | 74.0% | 73.6% | 73.6% | 72.2% | 71.1% | 70.4% | 69.6% |
| Tertiary industry | | 10.8% | 11.5% | 11.8% | 12.1% | 12.9% | 13.4% | 14.0% | 14.6% |
| Residence | | 12.0% | 12.6% | 12.7% | 12.5% | 13.1% | 13.6% | 13.8% | 14.0% |

Source: NBS, Wind, CSCI estimate

Coal-fired power generation expected to grow moderately

Based on the 13FY Energy Plan target, we estimate that the share of clean energy (excluding gas) will expand to c.33.4% in 2018 from 32.4% in 2017. Accordingly, the share of coal-fired power (including gas) will drop to 66.6% in 2018. Driven by the solid power consumption, we estimate that the coal-fired power generation will record a growth of c.3.5% YoY in 2018, slightly lower than 4.6% YoY in 2017. Thus, we expect the demand for thermal coal from the power sector would remain robust for 2018.

Figure 12: Power generation growth by source

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018F |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| YoY Growth % | 11.2% | 4.7% | 8.8% | 7.7% | -0.6% | 5.2% | 6.2% | 6.0% |
| Coal | 14.7% | -0.7% | 11.3% | 0.4% | -0.6% | 4.4% | 4.9% | 3.5% |
| Hydro | -7.8% | 24.3% | 3.9% | 34.9% | -6.4% | 5.6% | 2.9% | 6.0% |
| Nuclear | 16.9% | 12.8% | 13.6% | 20.4% | 28.7% | 24.4% | 16.4% | 12.4% |
| Wind | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | 26.3% | 17.6% |
| Solar | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | 38.0% | 43.3% |

Source: NBS, Wind, CSCI estimate

Coal industry consolidation intensification

On 19 December 2017, the NDRC has circulated an opinion (“the Opinion”) jointly with 11 other Chinese government entities to conditionally support the mergers, acquisitions and restructuring of China’s coal enterprises. In our view, the Opinion was an upgrade version of the Opinion issued in 2016 and it has indicated that Merger & Acquisition has become an increasing key strategy in speeding up the consolidation of the coal industry as opposed to the method of closing/upgrading low capacity mines adopted in the past two years.

Another 150mnt coal mining capacity likely to be cut in 2018

According to the Opinion, the Chinese government targets to form several large-size coal producers with +100mtpa mining capacity by 2020 through industry consolidation. To achieve this goal, we think the government will strictly carry out its capacity reduction plan and cut another 150mnt of coal mining capacity in 2018, in a bid to attain its target of 800mnt capacity reduction as set out in Energy Plan under the 13th FYP.

Figure 13: China’s coal supply and demand balance

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018F |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Total capacity | | | | | 5,700 | 5,410 | 5,230 | 5,080 |
| Reduction | | | | | | -290 | -180 | -150 |
| Supply | | | | | | | | |
| Output | 3,520 | 3,650 | 3,680 | 3,874 | 3,685 | 3,339 | 3,445 | 3,545 |
| Thermal | 2,766 | 2,918 | 2,823 | 2,776 | 3,027 | 2,754 | 2,874 | 2,960 |
| Coking | 536 | 540 | 570 | 563 | 483 | 436 | 447 | 461 |
| Others | 218 | 192 | 287 | 535 | 175 | 149 | 124 | 124 |
| Import | 222 | 289 | 327 | 291 | 204 | 256 | 271 | 261 |
| Total | 3,742 | 3,939 | 4,007 | 4,165 | 3,889 | 3,594 | 3,717 | 3,806 |
| Demand | | | | | | | | |
| Consumption | 3,430 | 3,577 | 3,618 | 3,533 | 3,653 | 3,635 | 3,686 | 3,831 |
| Thermal | 2,839 | 2,978 | 2,985 | 2,913 | 3,126 | 3,101 | 3,171 | 3,282 |
| Coking | 592 | 598 | 633 | 620 | 528 | 534 | 515 | 549 |
| Export | 15 | 9 | 8 | 6 | 5 | 9 | 8 | 8 |
| Total | 3,445 | 3,586 | 3,626 | 3,539 | 3,659 | 3,644 | 3,695 | 3,839 |
| Balance (S-D) | 297 | 353 | 381 | 626 | 230 | -50 | 22 | -33 |

