SUPPLIES, MINING & EXPLORATION

- **Global supplies of platinum increased by just 35,000 oz to 6.06 million ounces in 2010. Total worldwide shipments of palladium increased to 7.29 million ounces. Global supplies of rhodium fell to 751,000 oz.**
- **Supplies of platinum from South Africa remained flat at 4.64 million ounces last year. South African sales of palladium increased by 9% to 2.58 million ounces, while supplies of rhodium fell by 3% to 642,000 oz.**
- **Supplies of palladium from current Russian mining increased by 2% to 2.72 million ounces. Sales of palladium from state stocks were once again at around 1 million ounces. Platinum supplies climbed by 5% to 825,000 oz.**
- **Palladium supplies in North America dropped by 22% to 590,000 oz. Platinum supplies fell by 19% to 210,000 oz.**
- **Supplies from Zimbabwe rose by nearly a quarter to 280,000 oz of platinum and 220,000 oz of palladium.**

SOUTH AFRICA

South African platinum supplies remained flat overall at 4.64 million ounces in 2010. Although refined production rose by 2%, due to a production profile that was heavily loaded towards the end of the year not all of this metal had been shipped by the year-end, leading to an increase in refined stocks. Palladium sales rose by 205,000 oz, with the two largest producers recording significant increases in production, and also some pipeline releases. In contrast, sales of rhodium fell by 3% to 642,000 oz, due to a build-up of pipeline and refined metal stocks.

Anglo American Platinum

Platinum output from Anglo American Platinum's mining operations rose marginally in 2010. Equivalent refined platinum production (production in concentrate adjusted for standard smelting and refining recoveries) totalled 2.48 million ounces, as higher output from the Kroondal Pool and Share operation and the Mogalakwena open pit offset the impact of shaft closures at some of the group's Rustenburg mines.

In contrast, refined production rose by 120,000 oz, or 5%, to 2.57 million ounces, due to reductions in pipeline stocks at the group's smelting and refining operations. Refined output was particularly strong in the final quarter and, as a result, there was a build-up in unsold inventory of refined platinum at the year-end. Platinum shipments in 2010 totalled 2.52 million ounces, down 2% compared with the previous year when some 124,000 oz were sold from stocks.

The company's older western limb operations had a difficult year. Production from the Khuseleka and Siphumelele mines (formerly part of Rustenburg Section) fell sharply due to the closure of uneconomic shafts, while geological difficulties affected output at Khomanani (Rustenburg) and Union Mine. Production at Tumela and Dishaba (formerly Amandelbult Section) was stable, but remained well below pre-2008 levels.

