

Mineral Industry Surveys

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PLATINUM-GROUP METALS IN MARCH 2012

Engelhard's average March prices for platinum and rhodium decreased slightly and that for palladium decreased by 3% compared with average February prices. The average monthly iridium and ruthenium prices decreased slightly during the same period. Platinum and palladium daily prices dropped precipitously early in the month owing to the end of the 6-week workers' strike at Impala Platinum Holdings Ltd.'s (Implats) (Johannesburg, South Africa) Rustenburg operations in South Africa. Prices for platinum and palladium increased in mid-month, owing to anticipated increased demand and increased investment interest, and then prices generally decreased toward the end of March in response to reports of a slowdown in the Chinese economy. Rhodium prices decreased throughout the month, and were lower than platinum prices for the third straight month. Platinum prices were higher than those for gold for a few days during the month owing to improved outlook for automobile production, in which platinum is used in catalytic converters to decrease harmful emissions. Platinum prices then fell below those for gold.

Stillwater Mining Co. (Billings, MT) entered into an agreement with Mitsubishi Corp. (Tokyo, Japan) in which Mitsubishi will acquire a 25% share in Stillwater's Marathon platinum-group metals (PGM) project in Ontario, Canada. A related supply agreement gave Mitsubishi the option to purchase as much as 100% of PGM production from Marathon. PGM concentrates produced at Marathon were planned to be transported off site for smelting and refining. The mine was projected to produce about 6,200 kilograms per year of PGMs during a mine life of about 11.5 years starting in 2016 (Stillwater Mining Co., 2012).

Implats restarted operations at its Rustenburg Mine following a 6-week workers' strike. Implats rehired about 14,950 of the 17,200 workers that had been fired for participating in the illegal strike. Lost production as a result of the strike totaled about 3,700 kilograms of PGM (Reuters, 2012).

Implats reached an agreement with the Zimbabwe Government to transfer 51% ownership of its operations in Zimbabwe to locals as required by the Zimbabwe Government's indigenization law. Agreements were reached for both the

wholly owned Zimplats Mine and the Mimosa Mine, a 50-50 joint venture with Aquarius Platinum Ltd. (Perth, Australia). According to the agreement regarding Mimosa, Implats and Aquarius would sell 10% of the operations to workers, 10% to local communities, 6% to State employees, and 25% to a Government fund (Johnson Matthey plc, 2012a).

The U.S. Department of Energy (DOE) planned to invest more than \$5 million on two projects designed to lower the cost and increase the efficiency of fuel cells. Fuel cells produce electricity by combining oxygen with a fuel such as hydrogen using a catalyst such as platinum and produce only water as emissions. The 3-year projects would develop and engineer cost-effective components for fuel cells used in vehicles and stationary applications. The aim of the projects was to produce, by 2017, fuel cell systems that were 60% efficient, cost \$30 per kilowatt, and had 5,000 hours durability, equivalent to driving 241,000 kilometers. The DOE also planned to invest \$2 million in a third project to support research in improving hydrogen refilling technology. Several car manufacturers planned to introduce fuel cell-electric vehicles by 2015, and many States were investing in infrastructure for hydrogen fueling (Johnson Matthey plc, 2012b, c).

References Cited

- Johnson Matthey plc, 2012a, Implats, Aquarius get green light on Mimosa indigenization plans: London, United Kingdom, Johnson Matthey plc news release, March 22, 1 p.
- Johnson Matthey plc, 2012b, US Department of Energy invests \$5m in 2 fuel cell component projects: London, United Kingdom, Johnson Matthey plc news release, March 28, 1 p.
- Johnson Matthey plc, 2012c, US Department of Energy unveils \$2m to support hydrogen refilling technology: London, United Kingdom, Johnson Matthey plc news release, March 14, 1 p.
- Reuters, 2012, World's largest platinum mine restarts: Reuters, March 5, 1 p. (Accessed April 23, 2012, at <http://www.reuters.com/article/2012/03/05/implats-restart-idUSL5E8E55FZ20120305>.)
- Stillwater Mining Co., 2012, Stillwater and Mitsubishi enter into an agreement for development of Marathon project in Canada: Billings, MT, Stillwater Mining Co. news release, March 28, 1 p.

