

CREATING VALUE FROM OPERATIONS, PROJECTS AND TECHNOLOGY

OPERATIONS

APPROACH

Efficient management of its operations has enabled Sibanye to pay industry-leading dividends to shareholders and deliver significant value to other stakeholders since it listed in 2013 (details on value add to other stakeholders is available in the section *Social upliftment and community development* on page 82). The integration of the platinum operations acquired in 2016 will enable sustainable delivery of further value and allow the Group to capitalise on further value-accretive opportunities in the mining sector.

Sibanye’s operating model is based on implementing fundamental mining practices and flat, cost-efficient structures designed to optimise and sustain operational performance. The Group has a proven operational track record of managing complex mines and is confident that, by applying its operating model and mining capability to new acquisitions and projects, it can continue to realise value for stakeholders.

PERFORMANCE

Sibanye has successfully restructured and optimised its gold operations since 2013, significantly extending their economic lives. Initial restructuring resulted in a meaningful increase in production and decrease in operating costs. Further cost reductions at these assets are likely to be more incremental.

Capital investment in the sustainability of our operations continues. The decline projects at Driefontein and Kloof will extend the life of these mines and sustain production in the longer term.

The integration of the platinum operations (Kroondal, Mimosa, Platinum Mile as well as the Rustenburg assets) is a primary focus. Our operating model is based primarily on initially reducing then managing those costs that are under our control, thereby lowering pay limits (or the break-even grade at which the operations can be profitably mined). This contributes to greater operational flexibility and improved cash margins. Key elements of the optimisation process include continuous re-engineering of the business, and the introduction and adherence to planned return cut-off, ore reserve-management principles.

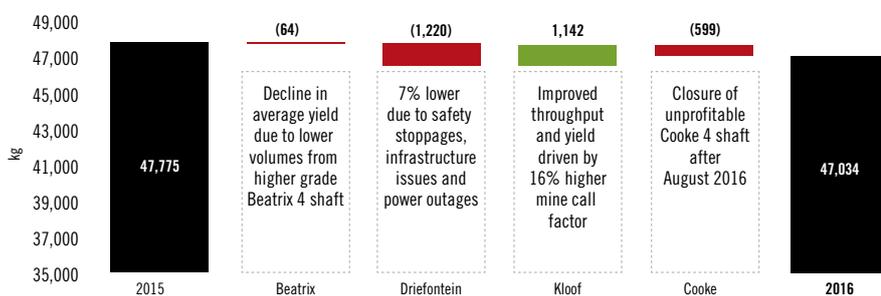
The daily efforts of our workforce and other stakeholders are key to our success. Our focus on employee safety and health is set out from page 71 while our approach to employee engagement can be found on page 35.

GOLD DIVISION

Overall, operational performance in 2016 was solid. Gold production in 2016 remained stable year-on-year despite numerous safety stoppages in the first half of the year and the closure of the unprofitable Cooke 4 shaft after August 2016, which resulted in a 599kg reduction in gold produced by the Cooke operations year on year.

Kloof produced 1,142kg more gold than in 2015 by improving throughput and yield following a renewed focus on mining quality factors, which resulted in a 16% higher mine call factor. At Driefontein, production was 7% lower year-on-year due to safety stoppages, infrastructure issues and power outages. Beatrix production was lower due to the lower volumes from the higher-grade Beatrix 4 shaft being processed.

Annual gold production variance (kg)



Mining is our core business activity. The performance of our operations is key to our vision to create superior value for all stakeholders. Our future lies in our reserves and resources while our investment in technology aims to deliver a profitable long-term future by allowing the safe extraction of previously inaccessible resources.





Given the safety incidents, stoppages and engineering challenges that impacted performance at the gold operations during the year, Sibanye did not achieve its original targets for costs and gold production.

In the Gold Division, costs were well contained during the year with the division being the lowest cost gold producer in South Africa, with an average operating cost of R862/t and an average all-in sustaining cost of R450,152/kg (US\$954/oz).

In the Gold Division, two thirds – R2,394 million (2015: R2,305 million) – of total capital expenditure by the division of R3,824 million (2015: R3,345 million) was spent on ore reserve development to maintain operational flexibility, in line with our operating model, while R684 million (2015: R669 million) was expended on sustaining operations and infrastructural maintenance (one of our material issues).

