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SAMPLE

SOUTH AFRICAN INLAND, EXPORT COAL MARKET, AND PRICE REVIEW

ANONYMYSED

TABLE OF CONTENTS

DISCLAIMER

In the preparation of this report, XMP/CJLC has relied on information related to mining methods and prospects sourced from the various mines involved. Wherever possible, it has been verified that the information is correct.

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FORWARD LOOKING STATEMENT

Aspects of the report comprise forecast statements regarding the operations, economic performance or financial condition of mines, including the economic outlook of the mining industry, expectations regarding prices, exchange rates, production, mining costs and other operational issues, growth prospects and outlook of collieries, the implementation and launch of operations of specific projects, their capital resources and expenditure, and outcomes of any pending litigation or trial proceedings.

Although we believe that the expectations in such statements are reasonable, no assurance can be given that they are totally correct. Accordingly, outcomes may differ from those set out in the report because of, among other factors, changes in economic market conditions, the regulatory environment and other government-related issues, success of business and operating initiatives, fluctuations in commodity prices and exchange rates, and business and potential risk management.

SCOPE OF WORK

This South African inland coal market review has the purpose of assessing the existing coal inland market, and the prices and qualities their mines could produce for this market.

For the purposes of this report the washed coal quality requirements of customers in these regions are:

Calorific Value	>25,5MJ/kg
Ash	<15%
Volatiles	>23%
Sulphur	<0,7%
Inherent Moisture	<5%

Delivered price for most customers would be calculated on a R/GJ/t basis, however some may insist on a FOT or FOR basis at source. Wherever possible, the coal price, delivered price and mode of delivery are reflected separately.

The recommended sizing of production from mines, used for the purposes of this report is as follows:

Spiral	0mm x 2mm
Duff	0mm x 10mm
Peas	10mm x 30 mm
Small Nuts	30mm x 50mm

Based on current market conditions, cognisance must be taken of the pre-COVID-19, current, and post-COVID-19 timeframes and their impact on the inland coal market and prices.

The scope of work includes the following topics:

- → Prices just before the lockdown in April 2020 and during 2021
- → A brief (less detailed than in the 2018 report) appraisal of the effects of the lockdown on the inland SA prices
- → An estimation of where prices will be, after the current lack of demand/decrease in prices caused by the lockdown
- → Shortfall in terms of supply versus demand and potential increases in prices beyond 2021 (“The Coal Cliff”)

The table below shows the ADB (Air Dry Basis) specifications and associated qualities used for reference in this report and expected by the inland market.

Coal specifications	Unit	Lower Ash A Grade		Lower Ash B Grade		Higher Ash C Grade		Higher Ash D Grade		Higher Ash Minus D Grade		High Ash	
AD Basis		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Calorific Value	MJ/kg	27.50	28.50	26.50	27.50	25.50	26.50	24.50	25.50	21.50	22.50	16.00	21.5
Volatile Matter	%	23.00	30.00	21.00	24.00	21.00	24.00	21.00	24.00	20.00	23.00	19.00	23.00
Ash content	%	12.00	15.00	14.00	18.00	17.00	22.00	18.00	30.00	20.00	35.00	22.00	35.00
Inherent Moisture	%	2.80	4.00	3.00	5.00	4.00	6.00	3.50	6.00	3.00	6.00	3.00	6.00
Total Sulphur	%	0.40	1.00	0.60	1.00	0.80	1.20	1.00	1.30	1.00	1.30	1.40	2.50
Fixed Carbon	%	61.20	50.00	61.00	52.00	57.00	47.00	56.50	39.00	56.00	35.00	55.00	35.00
Total Moisture	%	10.00	12.00	10.00	12.00	10.00	12.00	10.00	12.00	10.00	12.00	10.00	12.00
AR Basis	Ratio	0.9259	0.9167	0.9278	0.9263	0.9375	0.9362	0.9326	0.9362	0.9278	0.9362	0.9278	0.9362
Calorific Value	MJ/kg	25.46	26.13	24.59	25.47	23.91	24.81	22.85	23.87	19.95	21.06	14.85	20.13
Volatile Matter	%	21.30	27.50	19.48	22.23	19.69	22.47	19.59	22.47	18.56	21.53	17.63	21.53
Ash content	%	11.11	13.75	12.99	16.67	15.94	20.60	16.79	28.09	18.56	32.77	20.41	32.77
Inherent Moisture	%	2.80	4.00	3.00	5.00	4.00	6.00	3.50	6.00	3.00	6.00	3.00	6.00
Total Sulphur	%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fixed Carbon	%	56.67	45.83	56.60	48.17	53.44	44.00	52.69	36.51	51.96	32.77	51.03	32.77

SA inland coal production is set in size fractions. For the purposes of this report, inland coal has been grade-categorised as per the above table, using the following sizings.

Slurry	-0.5mm
Spiral	-2mm
Duff Coal	0mm x 12mm
Pea Coal	6mm x 25mm
Small Nut	25mm x 50mm
Large Nut	50mm x 80mm
Unsized	0mm x 50mm

OVERVIEW OF SOUTH AFRICAN COAL PRICES

PRE-COVID-19

Pre-2009 sized-coal prices in SA continued to rise at an average of 10% per annum, based on a biannual increase set to the market (March and October) by the inland coal suppliers. During the period 2009 to 2011, inland coal prices increased by an average of 20% per annum.

During the period 2011 to 2020, inland coal prices rose by an average of 8% per annum with a 10% increase during 2019, based on the rise of the export price to new levels in January 2019, i.e., US$100/t for RB1 at RBCT.

