

Mine Economics



SCENARIO: MARKET INTELLIGENCE 2020 CONSTANT USD

Chart

Data

2021 Nickel Production Ranked on Total Cash Cost*

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PROP...	COUN...	EQUITY OWN... (OWN... %)	PERC... LOWER (%)	PAID NICKEL (000 TONN...	LABOR (€/LB)	ENER... (€/LB)	REAG... (€/LB)	OTHER ONSITE (€/LB)	TCRC... (€/LB)	ROYAL... (€/LB)	TO... CA... CO... (€/...	↑
TOTAL AND WEIGHTED AVERAGE				1,273.1	77.66	48.89	48.93	99.47	107.20	13.71	395.86	
Codemin	Brazil	Anglo Ameri... PLC (100.00)	0.00	8.1	57.65	14.54	50.34	46.24	5.96	0.00	174.73	
Norilsk	Russia	PJSC Mining and Metall... Co. Norilsk Nickel (100.00)	0.64	180.3	41.38	3.30	1.82	14.95	111.72	8.70	181.88	
Platinum Mile	South Africa	Sibanye Stillwa... Ltd. (91.70) Mvela... Holdin... (Propri... Ltd (8.30)	14.80	0.1	12.29	73.80	15.16	16.37	135.09	0.00	252.71	
Marula	South Africa	Impala Platin... Holdin... Ltd. (73.26) Black Econo... Empo... (26.74)	14.81	0.2	72.98	5.90	1.93	26.33	140.38	9.99	257.51	
Nova- Bollinger	Austra...	IGO Ltd. (100.00)	14.83	20.5	115.89	37.38	8.51	53.88	19.57	31.21	266.45	
Zimplats	Zimba...	Zimpl... Holdin... Ltd. (100.00)	16.44	4.8	25.94	11.95	1.19	77.60	144.82	12.28	273.77	
Eagle	USA	Lundin Mining Corp. (100.00)	16.82	18.7	43.20	6.03	2.55	23.55	170.20	29.71	275.24	

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Ramu ▼	Papua New Guinea	Metall... Corp. of China Ltd. (56.97) Jilin Jien Nickel Industry Co. Ltd. (11.05) Jiuquan Iron and Steel (Group) Co. Ltd. (11.05) Nickel 28 Capital Corp. (8.56) Jinchu... Group Intern... Resou... Co. Ltd. (5.93) Mineral Resou... Develo... Corp. (3.94)	18.29	29.6	22.71	42.77	69.49	14.19	131.90	9.10	290.16
Kevitsa ▼	Finland	Boliden AB (publ) (100.00)	20.61	10.6	24.99	35.92	11.30	37.08	187.94	0.00	297.23
Jinchuan	China	Jinchu... Group Co. Ltd. (100.00)	21.44	73.3	122.79	18.46	2.45	32.95	115.72	9.29	301.65
Two Rivers ▼	South Africa	African Rainbow Miner... Ltd. (54.00) Impala Platin... Holdin... Ltd. (46.00)	27.20	0.5	71.15	20.29	2.61	48.19	126.70	34.93	303.86
Bafokeng- Rasimone	South Africa	Royal Bafok... Platin... Ltd. (100.00)	27.24	3.2	145.07	25.23	3.23	127.74	0.24	4.60	306.10
Kroondal	South Africa	Anglo Ameri... Platin... Ltd. (50.00) Sibanye Stillwa... Ltd. (50.00)	27.49	0.4	85.51	10.03	1.53	8.85	194.28	14.15	314.34
Mogalakw	South Africa	Anglo Ameri... Platin... Ltd. (100.00)	27.52	16.2	19.34	38.11	13.61	17.28	215.01	12.49	315.83
Punta Gorda ▼	Cuba	Cuban... (100.00)	28.80	22.0	5.62	44.32	155.27	52.58	59.47	0.00	317.26

