

CoalPeabodyXstrata.xls

92	A B C D E F G H I J K L M N O P Q R S
93 94 95	Production
96 97	Colliery Location Market Nominated capacity Model for (MI)(3) Colliery Location Market per year (Mt)(2) 2018 2017 2016 natural gas + syngas
98 99 100	BosjesspruitSecundaSecunda Synfuels Operations7,05,76,16,6million GJBrandspruitSecundaSecunda Synfuels Operations2,02,32,85,3105.72006ImpumeleloSecundaSecunda Synfuels Operations4,63,22,21,7112.92007
101 102 103	Middelbult, Shondoni shaftSecundaSecunda Synfuels Operations7,86,96,57,6122.22009SyferfonteinSecunda Synfuels Operations11,410,510,911,1122.22009
104 105	Inductional inductional stateSecuridal Synthesis Operations(1) $9,7$ $8,8$ $7,9$ $8,2$ Sigma : Mooikraal SasolburgSasolburg Operations $1,9$ $1,4$ $1,2$ $1,8$ 151.12011152.72012
106 107 108	38,8 37,6 42,3 161.4 2013 Sasol Form 20-F for 2018, p. 40 2013 2013 2013 2013
109 110 111	Map, 2017 20-F, page M-1
112 113	Crude oil and condensate ⁶⁰ Natural gas ⁴⁰ Oil equivalent ^{10/10} Exploration and Production International Licence Areas Mozambique ⁶ Northon Northon Northon Northon Africa Mozambique ⁶ Northon Northon Africa Mozambique ⁶ Northon Northon <t< td=""></t<>
114 115 116	Millions of barrels Billions of cubic feet Equivalent, Millions of barrels Balance at 59 June 2014 4,1 0,2 4,2 8,5 12,3 4,2 22,9 Revisions 0,0 0,1 (1,3) (1,2) (82,8) 33,3 8,49 25,5 12,3 4,2 22,9 Improved recovery 0,6 0,2 (0,5) 0,3 17,4 32,8 20,7 5,7 (1,5) 14,9 22,9 Ngeria Millions
117 118 119	Production
120 121	Improved recovery 0,0 0,0 0,4 0,4 0,4 (3,8) 27,2 23,4 (0,6) 4,5 0,4 4,3 0 00.45 Production
122 123 124	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
125 126 127	Proved developed reserves At 30 June 2015 1,1 0,3 1,1 2,5 386,8 103,7 490,5 65,5 17,6 1,1 84,2 Gazon
128 129	At 30 June 2016 22 0.2 0.8 3.2 738.1 107.9 846.0 125.2 18.2 0.8 144.2 At 30 June 2017 2.0 0.6 1.7 4.3 710.7 122.4 883.1 128.5 20.9 1.7 183.1
130 131 132	Proved undeveloped reserves A1 30 June 2015 3.3 0.0 - 3.3 984.3 13.1 997.4 167.4 2.2 - 169.6 A1 30 June 2016 1.6 472.4 14.8 487.2 80.3 2.5 - 82.8
133 134	At 30 June 2017 1,4 1,4 429,0 429,0 429,0 72,9
135 136 137	(1) 6000 Managard cubic teet of matural gas is equivalent to 1 barrel of oil. Sasol Form 20-F for 2017, page G-4
138 139 140	
141 142	Gross in site coal Geological Insut Extraction Recoverable Beneficiated resource ³⁰ discount Iosses rate reserves ³⁰ yield ⁴⁰ Proved/ Average Inherent Statum Average Inherent Statum Heat Value Statum Heat Value StatumValue Statum Heat Value Statum
143 144 145	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
146 147 148	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
149 150	Sylferfontein mine 219 16 54 39 86 100 Proved Brandspruit mine Wet 3,8 n/a Assigned Steam 17,6 1,3 Brandspruit mine
151 152 153	Impumelelo, Block 2, number 4 Seam Wet 4,1 n/a Assigned Steam 1,2 Impumelelo, Block 2, number 2 384 27 118 54 63 100 Proved Impumelelo, Block 2, number 2 Wet 4,1 n/a Assigned Steam 18,1 1,2 seam seam seam wet 4,1 n/a Assigned Steam 18,1 1,2
154 155 156	Block 2 South, number 4 seam
157 158	Block 3 South 141 38 19 58 52 100 Probable Block 3 South Wet 3,6 n/a Unassigned Steam 21,9 0,7 Total Secunda area 3630 1187 Sasol Form 20-F for 2017, page 37 Sasol Form 20-F for 2017, page 37
159 160 161	Sasol Form 20-F for 2017, page 37
162 163 164	Production capacity at 30 June 2017 Production capacity at 30 June 2017
165 166	Product South Malaysia ⁽¹⁾
167 168 169	(ktpa) Ethylene 615 72 687 Propylene 950 11 961
170 171 172	LDPE
173 174	Polýpropýlene-2
175 176 177	PVC
178 179 180	Cyanide
181 182	Calcium chloride 10 — 10 (1) Includes our attributable share of the production capacity of joint operations.
183 184 185	(2) Nameplate capacity represents the total saleable production capacity. Due to the integrated nature of
186 187 188	these facilities, the requirement for regular statutory maintenance shutdowns and market conditions, actual saleable volumes will be less than the nameplate capacity.
189 190	Sasol Form 20-F for 2017, page 52. Chemicals
191 192	

