

Strong outlook for Poland's new coking coal mines

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Investor confidence in Poland's coal mining industry is on the up again due to strong international prices for coking coal and strong steel demand.

There are three high quality coking coal projects under development in Poland, which will diversify supply portfolios for European steel producers and reduce imports from Australia and the United States.

Two met coal juniors Prairie Mining and Balamara Resources are at the forefront of developing new coking coal mines to supply regional steel markets.

Prairie Mining is developing two mines – the Debiensko and Jan Karski. Debiensko is being lined-up as a premium hard coking coal project and is development ready. A drilling program has already been initiated and selected seams from the Debiensko mine indicate that two hard coking coal specifications are viable, both lie within the range of international accepted benchmark coals. The mid-vol specs have an FSI of 8.5 and CSR of about 63% (comparable with Goonyella from Queensland) and has the potential to produce up to 4.02.6 mt/yr (run-of-mine) saleable hard coking coal) from 2022. It is located in the upper Silesian coal basin.

The Jan Karski prospect is listed by Prairie as a high value semi-soft coking coal asset, with the latest drilling and washability results indicating a product ash content of about 3.00% and a CSR of 51.50%. The ultra-low ash content makes it ideal for blending with hard coking coal and gives it a high value-in-use price premium of 10% above other premium Hunter Valley, Australian semi-soft coals. The low ash is more environmentally friendly, especially attractive in a tough EU regulatory environment for coal producers.

Prairie also has a huge logistic advantage compared to imported coking coal from the US and Australia. Delivered costs to the nearest steel plant and coke ovens are estimated at \$4.6/t, compared to a cost of \$37.70/t for imported coal. The two mines are next to existing seams mines that are being worked by listed Polish coal producers JSW and Bogdanka, so power, water and rail infrastructure is already in place.

IHS coal marker prices

Coking coal daily	Basis	09-Nov	Change
Australian prime hard coking coal	FOB	179.75	1.60
N. China prime hard coking coal	CFR	184.60	n/c
Australian hard coking coal	FOB	150.85	1.40
North China hard coking coal	CFR	162.20	-2.20
Coking coal weekly	Basis	03-Nov	Change
US low-vol	FOB	163.00	(0.50)
US high-vol 'B'	FOB	116.50	1.50
ULV PCI	FOB	115.50	0.50
Semi-soft coking	FOB	108.00	(4.00)
Coke Rizhao	FOB	315.00	n/c
ARA coke	CIF	285.00	3.00
Petcoke weekly	Basis	03-Nov	Change
US Gulf, Venezuela mid-sulphur	FOB	84.00	1.00
US Gulf, Venezuela high-sulphur	FOB	73.00	1.00
Steam coal weekly	Basis	03-Nov	Change
NEX	FOB	100.45	1.64

Source: IHS

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Freight rates

Coking coal	China	ARA	Japan	Taiwan
Queensland C	9.75	14.20	9.70	--
Queensland P	10.80	16.05	--	--
US east coast C	--	11.05	--	--
US east coast P	26.65	11.15	--	--
Canada C	11.50	--	12.20	13.90
Canada P	12.64	19.55	--	--

Note: All prices weekly apart from US east coast routes to ARA, which are assessed daily

Source: SSY, Clarksons

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Global coking coal trade (million tonnes)

Key exporters	Jul-17	Jun-17	CY 17	Jul-16
Australia	14.47	15.72	95.17	14.35
US (excl. Canada)	3.83	3.88	27.07	2.20
Canada	2.48	2.43	15.92	2.71
Key importers	Jul-17	Jun-17	CY 17	Jul-16
China	5.58	5.79	41.58	4.46
Japan	3.41	3.94	24.25	3.80
Korea	2.04	2.47	14.46	1.99

Source: Customs authorities

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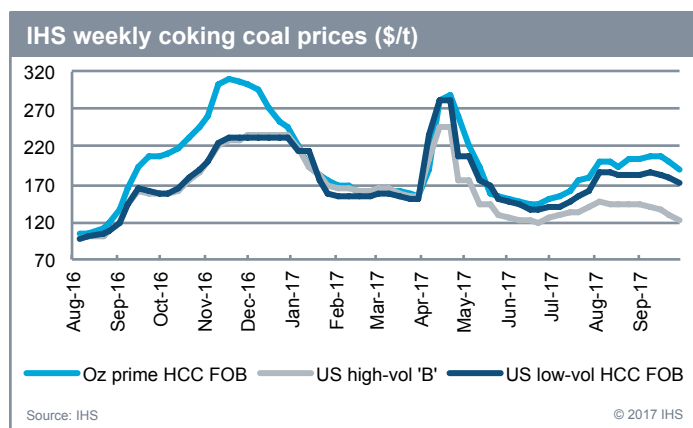
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Despite the early stages of the two projects, Prairie is already in discussions with local steel makers and coke producers for offtake agreements. Prairie estimates that Europe's steel industry consumes 47.75 mt/yr of hard coking coal (PCI, hard and semi-soft), of which 85% is imported mainly from Australia and the US.

