

A B C D E F G H I J K L M N

# Coal extraction data

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*Climate Mitigation Services*  
 File started: 19 June 2019  
 Last modified: June 2020

**Vale S.A., Brazil**

yellow column indicates original reported units

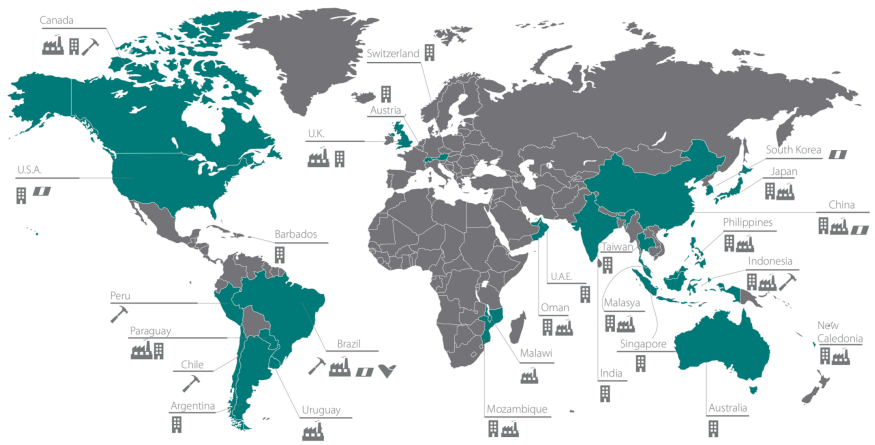
[www.vale.com](http://www.vale.com) location

## Production / Extraction data

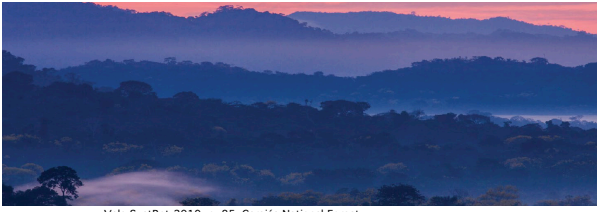
Year	Thermal coal		Metallurgical coal		Total Coal	
	Gross production	Gross production	Gross production	Gross production	Gross production	Gross production
	Million tons/yr	Million tonnes/yr	Million tons/yr	Million tonnes/yr	Million tons/yr	Million tonnes/yr

- 13 1950
- 14 1951
- 15 1952
- 16 1953
- 17 1954
- 18 1955
- 19 1956
- 20 1957
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- 22 1959
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- 73 2010
- 74 2011
- 75 2012
- 76 2013
- 77 2014
- 78 2015
- 79 2016
- 80 2017
- 81 2018

Established in 1942, privatized in 1997 Companhia Vale Do Rio Doce



Vale (2019) Sustainability Report 2018, page 33.



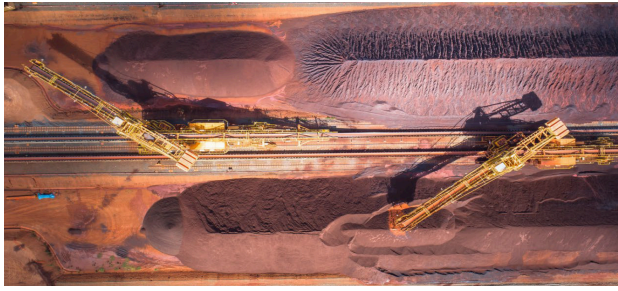
Vale SustRpt 2019, p. 85. Carajás National Forest.



Vale SustRpt 2019, p. 63.