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Moa Bay ▼	Cuba	Sherritt Intern... Corp. (50.00) General Nickel Co SA (50.00)	30.53	33.0	2.81	28.64	79.69	68.07	131.56	8.45	319.23
Marikana	South Africa	Sibanye Stillwa... Ltd. (95.25) Incwala Resou... (Pty) Ltd. (4.75)	33.12	2.9	134.62	13.81	2.26	30.66	126.17	14.78	322.31
Barro Alto ▼	Brazil	Anglo Ameri... PLC (100.00)	33.35	35.6	72.22	16.59	108.96	114.95	6.28	12.56	331.56
Mimosa ▼	Zimba...	Impala Platin... Holdin... Ltd. (50.00) Sibanye Stillwa... Ltd. (50.00)	36.15	3.3	55.26	23.52	9.56	106.71	127.19	14.34	336.57
Kalatongk	China	Xinjiang Xinix Mining Industry Co. Ltd. (100.00)	36.40	4.5	68.59	33.17	10.18	70.85	141.49	14.54	338.82
Amandelb	South Africa	Anglo Ameri... Platin... Ltd. (100.00)	36.76	0.9	193.84	25.88	3.80	9.68	87.86	18.49	339.55
Trojan ▼	Zimba...	Bindura Nickel Corp. Ltd. (100.00)	36.83	4.8	100.83	36.14	2.40	42.75	150.60	9.83	342.57
Western Limb Tailings ▼	South Africa	Sibanye Stillwa... Ltd. (100.00)	37.20	1.0	38.56	57.03	21.40	72.12	137.67	19.46	346.23
Union Section ▼	South Africa	Siyanda Resou... Pty Ltd. (85.00) Bakga... Ba Kgafela Comm... (15.00)	37.28	0.3	134.78	8.96	0.55	16.07	188.72	0.04	349.13
Unki ▼	Zimba...	Anglo Ameri... Platin... Ltd. (100.00)	37.30	2.9	57.16	11.89	1.55	62.02	202.21	15.95	350.78
Santa Rita ▼	Brazil	Appian Capital Advisory LLP (100.00)	37.53	13.7	33.46	68.26	27.68	87.76	105.60	29.34	352.10

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Pomalaa	Indone...	PT Aneka Tamba... Tbk (100.00)	38.60	26.0	60.86	160.35	9.27	109.92	0.00	18.43	358.83
Pilanesbe	South Africa	Sedib... Platin... Mines Ltd. (100.00)	40.64	0.7	54.34	36.68	34.24	45.17	189.88	2.12	362.43
Mototolo	South Africa	Anglo Ameri... Platin... Ltd. (100.00)	40.70	0.4	74.57	45.31	6.50	32.07	195.15	11.28	364.89
Modikwa	South Africa	Anglo Ameri... Platin... Ltd. (50.00) African Rainbow Miner... Ltd. (41.50) Private Interest (8.50)	40.73	0.5	113.55	25.79	3.93	20.22	194.34	7.28	365.10
Rustenburg	South Africa	Sibanye Stillwa... Ltd. (100.00)	40.77	1.9	127.87	9.82	2.29	28.16	179.70	17.29	365.14
Ambatovy	Madag...	Sumit... Corp. (54.17) Korea Resou... Corp. (45.82) Unna... Owner (0.01)	40.92	40.0	47.10	29.03	116.64	49.03	114.91	8.64	365.34
Stillwater	USA	Sibanye Stillwa... Ltd. (100.00)	44.06	0.8	100.22	6.34	1.05	29.82	239.60	0.00	377.03
Zonderein	South Africa	North... Platin... Holdin... Ltd. (100.00)	44.13	1.5	81.57	9.43	1.77	47.82	252.49	0.74	393.81
Falcondo	Domin... Repub...	Global Special Opport... Ltd. (85.26) Domin... Repub... (10.00) Franco-Nevada Corp. (4.10) Private Interest (0.64)	44.25	17.0	90.78	114.37	63.77	127.62	0.00	0.00	396.55
Forrestani	Austra...	Western Areas Ltd. (100.00)	45.58	14.9	114.73	9.95	1.97	35.11	219.72	22.10	403.57

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East Yellow Mountain	China	Xinjiang Xinxin Mining Industry Co. Ltd. (100.00)	46.75	5.9	109.59	42.05	15.83	51.91	166.51	25.19	411.07
Cerro Matoso ▼	Colom...	South32 Ltd. (99.94) Minew... (0.06)	47.21	36.2	53.92	88.89	92.40	93.58	0.91	81.64	411.34
Taganito ▸	Philip...	Nickel Asia Corpor... (65.00) Pacific Metals Co. Ltd. (33.50) Sojitz Corp. (1.50)	50.06	36.0	20.91	42.15	89.78	109.57	159.83	0.00	422.25
Sudbury Operation	Canada	Glenco... PLC (100.00)	52.89	25.1	201.14	14.66	2.78	62.84	142.12	0.00	423.54
Impala ▼	South Africa	Impala Platin... Holdin... Ltd. (96.00)	54.86	3.8	156.72	8.36	5.57	19.31	230.89	9.11	429.95
Raglan ▼	Canada	Glenco... PLC (100.00)	55.16	30.9	127.60	35.88	2.80	127.56	115.97	25.29	435.11
Sorowako	Indone...	PT Vale Indone... Tbk (100.00)	57.58	59.2	55.32	44.83	42.79	182.58	71.51	42.44	439.47
Weda Bay ▼	Indone...	Tsings... Holding Group Co. Ltd. (51.30) Eramet SA (38.70) PT Aneka Tamba... Tbk (10.00)	62.23	40.2	80.72	38.41	60.69	241.18	5.78	18.52	445.29
Tulaergen	China	China State-Owned Mining Enterp... (100.00)	65.38	1.4	72.80	60.37	17.59	74.62	201.05	21.48	447.89
Ravensthorc	Austra...	First Quant... Miner... Ltd. (70.00) POSCO Holdin... Inc. (30.00)	65.50	18.3	138.81	90.80	64.28	99.83	24.02	30.91	448.64
Oheyama	Japan	Nippon Yakin Kogyo Co. Ltd. (100.00)	66.93	12.0	0.00	0.00	0.00	165.76	291.65	0.00	457.41