TABLE 1
PLATINUM-GROUP METALS PRICES¹

(Dollars per troy ounce)

	Platinum	Palladium	Rhodium	Iridium	Ruthenium
2011:					
Low/date	1,356.00 Dec. 29	553.00 Oct. 5	1,400.00 Dec. ²	780.00 Jan. 3 and 4	110.00 Dec. ²
High/date	1,892.00 Aug. 22 and 23	851.00 Feb. 18	2,500.00 Jan. 31 and Feb. ²	1,085.00 Sep.–Dec. ²	180.00 Jan.–Aug. ²
Average	1,724.51	738.51	2,024.35	1,035.87	165.85
2012:					
February:					
Low/date	1,615.00/6 and 16	688.00/16	1,475.00 ²	1,075.00 ²	120.00 ²
High/date	1,731.00/29	727.00/29	1,540.00/14 and 15	1,085.00 ²	130.00 ²
Average	1664.50	708.05	1,511.50	1,079.00	127.00
March:					
Low/date	1,610.00/22	656.00/30	1,400.00/29 and 30	1,075.00 ²	120.00 ²
High/date	1,709.00/2	718.00/2	1,525.00 ²	1,075.00 ²	130.00 ²
Average	1,660.05	689.86	1,484.09	1,075.00	126.59
January–March:					
Low/date	1,410.00 Jan. 9	620.00 Jan. 9	1,350.00 Jan. ²	1,075.00 Feb.–Mar. ²	110.00 Jan. ²
High/date	1,731.00 Feb. 29	727.00 Feb. 29	1,540.00 Feb. 14 and 15	1,085.00 Jan.–Feb. ²	130.00 Feb.–Mar. ²
Average	1,611.53	687.07	1,462.02	1,079.67	121.67

¹Quotes from Engelhard.

²Occurred multiple days in month(s) listed.

Source: Platts Metals Week.

TABLE 2
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM METAL, BY COUNTRY¹

(Kilograms metal content, unless otherwise specified)

Period and country	Platinum grain and nuggets		Platinum sponge		Other unwrought platinum		Platinum, other		Platinum waste and scrap		Platinum coins	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		(thousands)		(thousands)		(thousands)		(thousands)		(thousands)		(thousands)
2011:												
December	42	\$1,530	3,530	\$169,000	638	\$24,800	258	\$10,800	8,010	\$109,000	223	\$10,800
January–December	1,230	65,700	35,800	1,910,000	7,160	211,000	4,800	206,000	78,900	832,000	1,200	66,300
2012:												
January	90	4,400	2,350	109,000	313	12,800	439	16,600	1,590	66,100	121	5,850
February:												
Australia	--	--	--	--	--	--	156	7,740	9	369	57	2,880
Austria	--	--	--	--	--	--	4	203	--	--	--	--
Belgium	--	--	25	1,170	--	--	--	--	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	120	3,030	--	--
Canada	1	51	--	--	--	--	8	462	260	9,450	(2)	5
Chile	--	--	--	--	--	--	--	--	141	277	--	--
China	--	--	--	--	--	--	2	96	13	628	--	--
Colombia	--	--	--	--	90	3,940	9	373	12	384	--	--
Czech Republic	--	--	--	--	--	--	3	177	--	--	--	--
Finland	--	--	--	--	--	--	--	--	4	228	--	--
France	--	--	--	--	--	--	-2	6	8	523	--	--
Germany	--	--	108	5,920	95	3,470	242	9,600	238	11,700	--	--
Indonesia	--	--	--	--	--	--	--	--	3	175	--	--
Israel	--	--	--	--	--	--	--	--	7	217	--	--
Italy	--	--	158	8,350	--	--	--	--	--	--	--	--
Japan	--	--	--	--	3	55	16	409	276	6,930	--	--
Korea, Republic of	--	--	135	7,160	--	--	3	76	--	--	--	--
Malaysia	--	--	--	--	--	--	--	--	53	1,280	--	--
Mexico	--	--	--	--	--	--	--	--	49	3,940	--	--
Norway	--	--	94	4,770	--	--	--	--	--	--	--	--
Philippines	--	--	--	--	--	--	--	--	6	181	--	--
Poland	--	--	--	--	25	1,590	--	--	--	--	--	--
Russia	16	844	--	--	--	--	--	--	--	--	--	--
Saudi Arabia	--	--	--	--	--	--	--	--	639	32,900	--	--
Singapore	--	--	--	--	(2)	6	--	--	169	5,530	--	--
South Africa	124	5,690	741	37,300	--	--	--	--	--	--	--	--
Switzerland	--	--	1	37	31	1,650	--	--	--	--	--	--
United Kingdom	--	--	283	15,100	(2)	9	99	5,450	290	10,300	--	--
Other	(2)	5	--	--	1	30	(2)	31	15	297	--	--
Total	142	6,590	1,550	79,800	245	10,800	543	24,600	2,310	88,300	57	2,890
January–February	232	11,000	3,900	188,000	557	23,500	982	41,200	3,910	154,000	178	8,730

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS, BY COUNTRY¹

(Kilograms metal content, unless otherwise specified)