Sasol Form	20-F	for	2018,	p. 40
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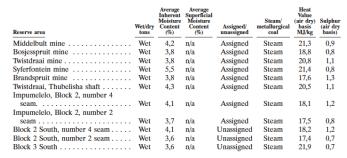
	Crude oil and condensate ⁽⁴⁾				Natural gas ⁽⁴⁾			Oil equivalent ⁽¹⁾⁽⁴⁾				Exploration and Production International Licence Areas		
	Mozambique ⁽²⁾	North America ⁽³⁾	Rest of Africa ⁽³⁾	Total	Mozambique ⁽²⁾	North America ⁽³⁾⁽⁵⁾	Total	Mozambique	North America ⁽³⁾⁽⁴⁾	Rest of Africa ⁽³⁾	Total		Africa	Mozambique Indian Ocean
	Millions of barrels		Billions of cubic feet		Equivalent, Millions of barrels					100				
Balance at 30 June 2014	4,1	0,2	4,2	8,5	1 388,4	72,5	1 460,9	235,5	12,3	4,2	252,0		×	
Revisions	0,0	0,1	(1,3) (0,5)	(1,2)	(82,8)	33,3 32,8	(49,5)	(13,8) 29,7	5,6	(1,3) (0,5)	(9,5)	Nigeria	· · · · · · · · · · · · · · · · · · ·	2
Improved recovery	0,6	0,2	(0,5)	0,3	174,7	32,8	207,5		5,7	(0,5)	34,9		AT 12 -	PPA (N) Blocks
Production	(0,3)	(0,2)	(1,3)	(1,8)	(109,2)	(21,8)	(131,0)	(18,5)	(3,8)	(1,3)	(23,6)	1	Sa harro	لمب ولا المعالية
Balance at 30 June 2015	4,4	0,3	1,1	5,8 0,6	1 371,1	116.8	1 487,9	232,9	19,8	1,1	253,8			PSACAP
Revisions	(0,3)	0,1	0,8	0,6	(42,4)	(0,6) 27,2	(43,0)	(7,4)	0,0	0,8	(6,6)	OWL 145 CAMUNATION	Indian ,	PPA (SILE
Improved recovery	0,0	0,0	0,4	0,4	(3,8)	27,2	23,4	(0,6)	4,5	0,4	4,3	OML 145	3 Cooon	Area A PSA Temane PSA Inhassoro
Production	(0,3)	(0,2)	(1,5)	(2,0)	(114,4)	(20,7)	(135,1)	(19,4)	(3,6)	(1,5)	(24,5)	222	Extrand (A)	Gas DPA OI DPA
Balance at 30 June 2016	3,8	0,2	0,8	4,8	1 210,5	122,7	1 333,2	205,5	20,7	0,8	227,0	-	The AA I when	
Revisions	0,2	0,5	2,1	2,8	88,9	21,6	110,5	15,1	4,0	2,1	21,2			
Improved recovery	(0,3)	_	0,1	(0,2)	(43,3)	-	(43,3)	(7,5)	_	0,1	(7,4)	*		×
Production	(0,3)	(0,1)	(1,3)	(1,7)	(116,4)	(21,9)	(138,3)	(19,7)	(3,8)	(1.3)	(24,8)	<u>2 2 0 10</u>		D 22 42 80 mmm
Balance at 30 June 2017	3,4	0,6	1,7	5,7	1 139,7	122,4	1 262,1	193,4	20,9	1,7	216,0			
	_	_	_	_		_	_	_	_	_	_		Atlantic	
Proved developed reserves													Ocean	South Africa
At 30 June 2015	1,1	0,3	1,1	2,5	386,8	103,7	490,5	65,5	17,6	1,1	84,2	Gabon		Ocean
At 30 June 2016	2,2	0,2	0.8	3,2	738.1	107.9	846.0	125.2	18.2	0.8	144.2			
	_	_		_		_			<u> </u>	_				
At 30 June 2017	2,0	0,6	1,7	4,3	710,7	122,4	833,1	120,5	20,9	1,7	143,1			
Proved undeveloped reserves	_	_	_	_		_		_		_	_			ER236
At 30 June 2015	3,3	0,0	_	3,3	984,3	13,1	997,4	167,4	2.2	_	169,6	Ebouri EEA Etamp EEA		Encos
	-	_	=	_						_			1 100 200 400 month	
At 30 June 2016	1,6	0,0	_	1,6	472,4	14,8	487,2	80,3	2,5	-	82,8	Avouma EEA		
At 30 June 2017	1,4	_	=	1.4	429,0	_	429,0	72,9	—	_	72,9	-		
At 30 June 2017	1,4	_	_	1,4	429,0	_	429,0	72,9	_	_	72,9		Legend	