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Voisey's Bay ▼	Canada	Vale SA (100.00)	67.87	34.3	88.48	50.70	8.92	132.26	167.66	15.92	463.94
Rio Tuba ▼	Philip...	Nickel Asia Corpor... (60.00) Pacific Metals Co. Ltd. (36.00) Sojitz Corp. (4.00)	70.57	22.0	40.05	31.38	126.17	112.01	159.92	0.00	469.54
Avebury ▼	Austra...	Dundas Mining Pty. Ltd. (100.00)	72.30	2.1	146.75	17.39	5.91	56.17	231.19	14.32	471.74
Ontario Division ▼	Canada	Vale SA (100.00)	72.47	58.4	113.77	21.35	7.44	235.35	94.18	1.04	473.13
TerraFame	Finland	TerraF... Oy (100.00)	77.06	27.3	83.30	40.55	219.19	67.00	70.42	0.00	480.46
Koniambo	New Caledo...	Societe Miniere du Sud Pacifi... SA (51.00) Glenco... PLC (49.00)	79.20	13.2	84.70	145.98	1.05	255.87	0.00	0.00	487.59
Onca Puma ▼	Brazil	Vale SA (100.00)	80.24	21.4	67.63	171.85	137.11	94.73	4.13	13.86	489.31
Hyuga ▼	Japan	Hyuga Smelti... Co. Ltd. (100.00)	81.92	13.0	0.00	0.00	0.00	186.27	305.20	0.00	491.47
Hachinohe	Japan	Pacific Metals Co. Ltd. (100.00)	82.94	24.0	0.00	0.00	0.00	197.71	295.17	0.00	492.87
Larco ▼	Greece	Larco SA (100.00)	84.83	18.0	86.76	66.10	98.13	260.85	0.00	0.00	511.83
Murrin Murrin ▼	Austra...	Glenco... PLC (100.00)	86.24	41.1	102.48	95.65	149.52	110.60	33.43	29.95	521.63
Leinster ▼	Austra...	BHP Group Ltd. (100.00)	89.47	26.7	185.87	62.61	5.98	67.63	247.29	14.53	583.91
Nkomati ▼	South Africa	African Rainbow Miner... Ltd. (50.00) PJSC Mining and Metall... Co. Norilsk Nickel (50.00)	91.56	1.5	221.49	47.70	17.99	104.09	189.38	5.86	586.52

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Savannah	Austra...	Panor... Resou... Ltd. (100.00)	91.68	0.8	256.88	21.79	3.53	35.40	252.50	23.55	593.65
SLN ▼	New Caledo...	Eramet SA (56.00) Société Territo... Calédo... de Partici... Indust... (34.00) Nippon Steel Nisshin Co. Ltd. (10.00)	91.74	43.6	113.62	234.58	34.32	185.31	43.98	0.00	611.82
Goro ▼	New Caledo...	Prony Resou... New Caledo... consor... (95.00) Societe de Partici... Miniere du Sud Caledo... SAS (5.00)	95.16	25.0	83.66	76.35	248.02	93.00	140.96	0.00	641.98
Alex ▼	China	Xinjiang Xinxin Mining Industry Co. Ltd. (100.00)	97.13	0.3	82.35	49.16	26.78	105.05	325.81	79.45	668.60
Mt Keith ▼	Austra...	BHP Group Ltd. (100.00)	97.15	28.3	191.53	113.11	29.92	147.23	251.89	16.13	749.81
Manitoba Division ▼	Canada	Vale SA (100.00)	99.37	8.0	369.37	32.78	14.61	163.11	202.71	0.00	782.59

*Figures pre-2021 are based on reported/actual data where available. Figures from 2021 and later are based on S&P Global Market Intelligence's estimates and forecasts. For Market Intelligence's Constant scenario, all forecasts for prices are in constant 2020 US dollars (e.g. wage rates, electricity prices, reagent or fuel costs and metal prices).

Access methodology and definitions (<https://spglobal.force.com/s/article/Mine-Economics-Methodology>) related to Mine Economics data.

Mine Economics covers 49.52% of 2021 global recovered Nickel production.

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