Following a review of capital requirements, planned capital expenditure for Burnstone was reduced by around R300 million for 2017.

ESTABLISHING THE PLATINUM DIVISION

Since taking ownership, the platinum operations bought from Aquarius (Kroondal, Mimosa and Platinum Mile) continued to perform optimally as did the Rustenburg operations, for the two months of ownership in 2016. The Platinum Division posted an operating profit of R74 million for the two months.

The integration of the platinum assets has thus far been encouraging, with the Aquarius assets continuing to operate according to expectation since their acquisition. The Rustenburg Operations, acquired effective 1 November 2016, recorded a pleasing operational turnaround in the last quarter of the year after a difficult first nine months, prior to their acquisition.

Overall, the Platinum Division delivered attributable production of 420,763oz (4E) at an average operating cost of R10,260/4Eoz (US\$701/4Eoz), or an average operating margin of 10%, for the nine months from April to December 2016. The division generated operating profit of R376 million¹ (US\$26 million) in 2016. Mimosa, which is equity-accounted, generated an operating profit of R254 million.

The Group has previously indicated that it expects to realise operational synergies of approximately R800 million annually from the combined Aquarius and Rustenburg operations over a three-year period. The first steps in achieving these synergies have begun with approximately R400 million in synergies expected to be achieved by 2017 year-end.

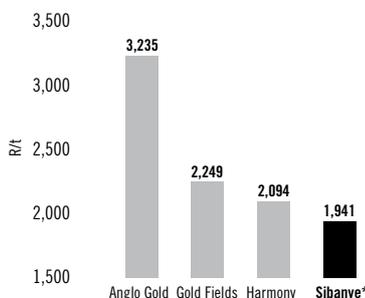
A Section 189 process at the Platinum Division was announced on 26 January 2017.

Steps taken at the Rustenburg Operation to achieve near-term profitability include:

- Aligning development to maintain current production levels
- Implementing operational and cost efficiency improvements
- Implementing previously identified synergies with shared services and breaking down mine boundaries

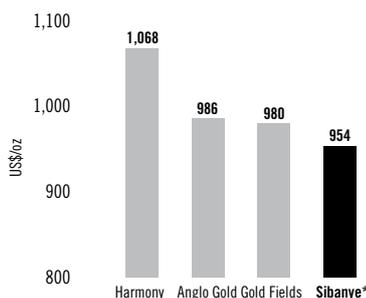
In the Platinum Division, R327 million of sustaining capital was spent. The division's growth capital is being reviewed as we assess its requirements. Expenditure at the Rustenburg Operations has been reduced in line with planned production levels, with total planned capital expenditure for the division of R900 million estimated for 2017.

Operating costs – South African underground gold mines (R/t)



Source for annual peers information at 31 December 2016: Nedbank

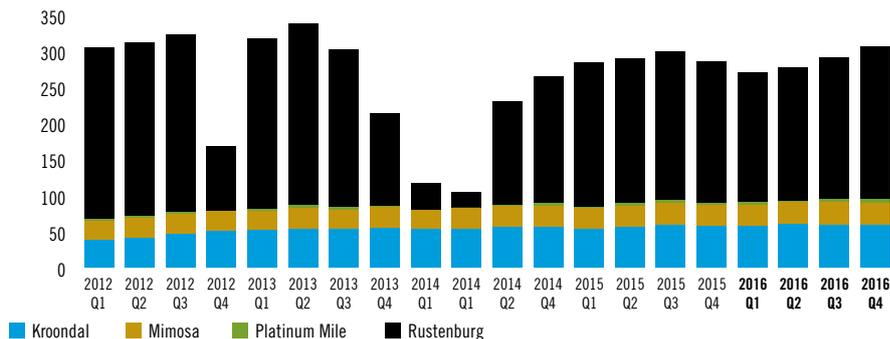
All-in sustaining cost comparison – South African gold producers (US\$/oz)



Source: Company reports for twelve months ended 31 December 2016

* Gold Division

Attributable PGM production profile – 4E ounces²



¹ Excludes R254million (US\$17million) equity-accounted operating profit from Mimosa