The following table indicates the average annual prices of inland coal and exports up to mid-2021:

IHS ANNUAL AVERAGE THERMAL PRICE (US$/t)					
Year	High CV US$ basis 6,000kcal/kg NAR FOB	Average A Grade Duff Price	Average B/C Grade Duff Price	Average A Grade Pea S/N Price	Average B/C Grade Pea S/N Price
	FOB RBCT	FOT	FOT	FOT	FOT
2006	$50.85	R333	R314	R351	R340
2007	$62.77	R333	R314	R384	R340
2008	$120.65	R597	R536	R788	R775
2009	$64.42	R607	R586	R713	R600
2010	$91.61	R533	R466	R574	R500
2011	$116.31	R540	R504	R600	R600
2012	$93.06	R570	R525	R640	R640
2013	$80.35	R570	R525	R652	R652
2014	$72.33	R570	R525	R652	R652
2015	$57.18	R562	R525	R695	R640
2016	$64.36	R687	R675	R820	R770
2017	$84.35	R837	R823	R1 246	R1 190
2018	$98.05	R930	R883	R1 219	R1 175
2019	$71.56	R1 018	R992	R1 259	R1 225
2020	$65.26	R850	R650	R1 100	R950

Q4 2021 FOB RBCT Forecast $158/t

IHS Markit

During 2019, prices in the inland market steadied and then began to reduce slightly as the pressure from export prices, plummeting to US$60/t FOB during middle to late 2019, began to make an impact, and larger exporters began to swing tonnages to the local market to increase revenue.

This table indicates export and inland prices since 2006 and average and Rand US$ exchange rate:

Average thermal coal prices	High CV - US$ basis 6,000kcal NAR		R/US$ Exchange Rate	High CV - R basis 6,000kcal/kg NAR		A Grade Duff	A Grade Pea S/N	B/C Grade Duff	B/C Grade Pea S/N
US$ per metric ton	Richards Bay	Maputo		Richards Bay	Maputo				
	FOB	FOB		FOB	FOB	FOT	FOT	FOT	FOT
2006	$50,85	$48,91	6,26	R318	R306	R333	R351	R314	R340
2007	$62,77	$61,55	7,39	R464	R455	R333	R384	R314	R340
2008	$120,65	$119,23	7,99	R964	R953	R597	R788	R536	R775
2009	$64,42	$61,08	10,32	R665	R630	R607	R713	R586	R600
2010	$91,61	$89,40	7,46	R683	R667	R533	R574	R466	R500
2011	$116,31	$114,12	6,91	R804	R789	R540	R596	R504	R600
2012	$93,06	$91,30	7,59	R706	R693	R570	R612	R525	R640
2013	$80,35	$78,22	9,11	R732	R713	R570	R667	R525	R652
2014	$72,33	$70,33	10,84	R784	R762	R570	R667	R525	R652
2015	$57,18	$55,09	12,77	R730	R704	R563	R695	R525	R640
2016	$64,36	$63,27	14,71	R947	R931	R687	R775	R675	R820
2017	$89,90	$88,12	12,37	R1 112	R1 090	R837	R1 246	R823	R1 190
2018 pre-July	$93,00	$91,00	13,56	R1 261	R1 234	R930	R1 219	R883	R1 175
2018 October	$92,03	$94,38	15	R1 380	R1 416	R1 018	R1 259	R992	R1 225
2019 October	$98,00	$102,00	16	R1 568	R1 632	R850	R1 150	R750	R1 050
2020 October	$57,00	$59,00	17	R969	R1 003	R650	R900	R550	R850

IHS Markit

This situation was already putting pressure on the economic wellbeing of many mining operations prior to COVID-19. Taking the current lower market supply conditions into consideration, these mines may either close or move into business rescue, possibly not opening again.

CURRENT MARKET

Based on recently released seaborne coal market reports, the general worldwide market conditions, press releases, sale prices and other information, it can be surmised that the general coal business in South Africa – as well as worldwide – has been under enormous pressure since the beginning of January 2020.

This pressure on the coal business was increased by factors already present pre-COVID-19, such as a lack of investment and exploration, already at a significant low. Further burdens were exerted by the extremely low export RBCT price during mid to late 2019 and into mid-2020.

Many small mines operating are attempting to supply inland and have large stockpiles of Pea coal, a very unusual situation prior to 2020 that points to a slow industrial production and demand for goods in SA.

Very few mines were willing or able to provide prices for the report and did not commit to any coal supply. Production from most of the mines contacted had already been allocated to users pre-lockdown and is being sold on contract to them. Other mines contacted are producing only 30% to 50% of normal output or have shut down completely.

Many mines, based on limited inland, Eskom, and export coal demands, are not able to operate at full capacity, and are either on care and maintenance or closed.

A large portion of ROM production has become available for purchase in the inland SA coal market during the last 6 months. This clearly points to Eskom not buying much from Junior/small mines now.

The market is also seeing many small mines going into business rescue or liquidation. This situation will negatively affect inland supply post-COVID-19, with these mines not being operational when a semblance of pre-COVID-19 demand returns.

The following table uses the previously presented grading table as the quality for current sized coal usage and average prices for specific user markets in SA, receiving coal by rail. Domestic use for heating and cooking is small, compared to the total market of about 20 000TPM

It should be noted that some of the monthly prices of inland supply have, on average, dropped from January 2020 to October 2020, when the last data on FOR inland consumption was compiled.

However, A Grade (+26,5MJ/kg <15% Ash) Duff and Pea coal in the inland market are still at premium with their price averaging ±R1200/t FOR as well as difficult to find. Local market consumption of 156Mt indicated to October 2020 is only what has been railed (FOR). It does not include tonnages transported by road to smaller customers not able to receive coal by rail.