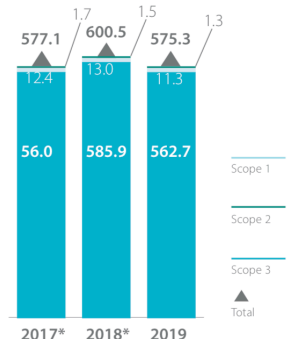
2007	0.60		1.89			-
2008	1.41		2.68			2.5
2009	3.08		2.59			4.1
2010	4.23		3.15			5.7
2011	5.34		2.33			7.4
2012	2.00		5.08			7.7
2013	1.88		6.89			7.1
2014	2.20		6.44			8.8
2015	0.89		5.61			8.6
2016	5.46		4.91			6.5
2017	4.60		7.18			10.4
2018	5.39		6.24			11.8
<b>Total</b>	<b>37.1</b>	<b>-</b>	<b>55.0</b>	<b>-</b>	<b>-</b>	<b>92.1</b>

<b>Coal Types:</b>	Thermal coal	<b>40.28%</b>	Metallurgical	<b>59.72%</b>	Total coal	<b>100.00%</b>



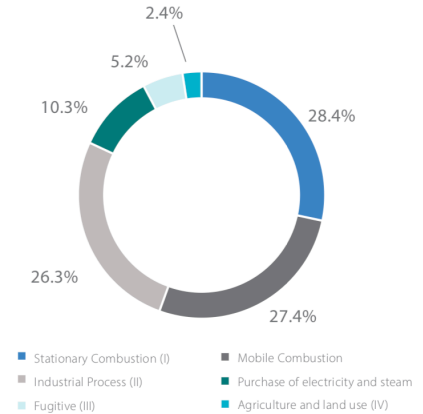
Vale SustRpt 2019, page 49.

Total GHG Emissions  
in millions of tCO<sub>2</sub>e



	Year ended December 31,	
	2019	2018
	(thousand metric tons, except where indicated)	
<b>Ferrous minerals:</b>		
Iron ore fines	267,992	307,433
Pellets	43,199	56,592
Manganese	1,063	1,572
Ferroalloys	127	141
ROM (run of mine)	1,314	1,548
<b>Coal:</b>		
Thermal coal	4,356	5,393
Metallurgical coal	4,427	6,240
<b>Base metals:</b>		
Nickel	206	236
Copper	244	274
Copper as nickel subproduct	122	105
PGMs (000' oz.)	319	374
Gold (000' oz.)	459	484
Silver (000' oz.)	1,830	2,169
Cobalt (metric tons)	4,273	4,974

Total emission (Scope 1 and 2) by source



	Year ended December 31,		
	2015	2016	2017
	(thousand metric tons, except where indicated)		
<b>Ferrous minerals:</b>			
Iron ore fines	276,393	289,940	288,692
Pellets	46,284	47,709	51,775
Manganese	1,764	1,851	1,826
Ferroalloys	69	127	132
ROM	12,269	3,496	2,637
<b>Coal:</b>			
Thermal coal	892	5,457	4,602
Metallurgical coal	5,614	4,907	7,178
<b>Base metals:</b>			
Nickel	292	311	295
Copper	397	430	424
PGMs (000' oz.)	519	507	350
Gold (000' oz.)	425	497	471
Silver (000' oz.)	2,303	2,578	2,179
Cobalt (metric tons)	3,840	4,734	5,103

Vale (2018) Annual Report & 20-F for 2017, page 92.

Operation	Mine type	Production for the year ended December 31,		
		2012	2013	2014
		(thousand metric tons)		
<b>Metallurgical coal:</b>				
<i>Vale Australia</i>				
Integra Coal(1)(4)	Underground and open-cut	962	1,410	715
Isaac Plains(2)	Open-cut	709	656	746
Carborough Downs(3)	Underground	911	2,447	1,857
<i>Vale Mozambique</i>				
Moatize(5)	Open-cut	2,501	2,373	3,124
<b>Total metallurgical coal</b>		<b>5,083</b>	<b>6,885</b>	<b>6,443</b>
<b>Thermal coal:</b>				
<i>Vale Australia</i>				
Integra Coal(1)	Open-cut	351	87	92
Isaac Plains(2)	Open-cut	381	347	326
<i>Vale Mozambique</i>				
Moatize(5)	Open-cut	1,267	1,444	1,784
<b>Total thermal coal</b>		<b>1,999</b>	<b>1,878</b>	<b>2,202</b>

