

# Mineral Industry Surveys

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## PLATINUM-GROUP METALS IN FEBRUARY 2011

Engelhard's average February price of palladium increased by 3%, and prices of platinum and rhodium increased slightly, compared with the average January prices. The average monthly price of iridium increased by 18% from that of January, and the price of ruthenium remained unchanged during the same period. Platinum and palladium prices recorded a large decrease toward the end of the month in response to political tensions in the Middle East. In contrast, iridium prices increased steadily throughout the month, reaching \$1,075 per troy ounce at the end of the month as a result of strong industrial purchasing from Asia (Jonson, 2011).

Stillwater Mining Co. (Billings, MT) recovered 12,400 kilograms (kg) of platinum, palladium, and rhodium from recycled catalytic converters in 2010, which was a 59% increase compared with recycling volumes in 2009. The increased volume was a result of higher metal prices in 2010, which encouraged recycling. Stillwater's Marathon copper-palladium project near Marathon, Ontario, Canada, was in the permitting phase. Mine construction was planned to begin in 2013 following a detailed engineering study, which was expected to be completed during the next 18 months. Mining was planned to begin the following year. The Marathon project was expected to have an annual production of about 6,220 kilograms of platinum and palladium during a mine life of 12 years. Stillwater planned to conduct exploration at its recently acquired platinum-group metals (PGM) properties at Geordie Lake, Ontario, and the Bird River property in Manitoba (Stillwater Mining Co., 2011).

Anglo Platinum Ltd. (Johannesburg, South Africa) produced 79,900 kg of platinum in 2010 and planned to produce 80,900 kg of platinum in 2011. The planned production increase was in response to anticipated steady consumption (Johnson Matthey plc, 2011a).

Magma Metals Ltd. (West Perth, Australia) reported a positive independent scoping study of its Thunder Bay North PGM project in Ontario. Several open pit and underground mining scenarios were evaluated, and the best option was determined to be an open pit mine. The open cut resource was 9.7 million metric tons of ore grading 0.92 gram per ton (g/t) platinum, 0.87 g/t palladium, and 0.04 g/t rhodium. The open pit was expected to be mined at the rate of 1.5 million metric tons per year during a 7-year mine life. The permitting process was anticipated to take as much as 2 years to complete, so the earliest startup date for mine development would be in early 2014 (Magma Metals Ltd., 2011).

A commemorative £5 platinum coin was scheduled to be minted in the United Kingdom to mark the upcoming royal wedding of Prince William to Kate Middleton. The coin was to depict an image of the royal couple while the obverse side was planned to show an image of Queen Elizabeth. Only 200 of the 94.2-gram platinum coins were expected to be made available (Johnson Matthey plc, 2011b).

### References Cited

- Johnson Matthey plc, 2011a, Anglo Platinum raises output forecast for 2011: London, United Kingdom, Johnson Matthey plc news release, February 7, 1 p.
- Johnson Matthey plc, 2011b, Royal wedding £5 coin to be struck in platinum: London, United Kingdom, Johnson Matthey plc news release, February 28, 1 p.
- Jonson, Nick, 2011, Iridium breaks \$1,000/oz on Asian demand, supply worries: *Platts Metals Week*, v. 82, no. 8, February 21, p. 1, 14.
- Magma Metals Ltd., 2011, Positive scoping study for Thunder Bay North project: West Perth, Australia, Magma Metals Ltd. news release, February 7, 10 p.
- Stillwater Mining Co., 2011, Stillwater Mining reports highest earnings in a decade: Billings, MT, Stillwater Mining Co. news release, February 22, 16 p.