² Estimated Rustenburg historic 4E production based on Anglo American Platinum's public disclosure of refined Pt production at Rustenburg Operations

CREATING VALUE FROM OPERATIONS, PROJECTS AND TECHNOLOGY CONTINUED

Key statistics by operation

2016

		Group	Gold Division	Driefontein	Kloof	Beatrix	Cooke	Corporate and reconciling items
OPERATING RESULTS								
Ore milled	000t		20,181	5,971	4,676	4,333	5,201	
Underground			8,084	2,055	2,009	2,862	1,158	
Surface			12,097	3,916	2,667	1,471	4,043	
Yield	g/t		2.33	2.70	3.25	2.32	1.09	
Underground			5.21	6.77	6.82	3.35	4.19	
Surface			0.41	0.56	0.56	0.30	0.20	
Gold produced	kg		47,034	16,130	15,210	10,041	5,653	
Underground			42,078	13,920	13,704	9,601	4,853	
Surface			4,956	2,210	1,506	440	800	
Gold sold	kg		46,905	16,046	15,176	10,041	5,642	
Underground			41,960	13,836	13,670	9,601	4,853	
Surface			4,945	2,210	1,506	440	789	
Revenue	R/kg		586,319	585,884	585,853	585,997	595,923	
Total cash cost	R/kg		377,034	355,416	340,762	381,625	527,916	
All-in cost	R/kg		472,585	424,872	435,609	453,232	595,959	
All-in cost margin	%		19	28	26	23	(1)	
Operating cost	R/t		862	937	1,080	866	575	
Underground			1,941	2,374	2,300	1,246	2,268	
Surface			140	182	162	126	90	
FINANCIAL RESULTS (R million)								
Revenue		31,240.7	27,501.3	9,401.1	8,890.9	5,883.9	3,362.2	(36.8)
Underground		28,026.5	24,608.4	8,105.3	8,012.6	5,626.9	2,900.4	(36.8)
Surface		3,214.2	2,892.9	1,295.8	878.3	257.0	461.8	–
Operating costs		(20,709.1)	(17,346.0)	(5,566.6)	(5,041.0)	(3,753.4)	(2,985.0)	–
Underground		(18,800.6)	(15,655.1)	(4,852.1)	(4,609.4)	(3,567.4)	(2,626.2)	–
Surface		(1,908.5)	(1,690.9)	(714.5)	(431.6)	(186.0)	(358.8)	–
Operating profit		10,531.6	10,155.3	3,834.5	3,849.9	2,130.5	377.2	(36.8)
Underground		9,225.9	8,953.3	3,253.2	3,403.2	2,059.5	274.2	(36.8)
Surface		1,305.7	1,202.0	581.3	446.7	71.0	103.0	–
Amortisation and depreciation		(4,041.9)	(3,814.7)	(1,012.9)	(1,190.7)	(818.0)	(770.8)	(22.3)
Net operating profit		6,489.7	6,340.6	2,821.6	2,659.2	1,312.5	(393.6)	(59.1)
Capital expenditure – total		(4,151.2)	(3,824.2)	(1,051.6)	(1,304.2)	(628.4)	(249.2)	(590.8)
Sustaining capital		(1,010.5)	(683.5)	(218.5)	(261.2)	(84.8)	(48.9)	(70.1)
Ore reserve development		(2,394.4)	(2,394.4)	(779.0)	(912.9)	(542.9)	(159.6)	–
Growth projects		(746.3)	(746.3)	(54.1)	(130.1)	(0.7)	(40.7)	(520.7)