Reserve area	Gross in situ coal resource ⁽²⁾ (Mt) ⁽⁵⁾	Geological discount (Mt) ⁽⁵⁾	Mine layout losses (Mt) ⁽⁵⁾	Extraction rate (%)	Recoverable reserves ⁽³⁾ (Mt) ⁽⁵⁾	Beneficiated yield ⁽⁴⁾ (%)	Proved/ probable
Middelbult mine, number 4 seam	666	90	168	45	206	100	Proved
Middelbult mine, number 2 seam	61	13	8	39	19	100	Probable
Bosjesspruit mine	218	9	92	49	76	100	Proved
Bosjesspruit mine	_	_	_	_	33	100	Probable
Twistdraai mine	7	1	3	35	1	P43,S23	Proved
Syferfontein mine	219	16	54	39	86	100	Proved
Brandspruit mine	43	1	34	44	3	100	Proved
Twistdraai Thubelisha shaft	692	179	117	55	250	P34,S38	Proved
Impumelelo, Block 2, number 4							
seam	703	49	99	54	230	100	Proved
Impumelelo, Block 2, number 2							
seam	384	27	118	54	63	100	Probable
Block 2 South, number 4 seam	363	98	48	54	123	100	Probable
Block 2 South, number 2 seam	133	36	18	54	45	100	Probable
Block 3 South	141	38	19	58	52	100	Probable
Total Secunda area	3 630				1 187		

Production capacity at 30 June 2017

Production capacity at 30 June 2017

Product	South Africa ⁽²⁾	Malaysia ⁽¹⁾⁽²⁾	Total				
Ethylana	615	(ktpa) 72	687				
Ethylene							
Propylene	950	11	961				
LDPE	220	102	322				
LLDPE	150	_	150				
Polypropylene-1	250	_	250				
Polypropylene-2	375	_	375				
Ethylene dichloride	160	_	160				
Vinyl chloride	205	_	205				
PVĆ	190	_	190				
Chlorine	145	_	145				
Caustic soda	167	_	167				
Cyanide	40	_	40				
Hydrochloric acid	90	_	90				
Calcium chloride	10	_	10				
 Includes our attributable share of the production capacity of joint operations. 							