Period and country	Unwrought palladium		Palladium, other		Iridium ²		Osmium ²		Ruthenium ²		Rhodium ²	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2011:												
December	10,900	\$219,000	798	\$18,100	100	\$3,270	--	--	1,000	\$3,850	1,200	\$59,800
January–December	87,000	1,890,000	11,900	268,000	2,880	59,400	48	\$261	13,200	69,300	13,100	844,000
2012:												
January	2,330 ^r	47,500	988 ^r	23,100	65	2,200	--	--	882 ^r	2,620	1,720	79,400
February:												
Austria	--	--	75	1,200	--	--	--	--	--	--	--	--
Belgium	378	6,610	4	89	--	--	--	--	62	186	21	997
Brazil	562	12,700	--	--	--	--	--	--	--	--	--	--
Canada	172	4,740	18	880	--	--	--	--	--	--	--	--
Germany	280	5,300	12	240	7	118	--	--	135	606	67	3,530
Italy	123	2,820	1	29	15	530	--	--	--	--	8	402
Japan	67	461	7	193	6	219	--	--	15	38	--	--
Korea, Republic of	112	2,580	--	--	--	--	--	--	--	--	--	--
Norway	409	8,970	93	2,070	--	--	--	--	--	--	7	275
Russia	2,520	54,800	380	8,230	--	--	--	--	--	--	90	3,920
South Africa	999	20,900	343	6,860	28	943	--	--	1,130	3,320	641	28,900
Switzerland	1	12	14	319	--	--	--	--	--	--	--	--
United Kingdom	1,410	31,500	88	2,060	19	663	--	--	241	992	26	1,430
Other	--	--	1	14	--	--	--	--	--	--	(3)	2
Total	7,030	151,000	1,040	22,200	75	2,470	--	--	1,580	5,140	859	39,400
January–February	9,360	199,000	2,020	45,300	140	4,670	--	--	2,460	7,760	2,580	119,000

^rRevised. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Unwrought and other forms.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY¹

(Kilograms metal content, unless otherwise specified)

Period and country	Platinum ²		Platinum waste and scrap		Palladium ²		Iridium, osmium, and ruthenium ^{2,3}		Rhodium ²	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2011:										
December	812	\$36,600	2,220	\$68,000	2,320	\$27,300	164	\$2,290	74	\$3,440
January–December	11,300	552,000	118,000	1,440,000	32,000	416,000	1,150	18,000	1,370	71,700
2012:										
January	483	20,100	8,610	70,300	2,060	27,800	40	421	35	2,480
February:										
Australia	3	167	--	--	61	579	2	42	--	--
Austria	4	149	--	--	2	43	--	--	--	--
Belgium	2	55	11	756	1	12	1	6	--	--
Canada	9	467	1	17	435	3,930	--	--	37	828
China	1	27	42	2,260	64	1,340	13	179	11	779
Colombia	--	--	--	--	38	104	--	--	--	--
Costa Rica	(4)	12	--	--	3	15	3	59	--	--
France	(4)	14	--	--	26	266	(4)	10	--	--
Germany	337	18,400	818	11,900	838	17,500	1	6	57	2,810
Hong Kong	8	303	--	--	77	1,310	15	84	--	--
India	2	34	--	--	6	37	--	--	--	--
Ireland	13	404	--	--	9	67	1	8	--	--
Israel	1	36	--	--	289	1,580	(4)	4	--	--
Italy	18	904	18	544	117	1,610	--	--	8	530
Japan	357	16,900	84	3,370	384	4,120	2	51	21	989
Korea, Republic of	(4)	3	--	--	11	142	3	54	--	--
Mexico	12	441	1	36	1	24	--	--	-4	11
New Zealand	(4)	19	--	--	48	161	--	--	--	--
Philippines	(4)	25	--	--	1	4	--	--	--	--
Romania	(4)	4	--	--	5	11	--	--	--	--
Saudi Arabia	(4)	4	--	--	1	30	--	--	--	--
Singapore	50	3,170	--	--	4	83	--	--	17	758
South Africa	--	--	966	3,450	2	38	--	--	--	--
Sweden	2	64	--	--	1	15	--	--	--	--
Switzerland	--	--	284	5,590	5	78	--	--	--	--
Taiwan	2	77	--	--	104	1,740	26	126	--	--
Thailand	-4	168	--	--	140	524	--	--	--	--
United Kingdom	30	1,150	1,280	44,000	294	3,580	1	21	-4	--
Other	3	103	--	--	69	308	--	--	--	--
Total	856	43,100	3,500	72,000	3,030	39,200	68	649	152	6,700
January–February	1,340	63,200	12,100	142,000	5,100	67,000	108	1,070	186	9,180

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Unwrought and other forms.

³Gross weight.

⁴Less than ½ unit.

Source: U.S. Census Bureau.