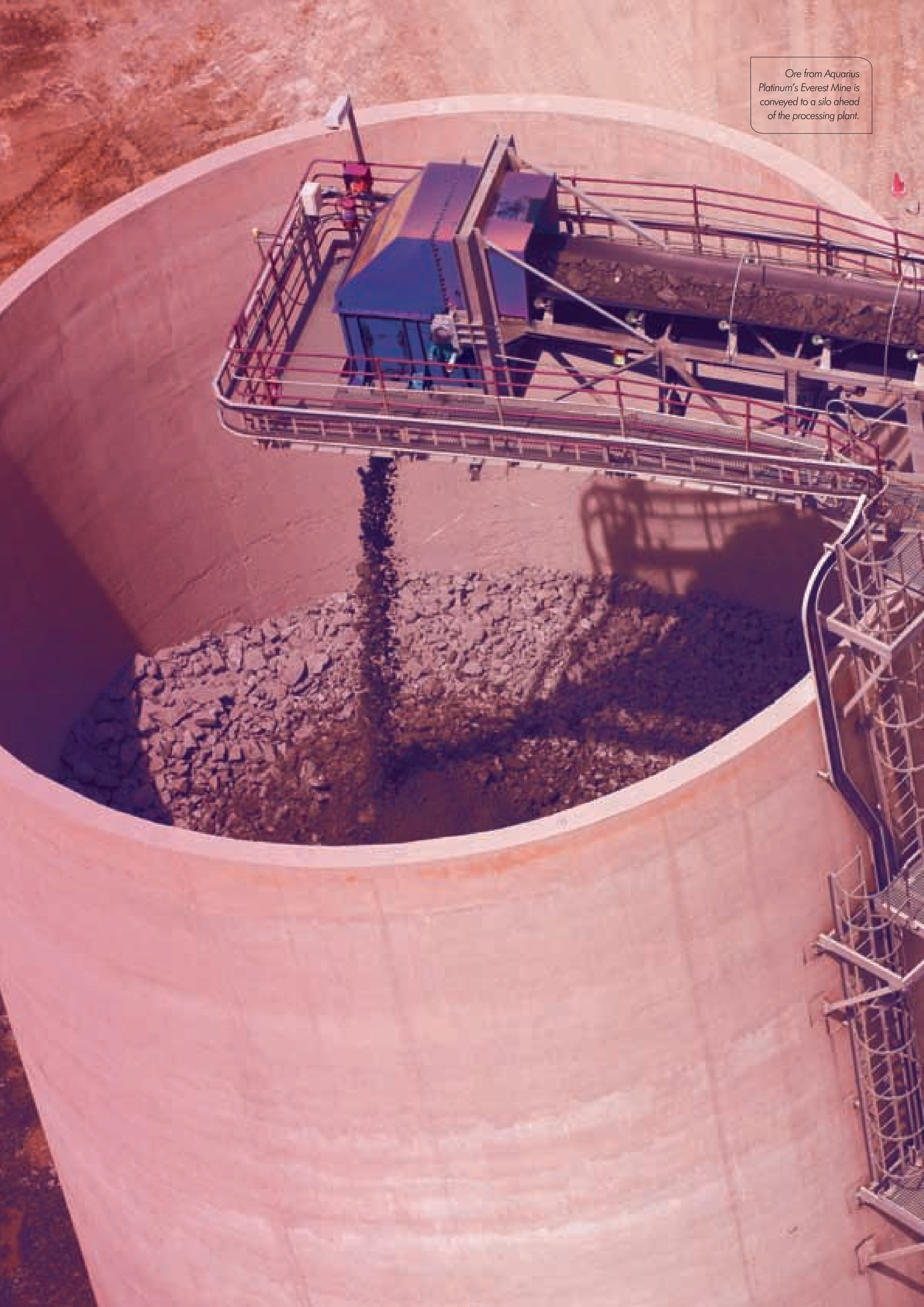
However, these losses were outweighed by increases at some of the newer operations. Anglo American Platinum's share of equivalent refined production from Kroondal and Marikana, operated under Pool and Share Agreements by Aquarius Platinum, rose by 12%, or over 30,000 oz. This was despite a major fall of ground at Marikana's 4 shaft in July 2010 which resulted in the loss of two weeks' production, and the closure on economic grounds of the Number 1 shaft at the same operation.

Production continued to ramp up at the expanded Mogalakwena open pit mine, which produced 260,000 oz of platinum in 2010 (up 10%). Platinum output from the Bafokeng Rasimone joint venture (operated by Royal Bafokeng Platinum) rose by 7% to 185,000 oz, with the mining of some UG2 ore supplementing production from the Merensky Reef.

In 2011, Anglo American Platinum expects to produce and sell 2.60 million ounces of platinum. The company has reopened Khuseleka 2 shaft, which was mothballed in 2009, while additional ounces will come from Khomanani, Tumela and Mogalakwena. The newly commissioned Unki mine in Zimbabwe will contribute up to 30,000 oz of production; metal from this operation will be included in our estimates of Zimbabwean supplies, discussed on page 22. Going forward, the company intends to grow its output annually in order to meet expected demand.

PGM Supplies: South Africa
'000 oz

Supply	2008	2009	2010
Platinum	4,515	4,635	4,635
Palladium	2,430	2,370	2,575
Rhodium	574	663	642



Ore from Aquarius Platinum's Everest Mine is conveyed to a silo ahead of the processing plant.

Impala Platinum

After a difficult year in 2009, the year 2010 saw a significant recovery in output from the Impala lease area. Refined platinum production from Impala's Rustenburg shafts rose by 8% to 940,000 oz, mainly due to a very strong performance in the second half when 7.8 million tonnes of ore were treated, compared with the first half of the year. Platinum sales from the lease area totalled 864,000 oz.

At Impala's Marula mine on the eastern Bushveld, the objective is to expand output to 100,000 oz of platinum in concentrate annually by 2013, but progress towards this target has been slow. In 2010, the operation milled 1.62 million tonnes of UG2 ore yielding 73,000 oz of platinum; these figures were little changed compared with the previous year.