Comment: Rick Heede:

Historical Milestones:

Sasol established on 26 September 1950.

The original coal-to-liquids (CTL) complex at Sasolburg, South Africa, starts producing synthetic fuels and chemicals and the first eight drums of creosote – the first Sasol product – are dispatched in March 1955. 2003: Construction of pioneering and environmentally-friendly gas-to-liquids (GTL) venture outside South Africa at Ras Laffan, Qatar commences.

https://www.sasol.com/about-sasol/company-profile/historical-milestones

Also see; John Collings (undated) Mind over Matter: The Sasol Story: A half-century of technological innovation. https://www.sasol.com/sites/default/files/content/files/mind_over_matter_07_1178173866476_0_1.pdf Wikipedia: "Sasol Limited is an integrated energy and chemical company based in Johannesburg, South Africa. The company was formed in 1950 in Sasolburg, South Africa. It develops and commercialises technologies, including synthetic fuels technologies, and produces different liquid fuels, chemicals and electricity. Sasol is listed on the Johannesburg Stock Exchange and the New York Stock Exchange. Major shareholders include South African Government Employees Pension Fund, Industrial Development Corporation of South Africa Limited (IDC), Allan Gray Investment Counsel, Coronation Fund Managers, Investment Asset Managers, among others. Sasol employs approximately 34 000 people worldwide and has operations in 38 countries. It is the largest corporate taxpayer in South Africa."

Cell: H19 Comment: Rick Heede:

Sasol mining tonnages for Secunda and Sasolburg for 1953/1954 through 2004/2005 from "mining colleagues" at Sasol, 7July2005.

Cell: N30 Comment: Rick Heede:

Sasol Annual Rpt 2009, page 47: "Sasol Petroleum International (SPI) develops and manages the group's upstream interests in oil and gas exploration and production. Particular focus is given to securing more natural gas reserves with the aim of leveraging the group's proprietary technology and developing new gas-to-liquids (GTL) facilities.storage (CCS) solutions in support of the group's coal-to-liquids." Gas sales, condensate sales, and oil sales data below.

Cell: E48

Comment: Rick Heede: Coal production for 1982 and 1983 from Sasol (1984) Annual Report.

Coal production for 1983 forward from Sasol (various) Annual Reports. Data reported by collieries and not totalled until the 1987 report.

Cell: E57

Comment: Rick Heede:

Sasol Annual Report for 1991 only reports production from Secunda Collieries; no mention of production from Sasol's Sigma Collieries.

Cell: E59

Comment: Rick Heede:

1993 production from Sasol (1994) Annual report, p. 12. Alos reports methane explosion at Secunda Collieries' Middelbult mine in March 1993, claiming 53 lives.

Cell: N60

Comment: Rick Heede:

AR 2010 pdf pg 39; report is MT sales and production (not Mm^3), this # is production

Cell: E66

Comment: Rick Heede:

Coal production for 200-2002 from Sasol (2003) SEC Form 20-F, www.sec.gov/index.htm. Reports prior to 2003 not available from SEC website.

Cell: E69

Comment: Rick Heede:

Coal production 2003 and 2004 from Sasol (2005) Annual Report, p. 29. Sasol Mining produces and supplies coal to Sasol's synfuels division. In 2003 Sasol produced 7.28 million tonnes of synthetic liquid fuels (refined at Natref); 2004 = 7.67 Mt. Production slate in 2004 was 66 percent liquid and gaseous fuels, 20 percent petrochemcial feedstocks, 11 percent carbon and nitrogenous feedstocks, and 3 percent "specialized cokes + creosote + related carbon and tar products."

