

Mineral Industry Surveys

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PLATINUM-GROUP METALS IN FEBRUARY 2006

According to Platts Metals Week, the price of platinum remained at or above the \$1,000-per-troy-ounce level throughout February and averaged \$1,039 per ounce for the month. The price decreased to a low of \$1,000 per troy ounce on February 16, after which the price climbed to \$1,054 per troy ounce at the end of the month. The price of palladium rose above the \$300-per-troy-ounce level for 4 days in early February, reaching a high of \$317 per troy ounce on February 3, before falling and ending the month at \$288 per troy ounce. The price of rhodium reached a 15-year high of \$3,520 per troy ounce in early February. The rapid price increase has been attributed to the large increases in the production of liquid crystal displays (LCD). LCD production machinery uses rhodium (Metal Bulletin, 2006). The price of iridium and ruthenium increased in February and ended the month at \$225 per troy ounce and \$105 per troy ounce, respectively.

On March 6, the Defense National Stockpile Center (DNSC) (2006) announced the February platinum-group metal (PGM) sales results under Basic Ordering Agreement DLA-PGM-002. In February, DNSC sold 18.68 kilograms (kg) of iridium, valued at approximately \$133,000 to Heraeus Incorporated (New York, NY).

PolyMet Mining Corp. (Vancouver, British Columbia, Canada) announced the completion of pilot plant testing of flotation and hydrometallurgical extraction of metals from NorthMet ore samples. The NorthMet project in northeastern Minnesota has the potential to produce cobalt, copper, gold, nickel, and PGMs (PolyMet Mining Corp., 2006).

During 2005, Stillwater Mining Company (Billings, MT) produced 17,200 kg (554,000 troy ounces) of PGMs, a 3% decrease compared with 2004 PGM production. Production from the Stillwater Mine declined 6% while production from the East Boulder Mine increased 5%. The decrease in production at the Stillwater Mine was caused by a reallocation of resources for development rather than for

mine production. Stillwater Mining's recycling program produced 27% more PGMs in 2005 than in 2004. At the end of 2005, the Stillwater Mining Company had a total proven and probable reserve of 750,000 kg (24.1 million troy ounces) of palladium and platinum, with a metal ratio of 3.5 palladium to 1 platinum. The 33% increase in reserves was the result of the completion of diamond drilling in 2005 (Stillwater Mining Company, 2006, p. 3-5). Stillwater also announced that it had signed long-term supply contracts with General Motors Corp., Ford Motor Company and Mitsubishi Motors North America Inc. for palladium and platinum. The contract period extends to 2010 (Platts Metals Week, 2006b).

MMC Norilsk Nickel (Moscow, Russia) announced, for the first time in its history, PGM reserves and resources for its Polar Division on the Taimyr Peninsula. At the end of 2004, the proven and probable ore reserve reportedly was about 1,930 metric tons (t) (62 million troy ounces) of palladium and 498 t (16 million troy ounces) of platinum. The measured and indicated mineral resources contain an additional 4,390 t (141 million troy ounces) of palladium and 1,240 t (40 million troy ounces) of platinum (MMC Norilsk Nickel, 2006). Also, Norilsk signed a contract to supply DaimlerChrysler Corporation with palladium for the production of auto catalysts (Platts Metals Week, 2006a).

North American Palladium Ltd. (NAP) (Toronto, Ontario, Canada) announced that the crushing and milling operations at its Lac des Iles Mine had been restored. On February 4, a tailings dam leak flooded the milling and primary crusher areas causing the shutdown of these operations. According to NAP, there was no environmental impact or production loss as a result of the leak (North American Palladium Ltd., 2006).

References Cited

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TABLE 1
PLATINUM-GROUP METALS PRICES¹

(Dollars per troy ounce)

	Platinum	Palladium	Rhodium	Iridium	Ruthenium
2005:					
Low/date	847.00 Jan. 4	174.00 Jul. 5	1,330.00 Jan. ²	145.00 Feb., Mar., Apr. ²	55.00 Feb. and Mar. ²
High/date	1,019.00 Dec. 12	297.00 Dec. 9	3,110.00 Nov. 17 and 18	195.00 Dec. ²	87.00 Dec. ²
Average	899.51	203.54	2,059.73	169.51	74.41
2006:					
January:					
Low/date	985.00/3	263.00/5	3,000.00 ²	195.00 ²	87.00 ²
High/date	1,077.00/30	293.00/31	3,500.00/31	205.00 ²	90.00 ²
Average	1,032.48	275.95	3,133.57	199.76	88.00
February:					
Low/date	1,000.00/16	275.00/16	3,460.00 ²	205.00 ²	90.00 ²
High/date	1,083.00/2	317.00/3	3,520.00 ²	225.00 ²	105.00 ²
Average	1,045.16	291.58	3,493.68	212.63	96.16
Year to date:					
Low/date	985.00 Jan. 3	263.00 Jan. 5	3,000.00 Jan. ²	195.00 Jan. ²	87.00 Jan. ²
High/date	1,083.00 Feb. 2	317.00 Feb. 3	3,520.00 Feb. ²	225.00 Feb. ²	105.00 ²
Average	1,038.82	283.77	3,313.63	206.20	92.08

¹Quotes from Engelhard Industries.

