Supplies, Mining and Exploration

South Africa

In 2001, sales of platinum from South Africa rose by 8 per cent to 4.1 million oz, as expansions by most existing producers added to output. Palladium shipments rose at a similar pace to total 2.01 million oz, but supplies of rhodium fell to 452,000 oz following sales from stocks the previous year.

The largest contribution to last year's increase in platinum supplies came from Anglo Platinum, which reported a 13 per cent improvement in refined platinum production compared with the previous year. Output at Impala was boosted by the reopening of the Crocodile River mine, while expansion at Lonmin resulted in a rise of 9 per cent in the company's platinum production. The small Kroondal mine benefited from a 50 per cent increase in capacity which came on stream in mid year.

The South African platinum industry has been sheltered from the decline in dollar pgm prices by the depreciation of the rand. While the platinum price in dollar terms retreated by over a third during 2001, the metal's rand value moved in the opposite direction, rising by 33 per cent to reach an all-time record of over R6,000 per oz on 20th December.

A period of strong rand pgm prices has left most existing producers with large surpluses of cash with which to finance expansion programmes, while it has become easier for new entrants to raise funding for platinum projects in South Africa. As a result, last year saw a further acceleration of the industry's expansion drive. Anglo Platinum confirmed three more major projects, including a joint venture with Lonmin Platinum. The latter revealed plans to bring forward its own expansion programme, while Impala announced the Two Rivers joint venture with Anglovaal Mining. Among the smaller producers, Aquarius Platinum proceeded with plans to begin mining at Marikana in 2002 and at Everest in 2004, while SouthernEra advanced the start-up of production at its Messina project. If all planned projects come to fruition, platinum output in South Africa will exceed 6 million oz per annum during the second half of this decade.

PGM Supplies: South Africa
'000 oz

	2000	2001
Platinum	3,800	4,100
Palladium	1,860	2,010
Rhodium	457	452

Anglo Platinum

Refined platinum production at Anglo Platinum was a record 2.11 million oz in 2001, up 13 per cent from 1.87 million oz the previous year. This reflected a 9 per cent increase in the milling rate to 26.8 million tonnes of ore, an improvement in metallurgical efficiencies, and reduced stocks of unrefined platinum in the processing pipeline. Palladium output rose by 11 per cent to 1.05 million oz, while that of rhodium was up 21 per cent to 200,000 oz.

Much of this increase came from an improved performance at the group's established operations, but new projects also began to contribute significant amounts of metal. Expansions of UG2 mining at Amandelbult and Lebowa reached full annual production rates, while production continued to build at the Bafokeng Rasimone Platinum Mine (BRPM). However, the latter has fallen behind plan due to geological difficulties that have delayed the development of underground ore reserves. In order to provide additional mill feed, near-surface UG2 and Merensky ore has been mined from open pits, while a new decline has been constructed to access shallow Merensky reserves sufficient for three years of mining.

Anglo Platinum intends to produce 2.35 million oz of platinum in 2002, as other expansion projects come on-stream. At Rustenburg Section, a significant addition to capacity is underway, with the development of a new concentrator to process UG2 ore from both existing shafts at Rustenburg and a new mine on the farm Waterval. Construction of the concentrator was completed in February 2002 and the project is scheduled to reach full production in mid 2002. Planned output is 395,000 oz of platinum per annum.

The new Maandagshoek mine on the Eastern Bushveld should also add to output this year, with operations scheduled to commence during the third quarter. At full production, due to be achieved in 2003, the mine will contribute 162,000 oz of platinum annually. At Union Section, a UG2 project yielding 94,000 oz of platinum per annum is due to start up this year, while the Pandora joint venture with Lonmin has begun operations on a limited scale (see page 15).

View across a section of the processing plant at Aquarius's Kroondal mine

Anglo Platinum has announced two other major projects that will enter production during the period to 2006. In July 2001, the group announced that it had reached a joint venture agreement with the Royal Bafokeng Nation, under which capacity at BRPM would be doubled through an extension of mining onto the farm Styldrift. Full production of 250,000 oz of platinum per annum is planned for 2006.

