Global Coal Markets Update – Opportunities for US Coal Exports

Hans Daniels, CEO

Doyle Trading Consultants, LLC

Colorado:
P.O. Box 4390
Grand Junction, CO 81502

New York:
52 Vanderbilt Ave.
11th Floor
New York, NY 10017

www.doyletradingconsultants.com
The Finer Things

Unauthorized reproduction and/or distribution is prohibited. The data, market news, commentary and opinion contained in this publication ("Content") are for informational purposes only. Content is not intended to be used, nor should it be used, as the primary basis for making trading or investment decisions. Specifically, Content should not be considered, either implicitly or explicitly, as a recommendation to buy, sell, hold, or engage in any type of transaction. While we at Doyle Trading Consultants use our best efforts to provide timely and accurate data and market news, we do not guarantee the timeliness, accuracy, reliability or completeness of any such information. We shall not be liable for any errors in Content or delays in the transmission of any Content.

COPYRIGHT© NOTICE

The content of this document is protected by Copyright© to Doyle Trading Consultants, LLC. This report is sold to each client for internal use only within the purchasing company and its affiliates. The distribution of this report, or any portions thereof, outside of the purchasing organization is strictly prohibited except as defined below. We thank you in advance for respecting this copyright and adhering to its principles.

If a client finds it necessary to provide portions of this report to an outside party such as outside legal counsel or another consultant under contract to the client, then a confidentiality statement must be executed by the outside party stating that Doyle Trading Consultants, LLC material will be used only for the client’s project and that all copies, either electronic or on paper, will be returned to the client upon completion of the project. Simultaneously with the release of the information to the outside party, a copy of the executed confidentiality statement must be sent or faxed to:

Doyle Trading Consultants, LLC
P.O. Box 4390 Grand Junction,
Colorado 81502
Fax: 970 256 8933

www.doyletradingconsultants.com
About DTC

Since 2002, DTC has served the needs of the coal and energy industry. More than 1000 industry leaders from over 200 companies subscribe to our services. We give our clients an edge by providing the following:

- **Principal Service**
- **Quarterly Coal Outlook and Price Forecast Report**
- **Utility and Natural Gas Insights Report**
- **Boardroom Presentations**
- **Bespoke Consulting**

Go to [www.doyletradingconsultants.com](http://www.doyletradingconsultants.com) or contact Steve Ristevski at 212.520.2774 for a free one-month trial
The Global and US Coal Markets – a 30,000 foot view

- US exports primarily influenced by domestic demand and international prices

- US demand for power is slowing
  - Annual power growth was as follows:
    - ‘50s: 9.4%, ‘60s: 7.4%, ‘70s: 4.6%, ‘80s: 2.4%, ‘90s: 2.2%, ’00s: 1.1%, ‘10s: -0.4%
  - Renewables and natgas taking market share

- International thermal and coking coal prices currently very strong
  - Coking coal prices very volatile, dependent on outside factors
  - Thermal coal prices very high, but backwardated

- US exports play increasingly significant role
  - Asia is growth market
    - Long haul distance
    - CC quality does not fit as well as with Europe
  - Europe is natural partner for US
Exports have played an important role for the U.S. coal industry—although that has changed through time

- That role has become more influential for some regions
- Export price influences domestic prices more in regions where exports are a larger share of the market
- Makes life difficult because the variables affecting this market are greater than the domestic market
- Highlights risks for producers and transporters

Source: U.S. Census and DTC Research (2017 represents DTC’s forecast as of September)
Despite being in shadow of coking coal, thermal coal prices have had a nice run

Prompt month prices are as follows:

- API2 (coal delivered into Northern Europe) - $93.35/MT
- NEWC - $96.45/MT
- PRB 8800 - $11.35/ton
- NYMEX - $57.50/ton

NEWC at $80/MT still is profitable for exports
Forward Prices Heavily Backwardated

- API2 and Newcastle curves backwardated for last 14 months
- Spread was $10/MT in March, but has steadily increased to ~$16/MT
- Backwardated strip is good news for coal producers who otherwise would overproduce and destroy price rally
  - Capital is kept at bay
- Lack of capex will hinder new production
  - Wall St favors dividends, buybacks, but does not reward growth
  - High grading, maintenance, labor
Atlantic Basin Netbacks – U.S. ‘In the Money’
Pacific Basin Netbacks – U.S. ‘In the Money’

Sources: DTC Research, Evolution Markets, FIS, CME, GlobalCoal, IHS, Lloyd’s List, Tullett Prebon, Coaldesk, AxsMarine, SSY, China Coal Resource
Utility demand expected to remain flat

Exports are primary growth driver for US coal demand

- CC exports expected to rise 11 mm tons to 52 mm tons in 2017
- Thermal exports expected to rise 17 mm tons to 36 mm tons in 2017
- Thermal exports do not include Signal Peak