		Platinum Division ¹	Kroondal	Platinum Mile	Mimosa	Rustenburg	Corporate and reconciling items
OPERATING RESULTS							
Ore milled	000t	11,611	2,732	5,669	1,012	2,198	
Underground		4,948	2,732		1,012	1,204	
Surface		6,663	–	5,669	–	994	
Yield	g/t	1.72	2.48	0.65	3.57	2.69	
Underground		2.99	2.48		–	3.65	
Surface		0.78	–	0.65	3.57	1.53	
4E PGM sold	kg	13,087	5,543	425	2,833	4,286	
Underground		12,092	5,543		2,833	3,716	
Surface		995	–	425	–	570	
Revenue	R/kg	287,339	355,999	308,471	431,768	386,374	
Operating cost	R/t	373	619	16	958	720	
Underground		832	619	–	958	1,209	
Surface		33	–	16	–	128	
FINANCIAL RESULTS (R million)							
Revenue		3,739.4	1,973.3	131.1	1,223.2	1,656.0	(1,244.2)
Underground		3,418.1	1,973.3	–	1,223.2	1,465.8	(1,244.2)
Surface		321.3	–	131.1	–	190.2	–
Operating costs		(3,363.1)	(1,689.8)	(90.8)	(969.0)	(1,582.5)	969.0
Underground		(3,145.5)	(1,689.8)	–	(969.0)	(1,455.7)	969.0
Surface		(217.6)	–	(90.8)	–	(126.8)	–
Operating profit		376.3	283.5	40.3	254.2	73.5	(275.2)
Underground		272.6	283.5	–	254.2	10.1	(275.2)
Surface		103.7	–	40.3	–	63.4	–
Amortisation and depreciation		(227.2)	(136.2)	(1.2)	(223.7)	(58.6)	192.5
Net operating profit		149.1	147.3	39.1	30.5	14.9	(82.7)
Capital expenditure – total		(327.0)	(175.8)	(1.3)	(159.8)	(148.7)	158.6
Sustaining capital		(327.0)	(175.8)	(1.3)	(159.8)	(148.7)	158.6
Ore reserve development		–	–	–	–	–	–
Growth projects		–	–	–	–	–	–

¹ The Platinum Division's results for the year ended 31 December 2016 include the Aquarius assets for nine months following their acquisition in April 2016 and the Rustenburg Operations for two months, November and December 2016

CREATING VALUE FROM OPERATIONS, PROJECTS AND TECHNOLOGY CONTINUED

Key statistics by operation continued

2015

		Group	Driefontein	Kloof	Beatrix	Cooke	Corporate and reconciling items
Operating results							
Ore milled	000t	19,861	5,772	3,977	4,319	5,793	
Underground		8,584	2,412	1,979	2,723	1,470	
Surface		11,277	3,360	1,998	1,596	4,323	
Yield	g/t	2.41	3.01	3.54	2.34	1.08	
Underground		5.02	6.36	6.49	3.51	3.65	
Surface		0.41	0.60	0.61	0.34	0.21	
Gold produced/sold	kg	47,775	17,350	14,068	10,105	6,252	
Underground		43,109	15,345	12,848	9,557	5,359	
Surface		4,666	2,005	1,220	548	893	
Gold price	R/kg	475,508	474,697	475,647	476,546	475,768	
Total cash cost	R/kg	347,613	309,764	342,764	340,792	474,584	
All-in cost	R/kg	430,746	374,790	430,751	408,422	544,658	
All-in cost margin	%	9	21	9	14	(14)	
Operating cost	R/t	825	907	1,201	785	514	
Underground		1,741	1,941	2,251	1,169	1,782	
Surface		128	165	161	129	83	
FINANCIAL RESULTS (R million)							
Revenue		22,717.4	8,236.0	6,691.4	4,815.5	2,974.5	–
Underground		20,515.0	7,284.1	6,112.8	4,555.7	2,562.4	–
Surface		2,202.4	951.9	578.6	259.8	412.1	–
Operating costs		(16,380.4)	(5,234.2)	(4,777.2)	(3,391.0)	(2,978.0)	–
Underground		(14,940.8)	(4,681.2)	(4,454.9)	(3,184.5)	(2,620.2)	–
Surface		(1,439.6)	(553.0)	(322.3)	(206.5)	(357.8)	–
Operating profit		6,337.0	3,001.8	1,914.2	1,424.5	(3.5)	–
Underground		5,574.2	2,602.9	1,657.9	1,371.2	(57.8)	–
Surface		762.8	398.9	256.3	53.3	54.3	–
Amortisation and depreciation		(3,636.6)	(1,142.6)	(1,029.3)	(739.4)	(704.6)	(20.7)
Net operating profit		2,700.4	1,859.2	884.9	685.1	(708.1)	(20.7)
Capital expenditure – total		(3,344.8)	(994.2)	(1,129.9)	(596.5)	(337.4)	(286.8)
Sustaining capital		(668.9)	(249.2)	(225.6)	(86.1)	(92.9)	(15.1)
Ore reserve development		(2,304.9)	(727.0)	(840.6)	(510.4)	(226.9)	–
Growth projects		(371.0)	(18.0)	(63.7)	–	(17.6)	(271.7)