Sasol is currently restructuring their business to return mostly to their original SA business, focusing on the Sasolburg's chemical plant. The company recently sold several international and cross-border projects to release debt and return to cash positive business. The added pressure of decreased fuel sales during COVID-19 has also placed pressure on the company turnover and reduced the share price substantially. Although Sasol Secunda buys some coal, it is mainly sized coal (not duff) and of the same quality as that of Secunda mines' output, i.e., like Eskom's specs of low CV and high Ash. Their requirements are intermittent, and they seldom give suppliers contracts.

Sales by user	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	YTD 2020
Power IPP	**1**	**2**	**2**	**1**	**2**	**3**	**3**	**1**	**1**	**1**	**16**
Value	1.556	2.861	2.154	935	2.528	3.317	3.250	1.634	1.580	1.231	**21.048**
R/t FOR	1.290	1.290	1.290	1.290	1.290	1.268	1.282	1.290	1.290	1.259	**1.284**
Merchant & Domestic	**1.239**	**1.423**	**1.234**	**1.026**	**1.242**	**1.102**	**1.323**	**1.396**	**1.328**	**1.562**	**12.875**
Value	340.707	354.324	318.438	261.623	317.872	283.255	344.035	344.821	383.740	368.569	**3.317.383**
R/t FOR	275	249	258	255	256	257	260	247	289	236	**258**
Industries	**881**	**912**	**808**	**729**	**689**	**648**	**742**	**647**	**617**	**747**	**7.420**
Value	531.473	459.677	375.526	416.179	303.115	277.152	372.612	315.230	307.063	443.208	**3.801.234**
R/t FOR	603	504	465	571	440	428	502	487	498	593	**509**
Steel	**104**	**110**	**120**	**20**	**45**	**102**	**108**	**106**	**114**	**110**	**939**
Value	98.742	93.684	102.665	21.447	33.677	72.081	74.454	82.722	91.798	91.555	**762.826**
R/t FOR	950	853	853	1.050	751	705	689	783	803	835	**827**
Chemical	**129**	**136**	**136**	**108**	**115**	**120**	**145**	**138**	**121**	**125**	**1.273**
Value	79.049	83.186	83.086	66.071	70.022	183.244	99.818	95.143	83.711	86.351	**929.682**
R/t FOR	611	611	611	611	611	1.533	690	690	690	690	**735**
Cement	**42**	**48**	**19**	**3**	**25**	**28**	**46**	**55**	**46**	**58**	**372**
Value	28.632	31.892	13.724	2.365	15.388	17.575	32.463	34.323	30.110	41.306	**247.777**
R/t FOR	677	659	715	740	606	618	700	628	655	710	**671**
Metallurgical	**6**	**8**	**4**	**0**	**4**	**5**	**5**	**8**	**9**	**16**	**64**
Value	7.684	10.083	5.279		3.555	4.662	4.193	4.987	6.245	9.806	**56.492**
R/t FOR	1.340	1.341	1.321		890	890	890	647	692	619	**959**
Brick	**33**	**40**	**46**	**32**	**31**	**39**	**45**	**46**	**37**	**41**	**392**
Value	9.428	11.493	12.384	5.083	5.006	6.349	7.276	8.065	11.149	10.286	**86.519**
R/t FOR	283	286	270	159	159	161	163	175	298	249	**220**
Other	**317**	**403**	**446**	**550**	**266**	**351**	**284**	**464**	**441**	**265**	**3.787**
Value	126.932	148.316	141.869	180.972	82.329	117.890	110.384	166.238	149.972	107.461	**1.332.364**
R/t FOR	401	368	318	329	310	336	388	358	340	406	**355**
Mines	**34**	**40**	**45**	**12**	**15**	**16**	**64**	**96**	**95**	**72**	**487**
Value	29.528	37.036	32.787	9.823	6.809	10.028	37.813	48.157	45.875	42.705	**300.561**
R/t FOR	881	924	721	842	461	618	595	504	483	596	**663**
Agriculture	**4**	**1**	**2**	**1**	**1**	**2**	**2**	**2**	**2**	**1**	**18**
Value	4.338	1.489	2.295	1.484	1.856	2.321	2.579	2.573	1.893	1.748	**22.578**
R/t FOR	1.179	1.232	1.232	1.240	1.240	1.240	1.240	1.240	1.234	1.240	**1.232**
Total	**14.692**	**15.614**	**16.298**	**13.940**	**15.336**	**15.593**	**16.783**	**16.178**	**15.944**	**16.312**	**156.690**

Department of Minerals and Energy

POST-COVID-19

As seen in the previous table, the average price of FOT A/B/C Grade Duff coal, used mainly in the cement and lime market, has not changed much since 2018, at ±R700/t as of April 2020. This price is not set to change and will presumably remain at this level following COVID-19.

The reason for using both FOT and FOR pricing is to comprehend the average price of SA mines for the various sized grades of coal. An average difference in sale price between FOR and FOT would be ±R50/t higher for FOT to cover logistics.

The A grade Pea coal price used in agricultural markets is still at a high of R1 200/t with C grade used in the metals mining market, averaging R840/t.

It is likely that post-COVID-19 prices for FOT sized coal will remain at current levels for many reasons, including that mining and washing costs did not change with COVID-19 and neither did logistics costs. The result is that the coal price to end users can therefore not be reduced. All mining companies who remain in operation post-COVID-19 will look to recoup the losses

incurred during the COVID-19 lockdown and economic crisis period, and will consequently be disinclined to drop prices.

