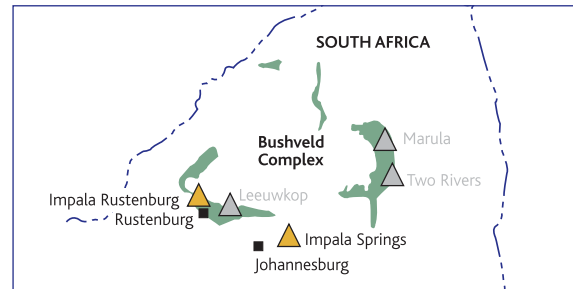


Review of operations and investments

Impala



Highlights

- 16.3Mt of ore milled
- 1.055Moz of platinum produced
- Safety a concern
- Plans in place to effect a turnaround in operational performance begin to bear results
- New shafts progressing well

Introduction

Impala, the group's primary business unit, comprises mining, processing and refining operations. The mining and processing operations are located on the western limb of the Bushveld Complex in North West Province, just north of the town of Rustenburg, while the refining operation is situated in the town of Springs, east of Johannesburg, in the province of Gauteng.

The mining operation comprises 14 operating shafts, five of which have underground decline systems (two are nearing completion) and two shafts which are currently in development. Mineral Processes houses the concentrator (milling, flotation and drying) and smelter operations. Refineries comprises both a base metals refinery (BMR) and a precious metals refinery (PMR).

With the finalisation of the transaction with RBH, the RBN, through the RBH, has an effective holding of 22.1% in Impala at an operational level. If the ESOP's holding of 4.2% is included, this brings the total effective BEE holding in Impala to 33.6% , which comfortably exceeds the BEE equity requirements stipulated by the MPRDA and the South African Mining Charter.

Safety

There was a deterioration in safety during the year. The lost-time injury frequency rate (LTIFR) per million manhours deteriorated by 6% to 4.19 while the fatal injury frequency rate (FIFR) increased from 0.079 to 0.106. Falls of ground remained the major contributor to fatalities and lost-time injuries.

A higher than average staff turnover at middle management level appears to have affected safety performance at Impala. The implications of this have been twofold: firstly, the operation has lost experienced employees and secondly, much time had to be spent retraining and training new and current employees.

The cause of most fatalities (seven out of the nine reported in FY2007) was related to falls of ground. Consequently, the fall of ground safety intervention programme has been revitalised and there has been a renewed focus on visible, felt leadership. A workplace self-rating system has also been implemented, driven by front line supervisors, review of a barring equipment and practice, as many lost-time injuries occur during the process of ensuring that an area is safe. This review system is currently being tested and trialled at 1 shaft.

The system of ground control districts implemented several years ago is now an inherent aspect of the support standards practice at Impala, in that the ground control districts determine the support standards implemented. The increased incidence of falls of ground has been aggravated by mining operations in remnant areas (previously termed white

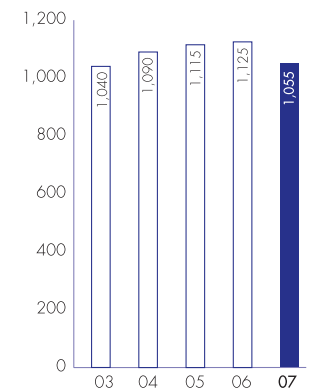
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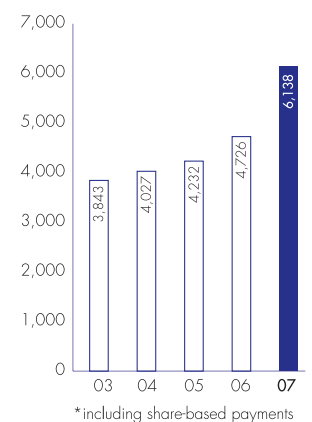
Impala key statistics