FUTURE FOCUS

The operational focus in 2017 will be on ensuring that we achieve our production and safety targets. Integration of the Rustenburg assets into the Platinum Division, and implementation of Sibanye's operating model and our values-based culture will continue. Realisation of cost and operational synergies in the Platinum Division will be a priority.

Gold production for the year ending 31 December 2017 is forecast at between 47,000kg and 48,000kg (1.51Moz and 1.54Moz) with total cash cost forecast between R385,000/kg and R395,000/kg (US\$890/oz to US\$910/oz) and an all-in sustaining cost of between R470,000/kg and R480,000/kg (US\$1,080/oz and US\$1,105/oz). Total capital expenditure for 2017, including Burnstone, is currently planned at approximately R4.0 billion (US\$300 million). The dollar costs are based on an average exchange rate of R13.50/US\$.

The Platinum Division is forecast to produce between 1.05Moz and 1.10Moz (4E) in 2017. The operating cost forecast for Kroondal is R10,500/4Eoz (US\$780/4Eoz), for Mimosa at R11,400/4Eoz (US\$845/4Eoz), for Platinum Mile R8,500/4Eoz (US\$615/4Eoz) and for Rustenburg R11,800/4Eoz (US\$875/4Eoz).

The total operating cost for the Platinum Division is forecast at between R11,150/4Eoz and R11,450/4Eoz (US\$825/4Eoz and US\$850/4Eoz).

Expected capital expenditure for 2017 is planned at approximately R900 million (US\$67 million) or between R780/4Eoz and R850/4Eoz. Marketable (saleable) chrome production from Rustenburg is forecast to be approximately 400,000t.



CREATING VALUE FROM OPERATIONS, PROJECTS AND TECHNOLOGY CONTINUED

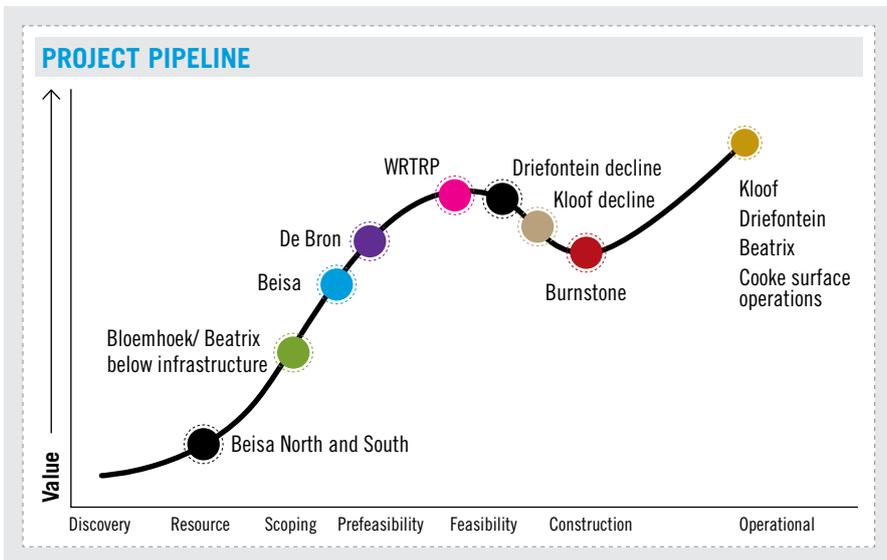
PROJECTS

We invest and consider investing in projects which meet or exceed a real internal rate of return of

15%

Expenditure on organic growth projects in 2016 was R746 million (US\$52 million), 70% of which was spent at the Burnstone project.