TABLE 1  
PLATINUM-GROUP METALS PRICES<sup>1</sup>

(Dollars per troy ounce)

|               | Platinum        | Palladium             | Rhodium                                | Iridium                    | Ruthenium                     |
|---------------|-----------------|-----------------------|--|----------------------------|-------------------------------|
| 2010:         |                 |                       |  |                            |                               |
| Low/date      | 1,482.00 Feb. 8 | 397.00 Feb. 5         | 2,120.00 Aug. <sup>2</sup>             | 420.00 Jan. <sup>2</sup>   | 170.00 Jan. <sup>2</sup>      |
| High/date     | 1,790.00 Nov. 9 | 800.00 Dec. 30 and 31 | 2,975.00 Apr. 15 and 16                | 780.00 Dec. <sup>2</sup>   | 245.00 Apr.–Jun. <sup>2</sup> |
| Average       | 1,615.56        | 530.61                | 2,459.07                               | 642.15                     | 198.45                        |
| 2011:         |                 |                       |  |                            |                               |
| January:      |                 |                       |  |                            |                               |
| Low/date      | 1,718.00/5      | 755.00/10             | 2,425.00 <sup>2</sup>                  | 780.00/3 and 4             | 180.00 <sup>2</sup>           |
| High/date     | 1,848.00/19     | 828.00/19             | 2,500.00/31                            | 865.00/28 and 31           | 180.00 <sup>2</sup>           |
| Average       | 1,790.62        | 797.48                | 2,437.62                               | 815.95                     | 180.00                        |
| February:     |                 |                       |  |                            |                               |
| Low/date      | 1,778.00/24     | 774.00/24             | 2,425.00 <sup>2</sup>                  | 865.00/1 and 2             | 180.00 <sup>2</sup>           |
| High/date     | 1,863.00/9      | 851.00/18             | 2,500.00 <sup>2</sup>                  | 1,075.00 <sup>2</sup>      | 180.00 <sup>2</sup>           |
| Average       | 1,828.68        | 823.47                | 2,475.00                               | 960.53                     | 180.00                        |
| Year-to-date: |                 |                       |  |                            |                               |
| Low/date      | 1,718.00 Jan. 5 | 755.00 Jan. 10        | 2,425.00 Jan.–Feb. <sup>2</sup>        | 780.00 Jan. 3 and 4        | 180.00 Jan.–Feb. <sup>2</sup> |
| High/date     | 1,863.00 Feb. 9 | 851.00 Feb. 18        | 2,500.00 Jan. 31 and Feb. <sup>2</sup> | 1,075.00 Feb. <sup>2</sup> | 180.00 Jan.–Feb. <sup>2</sup> |
| Average       | 1,809.65        | 810.47                | 2,456.31                               | 888.24                     | 180.00                        |

<sup>1</sup>Quotes from Engelhard.

<sup>2</sup>Occurred multiple days in month(s) listed.

Source: Platts Metals Week.