This is especially true in the Cape Pea coal market, where a customer is forced to balance quality and delivered price. This area receives the most expensive Pea coal in SA due to the large distances to deliver.

Industrial demand will return locally as South Africans still need this commodity. Pea coal prices will therefore remain at premium and in demand as many industries require steam.

The export coal price will also likely rise should demand worldwide return as current 30-day RB1 sale price statistics indicate a steadying in seaborne prices during the period September to December 2020, averaging $90.36 per ton in January 2021.

See indices next:

IHS MARKIT DAILY COAL PRICES (US$ / metric ton)		
High CV steam coal – basis 6.000kcal/kg NAR		
	Northwest Europe (ARA) CIF (US$/t)	Richards Bay FOB
2021/01/01	Holiday	Holiday
2021/01/04	68.70	87.10
2021/01/05	63.90	85.83
2021/01/06	63.36	85.30
2021/01/07	64.80	88.49
2021/01/08	67.85	90.70
2021/01/11	69.17	93.20
2021/01/12	70.78	98.15
2021/01/13	71.24	96.75
2021/01/14	70.87	94.06
2021/01/15	69.59	94.42
2021/01/18	67.14	95.36
2021/01/19	65.32	90.60
2021/01/20	66.92	88.60
2021/01/21	67.34	88.80
2021/01/22	65.42	88.08
2021/01/25	66.27	87.97
2021/01/26	65.50	87.00
2021/01/27	66.50	87.50
2021/01/28	69.45	88.15
2021/01/29	69.98	87.29

IHS Markit

Should the Indian export market and local demand return to pre-COVID-19 levels, this would also ensure that inland coal prices remain firm post-COVID-19. This is because the low-quality Indian sponge iron manufacturing demand (4 800kcal/kg) competes with Eskom pricing and supply, in this way supporting SA inland prices.

TRENDS IN PRODUCTION – SALES AND PRICES

PRE-COVID-19 – POST-COVID-19

As indicated in the previous report, washed coal production in SA has not increased by more than 3% since 2017, with many problems afflicting the local coal industry during the last 3 years. These include the following:

- → Difficulty raising finance for coal projects
- → Logistics costs and implementation issues
- → SA downgrade to junk status
- → Fewer projects coming online compared to mines reaching their end of life
- → Coal supply demand, compared to other energy sources
- → Minimal recent exploration conducted to find new coal reserves
- → Environmentalists' pressure to use renewable energy for power generation
- → Long delays and red tape to obtain permits and licenses to commence mining
- → Water licences, electricity shortages and labour issues

The demand for thermal coal in SA is however not set to decrease significantly for the next 5–10 years. Inland coal use for the industry will depend on the SA economy remaining at current levels.

This does not consider any additional Eskom, or IPP power stations planned for future construction and the additional coal tonnage demands required by these projects, nor new industrial complexes that are being constructed, requiring steam for operations and manufacturing.

Following the rapid decline of the FOB price from US$100/t in January 2019, many smaller independent mines remained under constant pressure for the duration of the year ending January 2020. With the lockdown, these mines are almost certainly not going to survive and reopen post-COVID-19. The issue of fewer mines returning to operation post-COVID-19 may also affect the coal price FOT and export as demand may outstrip supply.

The projected inland sized coal demand together with Transnet's intention to increase export capacity after 2020 and Eskom's possible increased demand of an additional 30Mtpa, would

mean that mines would need to open more frequently. Alternatively, the resulting decreasing tonnages produced will increase prices at mine gate.

SA INLAND MARKETS

As 2020 was an atypical year, a review of pre-COVID-19 2018 and 2019 annual coal tonnages has been included, for an overview of the sales over a 3-year period.

A breakdown of inland sales has been undertaken, with estimates wherever possible, backed by research data and in the following categories.

Local sales by industry 2018 to 2020

Tonnage % sales by province

Inland SA sales tons and percentage by user 2018 - 2020 follows:

SALES BY USER	2018		2019		Projected Dec 2020	
Industry	kt	%	kt	%	kt	%
Power generation	112,418	64	115,176	60,6	113,177	60,2
Synfuels	37,321	21	38,954	20,5	41,680	22,2
Merchants/Domestic	9,271	5	13,479	7,1	15,450	8,2
Industries	5,262	3	9,693	5,1	8,904	4,7
Thermal	3,745	2,13	5,098	2,7	4,544	2,4
Steel	2,960	1,68	3,077	1,6	1126,8	0,6
Chemical	1,814	1,03	1,626	0,9	1,528	0,8
Metallurgical	1,311	0,75	1,579	0,8	76,8	0,04
Cement	1,171	0,67	594	0,3	446,4	0,2
Brick & Tile	281	0,16	492	0,3	470,4	0,3
Mines	239	0,14	405	0,2	584,4	0,3
Agriculture	31	0,02	26	0,01	21,6	0,01
Transport	3	0,002				
Total	175,827	100	190,199	100	188,009	100

Department of Minerals and Energy

Inland sales, tons, and percentage for sized coal users (other than Power Generation and Synfuels) 2020

Sales by user	YTD 2020	
Projected Dec 2020	kt	%
Merchant & Domestic	15 450	46,6
Industries	8 904	26,9
Thermal	4 544	13,7
Chemical	1 528	4,6
Steel	1 127	3,4
Mines	584	1,8
Brick	470	1,4
Cement	446	1,3
Metallurgical	77	0,2
Agriculture	22	0,07
Total	**33 152**	**100**

Department of Minerals and Energy

Breakdown of the various sized coal markets in SA's provinces and their estimated usage in percentage.