	Year ended December 31,			
	2007	2008	2009	2010
	(thousand metric tons)			
Iron ore	262,687	264,023	229,174	254,902
Iron ore pellets	33,670	32,218	18,087	39,512
Manganese	708	759	986	1,119
Ferroalloys	488	396	253	401
Nickel	268	276	223	174
Copper	300	320	316	208
Potash	674	499	792	682
Platinum	345	411	233	97
Cobalt	2,404	3,087	1,854	0,902
<b>Coal:</b>				
Thermal coal	603	1,405	3,083	4,234
Metallurgical coal	1,894	2,682	2,990	3,150
<b>Phosphates:</b>				
MAP	-	-	-	703
TSP	-	-	-	461
SSP	-	-	-	1,533
DCP	-	-	-	284
Nitrogen	-	-	-	747

Vale (2013) Annual Report & 20-F for 2012, page 78.

- These figures correspond to our 61.2% equity interest in Integra Coal, an unincorporated joint venture. Our equity interest in Integra Coal increased to 64.8% in December 2014.
- These figures correspond to our 50.0% equity interest in Isaac Plains, an unincorporated joint venture.
- These figures correspond to our 85.0% equity interest in Carborough Downs, an unincorporated joint venture. Our equity interest in Carborough Downs increased to 90% in December 2014.
- Operations at Integra Coal and Isaac Plains have been suspended since May and November 2014, respectively.
- These figures correspond to 100% production at Moatize, and are not adjusted to reflect our ownership.

Vale (2015) Annual Report and 20-F for 2014, page 47.

Operations, 2014                      Table excludes Chinese production, includes 100% of Moatize (95% stake, tk).  
Customers and sales

**Cell:** I9

**Comment:** Rick Heede:

Vale S.A. is a Brazilian multinational corporation engaged in metals and mining and one of the largest logistics operators in Brazil. Vale, formerly Companhia Vale do Rio Doce (the Sweet River Valley Company, referring to the Doce River), is the largest producer of iron ore and nickel in the world. Vale also produces manganese, ferroalloys, copper, bauxite, potash, kaolin, and cobalt, currently operating nine hydroelectricity plants, and a large network of railroads, ships, and ports used to transport its products. The company has had two catastrophic tailings dam failures in Brazil: Mariana, in 2015, and Brumadinho, in 2019; the Brumadinho dam disaster caused the company to lose its license to operate eight tailings dams in Minas Gerais, and its stock to lose nearly 25 percent in value. Railroads: From 2000 to 2006, Vale invested more than \$1.3 billion on the acquisition of over 361 locomotives and around 14,090 freight cars, those locomotives were primarily for iron ore transportation, but some were for regular cargo. Some of the locomotives purchased were secondhand for refurbishment but at least 55 of the locomotives acquired were new ones of the model EMD SD70M, each one costing about \$2 million. After those investments, Vale became the owner of over 800 locomotives and more than 35,000 freight cars.

**History:**  
 Founded as Companhia Vale do Rio Doce (widely known as CVRD prior to 2007) ("Doce River Valley Company") was founded in Itabira, Minas Gerais, by the Brazilian Federal Government on 1 June 1942. One year later the Vitória a Minas railroad was inaugurated. The 1950s marked Companhia Vale do Rio Doce's entry into the global iron ore market, after the company's mine-railroad-port complex was modernized and iron ore prices doubled. At first, sales were mostly to the United States, but exports to Europe increased over the course of the decade. In 1966, the company inaugurated in Espírito Santo the Port of Tubarão, which was to become the most important port for CVRD and is still used to export iron ore mined from the Iron Quadrangle in Minas Gerais. The company acquired a majority interest in the Carajás Mine, with over 1.5 billion tonnes of iron ore in reserves, in 1970. In 1974, Vale became the world's biggest exporter of iron ore, a title which it still holds today. In 1982, Vale began to diversify after it started to produce aluminium in Rio de Janeiro. In the mid 1980s, profits increased considerably under the leadership of Eleizer Batista, father of Eike Batista. In 1985, Vale started to explore the Carajás Mine in the state of Pará just after the 1,600 mm (5 ft 3 in) gauge Carajás railroad was opened. In 1986, Ponta Madeira port terminal, which is still used to export iron ore mined at the Carajás Mine, was inaugurated in the state of Maranhão. In March 2017, Vale SA choose a commodities industry veteran, Fabio Schwartsman as chief executive officer. Schwartsman was CEO of Klabin SA, Brazil's largest paper and cardboard producer, for the past six years. Privatization in 1997:  
 In May 1997, despite protests by Vale employees and some politicians, the Brazilian Government auctioned a 41.73% interest in the company, which was sold for R\$3.34 billion (US\$3.13 billion). The largest interest purchased was a 16.3% stake purchased by Brazilian steel company Companhia Siderúrgica Nacional.