Another new mine is to be constructed at Twickenham on the Eastern Bushveld. Announced in September 2001, this operation will mine and process 250,000 tonnes of UG2 ore per annum, with output expected to reach 160,000 oz of platinum and 176,000 oz of palladium annually by 2005.

Impala Platinum

Output from the Impala lease area totalled 993,000 oz of refined platinum during 2001, virtually unchanged compared with the previous year. A rise in the head grade was offset by a decline in mill throughput, mainly caused by problems during the commissioning of the company's new UG2 concentrator. The plant began to operate in late 2001, allowing Impala to begin processing its surface stockpiles of ore; this should make a modest addition to production in 2002. However, there are no plans to expand platinum output, which is expected to remain at around the 1 million oz level for the foreseeable future.

At the Crocodile River mine, in which Impala owns an 83 per cent stake through its subsidiary Barplats, the refurbished concentrator began operations in January 2001 and a total of 795,000 tonnes of ore were milled last year. Production of metal in concentrate totalled approximately 37,000 oz of platinum, 16,000 oz of palladium and 6,000 oz of rhodium.

The current location of mining at Crocodile River is Maroelabult, where ore is being extracted via an open pit. Underground operations here are scheduled to commence in 2002, and reserves in this area are sufficient to support a production rate of 50,000 oz of platinum per annum for four years. In order to extend the mine life, Impala is evaluating the possibility of exploiting ore in the original workings (which were mothballed in 1991) or developing reserves elsewhere on the lease area.

Barplats has a second platinum project, Kennedy's Vale, at which exploration is continuing. A feasibility study should commence during 2002.

Sinking of the main decline at Impala's Marula Platinum project (formerly known as Winnaarshoek) is scheduled to get underway this year, and production is planned to start by December 2003. The mine's target output is around 175,000 oz of platinum per annum, but there is thought to be potential to double production at a later stage. Impala has signed an agreement under which Mmakau Mining and other black empowerment groups will take 20 per cent of the project.

Impala also has minority stakes in two other pgm ventures in South Africa. These are discussed in more detail under the section on "Other Projects in South Africa" on page 16.

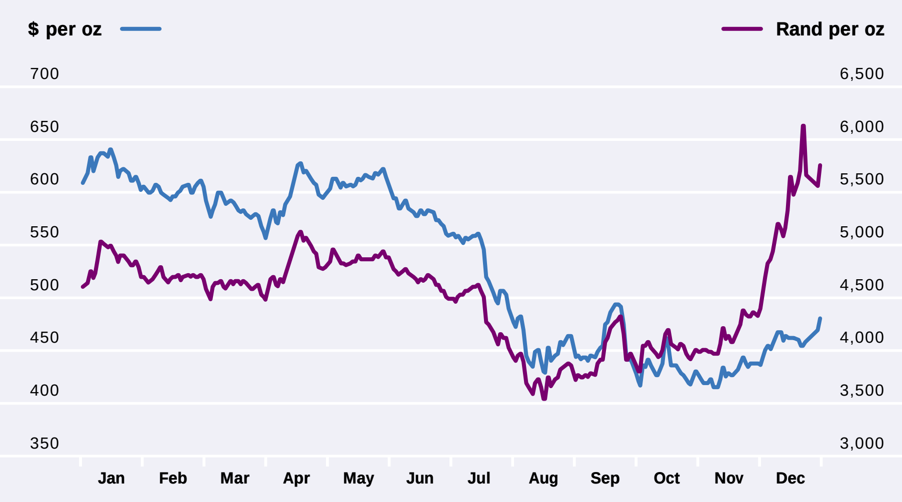
In addition to refining pgm from its own projects, Impala has entered agreements with several other producers to buy, refine and market their pgm. These include Aquarius and SouthernEra in South Africa, and Zimplats and Mimosa in Zimbabwe. Assuming that these companies' projects are brought into production as planned, Impala expects that by 2006 it will be refining around 2 million oz of platinum annually (including toll-refining of some 150,000 oz of secondary metal).