		FY2007	FY2006	% change
Sales	(Rm)	17,400.8	11,054.4	57.4
Platinum		9,572.8	6,628.6	44.4
Palladium		1,068.0	846.4	26.2
Rhodium		4,060.8	2,307.0	76.0
Nickel		1,757.5	767.1	129.1
Other		941.7	505.3	86.4
Cost of sales		(6,641.5)	(5,188.6)	(28.0)
On-mine operations		(4,798.0)	(3,815.4)	(25.8)
Concentrating and smelting operations		(917.5)	(834.0)	(10.0)
Refining operations		(376.7)	(386.8)	2.6
Amortisation		(593.7)	(516.0)	(15.1)
Increase/(decrease) in inventory		44.4	363.6	(87.8)
Mining gross profit		10,759.3	5,865.8	83.4
Profit/(loss) from metal purchased transactions		38.7	86.2	(55.1)
Sales of metals purchased		12,413.1	5,810.5	113.6
– IRS		12,229.2	5,743.7	112.9
– Other		183.9	66.8	175.3
Cost of metals purchased		(12,374.4)	(5,724.3)	(116.2)
– IRS		(12,226.0)	(5,662.5)	(115.9)
– Other		(148.4)	(61.8)	(140.1)
Gross profit in Implats group		10,798.0	5,952.0	81.4
Gross margin ex-mine	(%)	61.8	53.1	16.4
Other operating costs	(Rm)	(384.8)	(282.0)	(36.5)
Royalty expense		(1,624.3)	(811.3)	(100.2)
Sales volumes ex-mine				
Platinum	(000oz)	1,119.3	1,050.5	6.5
Palladium	(000oz)	446.9	530.2	(15.7)
Rhodium	(000oz)	110.6	121.2	(8.7)
Nickel	(000t)	7.1	7.8	(9.0)
Sales volumes metals purchased – IRS				
Platinum	(000oz)	677.3	517.5	30.9
Palladium	(000oz)	433.8	325.6	33.2
Rhodium	(000oz)	92.2	66.7	38.2
Nickel	(000t)	4.7	3.5	34.3
Prices achieved ex-mine				
Platinum	(\$/oz)	1,190	987	20.6
Palladium	(\$/oz)	335	253	32.4
Rhodium	(\$/oz)	5,104	3,001	70.1
Nickel	(\$/t)	31,645	15,648	102.2
Exchange rate achieved ex-mine	(R/US\$)	7.20	6.37	13.0
Production ex-mine				
Tonnes milled	(000t)	16,302	16,441	(0.8)
Platinum refined	(000oz)	1,055.3	1,125.3	(6.2)
Palladium refined	(000oz)	472.0	491.6	(4.0)
Rhodium refined	(000oz)	102.9	128.5	(19.9)
Nickel refined	(000t)	7.0	7.9	(11.4)
PGM refined production	(000oz)	1,872.4	2,002.9	(6.5)
Total cost*		6,477.0	5,318.2	(21.8)
per tonne milled	(R/t)	397	323	(22.9)
	(\$/t)	55	51	(7.8)
per PGM ounce refined	(R/oz)	3,459	2,655	(30.3)
	(\$/oz)	481	416	(15.6)
per platinum ounce refined	(R/oz)	6,138	4,726	(29.9)
	(\$/oz)	853	740	(15.3)
net of revenue received for other metals	(R/oz)	(1,280)	812	257.6
	(\$/oz)	(178)	127	240.2
Capital expenditure	(Rm)	2,097.7	1,600.5	31.1
	(US\$m)	292	250	16.8
* Includes share-based payments	(Rm)	554.2	159.4	(247.7)

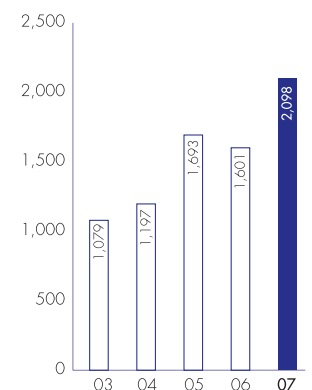
Impala – platinum production (000 oz)



Impala – operating cost* (R/platinum ounce)



Impala – capital expenditure (R million)





Review of operations and investments

Impala

areas) and also by the overall deeper nature of the operation. The management level at which the decision is made on whether or not to mine a remnant area has been elevated. Furthermore, the mining methods used in these areas have been amended so as to enhance safety.

Safety performance at Impala's Refineries remained stable in FY2007 with an LTIFR of 0.68 reported for the year. The Refineries maintained its ISO 14000 and ISO 9000 certification.

Zero injuries and fatalities remain the major goal of the Impala safety strategy and the aim is to achieve an LTIFR of 0 by 2012. More information on safety may be found in the section on Corporate Responsibility on pages 106 and 107 of this report.

Mining

Operational review

Production at Impala was 1.055Moz of platinum in FY2007, a decrease of 6.2% on the record level of production set the previous financial year. Production of PGMs totalled 1.87Moz, a decrease of 6.5%. Tonnes milled declined marginally by 0.8% to 16.3Mt.