The Two Rivers mine, a joint venture with African Rainbow Minerals, recorded another strong performance. Production of platinum in concentrate rose 7% to 142,000 oz, reflecting an increase in plant throughput to nearly 3 million tonnes. Improvements in concentrator recoveries are expected to lift annual output towards 150,000 oz by 2013.

Impala's Zimbabwean operations also had another excellent year; these operations are discussed separately on page 22.

Impala intends to expand platinum production from its lease area to 1 million ounces annually from 2014, as three major replacement shaft projects are brought on line. The first of these, 20 shaft, began to produce ore in January 2011, while 16 and 17 shafts are planned to come on-stream during the 2013 and 2017 financial years, respectively. Together, these three deep-level shafts will ultimately be capable of producing over half a million ounces of platinum annually.

Lonmin

Output from Lonmin's Marikana operations continued to recover during 2010, with the new Saffy and Hossy shafts continuing their ramp-up, and a sharp fall in the amount of production lost to safety stoppages. In addition, Lonmin restarted the open cast Merensky operations in mid-year. Mill throughput (including ore mined from the Pandora joint venture area) rose by 4% to 11.6 million tonnes, while grades and recoveries also improved; production of platinum in concentrate totalled 713,000 oz, a gain of 9%.

Refinery output for the year was once again affected by incidents at the Number One furnace, which experienced run-outs in March and May. The furnace was also taken off-line for a scheduled rebuild between late October and mid-December 2010. Despite the use of back-up smelting capacity at its three Pyromet furnaces, Lonmin was unable to smelt and refine all its concentrate. To avoid an excessive build-up in unprocessed stocks, some 87,000 oz of platinum were toll-refined at Impala Refining Services, while a further 25,000 oz of platinum were sold in concentrate form.

Sales by Lonmin during the 2010 calendar year totalled 664,000 oz platinum; the company expects the figure to rise to 750,000 oz during its financial year to September 2011. Going forward, output from the Marikana operations is planned to rise to 850,000 oz from 2013, including production at Pandora. It is not yet clear to what extent the Pandora joint venture could increase output in future: deepening of the E3 shaft will enable mining to continue at current rates, but a feasibility study of a 180,000 tonne per month operation was not conclusive, and the joint venture partners are reviewing alternative options.

Lonmin has made progress towards its target of producing 850,000 oz by 2013 and is expected to show growth in output due to replacement shafts ramping up, better efficiencies, and the reopening of the Merensky open cast operations.

Northam

After a steady first six months, in which production was slightly up on the same period of 2009, Northam's Zondereinde mine had an exceptionally difficult second half of 2010. A six-week strike, a slow post-strike start-up and a series of safety stoppages all impacted output; in total, the company lost nearly a third of available production days between July and December. As a result, pgm output for the year fell by 15% to 264,000 oz.

Looking ahead, the company continues to progress a

Milling ore at Northam's Zondereinde mine.

deepening project which will give access to additional Merensky Reef reserves, and which will enable the mine to sustain production at around 300,000 oz of pgm annually over its remaining eighteen-year life.

Development of the Booysendal project on the eastern limb of the Bushveld complex got underway in 2010: Northam spent R378 million on an 'early works programme', including the establishment of access roads and temporary power and water supplies. The project's planned start-up date is January 2013. Once complete, it is forecast to produce approximately 160,000 oz of pgm each year.

During 2010, Northam signed a Memorandum of Understanding with Jubilee Platinum plc. Together, the companies will assess the viability of establishing a ConRoast smelter facility in Middelburg; this could be used to process all or part of the output from Booysendal.

Output from Zondereinde should improve modestly in 2011, as the mine recovers from last year's strike. Operating conditions remain difficult, with ore reserve availability a problem on the Merensky Reef. However, Northam's overall output should increase in 2011, reflecting the ramp-up at Platmin's Pilanesberg mine, from which it receives concentrate.

Other Producers

In this section we discuss mines which are not owned (or part-owned) by the four major producers described above, although almost all pgm from these mines is refined in South Africa under concentrate off-take agreements by Anglo American Platinum, Impala Refining Services (IRS) or Northam Platinum.