Lonmin Platinum

Refined pgm production at Lonmin Platinum reached record levels in the year to September 2001, reflecting recent investment in new milling and hoisting capacity. Despite some geological problems (including a major collapse of ground which delayed the commissioning of a new shaft), underground ore production rose by 2 per cent to 10.1 million tonnes; meanwhile, mill throughput was supplemented by ore from surface stockpiles and rose by 10 per cent to 10.52 million tonnes. As a result, output of refined platinum was up 9 per cent to 717,000 oz. Output of palladium and rhodium also rose strongly, reaching 324,000 oz and 102,000 oz respectively.

In November 2001, Lonmin

Platinum Price in 2001, $ versus Rand



announced a major acceleration of its expansion programme. The company now intends to reach its target production level of 870,000 oz of platinum a year during 2003, rather than in 2008 as previously planned. A rapid build-up in production will be achieved by mining near-surface Merensky Reef and UG2 ore via open pits, with two new concentrators being built to process this material. In addition, Lonmin plans to bring forward increases in underground production at some of its shafts.

Lonmin will also benefit from increasing production at its Pandora joint venture with Anglo Platinum. This project, announced in April 2001, involves the exploitation of ore reserves owned by Anglo Platinum, downdip and east of the existing Eastern Platinum workings. Mining began in April 2002, but total output during the first two years of operation will be small, at less than 10,000 oz of platinum. Production will then build rapidly, reaching 230,000 oz of platinum a year in 2008. Each of the joint venture partners is entitled to a 50 per cent share of the metal.

The South Pit at Anglo Platinum's PPRust operation

Northam Platinum

The mining and milling rate at Northam rose substantially in the first six months of 2001, following the commissioning of the company's UG2 expansion project, but operations during the second half were affected by a five week strike during August and September. Total mill throughput was up 14 per cent compared with 2000. However, there was a sharp decline in the average pgm content of the ore due to increased production from the UG2, which at Northam typically has a mill head grade of under 4 grams per tonne, compared with around 6 grams per tonne for the Merensky Reef. As a result, total production of platinum group metals and gold in concentrate was virtually unchanged compared with the previous year, at 268,000 oz.

Output during 2002 is expected to be at record levels as the company benefits from a full year's production from the UG2 expansion and improved output of Merensky ore. We believe that combined pgm and gold production should exceed 300,000 oz this year, with platinum output approaching 200,000 oz.

Aquarius Platinum

At the Kroondal mine, a 50 per cent expansion of milling capacity was completed in June 2001. As a result, production in concentrate increased substantially to 113,000 oz platinum and 53,000 oz palladium last year. Kroondal will continue to ramp up production during 2002, and is expected to attain its target rate of 240,000 oz of pgm per annum during the year.

Aquarius has a second pgm project, Marikana, located 8 kilometres west of Kroondal, which is expected to come into production towards the end of this year. Plant construction began in early 2002, and mining is scheduled to get underway in June, ahead of the commissioning of the concentrator towards the year end. Although some concentrate may be obtained this year, we do not believe that any refined pgm will be generated from Marikana until 2003. Full production is planned to be around 160,000 oz of pgm per annum.

A third project, at Everest on the Eastern Bushveld, is currently the subject of a $2 million feasibility study. A drilling programme was completed during 2001, and the company intends to sink a short decline shaft in order to mine a bulk sample of ore for metallurgical testing. This decline is intended eventually to form part of the mining infrastructure at Everest. If the results of the feasibility study are favourable, mining could begin in 2004 and, at full capacity, annual production could be as high as 240,000 oz of pgm.

SouthernEra

At SouthernEra's Messina mine, small-scale production of pgm concentrates commenced during 2001. Although the main shaft and concentrator are still under development, the company is making use of a second, existing shaft to begin mining ahead of the commissioning of the main project. The first concentrate shipment from Messina occurred in September 2001, but total pgm output last year was very small.

In September 2001, SouthernEra announced that it had secured R345 million in debt financing to complete the redevelopment of the main Messina mine. Sinking of the principal shaft was completed in February 2002, and hoisting is scheduled to start in mid year. The project is expected to begin commercial production during the final quarter of this year, following the commissioning of the concentrator in September. Production is planned to total around 160,000 oz of pgm and gold per annum once the mine reaches full capacity.