The reduced throughput – both tonnes mined and platinum refined – resulted from the decline in the volumes of relatively high-grade Merensky ore mined, owing to lower grade mechanised Merensky ore (because of the greater dilution), and the underperformance of two major Merensky shafts. This was compounded by the decline in the grades of the Merensky ore mined. Increases in UG2 ore mined – both conventional and opencast – were insufficient to compensate for this. Steps were taken during the course of the year to enhance grade and there was a marked improvement in the last three months of the year, resulting in an overall grade for the year of 3.84g/t (3PGE+Au) compared to 3.80g/t for the previous financial year.

Mining of remnant areas continued in FY2007. It had been planned to phase out the contractors operating in these areas during the year, but because of the poor performance of Impala's own teams, their services were retained. Contractor mining will be reduced during the course of FY2008. Production from these areas fell to 19% of total output in FY2007, having peaked at 22% of conventional output in FY2006. Production from the remnant areas is scheduled to decline over next four years.

The high turnover in staff at certain levels of middle management, including supervisory and skilled categories, had implications for safety and production in terms of the grades and volumes mined. To counter the high turnover in staff, salaries have been realigned and a new incentive scheme was introduced for all employees at Impala's mining and

Impala – tonnes milled by source					
(000t)	FY2007	FY2006	FY2005	FY2004	FY2003
Merensky – total	8,165	8,630	8,600	8,422	8,169
– conventional	5,886	6,058	6,711	7,087	7,595
– mechanised	2,017	2,146	1,362	624	36
– opencast	262	426	527	711	538
UG2 – total	8,137	7,811	7,178	7,217	6,873
– conventional	7,662	7,618	7,178	7,217	6,873
– opencast	475	193	–	–	–
Total	16,302	16,441	15,778	15,639	15,042

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processing operations as from May 2007. In addition, to address the decline in production, both the mining cycle and technology in use were reviewed and optimised in line with best practice guidelines. The revised mining methodology which is aimed at improved grade control and productivity, and cost containment is currently on trial and being tested at 11 shaft.

Although the drill jig technology contributes positively to efficiencies, the primary aim of this technology, given the accompanying in-stope bolting, is improved safety. The roll-out of in-stope bolting is 90% complete. Problems were encountered with the acceptance of the technology by employees and there were issues with the weight of the drill, which has consequently been reduced by 20kg. The benefits of the technology were not adequately explained initially to employees and there were fears of job losses among employees. Currently, approximately 20 teams are using the drill jig technology and will continue to do so in FY2008. The equipment is to be further refined and difficulties relating to the use of the equipment are to be ironed out before it is rolled out to the rest of the operation. The company which developed the drill jig technology is committed to this process and is continuing with its research and development. Their instructors are assisting with the training of Impala employees.

Centares per stoping team increased to 395 centares from 393 centares the previous year, but the face advance in metres per panel team decreased from 15.2m to 14.4m. Centares per panel employee were thus 38, similar to that of FY2006. The new production incentive scheme is expected to contribute to improved productivity levels.

Development metres increased from 75,000m to 78,000m but efficiency levels were unchanged from the previous year. Development efficiencies will be a significant focus area in FY2008 so as to ensure and promote mining flexibility.

Excluding share-based payments, the cash operating cost per refined platinum ounce rose by 22.4%. The problems related to grade and volumes, the change in the Merensky-UG2 mix as well as the poor performance at 4, 11, 12 and 14 shafts aggravated this increase in costs. The cash cost per tonne milled was 26% higher at R397/t than the previous year. This compares with an inflation rate (CPIX) for the 12 months to end June 2007 of 6.5%. Higher prices of steel, coal, fuel, copper and reagents were far in excess of either the producer or consumer rates of inflation and these contributed to the increase in costs. Operational efficiency and cost management remain priorities.



Review of operations and investments

Impala



Capital projects

Very good progress was made with the development at 16 and 20 shafts. Production from these shafts will essentially be replacement ounces and limited growth in production has been included in plans going forward. A five-year growth profile is in place. Both shafts are on track to begin production as originally scheduled: 16 shaft in FY2012 and 20 shaft in FY2009 with full production scheduled for FY2016 and FY2013 respectively. By the end of June 2007, 16 shaft had reached a depth of 1,000m with a final depth of 1,675m planned, and 20 shaft a depth of 1,040m, 18m short of to its final depth of 1,058m.