²Occured multiple days in month 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)
2005:												
November	21	\$631	4,560	\$137,000	159	\$4,720	525	\$9,880	25,800	\$10,400	1	\$22
December	61	1,630	5,380	163,000	295	9,400	548	10,300	500	12,200	1	27
Year	358	10,000	68,100	1,940,000	1,740	48,000	7,020	144,000	184,000	157,000	23	574
2006:												
January:												
Belgium	--	--	34	972	--	--	--	--	--	--	--	--
Brazil	--	--	231	7,460	--	--	(2) ³	7	--	--	--	--
Canada	1	21	--	--	4 ³	45	31 ³	907	344 ³	4,120	32 ³	290
China	--	--	--	--	--	--	9 ³	85	(2)	200	--	--
Colombia	--	--	--	--	--	--	--	--	889	1,200	--	--
France	--	--	--	--	--	--	--	--	393	146	--	--
Germany	--	--	59 ³	1,850	177 ³	4,670	253 ³	3,520	82 ³	36	--	--
India	--	--	12	289	--	--	(2) ³	2	--	--	--	--
Ireland	--	--	--	--	--	--	1 ³	10	--	--	--	--
Italy	--	--	--	--	--	--	76	2,490	--	--	--	--
Japan	--	--	--	--	1	44	2 ³	14	10	329	--	--
Mexico	--	--	--	--	--	--	--	--	(2)	6	--	--
Norway	--	--	31	960	--	--	--	--	--	--	--	--
Philippines	--	--	--	--	--	--	--	--	7	154	--	--
Russia	--	--	34	1,150	--	--	25	780	--	--	--	--
South Africa	--	--	3,950	123,000	--	--	30	937	--	--	--	--
Switzerland	--	--	--	--	--	--	9 ³	178	--	--	--	--
United Kingdom	47	1,240	771	25,200	(2)	17	67 ³	1,300	6,110 ³	3,890	8 ³	118
Total	48	1,260	5,120	160,000	182	4,770	505	10,200	7,830	10,100	39	408

-- Zero.

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

²Less than ½ unit.

³All or part of these data have been referred to the U.S. Census Bureau for verification.

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		Unwrought osmium		Unwrought ruthenium		Rhodium ³	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2005:												
November	10,700	\$75,600	1,310	\$7,390	305	\$1,710	--	--	1,610	\$4,120	1,080	\$89,400
December	34,300	228,000	3,590	12,400	187	1,190	--	--	1,850	5,090	954	89,700
Year	124,000	776,000	15,200	79,700	3,010	16,700	39	\$362	23,200	49,800	13,600	821,000
2006:												
January:												
Belgium	92	833	--	--	--	--	--	--	--	--	27	2,220
Canada	61 ⁴	199	--	--	--	--	--	--	--	--	--	--
China	70	483	--	--	--	--	--	--	--	--	--	--
Estonia	--	--	--	--	--	--	--	--	--	--	200	19,100
France	--	--	2	9	--	--	--	--	--	--	--	--
Germany	4 ⁴	13	57	424	22	130	--	--	460	1,340	57	5,420
Italy	60	525	--	--	--	--	--	--	--	--	5	481
Japan	260 ⁴	1,250	114 ⁴	121	--	--	--	--	--	--	30	3,030
Luxembourg	8,300	78,500	--	--	--	--	--	--	--	--	--	--
Netherlands	--	--	--	--	4	20	--	--	--	--	--	--
Norway	103	898	--	--	--	--	--	--	--	--	31 ⁴	315
Russia	1,250	10,800	703	5,050	--	--	--	--	--	--	24	2,330
South Africa	1,580	13,200	--	--	84	479	--	--	2,030	5,120	1,060	96,800
Spain	3	24	--	--	--	--	--	--	--	--	--	--
Switzerland	--	--	185	1,300	--	--	--	--	--	--	36	3,530
United Kingdom	1,860	16,500	18	73	22	171	--	--	4	10	206	20,800
Total	13,600	123,000	1,080	6,980	132	800	--	--	2,490	6,470	1,680	154,000

-- Zero.