Xstrata's Eland Platinum mine produced around 60,000 oz of platinum in 2010, down around 20% compared with the previous year. The operation is in the process of transitioning from open cast to underground mining: output from the Kukama (western) decline shaft began in early 2011, with the Nyala (eastern) decline shaft set to follow suit during the second quarter. Xstrata forecasts that underground operations will produce 150,000 oz of platinum per year by the end of 2013. By late 2015, the company expects to process 500,000 tonnes of ore per month, at which point platinum output should total some 300,000 oz per annum. Platinum group metals from Eland are refined by Anglo American Platinum.

Apart from its Pool and Share mines, Aquarius Platinum operates two other underground operations in South Africa. Concentrate from these is refined by IRS. At the Everest mine, the re-establishment project proceeded ahead of schedule, with milling operations resuming in May 2010. This project involves the construction of new declines to replace the original shaft, which was abandoned due to subsidence in December 2009. Mill throughput at Everest yielded around 32,000 oz of platinum in 2010; output in 2011 should be significantly higher, as production from the new declines ramps up. Steady-state output of around 120,000 to 130,000 oz of platinum annually is expected to be achieved from 2013.

The deepening project at Northam Platinum is due to give the company access to additional Merensky reserves.

Production of platinum in concentrate from Aquarius' Blue Ridge mine totalled 20,000 oz in 2010. Since its acquisition from Ridge Mining in July 2009, this operation has struggled to achieve planned volumes; as a result, a decision was taken in September 2010 to close the mine temporarily for redevelopment. Ore mined during the shutdown will be stockpiled ahead of the restarting of the mill which is currently scheduled to take place in July 2011. Following redevelopment, Aquarius estimates that Blue Ridge will be capable of mining and processing 160,000 tonnes of ore per month, yielding 130,000 to 140,000 oz of pgm annually once it reaches steady-state production levels in 2014.

At Eastern Platinum's Crocodile River mine, platinum output was stable at around 65,000 oz, this metal being purchased and refined by IRS. Over the next two to three years, the company plans to increase mill throughput to 175,000 tonnes per month (a 65% increase on current levels), which would lift platinum production to over 110,000 oz annually. Part of this will come from the new Crocette section, development of which was restarted in April 2010 having been put on hold during 2009.

Platinum Australia's Smokey Hills operation also sends concentrate to IRS. The mine encountered both geological and labour difficulties during the year, restricting pgm production

Refined platinum output at Anglo American Platinum was strong in the final quarter of 2010.

to just 31,000 oz. Early in the year, potholes forced some changes in mine design, slowing the ramp-up in production. The company also lost production to industrial action both in the first quarter, and again in October following the dismissal of the mining contractor. These losses were partly offset by the decision to process chrome tailings through the plant, which added approximately 4,000 oz of pgm production in the second half of the year.

A feasibility study of the Kalahari Platinum (Kalplats) project was completed in 2010, and is under review by Platinum Australia's joint venture partner, African Rainbow Minerals (ARM). This study envisages an open pit operation mining and treating 1.5 million tonnes of ore, yielding 105,000 oz of platinum, palladium and gold annually over a nine year life. The initial capital cost is projected to be around R1.42 billion.

The build-up of production at Platmin's Pilanesberg Platinum Mine has been slow. In 2010, this operation milled 2.9 million tonnes of ore at a grade of 1.75 grams of pgm per tonne, yielding around 60,000 oz of pgm in concentrate, most of which was despatched to Northam for refining. Output should rise significantly in 2011: Platmin expects to produce and sell between 100,000 and 120,000 oz of pgm.

During 2010, Wesizwe Platinum signed a transaction with Jinchuan Group and the China Africa Development (CAD) Fund, under which it will receive an equity injection of $227 million in return for Wesizwe shares. Jinchuan and the CAD Fund have also undertaken to secure project finance of $650 million. Once the outstanding conditions of the agreement have been fulfilled, Wesizwe will have access to the funds necessary for the development of its Frisch–Ledig project, which is adjacent to Royal Bafokeng Platinum's Styldrift project. A feasibility study, conducted in 2008, envisaged a project mining and processing some 2.76 million tonnes of ore annually, yielding 350,000 oz of pgm per year.