Work has begun on the feasibility study for 17 shaft and this will be presented to the board in November 2007 for its approval for construction to begin during FY2008. Cost escalations for shaft construction are becoming problematic: of most serious concern is the cost of concrete as well as a shortage of the skills required.

Mineral Processes

Operational review

Tonnes milled declined marginally to 16.3Mt in FY2007 from the record level of 16.4Mt reported the year previously. The decline in recovery rates from 84.5% in FY2006 to 83.3% in FY2007 was largely a function of the ore mix supplied, and in particular the higher proportion of opencast UG2 material.

The high-energy flotation cells that have been so successful at the UG2 plant have also been installed at the MF2 plant and are currently being optimised.

The good performance of the tails scavenging plant continues. Given the success of the existing plant and its positive contribution to overall output, investigations are currently being conducted into expanding the plant.

Operating costs for Mineral Processes were approximately R56/tonne milled in FY2007 compared with R51/tonne the previous year.

Expansion

The first phase of the R1 billion smelter expansion, namely the upgrade of the No 4 contingency furnace at a cost of R150 million, has progressed well. Hot commissioning began in early June 2007. This upgrade will effectively increase smelter capacity to around 2.3Moz of platinum.

The R850 million approved for the second phase of the smelter expansion to 2.8Moz includes the conversion of the furnace from a contingency to a full-blown operating furnace by December 2008. Half of this capital expenditure relates to gas cleaning equipment to further improve environmental performance with respect to sulphur dioxide and dust emissions.

Refineries

Operational review

Refineries achieved record production of 2.026Moz of platinum (3.858Moz of PGMs) in FY2007. Lower receipts from certain toll contracts was offset by toll-in of concentrate from Lonmin following the breakdown of their smelter. The resultant "back-ending" in the supply mix to Refineries resulted in the receipt of certain metals (notably rhodium) in excess of processing capacity which caused a temporary build-up of their respective pipelines. This build-up (13,000oz of rhodium) will be released early in the new financial year. The Refineries capital programme addresses expansion capacity to cater for anticipated volumes over the next five-year horizon.

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Name	
Name	16 shaft
Location	Impala Rustenburg, western Bushveld
Description	Construction began in October 2004. On completion, the shaft will be 1,675m deep, with seven production levels. Production is scheduled to begin in FY2012.
Key information:	
Start date	October 2004
Completion date	Full production planned for FY2016
Annual capacity	At full production: <ul style="list-style-type: none"> • 2.7Mt annually (225,000 tonnes per month) • 190,000oz of platinum
Average grade	4.19g/t (3PGE+Au)
Capital expenditure	R3.6 billion Expenditure to date: R801 million
Life of shaft	27 years
Key project milestones achieved in FY2007	Development of intermediate pumping station completed. Sinking of both the main and ventilation shafts is on target. Construction of the surface infrastructure is on schedule.
Key project milestones	Ventilation shaft sinking completed in FY2008. Main shaft sinking to be completed FY2010. Main shaft to be commissioned by FY2011
Name	
Name	20 shaft
Location	Impala Rustenburg, western Bushveld
Description	Construction began in October 2004. On completion the shaft will have 10 production levels and be 1,058m deep. Production scheduled to begin in FY2009.
Key information:	
Start date	October 2004
Completion date	Full production scheduled for FY2013
Annual capacity	At full production: <ul style="list-style-type: none"> • 2.2Mt annually (185,000 tonnes per month) • 150,000oz of platinum
Average grade	3.72g/t (3PGE+Au)
Capital expenditure	R3.4 billion Expenditure to date: R787 million
Life of shaft	23 years
Key project milestones achieved in FY2007	Shaft sinking of both the ventilation and main shafts nearing completion as is development of the main station. Engineering and construction of surface infrastructure is progressing well.
Key project milestones in FY2008	Main shaft sinking to be completed by FY2008 Ventilation shaft sinking to be completed by FY2008 Main shaft to be commissioned by FY2008



Review of operations and investments

Impala

Name	Smelter expansion project
Location	Impala Rustenburg, western Bushveld
Description	The smelter expansion is aimed at increasing capacity at Mineral Processes to 2.8Moz of platinum annually. This includes the up-grade of the contingency furnace.
Key information:	
Start date	March 2006
Completion date	February 2009
Annual capacity	2.8Moz of platinum
Capital expenditure	R1 billion Expenditure to date: R231 million
Key project milestones achieved in FY2007	Commissioning of furnace began in June 2007
Key project milestones in FY2008	Proceeding with conversion of contingency furnace to a full-time operating furnace. Dryer to be commissioned in June 2008. Converter and gas cleaning stacks to be commissioned in December 2008.