TABLE 2  
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM METAL, BY COUNTRY<sup>1</sup>  
(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 |             |
|--------------------|----------------------------|-------------|-----------------|-------------|--------------------------|-------------|-----------------|-------------|--------------------------|-------------|----------------|-------------|
|                    | Value                      |             | Value           |             | Value                    |             | Value           |             | Value                    |             | Value          |             |
|                    | Quantity                   | (thousands) | Quantity        | (thousands) | Quantity                 | (thousands) | Quantity        | (thousands) | Quantity                 | (thousands) | Quantity       | (thousands) |
| 2010:              |                            |             |                 |             |                          |             |                 |             |                          |             |                |             |
| November           | 16                         | \$802       | 3,660           | \$192,000   | 356                      | \$13,200    | 212             | \$7,890     | 16,100                   | \$37,900    | (2)            | \$7         |
| December           | 65                         | 2,990       | 1,840           | 98,400      | 170                      | 7,770       | 254             | 10,100      | 13,000                   | 60,200      | 10             | 782         |
| Year               | 644                        | 16,700      | 31,700          | 1,590,000   | 3,790                    | 151,000     | 4,650           | 183,000     | 111,000                  | 565,000     | 46             | 2,760       |
| 2011:              |                            |             |                 |             |                          |             |                 |             |                          |             |                |             |
| January:           |                            |             |                 |             |                          |             |                 |             |                          |             |                |             |
| Belgium            | --                         | --          | 361             | 20,500      | --                       | --          | --              | --          | --                       | --          | --             | --          |
| Bolivia            | --                         | --          | --              | --          | --                       | --          | --              | --          | 968                      | 62          | --             | --          |
| Canada             | 1                          | 43          | --              | --          | --                       | --          | 16              | 928         | 190                      | 9,210       | --             | --          |
| China              | --                         | --          | --              | --          | --                       | --          | --              | --          | 12                       | 1,850       | --             | --          |
| Colombia           | --                         | --          | --              | --          | 71                       | 3,130       | --              | --          | 20                       | 262         | --             | --          |
| Czech Republic     | --                         | --          | --              | --          | --                       | --          | 7               | 102         | --                       | --          | --             | --          |
| France             | --                         | --          | --              | --          | 33                       | 871         | --              | --          | 12                       | 360         | --             | --          |
| Germany            | --                         | --          | 146             | 5,760       | 2,440 <sup>3</sup>       | 5,080       | 186             | 5,890       | 10,400                   | 17,400      | --             | --          |
| Israel             | --                         | --          | --              | --          | --                       | --          | --              | --          | 7                        | 265         | --             | --          |
| Italy              | --                         | --          | 57              | 3,270       | --                       | --          | --              | --          | --                       | --          | --             | --          |
| Japan              | --                         | --          | --              | --          | 3                        | 84          | --              | --          | 119                      | 5,180       | --             | --          |
| Malaysia           | --                         | --          | --              | --          | --                       | --          | --              | --          | 10                       | 941         | --             | --          |
| Mexico             | --                         | --          | --              | --          | 3                        | 144         | 1               | 15          | --                       | --          | --             | --          |
| Morocco            | --                         | --          | --              | --          | --                       | --          | --              | --          | 6                        | 223         | --             | --          |
| Norway             | --                         | --          | 16              | 874         | --                       | --          | --              | --          | 5                        | 271         | --             | --          |
| Philippines        | --                         | --          | --              | --          | --                       | --          | --              | --          | 7                        | 229         | --             | --          |
| Russia             | 16                         | 891         | 15              | 863         | 45                       | 2,440       | --              | --          | --                       | --          | --             | --          |
| Singapore          | --                         | --          | --              | --          | --                       | --          | --              | --          | 6                        | 442         | --             | --          |
| South Africa       | 57                         | 2,970       | 1,550           | 85,200      | (2)                      | 11          | --              | --          | --                       | --          | --             | --          |
| Switzerland        | --                         | --          | --              | --          | --                       | --          | 25              | 1,450       | --                       | --          | --             | --          |
| Taiwan             | --                         | --          | --              | --          | --                       | --          | --              | --          | 283                      | 3,310       | --             | --          |
| United Kingdom     | --                         | --          | 709             | 40,800      | --                       | --          | 17              | 820         | 98                       | 4,590       | --             | --          |
| Other              | --                         | --          | --              | --          | --                       | --          | (2)             | 25          | 72                       | 167         | --             | --          |
| Total              | 74                         | 3,900       | 2,860           | 157,000     | 2,590                    | 11,800      | 253             | 9,230       | 12,200                   | 44,800      | --             | --          |

-- Zero.

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

<sup>2</sup>Less than ½ unit.

<sup>3</sup>All 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 COUNTRY<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