At the Nkomati Nickel mine, a joint venture between African Rainbow Minerals and Norilsk Nickel, a large-scale expansion programme is close to completion. In 2010, pgm production doubled to 14,000 oz of platinum and 46,000 oz of palladium; this metal was refined outside South Africa, but is included in our estimates of South African supplies.

RUSSIA

Production of pgm from Norilsk Nickel's Russian mines rose modestly in 2010, exceeding the company's production plans. Supplies of palladium totalled 2.72 million ounces last year, up 2% compared with 2009. Platinum supplies increased by 5% to 825,000 oz. Nickel and copper mining in Russia are the key drivers of pgm output: pgm production largely comes as a by-product of these operations.

As discussed in our Platinum 2010 Interim Review, we believe that recent increases in pgm output at Norilsk are the result of greater processing of surface materials, including stored pyrrhotite concentrates, old flotation tailings, and a variety of pgm-bearing materials from the smelters. In contrast, production of pgm from underground ore has declined in recent years: between 2007 and 2009, the volume of ore extracted at the Taimyr operations (the principal source of Norilsk's pgm) was relatively stable at around 15 million tonnes, while pgm grades declined by 10% as richer ore was depleted. Norilsk Nickel intends to increase mining of disseminated ore to compensate for lower grades.

In 2011, Norilsk Nickel intends to increase ore output in order to maintain primary metal production at 2010 levels. Production of pgm this year is expected to total 21 tonnes (675,000 oz) of platinum and 84 tonnes (2.7 million ounces) of palladium.

Platinum production also occurs in the Russian Far East from alluvial mines in the Khabarovsk and Kamchatka regions.

PGM Supplies: Russia
'000 oz

Supply	2008	2009	2010
Platinum	805	785	825
Palladium			
Primary Production	2,700	2,675	2,720
State Sales	960	960	1,000
Rhodium	85	70	70

Russian supplies of platinum increased to 825,000 oz in 2010.

Norilsk Nickel has also developed the Severny Gluboky mine on the Kola peninsula. We believe that output in 2010 from these mines amounted to some 145,000 oz of platinum, slightly down on the previous year's level.

Substantial sales of palladium from state stocks occurred once again in 2010 – the remaining one-third of the large volumes of metal shipped by Gokhran into Switzerland in 2007 to 2008. In early 2010, several tonnes of palladium were shipped from Russia into Switzerland. We believe that this was simply a relocation of metal that had already been sold and therefore we do not include this in our 2010 Russian supply figures.

NORTH AMERICA

Supplies of platinum in North America declined by 50,000 oz in 2010 to 210,000 oz, while supplies of palladium reduced by 165,000 oz to 590,000 oz. Rhodium supplies also declined, to 12,000 oz. Despite increases in output from North American Palladium and Xstrata's operations, overall production suffered as Vale's Sudbury operations were affected by a year-long strike and production of platinum at Stillwater declined due to lower pgm grades and reduced mill throughput.

Canada

A rise in palladium prices led to the reopening of North American Palladium's Lac des Isles mine in April 2010. During the year, the mine processed some 650,000 tonnes of ore at a grade of 6.06 grams of palladium per tonne, with production totalling 95,000 oz of palladium and 5,000 oz of platinum.

Lac des Isles is currently exploiting the Roby Zone, with a remaining mine life of one to two years. The company is extending mining infrastructure in order to access the Offset Zone, from which commercial production is planned to commence during the second half of 2012. According to a scoping study published in August 2010, this ore body will initially be mined at a rate of 3,500 tonnes a day, rising to 5,500 tonnes per day by late 2014. At full capacity, annual palladium output is planned to reach around 250,000 oz.

Xstrata's Nickel Rim South mine attained nameplate capacity in October 2010, six months ahead of schedule. As a result, production from the company's Sudbury operations rose by 69% in 2010, to 15,472 tonnes of nickel in concentrate. Xstrata does not disclose pgm production in Canada, but Nickel Rim South exploits an ore body which contains unusually high grades of pgm for the Sudbury area, and we estimate that output from this mine in 2010 exceeded 60,000 oz of platinum plus similar quantities of palladium.

Raglan, Xstrata's nickel–copper mine in northern Quebec, reported a 3% decrease in production of nickel in concentrate in 2010, reflecting lower grades. This mine produces significant quantities of pgm, particularly palladium, as by-products.