SouthernEra believes there is potential to expand the Messina mine beyond this level, and is examining the possibility of mining on the Doornvlei Section, 12 kilometres east of the current project. Existing infrastructure includes an incline and a vertical shaft, each developed to a depth of 100 metres. A bankable feasibility study is expected to be complete by mid 2002.

Other Projects in South Africa

In May 2001 it was announced that Anglovaal Mining (Avmin) and Impala Platinum had acquired the right to mine pgm on the farm Dwars Rivier, on the Eastern Bushveld near the town of Lydenburg. The partners have formed the Two Rivers joint venture to develop and operate a new underground mine, with Anglovaal as the majority shareholder (55 per cent) and project operator. Initial plans envisage a mining rate of 1.4 million tonnes per annum, yielding 160-170,000 oz of pgm; a feasibility study is currently underway in order to verify the optimal design and production rate for the mine, and is due for completion during the second half of 2002.

Avmin already produces small amounts of pgm from the Nkomati base metals operation in Mpumalanga province, in which it holds a 75 per cent stake. During 2001, sales of pgm from this mine totalled around 30,000 oz. A feasibility study of an expansion has been completed and a decision on whether to proceed is expected this year. It is believed that this could boost pgm output to around 80,000 oz per annum.

Meanwhile, Impala has also formed a joint venture with the Australian company Pan Palladium covering the Volspruit and Zoetveld farms (the Grass Valley project) 15 kilometres south of Potgietersrus on the northern limb of the Bushveld, and the Nonnenwerth property 70 kilometres north of Potgietersrus.

The first phase of a feasibility study on an open pit mine at Grass Valley is now underway, and further exploration drilling and metallurgical testing are scheduled to take place this year.

UK-based Cluff Mining also has a number of pgm prospects in South Africa, which were acquired through a phased acquisition of a South African company, Sperrylite Resources, during 2000 and 2001. Cluff now holds the rights to four PGM exploration properties on and around the Bushveld Complex: Blaauwbank (Blue Ridge), Loskop, Fonte Verde and Blue Sky North. At the end of last year, Cluff announced that it intended to begin a feasibility study of Blue Ridge during 2002.

Russia

Sales of palladium by Russia in 2001 are estimated to have fallen by 17 per cent to 4.34 million oz. Although there were large shipments of Russian palladium into Switzerland in the first quarter of the year, we do not believe that all of this metal was sold to consumers during 2001. In August, Almaz halted spot sales of palladium in an effort to support the price. Subsequently, shipments of platinum and rhodium accelerated, with the result that estimated platinum sales for the full year increased by 18 per cent to 1.3 million oz. Supplies of rhodium, at 125,000 oz, exceeded production, but were lower than in 2000, when a large amount of metal was sold from stocks.

The usual early-year delays in authorising export quotas for pgm again affected Russian sales in 2001. In the event, President Putin signed the relevant documents in March and shipments of platinum and rhodium began soon afterwards.

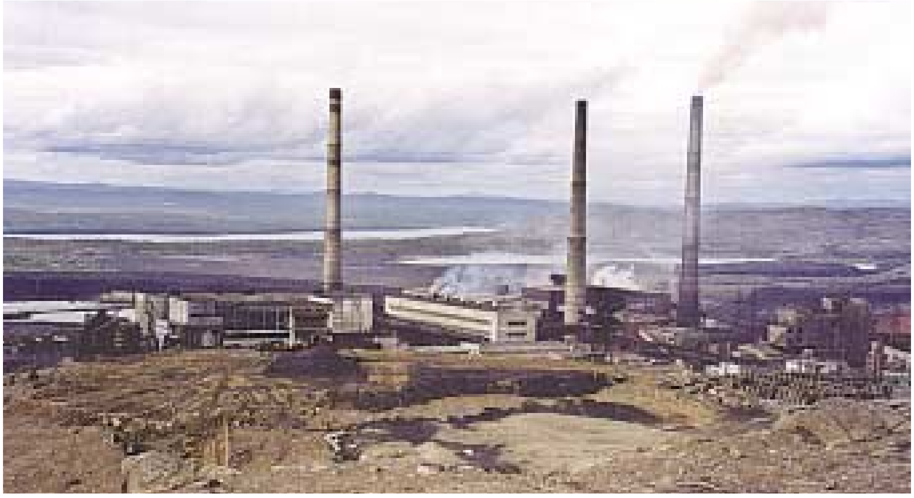
The situation with palladium was more complex. From the beginning of the year, Norilsk Nickel was able to export this metal under a ten-year quota and licence granted in 1999. However, it seems unlikely that Norilsk was behind the exceptionally large shipments of Russian palladium into Switzerland in February and March, which amounted to almost 2.2 million oz. It was initially reported that Swiss customs officials had said that these shipments were transfers from a local vault where the metal had been stored for some time. Although this story was subsequently denied by the Swiss authorities, it still seems probable that the metal formed part of a stock held locally by either the Ministry of Finance or Central Bank of Russia.

