

Mineral Industry Surveys

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VANADIUM IN NOVEMBER 2011

Reported domestic consumption of vanadium in November 2011 was slightly more than that of the previous month, and was about 6% less than that of November 2010. Consumer stocks of vanadium, in all forms, were 204 metric tons (t) at the beginning of 2011 and 169 t at the end of November.

According to Ryan's Notes, U.S. ferrovanadium (FeV) prices ranged from \$13.875 to \$14.350 per pound of vanadium content in November, as compared with \$14.663 to \$15.025 in October. European FeV prices ranged from \$26.063 to \$26.550 per kilogram in November, as compared with \$27.319 to \$27.925 in October. Vanadium pentoxide (V₂O₅) prices ranged from \$6.500 to \$6.800 per pound in both October and November.

Evraz Group S.A. (Moscow, Russia) announced that its production of vanadium slag decreased by 8% in the third quarter owing to planned maintenance shutdowns at its pig iron plant operated by Evraz Highveld Steel and Vanadium Ltd. However, FeV production in the third quarter of 2011 increased by 40% to 4,320 t, compared with 3,090 t produced in the third quarter of 2010.

Reference Cited

Evraz Group S.A., 2011, Evraz Group 3Q 2011 operational results: Luxembourg, Luxembourg, Evraz Group S.A., November 4, 6 p. (Accessed January 13, 2012, at http://www.evraz.com/111017_3Q11_operational_results.pdf.)

TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM¹

(Kilograms, contained vanadium)

| | 2010 | | 2011 | | | | Consumption | Stocks, end of period |
|---------------------------|-------------|---------|----------------------|----------------------|----------|---------|-------------|-----------------------|
| | Consumption | Stocks | October | | November | | | |
| Ferrovandium ² | 4,210,000 | 187,000 | 333,000 ^r | 118,000 ^r | 333,000 | 111,000 | 3,700,000 | 111,000 |
| Vanadium-aluminum alloy | W | W | (3) | (3) | (3) | (3) | (3) | (3) |
| Other ⁴ | 815,000 | 61,600 | (3) | (3) | (3) | (3) | (3) | (3) |
| Total | 5,030,000 | 248,000 | 396,000 ^r | 179,000 ^r | 400,000 | 169,000 | 4,460,000 | 169,000 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Other."

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

²Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

³Withheld to avoid disclosing company proprietary data; included in "Total."

⁴Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

TABLE 2
U.S. CONSUMPTION OF VANADIUM, BY END USE¹

(Kilograms, contained vanadium)

| | 2010 | 2011 | | |
|--|-----------|----------------------|----------|------------------|
| | | October | November | January–November |
| Steel: | | | | |
| Carbon | 843,000 | 53,900 | 53,600 | 620,000 |
| High-strength low-alloy | W | W | W | W |
| Stainless and heat-resisting | 120,000 | 5,110 | 5,110 | 56,400 |
| Full alloy | 2,030,000 | 171,000 ^r | 171,000 | 1,880,000 |
| Tool | W | W | W | W |
| Total steel | 2,990,000 | 230,000 ^r | 230,000 | 2,560,000 |
| Superalloys | 9,230 | 410 | 508 | 11,400 |
| Miscellaneous and unspecified ² | 252,000 | W | W | W |
| Total consumption | 5,030,000 | 396,000 ^r | 400,000 | 4,460,000 |

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total consumption."

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

²Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3
U.S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND VANADIUM
METAL, INCLUDING WASTE AND SCRAP¹

(Kilograms, gross weight, unless otherwise specified)

| | Aluminum-vanadium master alloy | | Vanadium metal, including waste and scrap | |
|---------------------------------|-----------------------------------|--------------|--|-----------|
| | Quantity | Value | Quantity | Value |
| Imports for consumption: | | | | |
| 2010 | 9,200,000 | \$20,200,000 | 9,660 | \$434,000 |
| 2011: | | | | |
| September | -- | -- | 935 | 50,400 |
| October: | | | | |
| China | 7,000 | 42,200 | -- | -- |
| Germany | -- | -- | 120 | 20,300 |
| Netherlands | 11,600 | 67,300 | -- | -- |
| Total | 18,600 | 109,000 | 120 | 20,300 |
| January–October | 1,340,000 | 3,710,000 | 33,600 | 1,580,000 |
| Exports: | | | | |
| 2010 | 11,900,000 | 33,300,000 | 21,200 | 671,000 |
| 2011: | | | | |
| September | 728,000 | 2,940,000 | 8,940 | 345,000 |
| October: | | | | |
| Canada | 369,000 | 985,000 | -- | -- |
| Colombia | -- | -- | 369 | 14,300 |
| Japan | 11,600 | 150,000 | 21,600 | 721,000 |
| Malaysia | 637 | 8,290 | -- | -- |
| Mexico | 200,000 | 656,000 | -- | -- |
| United Kingdom | 16,300 | 443,000 | -- | -- |
| Total | 597,000 | 2,240,000 | 22,000 | 735,000 |
| January–October | 8,020,000 | 28,000,000 | 98,300 | 3,230,000 |