COAL TONNAGES PER REGION (%)			
Province	Duff Coal	Pea Coal	S/N Tons
Gauteng	15	40	26
Mpumalanga	15	15	10
KZN	5	15	5
Western Cape	10	10	5
North West	29	5	40
Limpopo	3	5	3
Free Sate	2	5	3
Eastern Cape	3	2	3
Northern Cape	18	3	5
TOTAL	100	100	100

It is not possible now, to separate A and B Grade users from those using C Grade as this requires further research. Very few of the sized coal consumers buy C Grade, apart from some of the duff used in the cement industry.

SA INLAND TARGET MARKET BREAKDOWN – TONNAGES

INITIAL MARKETS

		Low	Expected			
Total inland market		**25 000 000**	**30 000 000**			
		50%	Assumed A&B grade in line with qualities			
Assumed inland market		**1 300 000 pm**	Estimate			
		Duff	**Peas**	**Nuts**	**Total**	
		33.33%	33.33%	33.33 %	100%	
Annual market		5 200 000	5 200 000	5 200 000	**15 600 000**	
Western Cape		10%	10%	5%		
	Annual	520 000	520 000	260 000	**1 300 000**	**2**
	Monthly	*43 333*	*43 333*	*21 667*	***108 333***	
North West		29%	5%	40%		
	Annual	1 508 000	260 000	2 080 000	**3 848 000**	**5**
	Monthly	125 667	21 667	173 333	***320 667***	
Northern Cape		18%	3%	5%		
	Annual	936 000	156 000	260 000	**1 352 000**	**2**
	Monthly	*78 000*	*13 000*	*21 667*	***112 667***	
TOTAL						
	Annual	2 964 000	936 000	2 600 000	**6 500 000**	
	Monthly	*247 000*	*78 000*	*216 667*	***541 667***	

SA INLAND TARGET MARKET BREAKDOWN – TONNAGES

INITIAL MARKETS

		Low	Expected			
Total inland market		**25 000 000**	**30 000 000**			
		50%	Assumed A&B grade in line with qualities			
Assumed inland market		**1 300 000 pm**	Estimate			
		Duff	**Peas**	**Nuts**	**Total**	
		33.33%	33.33%	33.33 %	100%	
Annual market		5 200 000	5 200 000	5 200 000	**15 600 000**	
Western Cape		10%	10%	5%		
	Annual	520 000	520 000	2600000	**1 300 000**	1
	Monthly	*43 333*	*43 333*	*21667*	***108 333***	
North West		29%	5%	40%		
	Annual	1 508 000	260 000	2 080 000	**3 848 000**	3
	Monthly	125 667	21 667	1733333	***320 667***	
Northern Cape		18%	3%	5%		
	Annual	936 000	156 000	2600000	**1 352 000**	1
	Monthly	*78 000*	*13 000*	*21667*	***112 667***	
Gauteng		15%	40%	26%		
	Annual	780 000	2 080 000	1 352 000	**4 212 000**	3
	Monthly	*65 000*	*173 333*	*112667*	***351 000***	
TOTAL						
	Annual	3 744 000	3 016 000	3 952 000	**10 712 000**	
	Monthly	*312 000*	*251 333*	*329333*	***892 667***	

Slurry/Spiral and Duff coal

Fine-grained coals such as Duff and Spiral usually attain a lower sale price FOT than larger size fractions.

The regions identified for potential customers contain 80% of the large Duff users and 16 cement plants of several companies.

These buyers of Duff are predominantly production facilities using large volumes of coal, mostly received by rail. They are listed as follows:

COMPANY	OPERATION	LOCATION	LATITUDE	LONGITUDE	CV MJ/KG	ASH	TPM	DELIVERY
PPC	De Hoek	Western Cape	32°56'32.75"S	18°45'38.78"E	>25.5	<18%	20 000	Rail can accept road
PPC	Dwaalboom	Mafikeng	24°48'38.38"S	26°49'49.72"E	>25.5	<18%	20 000	Rail can accept road
PPC	Hercules	Pretoria	25°43'20.30"S	28°10'10.45"E	>26.0	<18%	5 000	Rail and road
PPC	Riebeeck	Western Cape	33°18'50.19"S	18°50'42.45"E	>26.5	<18%	20 000	Rail can accept road
PPC	Slurry	Mafikeng	25°48'50.90"S	25°50'37.32"E	>25.5	<18%	15 000	Rail can accept road
PPC	Lime Acres	Daniels Kuil Kimberley	28°20'46.90"S	23°30'24.32"E	>26.5	<15%	30 000	Rail
PPC	Harare, Zim	Colleen Bawn	21° 0'22.68"S	29°12'49.53"E	?	?	??	Road
Mamba Cement	Thabazimbi	Thabazimbi	24°59'11.93"S	27°32'47.24"E	?	?	??	
Lafarge Cement	Lichtenburg	Lichtenburg	26° 8'8.41"S	26°10'55.79"E	>26.5	<15%	10 000	Rail can accept road
Lafarge Cement	Zimbabwe	Harare, Zimbabwe	17°49'17.68"S	31°11'58.40"E	?	?	??	Road
Sephaku Cement	Lichtenburg	Lichtenburg	26° 8'38.07"S	25°51'23.78"E	>25.0	<20%	15 000	Road
Afrisam Cement	Lichtenburg	Lichtenburg	26°11'5.87"S	25°59'45.13"E	>25.1	<20%	15 001	Rail can accept road
Afrisam Cement	ULCO	Delportshoop	28°19'23.90"S	24°13'5.44"E			15 000	Rail can accept road
Idwala Lime	Lime Acres	Daniels Kuil Kimberley	28°12'39.66"S	23°32'51.88"E	>26.5	<15%	25 000	Rail
Ohorongo Cement	Namibia	Otavi	19°31'14.56"S	17°26'55.45"E	?	?	5 000	Rail and road
Sino Cement	Zimbabwe	Gweru	19°25'3.98"S	30° 2'58.76"E	?	?	??	Road and rail??