The imports into Switzerland coincided with substantial offerings in the market, especially at the London fixes, and with a large increase in market liquidity that suggested that some of the metal had become available for lending. The palladium price also fell sharply, though not as much as would have occurred had all the 2.2 million oz been sold into what was already a weakening market.

In June 2001 a new presidential decree "On the procedures of imports and exports from the Russian Federation of precious metals and precious stones" was signed by President Putin. This

PGM Supplies: Russia
'000 oz

	2000	2001
Platinum	1,100	1,300
Palladium	5,200	4,340
Rhodium	290	125



Norilsk Nickel smelter on the Kola Peninsula

decree includes numerous changes to the existing procedures, but the most notable for pgm is that the power to grant export quotas passed from the President to the Russian Government. Although quotas will continue to be set annually, provision is made for exceptional individual long-term quotas for up to five years. In March 2002 Norilsk Nickel was granted such quotas for platinum and rhodium, to add to its existing ten year quota for palladium.

The decree allows a wider range of banks, miners and producers to apply for quotas to export refined pgm, but re-emphasises that all such exports of pgm are to be carried out only by Almaz. The alluvial platinum producers of the Far East of Russia were granted export quotas in their own right for the first time in 2001, but it appears that they must continue to renew these annually.

During 2001, Norilsk Nickel made further progress in the modernisation of its mining and refining operations at Norilsk in Siberia and on the Kola Peninsula. In September it announced that contracts worth $250 million had been signed with Outokumpu to construct a new concentrator at Norilsk, replacing the present facility that was built in 1948, and to expand the concentrator at Talnakh. These improvements should enable Norilsk to treat more disseminated ore and to process tailings from mining in earlier years, allowing the company to increase its output of pgm without expanding production of nickel and other base metals. In January 2002 it was announced that Outokumpu would also begin the reconstruction of the Nadezhda smelter at Norilsk, with completion scheduled for 2005.

In December last year Norilsk signed loan and grant contracts with the Nordic Investment Bank to modernise its metals subsidiaries on the Kola Peninsula. In return for a grant of $31 million from the Norwegian Government and a ten-year loan of $30 million from the Bank, Norilsk will invest $35 million of its own funds to modernise its Kola operations. Although important for the local economy and to reduce pollution in the region, these investments will have far less impact on pgm production than those in Siberia.

Current production levels at the alluvial producers in the Far East of Russia – at Kondyor and Koryak – are believed to be lower than in the late 1990s. There have been several indications that Koryakgeologodobycha, which exploits deposits in Kamchatka, has been increasing its emphasis on gold, rather than platinum. At Kondyor, in Khabarovsk, the production of platinum is thought to have stabilised at a level beneath the maximum obtained some years ago.

North America

North American supplies of platinum rose by 23 per cent to 350,000 oz during 2001, while those of palladium were up 34 per cent to 850,000 oz. These increases reflected expansions of pgm mining at Stillwater and North American Palladium, and higher output of pgm as a by-product of nickel mining by Inco and Falconbridge.

Canada

Canada's only primary producer of pgm is the North American Palladium mine at Lac des Isles in Ontario. During 2001, the company completed an ambitious expansion programme, with the commissioning of a new 15,000 tonne per day concentrator at the beginning of June. Although the build-up in production has been slower than planned, due to some unexpected bottlenecks in the crushing and flotation circuits, the company processed 2.66 million tonnes of ore last year, nearly three times its throughput in 2000.