US Coal Supply and Demand

<table>
<thead>
<tr>
<th>Supply (million short tons)</th>
<th>2013 Actual</th>
<th>2014 Actual</th>
<th>2015 Actual</th>
<th>2016 Actual</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central App</td>
<td>127.1</td>
<td>116.4</td>
<td>90.0</td>
<td>66.7</td>
<td>77</td>
<td>76</td>
</tr>
<tr>
<td>Colorado/Utah</td>
<td>41.2</td>
<td>41.9</td>
<td>33.3</td>
<td>26.4</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Illinois Basin</td>
<td>132.2</td>
<td>137.2</td>
<td>123.8</td>
<td>98.4</td>
<td>106</td>
<td>104</td>
</tr>
<tr>
<td>Northern App</td>
<td>122.5</td>
<td>133.0</td>
<td>115.8</td>
<td>101.9</td>
<td>109</td>
<td>109</td>
</tr>
<tr>
<td>Powder River (WY, MT)</td>
<td>430.2</td>
<td>440.2</td>
<td>417.6</td>
<td>329.8</td>
<td>354</td>
<td>356</td>
</tr>
<tr>
<td>Other Regions</td>
<td>131.6</td>
<td>131.3</td>
<td>116.4</td>
<td>105.0</td>
<td>102</td>
<td>98</td>
</tr>
<tr>
<td><strong>Total US Production</strong></td>
<td><strong>984.8</strong></td>
<td><strong>1,000.0</strong></td>
<td><strong>897.0</strong></td>
<td><strong>728.2</strong></td>
<td><strong>778</strong></td>
<td><strong>772</strong></td>
</tr>
<tr>
<td>Waste Coal</td>
<td>11.3</td>
<td>12.1</td>
<td>9.9</td>
<td>8.7</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Imports</td>
<td>8.9</td>
<td>11.3</td>
<td>11.3</td>
<td>9.8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td><strong>1,005.0</strong></td>
<td><strong>1,023.5</strong></td>
<td><strong>918.2</strong></td>
<td><strong>746.7</strong></td>
<td><strong>795</strong></td>
<td><strong>788</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demand (million short tons)</th>
<th>2013 Actual</th>
<th>2014 Actual</th>
<th>2015 Actual</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>858.0</td>
<td>851.6</td>
<td>738.4</td>
<td>677.3</td>
<td>680.0</td>
<td>674.0</td>
</tr>
<tr>
<td>Coking Coal-Domestic</td>
<td>21.5</td>
<td>21.3</td>
<td>19.7</td>
<td>16.5</td>
<td>18.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Industrial</td>
<td>43.1</td>
<td>42.9</td>
<td>38.5</td>
<td>34.6</td>
<td>34.0</td>
<td>33.0</td>
</tr>
<tr>
<td>Residential/Comm.</td>
<td>2.0</td>
<td>1.9</td>
<td>1.5</td>
<td>1.2</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Exports/CC</td>
<td>65.7</td>
<td>60.1</td>
<td>46.4</td>
<td>40.8</td>
<td>52.0</td>
<td>48.0</td>
</tr>
<tr>
<td>Exports/Steam</td>
<td>52.0</td>
<td>37.2</td>
<td>27.6</td>
<td>19.0</td>
<td>36.0</td>
<td>33.0</td>
</tr>
<tr>
<td><strong>Total Exports</strong></td>
<td><strong>117.7</strong></td>
<td><strong>97.3</strong></td>
<td><strong>74.0</strong></td>
<td><strong>59.8</strong></td>
<td><strong>88.0</strong></td>
<td><strong>81.0</strong></td>
</tr>
<tr>
<td><strong>Total Demand</strong></td>
<td><strong>1,042.1</strong></td>
<td><strong>1,015.0</strong></td>
<td><strong>872.1</strong></td>
<td><strong>789.3</strong></td>
<td><strong>821.0</strong></td>
<td><strong>808.0</strong></td>
</tr>
</tbody>
</table>

Source: DTC Monthly Update
Exports to Europe have always been reliable due to geography and quality
- Nearly half of US thermal exports were to Europe

Exports to Asia are important for western thermal (PRB and Rocky Mountain coal) and met
- West Coast exports, important for thermal, is limited by port access
US Coking Coal Exports by Destination

- Natural market: Europe
  - Transportation advantage
  - Quality fit with blast furnaces
  - Stable to declining market with few growth prospects
- Growth market: Asia
Europe