| Period and country | Unwrought palladium |                      | Palladium, other |                      | Iridium <sup>2</sup> |                      | Osmium <sup>2</sup> |                      | Ruthenium <sup>2</sup> |                      | Rhodium <sup>2</sup> |                      |
|--------------------|---------------------|----------------------|------------------|----------------------|----------------------|----------------------|---------------------|----------------------|------------------------|----------------------|----------------------|----------------------|
|                    | Quantity            | Value<br>(thousands) | Quantity         | Value<br>(thousands) | Quantity             | Value<br>(thousands) | Quantity            | Value<br>(thousands) | Quantity               | Value<br>(thousands) | Quantity             | Value<br>(thousands) |
| 2010:              |                     |                      |                  |                      |                      |                      |                     |                      |                        |                      |                      |                      |
| November           | 4,220               | \$82,800             | 588              | \$15,700             | 389                  | \$8,690              | --                  | --                   | 830                    | \$4,730              | 869                  | \$61,900             |
| December           | 4,230               | 91,100               | 899              | 21,500               | 448                  | 7,160                | --                  | --                   | 1,240                  | 6,840                | 723                  | 51,800               |
| Year               | 64,400              | 990,000              | 6,310            | 122,000              | 3,530                | 65,900               | 76                  | \$612                | 14,100                 | 82,500               | 12,800               | 914,000              |
| 2011:              |                     |                      |                  |                      |                      |                      |                     |                      |                        |                      |                      |                      |
| January:           |                     |                      |                  |                      |                      |                      |                     |                      |                        |                      |                      |                      |
| Belgium            | 13                  | 340                  | --               | --                   | --                   | --                   | --                  | --                   | --                     | --                   | 104                  | 7,520                |
| Canada             | --                  | --                   | 318              | 9,930                | --                   | --                   | --                  | --                   | --                     | --                   | --                   | --                   |
| Germany            | 244                 | 4,580                | 7                | 177                  | 11                   | 242                  | --                  | --                   | --                     | --                   | 131                  | 8,080                |
| Israel             | --                  | --                   | 8                | 103                  | --                   | --                   | --                  | --                   | --                     | --                   | --                   | --                   |
| Italy              | 69                  | 1,770                | 9                | 266                  | --                   | --                   | --                  | --                   | --                     | --                   | 1                    | 80                   |
| Japan              | 120                 | 796                  | 6                | 198                  | --                   | --                   | --                  | --                   | --                     | --                   | --                   | --                   |
| Norway             | 162                 | 4,050                | --               | --                   | --                   | --                   | --                  | --                   | --                     | --                   | 7                    | 478                  |
| Russia             | 916                 | 23,000               | 311              | 7,870                | --                   | --                   | --                  | --                   | --                     | --                   | 40                   | 2,990                |
| South Africa       | 2,910               | 70,600               | 16               | 342                  | 250                  | 5,370                | --                  | --                   | 542                    | 2,880                | 810                  | 58,500               |
| Switzerland        | (3)                 | 9                    | 10               | 309                  | --                   | --                   | --                  | --                   | --                     | --                   | --                   | --                   |
| United Kingdom     | 489                 | 12,500               | 223              | 5,970                | (3)                  | 2                    | --                  | --                   | 571                    | 2,430                | 60                   | 1,610                |
| Total              | 4,920               | 118,000              | 908              | 25,200               | 261                  | 5,610                | --                  | --                   | 1,110                  | 5,320                | 1,150                | 79,200               |

-- Zero.

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

<sup>2</sup>Unwrought and other forms.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY<sup>1</sup>

(Kilograms of metal content, unless otherwise specified)