Gross costs at Refineries were well controlled with a 7% increase year-on-year, driven primarily by additional volumes. The growth in production volumes of 186,000oz of platinum resulted in a unit cost decrease of 1.7%.

Expansion

In May 2007, the board approved funding of R668 million for the Phase II expansion of the BMR to sustainable annual production of 2.8Moz of platinum. This project, which is scheduled for completion by February 2010, focuses on a new PGM-upgrade high-security area. This is a low-risk expansion as it is based on tried and tested technology.

The R225 million Phase II expansion at the PMR, which was initiated in 2004 to increase production capacity from 1.6Moz to 2Moz of platinum, is complete. Of this cost, approximately 75% related to the provision of environmental attenuation equipment to address both liquid and gaseous effluent. While all installations have been completed, final performance testing is being undertaken to ensure regulatory compliance and this is scheduled for completion by August 2007.

The Phase III expansion of the PMR to a capacity of 2.3Moz of platinum is on track. This phase which began in April 2006 is scheduled for completion in April 2008 at an estimated cost of R50 million. This expansion focuses on the provision of additional processing equipment.

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Name	Refineries expansion project
Location	Impala Springs
Description	<p>Phased expansion to increase refining capacity at both the Base Metals Refinery (BMR) and the Precious Metals Refinery (PMR) to 2.8Moz of platinum annually.</p> <p>BMR: Phase II expansion involves establishment of a new PGM-upgrade high-security area of 2.8Moz.</p> <p>PMR: Phase III will focus mainly on the provision of additional processing equipment from 2Moz to 2.3Moz. Phase IV includes the provision of a new rhodium-iridium processing facility from 2.3Moz to 2.8Moz.</p>
Start date	<p>BMR: Phase II – June 2007</p> <p>PMR: Phase III – April 2006 Phase IV – June 2007</p>
Completion date	<p>BMR: Phase II – 2010</p> <p>PMR: Phase III – 2008 Phase IV – 2010</p>
Annual capacity	2.8Moz of platinum
Capital expenditure	<p>BMR: Phase II project execution: R668 million</p> <p>PMR: Phase III project execution: R50 million Phase IV study, interim and project execution: R645 million</p>
Key project milestones achieved in FY2007	<p>BMR: Phase II – board approved funding.</p> <p>PMR: Phase III – project is nearing completion. Phase IV – board has approved budget for feasibility study and for purchase of interim processing equipment.</p>
Key project milestones in FY2008	<p>BMR: Phase II – project execution to begin.</p> <p>PMR: Phase III – scheduled for completion in FY2008. Phase IV – feasibility study will be conducted.</p>





Review of operations and investments

Impala

In May 2007, the Implats board approved initial capital expenditure of R135 million for both the feasibility study and the provision of interim processing equipment for the Phase IV expansion which will further increase capacity of the PMR to 2.8Moz. Phase IV will include the construction of a new rhodium-iridium processing facility. Initial estimates of the total cost of this expansion are in the region of R645 million.

The planned Phase IV expansion is strategically important given planned and potential expansions across the Implats group. This expansion ties in with the third furnace being established at Mineral Processes which will increase capacity there to 2.8Moz.

Research and development

An advanced process control circuit which enhances the grade of the concentrate supplied to the PMR by the BMR was successfully implemented during the year. Investigations into other areas in which the principle of advanced process control could be implemented, will result in increased productivity and cost benefits.

Modifications are being made to the filtration process in the palladium circuit. Extensive testing was done and the necessary changes are to be implemented permanently. This process will accommodate greater volumes and result in a more robust circuit.

A patented, improved rhodium-iridium separation resin circuit was successfully tested at plant scale and will be included in phase IV of the PMR expansion. This is a more efficient separation resin which will give greater operational efficiency, shorten the pipeline and reduce operating costs.

Other initiatives include a holistic effluent strategy and test work on direct metallisation of the final products. The latter is potentially more efficient than the current ignition method and also reduces the load on gas scrubbing circuits and is hence a 'cleaner' route. This research will be progressed during FY2008.

Outlook

Platinum production at Impala Rustenburg is dependent on the operation increasing production of quality tonnes and we expect to produce between 16.4Mt and 17.0Mt. The planned expansions at Mineral Processes and Impala Springs will achieve processing capacity of around 2.8Moz by FY2011.