Central European countries consume about 25mt-30 mt/yr of coking coal. Poland's production has been declining in recent years and qualities have not met specifications. This has forced some steel producers to import coking coal from Canada for blending with domestic material. Yesterday, ArcelorMittal reported a supply disruption at two of its Polish coking plants in Krakow and Zdzeszowice. JSW's Zofiówka coking coal mine supplies the two plants, but deliveries have been reduced, due to a shortage of rail wagons.

ArcelorMittal said it has been forced to change its coal mix. Zdzeszowice is one of the biggest coke plants in Europe, with a production capacity of about 4.40 mt/yr. The Krakow-based plant has a coke-making capacity of 0.70 mt/yr, according to a trading source.

ArcelorMittal's contract with JSW expires at the end of the year.

Other regional steel makers in Germany, the Czech Republic and Austria also need security of supply of high spec coking coal, which the existing mines are having problems producing.

Meanwhile, ASX-listed Balamara Resources is also developing a major coking coal asset – Nowa Ruda in the lower Silesian coal basin. Early indications are showing that the mine can produce material with a CSR of about 69%, which is comparable to premium Australian coking coal. Annual production is expected to be about 1.50 mt/y and is slated for production in 2019. There are five steel plants within 150 km of the coking coal mine, and talks have already taken place with regional steel-makers to take the coal. There are also plans to upgrade Gdansk port to load Baby Capes. At the moment it is limited to Panamax vessels.

Fundamentals for steel and coking coal in Europe are strong going forward. Coking coal is on the list of critical raw materials listed by the European Commission. Poland is also coal friendly, and has a well-trained mining workforce.

Elsewhere in Europe, Prairie also notes that growing demand for ultra-low emission vehicles is expected to drive growth in steel supply to the regional car industry. Almost 0.5 tonnes of coking coal are required to produce the structural, electrical and plated steel for each electric car. In the UK, infrastructure projects including the High Speed 2 Rail Line and the

construction of the Hinkley Point C Nuclear Power Station are expected to use over 3 million tonnes of steel.

Prairie Mining and Balamara Resources are still in the early stages of development, but they are ideally positioned to supply coking coal to meet Europe's steel demand going forward.

Briefs

Australian coal shipments down 4% in October

Coal shipments from Australian export terminals were down 4% year on year in October as a result of continuing low shipments out of Port Kembla, maintenance at Hay Point and weak shipments out of Port Waratah Coal Services terminal at Newcastle.

Total shipments reached 29.97 mt in October, compared with 31.17 mt in October 2016.

A total of 309.62 mt of coal was shipped from Australia in January-October, down 5% on the year or 14.61 mt.

The majority of the fall resulted from the impact Cyclone Debbie had on the Queensland logistics chain in late March.

Shipments out of Queensland over January-October were down 5% or 8.65 mt to 173.43 mt from 182.08 mt previously, but a 4.65 mt improvement from being 13.30 mt lower at the end of May, when the largest on year loss was recorded.

Coal shipments out of Dalrymple Bay and Gladstone remained strong in October, while shipments out of Hay Point fell as a result of a full month maintenance shutdown of Berth 1.

Meanwhile, losses out of New South Wales continued to mount in October with total shipments from the state in January-October falling 4% or 5.96 mt year on year to 136.19 mt from 142.15 mt.

In January-October this year, combined shipments from Newcastle terminals fell 2% to 131.22 mt from 133.31 mt. However, this entire decline occurred in September-October, with terminal data showing shipments in January-August increased by 0.61 mt year on year.

Meanwhile, shipments out of Port Kembla remained low in October as a result of the numerous temporary suspensions of mining at the Appin Colliery at South32's Illawarra Coal Complex because of elevated methane levels.

The Appin Colliery reopened in late September, and market participants had been expecting a return to normal volumes being shipped out of Port Kembla, however logistics sources say there are still very few vessels scheduled to arrive at the terminal before the end of the year.

Briefs (continued)

China's steel exports fall

Chinese steel exports fell 3.0% month on month and 35% year on year to 4.89 mt in October, the first time exports have been under 5.0 mt since March 2014.

Exports in January-October totalled 64.49 mt, dropping 30% from the same period last year.

Steel imports in October fell to 0.95 mt, from 1.24 mt the previous month, and were 12% lower than a year earlier, while

January-October imports totalled 10.96 mt, rising less than 1% year-on-year.

Iron ore imports were also lower in October at 79.49 mt, the lowest since

February 2016 and down sharply from the record high of 102.83 mt in September, and slipping 2% year-on-year. Imports in January-October totalled 896.23 mt, climbing 6% from the corresponding period of last year.