Production of pgm from Vale's Sudbury mine fell by over 60% last year, to just 35,000 oz of platinum and 60,000 oz of palladium, of which we estimate that around half came from ore purchased from QuadraFNX Mining. Output from Vale's own mines was severely hit by a year-long strike which ended in July 2010.

USA

Production of pgm by Stillwater Mining Company from its Montana mining operations fell by 9% in 2010, to 112,000 oz of platinum and 377,000 oz of palladium. The decline was primarily due to a combination of reduced mill throughput and the mining of lower grade areas at the Stillwater Mine, where the pgm content of ore processed last year fell 9% to 0.53 oz per ton (18 grams per tonne). Output from the East Boulder mine was little changed.

PGM Supplies: North America
'000 oz

Supply	2008	2009	2010
Platinum	325	260	210
Palladium	910	755	590
Rhodium	18	15	12

In 2011, output is expected to increase slightly to 500,000 oz of combined platinum and palladium. In order to compensate for reduced pgm grades at the Stillwater mine, the company intends to reopen the east side of the operation, which was shut down in 2008 due to low pgm prices. Grades in this area are typically higher than average, but ground conditions are difficult, leading to high mining costs.

Going forward, higher pgm prices have encouraged Stillwater to investigate the potential to expand its Montana operations. During 2010, the company undertook a programme to assess undeveloped areas adjacent to its existing mines. It has identified two potential projects, the Blitz project which would extend mining infrastructure eastwards from the existing Stillwater mine, and the Graham Creek project, a westwards extension of the East Boulder mine. It will take five years to develop these projects, although Stillwater believes that it may be possible to bring on additional production more quickly.

In November 2010, Stillwater spent $173 million to acquire the pgm assets of the Canadian exploration company Marathon PGM Corporation. The latter's Marathon pgm–copper project is located near the town of Marathon, Ontario in Canada; a feasibility study envisaged annual production of around 37 million pounds (around 17,000 tonnes) of copper and 200,000 oz of combined palladium and platinum, over a twelve-year life. The project is currently in the permitting phase and Stillwater hopes to commence construction in 2013.

In December 2010, Norilsk Nickel completed a secondary offering, selling its controlling stake in Stillwater. The offer was oversubscribed, reflecting continuing interest in the North American pgm mining sector.

ZIMBABWE

Supplies from Zimbabwe increased in 2010 following a ramp-up of expansion projects. Total platinum sales from Zimbabwe increased by 22% in 2010 to 280,000 oz, while supplies of palladium rose by 40,000 oz to 220,000 oz.

After a rapid ramp-up of its Phase I expansion, Zimplats operated at close to full capacity in 2010, milling 4.2 million tonnes of ore and despatching 180,000 oz of platinum in matte for final refining by Impala Refining Services in South Africa. This was despite an unscheduled eleven-day shutdown at the older of the two concentrators, at the Selous Metallurgical Complex, during the final quarter of the year.

A second phase of expansion at Zimplats is now underway. This $450 million project will involve the construction of a third underground mine plus a second concentrator at Ngezi, lifting the mine's overall capacity to 6.1 million tonnes of ore annually. Once Phase 2 reaches steady-state production levels in 2014, annual platinum output from Zimplats will reach 270,000 oz. Impala is now conducting a feasibility study for a third stage of expansion, which would require investment in new smelting and base metals refining capacity alongside the development of a fourth underground portal and associated concentrator.

PGM Supplies: Zimbabwe
'000 oz

Supply	2008	2009	2010
Platinum	180	230	280
Palladium	140	180	220
Rhodium	15	19	24

The Mimosa mine, a joint venture between Impala Platinum and Aquarius Platinum, enjoyed another excellent year. Production of platinum in concentrate increased by 3% to 101,000 oz, despite operations being hampered by poor ground conditions during the final quarter. After a series of incremental expansions over the last few years, Mimosa is now operating at steady-state throughput and no further expansions are envisaged in the next five years. However, in the longer term, there may be potential to increase output from the southern portion of the South Hill deposit (the site of current operations) and by developing the North Hill area.

Construction of Anglo American Platinum's Unki East mine continued during 2010. Some 392,000 tonnes of ore were mined from underground development during the year, with this material being stockpiled ahead of the commissioning of the concentrator in late November. Anglo American Platinum expects to refine up to 30,000 oz of platinum from Unki in 2011; at steady-state production levels – expected to be achieved in the second half of 2013 – the operation will process 120,000 tonnes of ore each month, yielding around 70,000 oz of platinum annually. Concentrate from the mine, located near Gweru in central Zimbabwe, will be transported by road to the group's Polokwane smelter in South Africa.