With the increase in concentrator capacity, the mine is now able to process ores with a much lower pgm content, and average grades have therefore fallen sharply – the head grade during the second half of 2001, following the commissioning of the new mill, fell below 2 grams per tonne. This compares with a typical grade of 3-5 grams per tonne before the expansion. Last year, palladium output was also affected by low recoveries during the initial months of operation at the new plant. As a result, palladium production rose by only 34 per cent, to 127,500 oz, despite the trebling of the milling rate.

In January 2002, North American Palladium announced that it had revised this year's mining plan in order to improve profitability. The quantity of ore and waste extracted from the open pit is to be reduced, and additional mill feed

PGM Supplies: North America '000 oz	2000	2001
Platinum	285	350
Palladium	635	850
Rhodium	17	23

will be sourced from existing ore stockpiles (which at the end of 2001 totalled 6.4 million tonnes grading 1.33 grams of palladium per tonne). This will enable mill throughput to be sustained at the planned level of 5.475 million tonnes per annum. Although the average grade will decline again this year, output of palladium is expected to rise significantly and is likely to be close to 200,000 oz.

Significant quantities of pgm are also produced in Canada as by-products of nickel mining by Inco and Falconbridge. Since the late 1990s, Inco has rationalised its Sudbury mining operations, focusing on higher-grade, lower-cost orebodies, with the result that pgm output has risen steadily. Last year, additional pgm came from the Copper Cliff North mine, where a zone of ore grading 16.4 grams per tonne of pgm and gold was brought into production in the last quarter of 2000. Total refined pgm output at Inco was 405,000 oz, up 18 per cent compared with the previous year; this figure includes small quantities of pgm recovered from semi-processed materials purchased from other mining companies. The company expects pgm production in 2002 to be at a similar level to last year.

At Falconbridge's Sudbury operations, striking employees returned to work on 23rd February 2001, following a seven month stoppage. Full mine production of 50,000 tonnes of ore per week was achieved by June, and the mines operated continuously throughout the remainder of the year. As a result, nickel output from Sudbury was up 9 per cent last year, while there was also a 6.5 per cent rise in production from Falconbridge's second Canadian nickel mine, at Raglan in northern Quebec. These increases were reflected in higher output of pgm during 2001. In addition, metallurgical problems led to a build-up in stocks of unrefined metal during 2000; the release of this metal from the refining pipeline is believed to have boosted pgm output last year.

USA

Refined pgm output from Stillwater Mining Company increased sharply last year. At the company's Stillwater Mine at Nye, recent investment in overcoming underground bottlenecks was reflected in a significant improvement in mining and milling rates. A total of 912,000 tons of ore was processed through the concentrator, up 21 per cent compared with 2000, though this was partly offset by a slight fall in the overall head grade to 0.62 oz per ton. Palladium output rose by 18 per cent to 388,000 oz last year, while platinum production was up 16 per cent at 116,000 oz.

A further 17,000 oz of palladium and 5,000 of platinum were produced from low-grade development ore during the final stages of development at the company's East Boulder project. The mine is scheduled to begin stoping operations during the first half of 2002, and ore production is planned to reach 1,000 tons per day by mid year. Grades at East Boulder are expected to be somewhat lower than at Stillwater, at around 0.5 oz per ton.

The decline in the palladium price during 2001 affected Stillwater Mining Company more seriously than other pgm producers, because of the relatively high cost of its underground operations, a lack of cash, and the need for further substantial capital investment to complete its expansion programme. As a result, in November last year the company announced that its expansion targets had been reduced. Plans for a further 20 per cent increase in production at the established Stillwater mine have been put on hold, with mine output to be maintained at around 2,500 tons of ore per day, while the target mining and milling rate at the new East Boulder operation has been halved to 1,000 tons per day.

Exploration in North America

Rises in platinum and palladium prices in recent years have stimulated a surge in exploration projects in Canada and the USA. Most are still at a very early stage, but among those which have reported

The Falconbridge Raglan mine site in northern Quebec results from exploration drilling are a number of joint ventures with established mining companies.