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

²Unwrought and other forms of iridium.

³Unwrought and other forms of rhodium.

⁴All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

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

(Kilograms of metal content, unless otherwise specified)

Period and country	Platinum ²		Platinum waste and scrap		Palladium ²		Iridium, osmium, and ruthenium ^{2,3}		Rhodium ²	
	Value		Value		Value		Value		Value	
	Quantity	(thousands)	Quantity	(thousands)	Quantity	(thousands)	Quantity	(thousands)	Quantity	(thousands)
2005:										
November	1,760	\$44,700	2,890	\$62,000	3,210	\$10,800	133	\$937	5	\$585
December	1,440	31,500	1,740	39,600	2,000	11,200	140	826	300	7,130
Year	20,700	448,000	24,900	482,000	27,000	122,000	1,080	7,200	615	28,900
2006:										
January:										
Australia	6 ⁴	81	--	--	13	119	--	--	--	--
Belgium	4	105	--	--	14 ⁴	130	--	--	--	--
Brazil	36	942	--	--	250	2,240	1	5	--	--
Canada	74 ⁴	1,540	234 ⁴	2,230	110 ⁴	784	--	--	(5) ⁴	15
China	183	4,650	--	--	20 ⁴	251	--	--	2 ⁴	390
Denmark	(5) ⁴	3	--	--	4 ⁴	53	--	--	--	--
Egypt	4	41	--	--	--	--	--	--	--	--
Finland	1 ⁴	13	--	--	(5) ⁴	4	--	--	--	--
France	5 ⁴	88	--	--	58	344	3	11	--	--
Germany	246 ⁴	5,340	38 ⁴	702	378 ⁴	1,520	--	--	33	3,380
Haiti	--	--	--	--	(5)	3	--	--	--	--
Hong Kong	47 ⁴	1,090	--	--	44 ⁴	248	13	93	(5)	10
India	1 ⁴	18	--	--	--	--	--	--	1 ⁴	162
Ireland	11	230	--	--	7 ⁴	20	--	--	--	--
Israel	(5)	5	--	--	40 ⁴	263	--	--	--	--
Italy	363 ⁴	11,800	--	--	19	147	--	--	--	--
Japan	372 ⁴	8,830	122	3,910	33 ⁴	223	15 ⁴	139	--	--
Korea, Republic of	1 ⁴	12	--	--	23 ⁴	91	--	--	--	--
Kuwait	--	--	--	--	2 ⁴	20	--	--	--	--
Liechtenstein	--	--	--	--	(5)	4	--	--	--	--
Malaysia	1	10	--	--	(5)	3	7 ⁴	189	--	--
Mexico	12 ⁴	147	--	--	2 ⁴	25	--	--	1 ⁴	100
Netherlands	4	87	--	--	30	326	--	--	--	--
New Zealand	(5) ⁴	6	--	--	2	23	--	--	--	--
Norway	3 ⁴	38	--	--	7 ⁴	94	--	--	--	--
Philippines	1 ⁴	25	--	--	--	--	--	--	--	--
Romania	1 ⁴	13	--	--	(5) ⁴	6	--	--	--	--
Singapore	1	35	--	--	3	28	--	--	--	--
Slovenia	--	--	--	--	1	5	--	--	--	--
South Africa	--	--	--	--	7	39	--	--	(5)	5
Spain	--	--	--	--	14	122	--	--	--	--
Suriname	3	64	--	--	--	--	--	--	--	--
Sweden	3 ⁴	52	--	--	3 ⁴	41	--	--	--	--
Switzerland	114 ⁴	1,420	--	--	93 ⁴	882	(5) ⁴	4	--	--
Taiwan	28 ⁴	646	--	--	211 ⁴	1,080	22	92	--	--
Thailand	3 ⁴	61	--	--	7 ⁴	65	--	--	--	--
Trinidad and Tobago	--	--	--	--	(5)	3	--	--	--	--
United Kingdom	248 ⁴	6,220	824 ⁴	21,600	718	3,210	35	328	7 ⁴	786
Venezuela	6	152	--	--	--	--	--	--	--	--
Vietnam	1 ⁴	9	--	--	--	--	--	--	--	--
Other	3 ⁴	61	--	--	3	18	--	--	--	--
Total	1,790	43,800	1,220	28,400	2,120	12,400	95	862	44	4,850

-- Zero.

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

²Unwrought and other forms.

³Gross weight.

⁴All or part of these data have been referred to the U.S. Census Bureau for verification.

⁵Less than ½ unit.

Source: U.S. Census Bureau.