As a result of the recent strength in the rand and its impact on operating margins for the gold industry, organic project capital expenditure has been reviewed. This includes a review of the planned 2017 capital profile at the UG2 project at Rustenburg, the Burnstone project and the West Rand Tailings Retreatment Project (WRTRP). Certain projects may be deferred or placed on care and maintenance until commodity prices sustainably improve and/or exchange rate volatility has subsided.



BURNSTONE

Burnstone is located in the South Rand Goldfield of the Witwatersrand Basin near the town of Balfour, approximately 75km east of Johannesburg in the Mpumalanga province of South Africa.

Sibanye acquired the Burnstone assets in April 2014, comprising two shaft complexes, namely the surface portal and mechanised vehicle access decline and the vertical shaft (shaft bottom at 495m below surface), as well as a 125,000tpm gold processing plant, the tailings storage facility and surface infrastructure to support a producing operation, albeit with areas still to be constructed.

Burnstone had previously produced approximately 38,000oz of gold before being placed on care and maintenance in mid-2012.

The Burnstone project feasibility study was approved by the Board for project execution in November 2015. The project is planned with a five-year build-up to steady-state production by 2021, then averaging 120,000oz annually for nine years till the end of 2029. Thereafter a 10-year period of decreasing but profitable production supports an initial 26-year life-of-mine plan, yielding 2.05Moz of gold production from the feasibility resource of 5.7Moz. This initial LoM plan was limited to approximately 60% of the total Burnstone resource of 8.9Moz as the mine design and schedule in the feasibility study were limited to mineable reserves within a 3km radius of the shaft infrastructure. During the steady-state production period the potential of the 3.2Moz of resource not included in this base LoM plan will be determined.

First gold production is planned in the second half of 2018 when there is sufficient on-reef development stockpiled (2.5 years) to start up the metallurgical plant, albeit at a reduced milling capacity. The full production run rate is planned to be achieved in 2021 and the total LoM project capital is estimated at R1,852 million (in 2015 terms).

In 2015, concurrent with completing the feasibility study, R272 million was spent on completing the mine-dewatering and permanent pumping infrastructure, re-aligning the shaft steelwork for rock-hoisting, and completing approximately 2km of development to commence accessing the orebody. The development was completed utilising the existing mechanised development machines which were first refurbished before being put back into production. Three development fleets of equipment were in production by year end.





In 2016, R531 million was spent in the first full year of the feasibility study build-up where the expenditure provided for:

- 4,950m of development. In the fourth quarter, with all development fleets in production, 1,915m of the planned 2,100m was produced and the team's performance has steadily improved
- mine infrastructure running costs
- planned project capital infrastructure
- procurement of additional mechanised mining fleets and ancillary support vehicles

The budget for 2017 has been revised to R400 million – compared to an initial budget of R672 million – to deliver 6,000m of access development (this is a reduction from the feasibility study's 8,300m of access development) and to run the mine in support of this revised plan and defer certain project infrastructure.

KLOOF DECLINE

The feasibility study for the Kloof below infrastructure decline project was approved by the Board for project execution in November 2015. The life-of-mine plan yields approximately 0.57Moz of gold in addition to that currently planned without the project and extends Kloof's operating life by 2034.

During 2016, the project programme and capital expenditure were re-assessed and a specialist mining contractor was appointed to deliver an accelerated project programme to first ore production. The Board approved project capital of R904 million which made provision for the mining contractor, an increase from the previously approved R757 million (2015 base inflated to 2017 terms). The improved project programme generates earlier revenue and more than offsets the increased capital and drives improved project financial metrics.

The reef-wide raises are now scheduled to begin mid-2020 on 46 level (same as the feasibility study) but significantly almost two years earlier on 47 level, commencing March 2021 (end 2022 in the feasibility study).

With project preparation and access development to the project site on 45 level, R55 million was spent in 2015 and R121 million in 2016, including the procurement of mechanised mining equipment and mobilisation of the mining contractor.

For 2017, project expenditure of R177 million is planned for the 900m of project development and associated infrastructure construction.

DRIEFONTEIN DECLINE

The feasibility study (2015) indicated this project has the potential to extend Driefontein's operating life from 2028 to 2042, producing an additional 2.1Moz of gold in addition to that expected from the current life-of-mine plan, following the first reef intersection and raise development from mid-2020 on 52 Level and the end of 2023 on 54 Level. The feasibility study project capital is estimated at R1,126 million in 2017 terms (R1,061 million in 2015 terms).