Anglo Platinum has funded five phases of drilling at Pacific North West Capital's River Valley project to the east of Sudbury, earning itself a 50 per cent interest in the joint venture. An initial resource estimate has been calculated, totalling 12.7 million tonnes grading 1.39 grams of platinum and palladium per tonne, with a platinum:palladium ratio of about 1:3. Mustang Minerals also has a project at River Valley; exploration is being funded by Impala Platinum, which has the right to earn a 60 per cent interest in the venture. Mustang has established a second joint venture, this time with Falconbridge, covering its East Bull Lake prospect west of Sudbury.

Impala has also entered agreements with two companies exploring in the Birch Lake area of the Duluth Complex, located in northern Minnesota.

Zimbabwe

Supplies of platinum from Zimbabwe were small in 2001, at about 15,000 oz. However, output is set to rise significantly over the next two years, with the start-up of the Ngezi project and expansion of the existing Mimosa mine.

During 2001, Zimbabwe's only functioning platinum mine, Mimosa, continued to operate at an annual production rate of around 15,000 oz of platinum. An expansion programme has been under consideration for several years and is finally expected to get underway during 2002. Finance has been raised through the sale to Impala of a 35 per cent stake in Mimosa Mining Company for $30 million; this should provide most of the capital necessary to raise platinum output to around 70,000 oz per annum.

Platinum output from Zimbabwe will be augmented this year by the start up of a second mine, Zimplats' Ngezi open cast project. Funds for the mine's development were secured in March 2001, again with the involvement of Impala, which acquired a 30 per cent stake in Zimplats' subsidiary Makwiro Platinum Mines (which owns the Ngezi project and the former Hartley Platinum mine) at a cost of $30 million. The South African bank ABSA agreed to provide a further $30 million in debt finance. In addition, Impala and ABSA have each purchased a 15 per cent equity interest in Zimplats itself.

Infrastructure development at Ngezi was completed in December 2001 with the commissioning of an ore crusher and the opening of a new road which links the mine site with the processing plant at the former Hartley Platinum mine (now known as the Selous Metallurgical Complex). Mining at Ngezi commenced during the final quarter of last year, and the first smelter matte was produced in January 2002 following recommissioning of the concentrator and smelter at Selous. Matte from the project is to be shipped to Impala in South Africa for refining.

Zimplats expects Ngezi to reach full production of 183,000 tonnes of ore per month in May 2002; this should yield around 208,000 oz of pgm a year. The company is considering an expansion of pgm output through an extension of open cast operations, and possibly via a limited reopening of the underground mine at Hartley.

Other Projects

Higher platinum and palladium prices since the late 1990s have been reflected in a wave of exploration for new, economic pgm deposits. The majority of these projects appear to concern relatively low-grade palladium deposits which may not be viable at lower prices. However, several have progressed beyond the initial stages of exploration and are now at the feasibility study stage.

In June 2001 it was announced that Lonmin was to pay A$7.8 million for an 11.8 per cent stake in the Australian company Helix Resources NL. In addition, the two companies entered an agreement under which Lonmin can earn a 50 per cent interest in Helix's Munni Munni project by funding a feasibility study and providing technical assistance. The Munni Munni project is located near Karratha in Western Australia, and previous exploration work led to an initial resource estimate of 9.2 million tonnes of ore grading 2.9 grams of pgm plus gold per tonne. Like most deposits outside Southern Africa, the deposit is palladium-rich, with a platinum:palladium ratio of about 1:1.5.

Lonmin has also bought a 39 per cent interest in Platinum Australia Limited for A$12 million. These funds will be used for a full feasibility study of the company's Panton Platinum-Palladium project, where a resource of 33.6 million tonnes grading 2 grams per tonne was estimated in April 2001. Unusually, the platinum and palladium values appear to be about equal.

The Arctic Platinum Partnership, a joint venture between Gold Fields and Outokumpu, is exploring for pgm in northern Finland. A feasibility study is currently underway and is scheduled for completion in late 2002. In January 2002 the joint venture announced that it had identified resources totalling 152.5 million tonnes at an average grade of 2.3 grams per tonne, with a platinum to palladium ratio of about 1:3.

PGM Supplies: Zimbabwe & Others
'000 oz

	2000	2001
Platinum	105	110
Palladium	105	120
Rhodium	3	4