| Period and country | Platinum <sup>2</sup> |             | Platinum waste and scrap |             | Palladium <sup>2</sup> |             | Iridium, osmium, and ruthenium <sup>2,3</sup> |             | Rhodium <sup>2</sup> |             |
|--------------------|-----------------------|-------------|--------------------------|-------------|------------------------|-------------|---|-------------|----------------------|-------------|
|                    | Value                 |             | Value                    |             | Value                  |             | Value   |             | Value                |             |
|                    | Quantity              | (thousands) | Quantity                 | (thousands) | Quantity               | (thousands) | Quantity                                      | (thousands) | Quantity             | (thousands) |
| 2010:              |                       |             |                          |             |                        |             |   |             |                      |             |
| November           | 1,430                 | \$71,100    | 2,020                    | \$75,700    | 3,230                  | \$31,900    | 159   | \$1,840     | 181                  | \$12,500    |
| December           | 924                   | 41,000      | 4,740                    | 178,000     | 3,510                  | 39,100      | 84  | 567         | 215                  | 15,900      |
| Year               | 16,900                | 775,000     | 38,200                   | 1,100,000   | 38,100                 | 419,000     | 3,720   | 36,800      | 2,320                | 136,000     |
| 2011:              |                       |             |                          |             |                        |             |   |             |                      |             |
| January:           |                       |             |                          |             |                        |             |   |             |                      |             |
| Australia          | 1                     | 183         | --                       | --          | 45                     | 578         | 5   | 30          | --                   | --          |
| Austria            | 1                     | 43          | --                       | --          | 4                      | 65          | --  | --          | --                   | --          |
| Belarus            | --                    | --          | --                       | --          | 77                     | 527         | --  | --          | --                   | --          |
| Belgium            | 1                     | 32          | --                       | --          | 4                      | 22          | --  | --          | --                   | --          |
| Canada             | 38                    | 1,430       | 12                       | 348         | 193                    | 2,330       | --  | --          | --                   | --          |
| China              | 1                     | 43          | 37                       | 1,920       | 101                    | 1,570       | --  | --          | 21                   | 1,580       |
| Colombia           | (4)                   | 4           | --                       | --          | 31                     | 91          | --  | --          | --                   | --          |
| Costa Rica         | (4)                   | 4           | --                       | --          | 3                      | 17          | (4)   | 10          | --                   | --          |
| Czech Republic     | --                    | --          | --                       | --          | 146                    | 294         | --  | --          | --                   | --          |
| France             | 3                     | 70          | --                       | --          | 47                     | 537         | 1   | 4           | --                   | --          |
| Germany            | 223                   | 10,900      | 165                      | 14,100      | 251                    | 2,940       | 1   | 6           | --                   | --          |
| Hong Kong          | 26                    | 906         | 1                        | 51          | 143                    | 2,200       | 17  | 429         | --                   | --          |
| India              | 54                    | 3,020       | --                       | --          | 7                      | 43          | 3   | 49          | --                   | --          |
| Ireland            | 14                    | 585         | --                       | --          | 4                      | 53          | 2   | 9           | --                   | --          |
| Israel             | 1                     | 26          | --                       | --          | 351                    | 1,940       | --  | --          | --                   | --          |
| Italy              | 20                    | 1,160       | --                       | --          | 74                     | 1,160       | --  | --          | 7                    | 366         |
| Japan              | 204                   | 11,300      | 149                      | 5,020       | 102                    | 874         | --  | --          | 35                   | 2,450       |
| Korea, Republic of | 4                     | 139         | --                       | --          | 90                     | 846         | (4)   | 3           | --                   | --          |
| Laos               | 3                     | 141         | --                       | --          | --                     | --          | --  | --          | --                   | --          |
| Liechtenstein      | (4)                   | 6           | --                       | --          | (4)                    | 9           | --  | --          | --                   | --          |
| Malaysia           | --                    | --          | --                       | --          | 1                      | 19          | --  | --          | (4)                  | 11          |
| Mexico             | 99                    | 3,690       | --                       | --          | 55                     | 115         | --  | --          | (4)                  | 24          |
| Netherlands        | (4)                   | 62          | --                       | --          | 3                      | 46          | --  | --          | --                   | --          |
| New Zealand        | (4)                   | 5           | --                       | --          | 2                      | 33          | --  | --          | --                   | --          |
| Saudi Arabia       | --                    | --          | --                       | --          | 43                     | 214         | --  | --          | --                   | --          |
| Singapore          | 107                   | 4,150       | --                       | --          | 63                     | 238         | --  | --          | --                   | --          |
| South Africa       | --                    | --          | 16                       | 1,280       | --                     | --          | --  | --          | --                   | --          |
| Spain              | --                    | --          | --                       | --          | 8                      | 118         | --  | --          | --                   | --          |
| Switzerland        | 11                    | 373         | 1,370                    | 24,900      | 377                    | 4,010       | --  | --          | --                   | --          |
| Taiwan             | 6                     | 263         | --                       | --          | 308                    | 1,750       | 10  | 60          | --                   | --          |
| Thailand           | (4)                   | 156         | --                       | --          | 28                     | 273         | --  | --          | --                   | --          |
| United Kingdom     | 68                    | 3,330       | 2,130                    | 89,500      | 254                    | 1,980       | 2   | 18          | --                   | --          |
| Other              | 7                     | 160         | --                       | --          | 23                     | 222         | --  | --          | --                   | --          |
| Total              | 892                   | 42,200      | 3,880                    | 137,000     | 2,840                  | 25,100      | 41  | 618         | 63                   | 4,430       |

-- Zero.

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

<sup>2</sup>Unwrought and other forms.

<sup>3</sup>Gross weight.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.