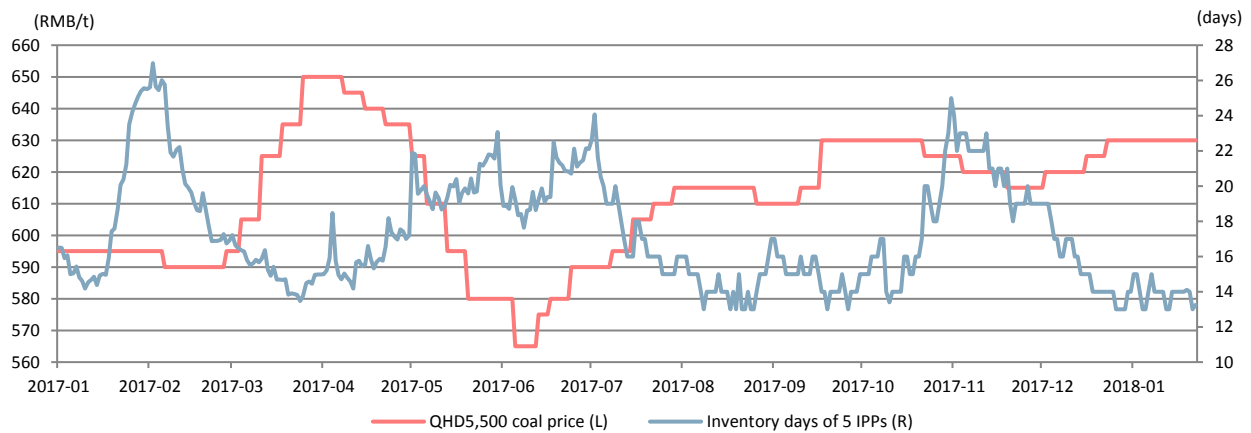
Source: NBS, Wind, CSCI estimate

Tight supply and solid demand continue to support the coal price

Against this backdrop, we estimate coal supply will increase by 2.4% YoY in 2018, almost flat as compared with a 3.4% YoY growth in 2017. In general, we believe the growth rate of coal demand will continue to outpace that of supply in 2018. Meanwhile, coupled with rapid industry consolidation, coal resources have become centralised with the national majority being distributed to the large coal producers such as Shenhua (1088.HK), China Coal (1898.HK), and Yanzhou Coal (1171.HK), which are also state-owned enterprises. Thus, the government’s control of the coal price will become more and more important and effective. On such basis, we forecast the QHD5,500k coal price to remain at the current level going forward, fluctuating between RMB600-630/t in 2018, within the healthy range stipulated by the government.

Coal price movement impacted by policies

Figure 14: QHD5,500 coal price vs. Inventory days of IPP



Source: Wind, CSCI Research

- On 12 January 2018, according to China Coal Transportation and Distribution Association, major coal producers including Shanxi Coking Coal, Lu’an Group and Yangquan Coal Industry (Group) in Shanxi province announced to cut their coal prices by RMB15-20/tonne respectively, in a bid to guarantee coal supply, reduce price fluctuation and relieve pressure faced by power plants amid the extreme winter conditions and the expected production suspension among coal producers.
- On 4 December 2017, the Ministry of Environmental Protection (MEP) released an urgent notice of “comprehensive coordination on non-centralised coal burning operations to guarantee winter heating”. The notice permitted the resumption of coal-heating in some “2+26” cities where coal-to-gas switch projects remained uncompleted. This has subsequently kicked off the coal price uptrend during the winter of 2017/18, with the coal spot price gradually having edged up by RMB10/t to RMB630/t within a short period between 4 and 22 Dec 2017.
- On 28 November 2017, the NDRC issued a notice to the local governments to set up respective permitted reasonable days of coal inventory for coal suppliers and downstream consumers, as well as the related monitoring methods.