Due to the large volumes of coal required and the lower sale price of their goods, these companies will typically negotiate lower prices for their Duff coal and sign long-term contracts.

Unfortunately, none of them were able to give delivered prices, qualities of coal received, or current supplier details. Their procurement sections decided not to supply any details of coal purchasing.

Therefore, the only prices for Duff coal available are from the mines in the Witbank and Middelburg area, as the cement and lime manufacturers primarily receive coal by rail to obtain the large volumes required at lower prices. Most large users have a Transnet rail account and would receive coal FOR. Ascertaining rail costs to their factories was therefore not possible.

Calorific values of between 24MJ/kg and 26MJ/kg with <15% Ash (RB1 Spec) are bought by Duff users in the cement and refractory brick making industries, but only the >26.5MJ/kg (15%

Ash) grade is suitable for the lime, iron, and steel industry. This sector has the limit of a maximum Ash of 15% in Duff coal and requires higher CV.

Pea Coal

This is the largest inland market for sized coal and is collectively around three times larger than the total Duff market, estimated at ±60% of total inland sized coal market of ±30Mtpa (for 2020, according to statistics released by DMRE. Pea coal market is larger than duff and small nuts markets, simply because of the number of companies using peas for steam boilers. Between 400-5 000t per month of peas are consumed by boiler users. There are many more pea users than duff users.

Large end users of Pea coal are in and around major centres of SA, not in the regions beyond the Western Cape currently under review and all receive coal from Mpumalanga. The Cape area is supplied in a different manner to the rest of the country. Pea coal provided to Cape Town and the 100km surrounding area of the North and Western Cape is controlled by trader operating depots in Cape Town, sending Pea coal to their depots by rail from Mpumalanga.

After delivery to the depot, the product is distributed by road to the surrounding areas of Cape Town, as far as the Ceres valley. None of the users examined buy directly from a mine and all are supplied by one of the traders, mostly due to an average 400 ton per month customer requirement.

An attempt to supply a 1 000 ton per month Pea coal to the Cape region by road is not successful because of the related cost of road transport being higher than rail. For small quantities, coal is therefore delivered by rail and then distributed from depots to the small user by road.

The details of the potential customers and in the Western Cape Market:

COMPANY	OPERATION	LOCATION	LATITUDE	LONGITUDE	CV MJ/KG	ASH	TPM
OPAK Depot	Depot	Cape Town	To follow	To follow	>26.6	<15	15 000
Wescoal Depot	Depot	Cape Town	To follow	To follow	>26.7	<15	15 000
VDM Depot	Depot	Cape Town	To follow	To follow	>26.8	<15	10 000

Understanding users' requirements and a more in-depth review of customers requiring quality Pea coal supply is being undertaken, with the following industries and users already identified:

Based on information available from the John Thompson – ATCOM website and discussions with their Cape Town and Jhb branches, the following information on several SA industries using coal fired boilers was furnished:

CATEGORY		COMPANY	OPERATION	LOCATION
Manufacturing		SAPPI	Fine Papers	Enstra Springs Gauteng
			Ngodwana	Lowveld Mpumalanga
			Sappi – Saiccor	Umkomaas KZN
			Tugela Mill	Mandini KZN
			Stanger Mill	Kwadakuza KZN
		PG Bison	Boksburg	Boksburg Germiston
			Kemp Site	Piet Retief Mpumalanga
		Technopol	Styrofoam Manufacturer	Nuffield Springs
		Everite	Vereeniging	Gauteng
		PPC	Cement	Port Elizabeth
Food & Alcohol	Soft Drinks	Kingsley Soft Drinks	Drinks Manufacturer	Springs
	Sugar	ABI - Coca Cola		
		Nescafe	Newcastle	Newcastle KZN
		Tongaat Hullets Sugar		KZN
		Illovo Sugar		KZN
		RCL Foods Sugar & Milling		Mpumulanga
		Umfolozi Sugar Mill		KZN
		Gledhow Sugar Company		KZN
	Liquor	Distell	Germiston	Wadeville
		SAB - Miller	Brewery	Alrode Gauteng
			Brewery	Chamdor Gauteng
			Prospecton Brewery	Isipingo KZN
			Brewery	Rosslyn PTA
			Brewery	Polokwane
		Namibia Breweries	Brewery	
		Kalagadi Breweries	Brewery	
		Heineken	Brewery	Sedibeng
	Foodstuffs	Dairy Maid Ice Cream	Olifantsfontein	Olifantsfontein
		Rainbow Chicken Farms	Rustenburg	Steelpoort
		Pioneer Foods	Industria Randburg	Randburg Gauteng
			Aeroton	JHB Gauteng
		Koo Brands	Manufacturing	Boksburg Gauteng
			Manufacturing	Langeberg – Ashton Cape
			Manufacturing	Paarl Cape
		Tiger Brands	Albany Bakeries	Germiston
			Manufacturing	Boksburg Gauteng
			Food Processsing	Roodekop Germiston
Cigarettes		British American Tobacco	Heidelburg	Heidelburg

Production facilities using Pea size coal located in the Western Cape and surrounding regions would prefer to buy a typical A or B Grade, as a large majority of boiler operations are between 10 and 50 years old, requiring qualities in this range to achieve efficient production.