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND
OTHER OXIDES AND HYDROXIDES OF VANADIUM¹

(Kilograms, contained vanadium, unless otherwise specified)

| | Ferrovanadium | | Vanadium pentoxide (anhydride) ² | | Other oxides and hydroxides of vanadium | |
|---------------------------------|---------------|--------------|--|--------------|--|-------------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Imports for consumption: | | | | | | |
| 2010 | 1,340,000 | \$41,100,000 | 4,000,000 | \$53,700,000 | 167,000 | \$3,330,000 |
| 2011: | | | | | | |
| September | 361,000 | 10,600,000 | 275,000 | 5,020,000 | 8,340 | 233,000 |
| October: | | | | | | |
| Austria | 72,600 | 2,000,000 | 7,410 | 112,000 | 8,390 | 219,000 |
| Brazil | 16,100 | 456,000 | -- | -- | -- | -- |
| Canada | 180 | 9,040 | -- | -- | -- | -- |
| China | -- | -- | 24,700 | 463,000 | -- | -- |
| Czech Republic | 13,900 | 395,000 | -- | -- | -- | -- |
| Korea, Republic of | 190,000 | 6,080,000 | -- | -- | -- | -- |
| South Africa | -- | -- | 319,000 | 4,780,000 | 66,400 | 1,310,000 |
| Taiwan | -- | -- | 10,100 | 281,000 | -- | -- |
| Total | 293,000 | 8,940,000 | 361,000 | 5,630,000 | 74,800 | 1,530,000 |
| January–October | 1,820,000 | 52,900,000 | 2,580,000 | 41,100,000 | 754,000 | 14,700,000 |
| Exports: | | | | | | |
| 2010 | 882,000 | 18,100,000 | 140,000 | 2,140,000 | 1,100,000 | 10,600,000 |
| 2011: | | | | | | |
| September | 42,600 | 1,100,000 | 506 | 17,000 | 3,480 | 37,100 |
| October: | | | | | | |
| Austria | -- | -- | -- | -- | 15,500 | 138,000 |
| Canada | 40,700 | 1,070,000 | -- | -- | -- | -- |
| Germany | -- | -- | -- | -- | 3,370 | 30,000 |
| Korea, Republic of | 2,720 | 121,000 | -- | -- | -- | -- |
| Mexico | -- | -- | 396 | 11,800 | -- | -- |
| Saudi Arabia | -- | -- | 1,200 | 24,500 | -- | -- |
| Total | 43,400 | 1,190,000 | 1,600 | 36,300 | 18,900 | 168,000 |
| January–October | 370,000 | 8,040,000 | 79,800 | 1,250,000 | 227,000 | 1,990,000 |

-- Zero.

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

²May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG¹

(Kilograms, contained vanadium pentoxide, unless otherwise specified)

| | Ash and residues | | Ash and residues (not from the manufacture of iron and steel) | | Slag, from the manufacture of iron and steel | |
|-----------------|------------------|-------------|--|-------------|---|-------------|
| | Quantity | Value | Quantity | Value | Quantity | |
| | | | | | (gross weight) | Value |
| 2010 | 521,000 | \$5,570,000 | 490,000 | \$1,370,000 | 62,800,000 | \$3,710,000 |
| 2011: | | | | | | |
| September | 135,000 | 106,000 | -- | -- | 135,000 | 80,300 |
| October: | | | | | | |
| Belgium | 5,110 | 50,900 | -- | -- | -- | -- |
| Canada | 170,000 | 72,100 | -- | -- | 53,000 | 37,000 |
| Germany | -- | -- | -- | -- | 31,600 | 9,000 |
| Mexico | -- | -- | -- | -- | 245,000 | 73,400 |
| Total | 175,000 | 123,000 | -- | -- | 329,000 | 119,000 |
| January–October | 1,230,000 | 1,500,000 | 75,000 | 367,000 | 177,000,000 | 4,900,000 |

-- Zero.

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

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS¹

(Kilograms, contained vanadium, unless otherwise specified)

| | Sulfates | | Vanadates | |
|-----------------|----------|-----------|-----------|-------------|
| | Quantity | Value | Quantity | Value |
| 2010 | 48,200 | \$608,000 | 158,000 | \$4,050,000 |
| 2011: | | | | |
| September | -- | -- | 29,600 | 803,000 |
| October: | | | | |
| Austria | -- | -- | 48 | 2,730 |
| China | -- | -- | 6,630 | 215,000 |
| Germany | -- | -- | 312 | 23,500 |
| Japan | -- | -- | 49 | 2,610 |
| South Africa | -- | -- | 26,300 | 1,020,000 |
| Total | -- | -- | 33,300 | 1,260,000 |
| January–October | 37,300 | 669,000 | 205,000 | 5,310,000 |

-- Zero.

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

Source: U.S. Census Bureau.