**Diversification into coal:**  
 In 2007, Vale made a major entry into coal mining by acquiring AMCI Holdings Australia for AU\$835 million. In 2014, Vale announced the sale of coal assets in Mozambique to Mitsui in a \$950 million transaction.

**Criticism:**  
 In January 2012, Vale received the "people's choice" Public Eye Award as the corporation with the most "contempt for the environment and human rights" in the world. Vale received 25,000 votes, with the Belo Monte Dam cited as a reason. During the interim between the two dam disasters, of 2015 and 2019; Vale had denied owning an upstream tailings waste structure such as collapsed, causing the Brumadinho dam to burst. Following the 2019 disaster, BBC News reported that "Correspondents say the alarm system the company had installed to warn residents of any risk did not go off." [https://en.wikipedia.org/wiki/Vale\\_\(company\)](https://en.wikipedia.org/wiki/Vale_(company)) (June 2020)  
 CAI: update coal mining, mines owned, annual production, and forecasts.

**Cell:** D11

**Comment:** Rick Heede:

Coal production by coal mining companies and state-owned enterprises, including subsidiaries of oil and gas companies.

Coal types produced are not ordinarily reported by coal operators (except for metallurgical coal). We distinguish, where possible and reasonably well known, between hard (bituminous and subbituminous) and soft (lignite or peat) coals, especially for the larger companies operating in regions such as Australia and India where soft coals are predominant. Soft coals have lower carbon content per tonne than do hard coals.

**Cell:** D73

**Comment:** Rick Heede:

Vale (2013) Annual Report & 20-F for 2012, page 78.

**Cell:** D78

**Comment:** Rick Heede:

Vale (2015) Annual Report and 20-F for 2014, page 47. Thermal and metallurgical coal sales (not production) data for 2012 to 2014,

**Cell:** D81

**Comment:** Rick Heede:

Vale (2018) Annual Report and 20-F for 2017, page 92. Thermal and metallurgical coal sales (not production) data for 2015 to 2017.

**Cell:** D84

**Comment:** Rick Heede:

Vale (2020) Annual Report & 20-F for 2019, page 105.

**Cell:** Q84

**Comment:** Rick Heede:

3.1 Operations We produce metallurgical and thermal coal through our subsidiaries Vale Moçambique, which operates the Moatize mine, and Vale Australia, which operates coal assets in Australia through wholly-owned companies and unincorporated joint ventures. We also have a minority interest in two Chinese companies, Henan Longyu Energy Resources Co., Ltd. ("Longyu") and Shandong Yankuang International Coking Company Limited ("Yankuang").  
 Vale (2015) Annual Report and 20-F for 2014, page 47.

**Cell:** Q85

**Comment:** Rick Heede:

Coal sales from our Australian operations are primarily focused on Asia. Coal sales from our Moatize operations, in Mozambique, target global steel markets, including Asia, Africa, Europe and the Americas. Our Chinese coal joint ventures direct their sales into the Chinese domestic market.

**Cell:** AB88

**Comment:** Rick Heede:

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