However, only two of the depots investigated seem to be receiving Pea coal directly from mines, Wescoal Mining and Opack, a logistics company. Research has revealed unhappy end users who receive a mixed quality of Peas for their boilers, resulting in low efficiencies, suggesting the blending of different mines' coals by some suppliers.

Fundamentally, the Cape market is in disarray and looking for coal of good quality and price to enter the market and connect to depot owners with clients. This is all about price versus quality as the total Cape Town market of Pea coal is currently not more than 50 000t per month.

The delivered price to depots and to customers is as follows:

Between R1 650/t and R1 750/t

For >26MJ/kg or R63.46/GJ/t

Not including additional loading and delivery to the client which can add anywhere between R50/t and R150/t, depending on the delivery distance

Based on a B Grade price in Mpumalanga FOR of ±R1 000/t, logistics to the Cape market would be ±R700/t before delivery

Many customers in this sector who prefer a higher CV, lower Ash coal to increase boiler efficiencies and lower energy input costs, but do not have adequate Ash handling facilities onsite, will therefore look for a lower Ash coal to decrease the cost of handling Ash discards.

For this reason, an A grade +26.5MJ/kg Pea coal will sell better to this sector than a C Grade 25MJ/kg product. However, with the continual rise of inland coal prices, many Pea coal users will buy a C Grade 25MJ/kg Pea coal to reduce energy input costs.

Small Nut Coal (Thermal and Ferroalloy Markets)

The thermal small nut market to the regions identified is not substantial, and the whole small nut market in SA is not more than 20% of the total inland tonnage (Excluding Ferroalloys). The thermal market is also seasonal with a 100% increase in demand during the winter months (May – August), and much lower demand in the summer months.

The winter demand is for domestic heating, animal and poultry heating and farming, the fruit canning industry and flower growers.

The ferroalloy market to the Northwest province is estimated to be as large as the Duff coal markets.

Limited low P, low S, high fixed carbon product is available for mining in SA (5 seam mined in Witbank Coalfield) and carries a premium price over normal thermal coal small nut, because of the specialised and quality requirement.

The market in general requires small nut size fractions, with a limited requirement for peas and large nut sizes. In all applications the low P product will attain between R1 100 and R1 250 per ton FOT in Mpumalanga, much higher than the current R950 per ton for B grade thermal small nut coal.

Using the information gathered on the ferroalloy market thus far, the annual tonnage requirements are estimated to be at ±10 000 tons to 15 000 tons per month, per user, resulting in a conservative market of between 200 000 TPM to 250 000TPM.

As with the Pea coal, the Cape region depots receive and distribute the S/N coal, which is also very seasonal with the fruit picking and processing season being when the most tonnage is required. Delivered price to the depots is like Peas at R1 650/t for B Grade.

The users of large quantities of S/N mostly receive coal by rail and, as with Duff coal users receiving rail deliveries, obtaining the R/GJ/Ton delivered price is not possible. All end users request a price from the supplier and assess the price against the quality. No guidance on the delivered price was available.

The remaining estimated Western Cape area monthly thermal tonnage requirements do not exceed 5 000 tpm and the total region of the Cape is not more than 10 000 tpm.

A total of 19 alloy industry users have thus far been identified, made up of smelters and char plants that require No.5 seam qualities, with a large portion operating in the NW province and Mpumalanga ferro chrome industry.

FERROALLOYS									
COMPANY	OPERATION	LOCATION	ASH	P	S	SIZE	LATITUDE	LONGITUDE	DELIVERY
Glencore Merafe JV	Merafe Ferro Chrome	Rustenburg				25 x 50	25°37'15.91"S	27°13'8.41"E	
Samancor	Tubatse Ferrochrome	Steelpoort	<15%	<0.015%	<0.8%	25 x 50	24°44'34.28"S	30°11'42.73"E	
	MFC Samancor	Middleburg					25°48'17.69"S	29°29'38.63"E	
	Samancor Ferrometals	Ferrobank Witbank					25°51'12.75"S	29° 9'47.48"E	
	Samancor Doornbosch	Doornbosch Limpopo					24°39'23.47"S	30°10'4.24"E	
	Samancor Witbank	Witbank					25°51'20.66"S	29°10'8.48"E	
	TC Smelters	Driekop Limpopo					24°33'23.11"S	30° 8'38.03"E	
Xstrata Alloys	African Carbon Manufacturers	Ferrobank Witbank	<15%	<0.015%	<0.8%	25 x 50	25°51'19.25"S	29° 9'55.56"E	Road
	African Carbon Producers	Kwaguga Witbank	<15%	<0.015%	<0.8%	25 x 50	25°51'49.03"S	29°10'37.14"E	Road
	African Fine Carbon	Middleburg	<15%	<0.015%	<0.8%	25 x 50	25°51'32.95"S	29°28'9.02"E	Road
	Chartech	Kwaguga Witbank	<15%	<0.015%	<0.8%	25 x 50	25°50'49.35"S	29° 9'51.65"E	Road
Glencore Alloys	Lion Smelter	Steelpoort				25 x 50	24°49'5.61"S	30° 7'9.86"E	
	Boshoek	Boshoek NW				25 x 50	25°29'30.77"S	27° 6'3.24"E	
	Wonderkop	Marikana Kroondal				25 x 50	25°42'47.82"S	27°24'1.08"E	
	Rustenburg Glencore Smelter	Rustenburg				25 x 50	25°37'12.32"S	27°13'22.07"E	Rail and road
	Rustenburg Smelter	Rustenburg					25°37'21.24"S	27°13'29.78"E	
Scaw Metals	Alloy Production	Wadeville				12 x 30	26°16'24.11"S	28° 9'48.52"E	Rail and road
Sibanye	Sibanye Platinum UG2 Concentrator	Rustenburg					25°40'26.60"S	27°18'58.97"E	Road

CJC Consulting

Unsized 0mm x 50mm

The inland users that employ 0mm x 50mm thermal coal sizes are limited, mostly independent power producers who require a C Grade quality for boiler efficiencies.