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Quarterly metallurgical coal benchmark price history

Coking coal	HCC (\$/t)	+/- % on previous quarter	ULV PCI (\$/t)	+/- % on previous quarter	PCI/HCC relativity %	Semi-soft (\$/t)	+/- % on previous quarter	SS/HCC relativity %
Apr-Jun 2010	200.00	n/a	170.00	n/a	85.00%	167.00	n/a	83.50%
Jul-Sep 2010	225.00	12.50%	180.00	5.88%	80.00%	*171.00	2.40%	76.00%
Oct-Dec 2010	209.00	-7.11%	*149.00	-17.22%	71.29%	143.00	-16.37%	68.42%
Jan-Mar 2011	225.00	7.66%	180.00	20.81%	80.00%	181.25	26.75%	80.56%
Apr-Jun 2011	*330.00	46.67%	*275.00	52.78%	83.33%	*259.00	42.90%	78.48%
Jul-Sep 2011	315.00	-4.55%	230.00	-16.36%	73.02%	212.00	-18.15%	67.30%
Oct-Dec 2011	285.00	-9.52%	208.00	-9.57%	72.98%	*182.00	-14.15%	63.86%
Jan-Mar 2012	235.00	-17.54%	171.00	-17.79%	72.77%	179.00	-1.65%	76.17%
Apr-Jun 2012	210.00	-10.64%	153.30	-10.35%	73.00%	147.00	-17.88%	70.00%
Jul-Sep 2012	225.00	7.14%	162.00	5.68%	72.00%	147.00	0.00%	65.33%
Oct-Dec 2012	170.00	-24.44%	125.00	-22.84%	73.53%	117.00	-20.41%	68.82%
Jan-Mar 2013	165.00	-2.94%	124.00	-0.80%	75.15%	117.00	0.00%	70.91%
Apr-Jun 2013	172.00	4.24%	141.00	13.71%	81.98%	121.00	3.42%	70.35%
Jul-Sep 2013	145.00	-15.70%	116.00	-17.73%	80.00%	105.00	-13.22%	72.41%
Oct-Dec 2013	152.00	4.83%	121.00	4.31%	79.61%	105.50	0.48%	69.41%
Jan-Mar 2014	143.00	-5.92%	116.00	-4.13%	81.10%	103.50	-1.90%	72.40%
Apr-Jun 2014	120.00	-16.08%	100.00	-13.79%	83.33%	90.00	-13.04%	75.00%
Jul-Sep 2014	120.00	n/a	100.00	n/a	83.33%	89.00	-1.11%	74.17%
Oct-Dec 2014	119.00	-0.83%	99.00	-1.01%	83.19%	87.00	-2.25%	73.11%
Jan-Mar 2015	117.00	-1.68%	99.00	n/a	84.62%	86.00	-1.15%	73.50%
Apr-Jun 2015	109.50	-6.41%	92.50	-6.57%	84.47%	81.00	-5.81%	73.97%
Jul-Sep 2015	93.00	-15.7%	73.00	-21.08%	78.49%	74.00	-8.64%	79.57%
Oct-Dec 2015	89.00	-4.3%	71.00	-2.74%	79.78%	71.00	-4.05%	79.78%
Jan-Mar 2016	81.00	-8.99%	69.00	-2.82%	85.19%	66.00	-7.04%	81.48%
Apr-Jun 2016	84.00	3.70%	73.00	5.80%	86.90%	70.00	6.06%	83.33%
Jul-Sep 2016	92.50	10.10%	75.00	2.70%	81.10%	74.00	5.70%	80.00%
Oct-Dec 2016	200.00	116.22%	133.00	77.33%	66.50%	130.00	75.68%	65.00%
Jan-Mar 2017	285.00	42.50%	180.00	35.34%	63.16%	171.00	31.54%	60.00%
Apr-Jun 2017	193.50	-32.11%	135.00	-25.00%	69.00%	126.00	-26.32%	65.12%
Jul-Sep 2017	170.35	-11.96%	127.50	-5.56%	74.85%	120.00	-4.76%	70.44%

* = average of a range

Source: IHS Energy

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IHS coking coal index specifications

	Total moisture (%) max	Ash % max	Sulphur % max	CSR min	CSN min	Rank	Fluidity (ddpm)	Vols %	c.v	Phosphorus %
Australian prime hard FOB	10	10.5	0.7	67	7	1.15-1.55	100-plus	26 max	--	
North China prime hard CFR	10	10.5	0.7	67	7	1.15-1.55	100-plus	26 max	--	
Australian hard coking coal FOB	--	7.5 – 10.5	0.4 – 1	58-66	--	--	--	20-28	--	0.02-0.08
North China hard coking coal CFR	--	7.5 – 10.5	0.4 – 1	58-66	--	--	--	20-28	--	0.02-0.08
US high-vol 'B' FOB	--	9	1	--	7-9	--	15,000	32-34	--	
US low-vol FOB	--	9	1.2	--	7-9	--	--	16.5-21	--	
Australian ULV PCI FOB	--	10	0.8	--	--	--	--	12-21	6,900-7,750 GAD	

Source: IHS Energy

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IHS coke index specifications

	Ash %	Sulphur % max	M40 min	CSR
Coke FOB Rizhao	12	0.6	80	60>
Coke CIF ARA	12.5	0.6	80	60>

The methodology is available on IHS.com

Source: IHS Energy

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IHS petcoke index specifications

	Sulphur %	Calorific value	Typical HGI	CSR
US Gulf, Ven. mid-sulphur FOB	4-5.5%	7,500kc NAR	45-50	60>
US Gulf, Ven. high-sulphur FOB	5.5-7%	7,500kc NAR	45-50	60>

Source: IHS Energy

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