Figure 15: NDRC’s permitted days of coal inventories

| Role | BHB Coal price (RMB/t) | Days of inventory | Equivalent volume |
|---------------|------------------------|---|------------------------------------|
| Coal miner | > 570 | <= 3 days | Designed daily production capacity |
| | 500 - 570 | >= 5 days | |
| | < 500 | >= 7 days | |
| Coal refiner | > 570 | >= 3 days of daily trading volume of previous year | |
| | < 570 | <= monthly average trading volume of previous year | |
| Coal consumer | > 570 | <= max. inventory (equivalent to twice of min. inventory) | |
| | < 570 | >= average of the most recent 3 years of inventory | |

Source: NDRC, CSCI Research

- At the coal trading conference held in Qinhuangdao on 21-23 November 2017, a total of c.130mnt/70mnt of thermal/coking coal contracts were reached, up by 27.2% and 28.4% YoY, from 102.2mnt and 54.5mnt in 2016, respectively. The benchmark price for contracted thermal coal remained flat YoY at RMB535/t. Even though, a majority of coal suppliers and power producers have signed off contracted volumes without stipulating prices, which indicates that a discrepancy of the 2018 coal price exists between the sellers and buyers.
- During a monthly press conference on 15 November 2017, the NDRC outlined four measures to be adopted to ensure stable coal supplies and prices to meet heating demand over the winter, including: 1) To enhance the daily monitoring of the balance of coal supply and demand, 2) To raise the effective coal supply, 3) To meet the coal transportation demand in the key ports, and 4) To increase the utilisation of clean energy and to lower the consumption of coal-fired power.
- On 14 November 2017, the NDRC handed out a circular of “urging the signing and fulfilment of mid-/long-term coal supply contracts for 2018”, in order to ensure coal price and supply stability at the coal trading conference held in Qinhuangdao on 21-23 November 2017, where major coal producers signed mid-/long-term contracts with power and steel companies for 2018.
- On 27 October 2017, the NDRC issued a notice to local authorities to conduct regular inspections to monitor activities related to coal trading and at coal ports, and to watch stock levels and price changes for signs of irregularities, such as price manipulation, and also to warn coal producers not to abuse their dominant position in the market to sell coal at unfair prices, and to refrain from speculation, hoarding and bidding up prices as power producers stock up to meet heating demand over the winter.
- On 21 September 2017, the NDRC issued a circular to urge the release of advanced coal mine production, in order to guarantee safe supply of power and energy during the 19th Party Congress in October.
- On 19 July 2017, the State Administration of Coal Mine Safety (SACMS) issued the notice of “Implementation Plan of Coal Mine Safety Inspection”, which stipulated that inspection of coal mines is to be conducted from July to October.
- On 14 April 2017, in an internal meeting hosted by the NDRC with IPPs and coal producers, coal producers expressed their willingness to lower the coal price. As a result, the thermal coal price started to drop post the meeting.
- On 23 March 2017, the Ministry of Environmental Protection (MEP) announced the “Action Plan against Air Pollution in Beijing-Tianjin-Hebei region and surrounding areas” (“the Action Plan”). According to the MEP, 5,600 environmental inspectors were sent to Beijing, Tianjin, and 26 cities (the “2+26 cities”) in the Beijing-Tianjin-Hebei region and nearby areas to check on implementation of pollution control targets and emission standards.
- On 13 January 2017, the NDRC, China Coal Industry Association (CCIA), China Electricity Association (CEC), and China Steel Association (CSA) jointly issued a notice to regulate the coal price by stipulating three different price ranges and their respective responsive action.

Figure 16: Coal price ranges and responsive actions

| Area | Price range (RMB/t) | Responsive action |
|-------|---------------------|-------------------|
| Red | > 600 | Regulate |
| Blue | 570 – 600 | Monitor and guide |
| Green | 500 – 570 | No action |
| Blue | 470 – 500 | Monitor and guide |
| Red | < 470 | Regulate |

Source: CEC, CSCI Research



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Company Rating Definition

The Benchmark: Hong Kong Hang Seng Index; Time Horizon: 12 months

| | |
|-------------|--|
| Buy | 12-month absolute total return: $\geq 10\%$ |
| Hold | 12-month absolute total return: $> -10\%$ but $< 10\%$ |
| Sell | 12-month absolute total return: $\leq -10\%$ |

Disclosure of Interests

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