- Key importer of US coal
- Weak growth forecast
- EU stocking up ahead of winter season
- SCOTA favors higher CV coal
  - Opportunity for ILB coal, but high sulfur must be blended to meet standards
  - Blending can be done at export terminal, receiving terminal or at plant
  - Approx. 2 tons of low sulfur Russian coal blended with 1 ton of ILB yields product that works in European boilers
  - High sulfur ILB coal faces penalty of approx. $15-$20/ton compared to API2 price
- Ukraine production down 9% to 23.6 mm MT in 2017
  - 0.7 mm MT will be imported from US
  - 99% of thermal and 80% of cc currently imported from Russia
- Long-standing relationships between US and Europe
- High-vol coal in demand in Europe
- Australia making inroads into Europe
It’s all about China

- China consumes well over half of world’s coking coal
- Produces almost all of its domestic demand
- Imports make up gap between domestic production and consumption
  - Imports make up <10% of Chinese demand, but account for roughly 20% of global trade
China is a net importer of coking coal equivalent

- Through July, YTD net CCE is 6.5 mm MT
  - Last year through July, YD net CCE was -16.6 mm MT
  - Over a 23 mm MT turnaround from last year
  - YTD coke exports through August were 5.3 mm MT versus 6.8 mm MT YoY
- Shift to net exporter began in 2014, then reversed in 2017
- Beijing is pushing to reduce excess capacity in steel and coal

Net CCE = Coking Coal Imports – Steel Exports Equiv – Coke Exports Equiv
India

- Coal India Limited (CIL) production down 6% YTD
- Power station stocks average seven days of burn – lowest level in 3 years
- Thermal coal imports down 15% to 84 mm MT through July
  - Monsoon and high prices kept foreign coal out
  - Private generators awaiting drop in price due to fixed tariffs on power purchase agreements
  - Gov’t-owned plants told to not take imports

- Top 3 CC importer
- Domestic transportation constraints
- Approaching rapid steel growth phase
- 60% of steel production with EAF
Largest supplier of thermal coal
  Mostly to China and India
Official target is 413 mm MT
  Heavy rains all year
  1H17 production annualizes to 420 mm MT
  Second consecutive year of declining production looming
Domestic Market Obligation (DMO)
  121 mm MT in 2017
  240 mm MT in 2024
35 GW of new capacity coming online
Rising domestic coal demand will reduce coal available for export
  366 mm MT exported in 2016
  160 mm MT forecasted to export in 2024

<table>
<thead>
<tr>
<th>Year</th>
<th>Target</th>
<th>Actual</th>
<th>Export</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>407</td>
<td>412</td>
<td>345</td>
<td>67</td>
</tr>
<tr>
<td>2013</td>
<td>431</td>
<td>474</td>
<td>402</td>
<td>72</td>
</tr>
<tr>
<td>2014</td>
<td>421</td>
<td>458</td>
<td>382</td>
<td>76</td>
</tr>
<tr>
<td>2015</td>
<td>425</td>
<td>461</td>
<td>375</td>
<td>86</td>
</tr>
<tr>
<td>2016</td>
<td>419</td>
<td>455</td>
<td>366</td>
<td>89</td>
</tr>
</tbody>
</table>
Colombia

- Increasing shipments to Asia and away from Europe/Atlantic Basin
  - Diverting SCOTA-quality shipments away from Europe
  - May exports to Asia approached 1 mm MT after zero exports to Asia in Feb
- Heavy rains earlier this year hampered output
- Mines are dealing with lower-grade seams
- Currently exporting about 3.5 mm MT to Europe each month
  - Down 40% from earlier in the year
Australia

- Responsible for 189 mm MT of seaborne cc exports
  - 65% of world seaborne cc trade
- Cyclone Debbie knocked out ~13.3 mm tons of production along Aurizon rail network
  - Queensland is closing Debbie losses at rate of ~1.3 mm MT/month
  - If rate holds, Debbie will have taken out ~6.5 mm MT of cc from seaborne market
- Labor issues at six Glencore mines
- Strong AUS dollar hurts producers
Mongolia

- Significantly ramped up production this year
- CC exports annualize to 10.8 mm MT
- Only customer is China
- Mind-boggling traffic jams of coal trucks waiting to deliver coal to China
  - 120-150 km-long traffic jams at the border

Chinese Coking Coal Imports from Mongolia by Month

Source: China Coal Weekly
Summary

- Strong international demand, but weak domestic demand for cc and thermal
  - Asia continues to show demand strength with declining exports from key producers
    - Lack of western US terminal capacity hurts western producers
  - European demand is relatively weak, but is natural consumer for US coal
    - High sulfur blended with low sulfur

- Weak capital investment in new production
  - Wall St favors US dividends and buybacks, but does not reward growth
  - Reduced CAPEX – equipment, high grading, maintenance, labor
  - New mine development – limited at this time
  - Current ownership more focused on returns and providing value to shareholders

- Backwardated price curve

- Increased volume volatility will be difficult for production/transportation chain to absorb

Go to [www.doyletradingconsultants.com](http://www.doyletradingconsultants.com) or contact Steve Ristevski at 212.520.2774 for a free one-month trial