Current research into the market thus far has shown the following end users reviewing coal supply currently.

POWER GENERATION 0MM X 50MM										
COMPANY	OPERATION	LOCATION	CV MJ/kg	Ash	S	SIZE	LATITUDE	LONGITUDE	TPM	DELIVERY
Kelvin Power Station	Ekurhuleni	Kempton Park	<25.5	<18%	<1%	0 x 50	26° 6'55.46"S	28°11'45.70"E	100,000	Road only
Eskom	Grootvlei Power Station	Grootvlei	<24.5	<22%	<1%	0 x 50	26°46'10.62"S	28°29'47.47"E	100,000	Rail and road
Nampower	Van Eck Power Station	Windhoek	>26.5	<18%	<1%	0 x 30	22°30'50.11"S	17° 4'47.21"E	20,000	Rail and road

FUTURE FOR SA COAL
INDUSTRIAL POWER AND HEATING SECTORS

Based on the limited number of new mines that opened during the last five years, as well as the many mines that have now been closed with COVID-19, local demand for the next 5 years is set to outstrip supply.

This only refers to the inland market. The unanticipated reappearance of a buoyant export market will put an additional strain on local coal supply, should the expansions for both rail and ports in SA be completed and implemented.

Due to mineable reserves coming to their end of life and lower quality reserves used for Eskom, inland qualities have dropped since 2015 to a 25.5MJ/kg coal CV. This situation will pose a real threat to some manufacturers in SA who cannot operate efficiently with such low CV coal.

Due to the challenges of raising capital and the qualities of their reserves, many new mines do not plan to beneficiate coal and would rather mine, crush, and screen to sell to Eskom.

Three of the five major coal export companies (Anglo, South32 and Glencore) have or are shortly exiting their SA coal mining business – some, their coal business worldwide – and have sold shares/mines in local operations to local SA entrepreneurs.

From public comments from the CEO of Exxaro, another major, it is possible that they exit coal mining for other “cleaner” commodities.

The last major, Sasol, is not part of the market, as most of their production is dedicated to synthetic fuels and so their presence is not visible to the SA inland market.

CONCLUSIONS

It is extremely difficult to predict what will happen to the market price inland and export post-COVID-19, beyond 2022. FOT prices offered by mines have seldom seen a disparity to the level of R150/t difference between producers. However, as always, demand and supply will determine the price.

Based on the data in this report, the market feedback received and the general status of the inland coal market, it is foreseen that there will be an opportunity to access the identified markets from 2022. This is even the case with regions historically supplied from Mpumalanga, such as Gauteng and the Northwest provinces.

The regions under review would be keen to receive a good quality coal, at a competitive GJ/t price. However, lower Ash end users can be aimed for as long-term contract customers.

Large tonnage, low Ash end users within the regions identified can be targeted incrementally, once in production.

The intention to produce a low P (<0.015%), low ash (<15%) and low S (<0.7%) will allow deals with users of the ferroalloy market, with the certainty that, once the customer sees the Maatla quality, a deal will be made. The low P ferroalloy market is prepared to pay a premium for the qualities from Maatla with a price of ±R1250 per ton FOR or FOT possible.

One of the offers has come from a depot operator in Cape Town, willing to check the FOR option, as he sells in SA, with Cape Town as one of his regions. The largest hurdle facing this operator is obtaining reliable, consistent quality, sizing, and tonnage.

In January 2021, mines worldwide decreased production or closed non profitable operations. This will impact prices positively when demand returns post-COVID-19 and major companies are unable to provide enough coal.

The previous 2020 report clearly showed that competition to source good quality coal in forthcoming years will become more difficult for inland coal users. From large ones, such as Eskom, to the smallest requiring steam coal for industrial production – they will all experience difficulties to ensure a continued, reliable, constant quality of supply.

This coal shortage was a reality for inland users in early 2019 when the RB1 FOB export price was hovering at around US$100/t and a large portion of sized coal was finding its way into that market.

This increased A Grade Pea coal prices to R1 250/t FOT. When export prices decreased to $47/t in mid-2020, the A Grade price declined to ±R1 000/t.

With some mines now closing in the lockdown period, and export prices global and coal demand consequently possibly increasing, a shortage of sized coal could be experienced by the inland market.

Based on the feedback received from suppliers, the following FOT per ton prices apply under the current market conditions:

A GRADE	B GRADE	C GRADE
(+27,5Mj/Kg–6250Kcal/Kg)	(+26,5Mj/Kg–6050Kcal/Kg)	(+25,5Mj/Kg–5850Kcal/Kg)
Peas R950–R1 500/t	Peas R900–R1 000/t	Peas R750–R850/t
Duff not available	Duff R650–R750/t	Duff R550–R700/t

The indication is that FOT inland sized prices will likely remain firm, with a real possibility that if demand starts to outstrip supply, prices may even increase during the next 24 to 36 months.

Coal prices quoted in this report will change during 2021and beyond, with the possibility that A Grade Pea coal may again reach the of R1 250//t FOT price.