The Unki East mine is a first stage in the development of Anglo American Platinum's Zimbabwean mineral assets. The company is undertaking initial evaluation of further phases of development, and believes that the Unki project area could ultimately support production of up to 5.8 million tonnes of ore per annum (280,000 oz of platinum annually).

In March 2011, the Zimbabwean government published regulations stipulating that foreign-owned mines must submit plans on how they plan to transfer 51% ownership to indigenous investors and enact those plans within six months of approval. At the time of writing, there is considerable uncertainty about the eventual impact of these measures and it remains too early to say how this will affect future production levels.

OTHER PRODUCING COUNTRIES

Platinum group metals produced as by-products of mining in other countries such as China and Columbia remained relatively flat overall in 2010. Approximately 110,000 oz of platinum, 185,000 oz of palladium and 3,000 oz of rhodium were produced, with palladium showing the biggest increase in output.

Small amounts of pgm are mined in many other countries, mainly as a by-product of nickel mining, with China and Botswana the largest producers. Some platinum is also extracted from alluvial deposits (notably in Colombia), while minor quantities of pgm (mainly palladium) are refined from anode sludges produced during electrolytic copper refining at numerous locations around the world.

The Tati Nickel mine in Botswana is part of Norilsk Nickel's African operations, with Norilsk holding an 85% share in the mine and the Botswana government the remaining 15%. The operation consists of an open pit (the Phoenix mine), located about 35 km from Francistown, and a mothballed underground mine at nearby Selkirk. In 2010, Tati produced 107,000 oz of palladium and 18,000 oz of platinum.

Production of pgm at the Jinchuan Non-Ferrous Metals Company in Gansu province, China, is estimated to total around 70,000 oz per annum. Of this, approximately two thirds comes from the mining of nickel ores at Jinchuan itself. These ores contain small amounts of pgm (less than 0.5 grams per tonne) with a platinum to palladium ratio of around 2:1.

The remaining pgm refined at Jinchuan comes from nickel concentrates purchased from nickel mining operations in other countries, including Australia, Spain and Zambia. Jinchuan holds a 50.4% stake in Albidon Limited, owner of the Munali nickel project in Zambia. This project was put on hold in March 2009, but restarted in December that year, and in 2010

PGM Supplies: Other Producing Countries
'000 oz

Supply	2008	2009	2010
Platinum	115	115	110
Palladium	170	160	185
Rhodium	3	3	3

Production at Anglo American Platinum's Tumela mine in South Africa was stable but remained below pre-2008 levels.

produced some 2,800 tonnes of contained nickel along with small quantities of pgm.

Concentrate from Lundin Mining's Aguablanca nickel mine in Spain is also refined at Jinchuan. This operation, located in the Badajoz province about 80 km from Seville, consists of an open pit mine and associated processing facility. In 2010, Aguablanca milled 1.4 million tonnes of ore (down from 1.9 million tonnes the previous year), yielding some 6,300 tonnes of contained nickel and an estimated 12,000 oz of pgm. In December 2010, very heavy rains resulted in a slope failure in the pit, and operations were curtailed; they are unlikely to restart until 2012.

A new nickel–copper–pgm project in Finland is currently being developed by the Toronto-listed company First Quantum Minerals. The $400 million Kevitsa project is located approximately 140 km north-northeast of the town of Rovaniemi in northern Finland and is expected to enter production in 2012. It is planned to mine 5 million tonnes of ore annually from an open pit, which we estimate will yield approximately 30,000 oz of pgm. It is not yet known where this metal will be refined.

There are a number of exploration-stage projects investigating platinum group metal deposits in Finland. The most advanced of these is Gold Fields' Arctic Platinum Project, located 60 km south of Rovaniemi, which was the subject of a scoping study (conducted by former joint venture partner North American Palladium) in 2007, but which was not considered sufficiently attractive at then-prevailing pgm prices. In 2010, it was reported that Gold Fields was investigating hydro-metallurgical processing options to recover copper, nickel and pgm from the deposit. The company plans to process metallurgical samples through a pilot plant facility.