of the total cale produced in 2004, 402 Mt were supplied to the synfuels division and 6 to 7 Mt to Sasol's petrochemical division. Natural gas from Mozambique is slated to replace coal for synfuels production. p. 29. Sasol also reports 3,115 million cubic meters of crude oil processed in 2004, which (at 0.159 cm per bbl) equals 19.59 billion bbl. We conclude that the data units are in thousand (not million, as stated) cubic meters, meaning a refinery throughput of 19.59 million bbl. Liquid fuel sales are reported as 9,318 million cubic meters, or (once crediting proper units) equal to 58.60 million bbl; 2004 report, page 33. Sasol also reports gas sales of 52.9 million gigajoules (ie, petajoules, or PJ) in 2004, 48.7 PJ in 2003. Sales via "Spring Lights Gas,our 49:51 gas marketing joint-venture company with the Durban-based Coal Energy and Power Resources black empowerment company." p. 37.

We have not found evidence of Sasol's own extraction of crude oil or natural gas, and thus base the company's production on its coal operations alone.

Cell: N70

Comment: Rick Heede

Sasol Annual Rpt 2009, page 37: "Sasol Synfuels operates the only commercial coal-based synfuels manufacturing facility in the world." 2008 production of 7.4 million tonnes (sales of 7.5 Mt).

Cell: H72

Comment: Rick Heede:

Sasol Annual Rpt 2007, page 34, coal production in million tonnes; sales are 47.7 and 46.5 million tonnes for 2006 and 2007.

Cell: H74 Comment: Rick Heede

Sasol Annual Rpt 2009, page 31: total sales in 2008: 46.1 million tonnes; total production 42.8 million tonnes. Production chiefly at Secunda mining complex, also 1.8 Mt at Sigma Mooikraal Colliery; Secunda mines nearing depletion, proposing to develop new mines and shafts (R7 billion).

Cell: H76

Comment: Rick Heede: AR 2010 pdf report pg 31

Cell: H79

Comment: Rick Heede:

Sasol Annual Report 2013, page 93.

Cell: N79

Comment: Rick Heede:

Sasol AnnRpt 2013, 130 pp. Page 97: Synfuels: tottal production in 2013: 7.443 Mt (7.2 in 2012).

Page 99: Crude oil processed in 2013 is 2.637 MI (million liters?), total production 7.8 Mm^3 (8.1 Mm^3 in 2012)

Cell: H81 Comment: Rick Heede:

Sasol AnnRpt 2015, page 84, "saleable production" for 2014 and 2015. Excludes "external purchases" of 5.1 Mt and sales to customers (41.7 Mt plus 3.4 Mt export).

Cell: N81 Comment: Rick Heede:

Sasol AnnRpt 2015, page 88. Synfuels refined product 32.4 Mb, plus processed crude oil 19.8 Mb, 52.2 Mb / 7.33 bbl/tonne

Cell: H83

Comment: Rick Heede:

Sasol Limited 20-F June 2018, page 40, saleable domestic production, in Mt, for 2016-2018. https://www.sasol.com/sites/default/files/financial_reports/Sasol%2020-F%20Website%20Version.pdf

Cell: P96 Comment: Rick Heede:

Sasol Annual Rpt 2009, page 33: "Sasol Gas, which markets natural gas from Mozambique and methane-rich gas produced by Sasol Synfuels, sustained sales volumes at 122,2 million gigajoules (M GJ) in 2008."

Sasol

Updated to 2013. However, Sasol Annual Reports or Form 20-F filed with US SEC do not contain detailed data on natural gas production -- primarily in Mozambique. Gas production is combied with syngas production, which is excluded insofar as the carbon in the mined coal is already accounted for in coal production. We assume, lacking detail, that 70 percent of total gas production (natural and syngas) is natural gas.

Cell: D108

Comment: Rick Heede: Sasol 20-F for 2018, p 39-40: "Mining operates seven mines for the supply of coal to the Secunda Synfuels Operations, Sasolburg Operations (utility coal only) and the external market. The annual production of each mine, the primary market to which it supplies coal and the location of each mine are indicated in the table above.