The feasibility study for the Driefontein below infrastructure decline project was approved by the Board for project execution in November 2015. R34 million was spent on capital expenditure in 2016 with 370 metres developed.

For 2017, R125 million is approved to complete 700m of development and complete all flat conventional mine development in preparation to handover mining of the larger winder excavations, incline and the shaft-sinking project scope to a specialist mining contractor in 2018.



CREATING VALUE FROM OPERATIONS, PROJECTS AND TECHNOLOGY CONTINUED

A similar process has been completed for the Driefontein decline project as for the Kloof project, where specialist mining and construction contractor tenders are being adjudicated. Improvements in the project schedule after accounting for significantly more stringent rock engineering design changes and mining extraction sequences indicate 52 level will be approximately nine months later than the feasibility study with 54 level 10 months ahead of schedule.

The potential to deliver robust financial returns, offsetting an increase in capital for a mining contractor to execute the project scope and develop the project is indicated by the tendered contractor rates and a full motivation for consideration and approval of this change of scope is to be considered in the third quarter of 2017. It is anticipated that contractor mobilisation on approval would commence in October 2017 with development starting in January 2018.

WEST RAND TAILINGS RETREATMENT PROJECT

The WRTRP is a large-scale, long-life surface tailings retreatment opportunity, the economic viability of which was secured through the acquisition of the Cooke assets by Sibanye in 2014. The combined WRTRP reserves amount to 677.3Mt of the historic Driefontein, Kloof and Cooke tailings storage facilities (TSFs), containing estimated gold and uranium mineral reserves of 6.2Moz and 97.2Mlb, respectively.

The definitive feasibility study for this project as well as the front-end engineering design was completed during the fourth quarter of 2016, rendering the WRTRP construction ready.

Key to the successful execution of this project is the permitting and construction of a high-volume capacity network of pipelines connecting reclamation stations, thickeners and processing plants for economical extraction of gold and uranium from the historical TSFs. In addition, the project must permit and construct a single large regional TSF covering 1,350ha in accordance with modern, sustainable deposition practices. Permitting for the WRTRP is well advanced, with the regulators due to award permits during the second quarter of 2017.

The scope of the initial "Get into Business" strategy included the reclamation of four key anchor resources accounting for 210Mt, ~2.3Moz Au and ~54Mlb U_3O_8 . The gold-rich Driefontein 3 and 5 TSFs and the Cooke 4 South tailings dams will be reclaimed sequentially at a rate of 1Mtpm concurrently with the uranium-rich Cooke tailings dam at a rate of 400,000tpm. The resultant tailings will be deposited onto the new regional TSF. Steady-state annual production of ~100,000oz of gold and 900,000lb of uranium is planned during the first phase, allowing for the recovery of ~2.7Moz of saleable gold and ~31.1Mlb of saleable uranium over the first 40 years of the project.





The project team will continue to drive and close out the required regulatory approvals and pilot plant implementation as we advance potential funding solutions.

A pilot plant is currently being constructed and a commissioning date of June 2017 has been proposed. The pilot plant will be established to optimise gold and uranium recoveries ahead of the large scale WRTRP implementation and substantially reduce any process related uncertainty. Execution of the WRTRP will therefore not take place until further notice.

SOUTHERN FREE STATE PROJECTS

The Southern Free State (SOFS) projects include Sibanye's Wits Gold mining right and prospecting right holdings in the Free State goldfields of the Witwatersrand Basin.

The mining right consolidating the De Bron Merriespruit, Bloemhoek, Hakkies and Robijn projects into one mining right has been approved for a period of 23 years and is in the process of being executed. This mining right is contiguous to the north-east of the Beatrix mining right. Sibanye acquired the De Bron Merriespruit and Bloemhoek projects in December 2013 on its acquisition in full of Wits Gold.

The Beisa project at Beatrix West is now included in the Mineral Reserve with gold reserves of 0.7Moz and uranium reserves of 16.1Mlb. The prefeasibility study for this project was enhanced by implementing cut-off grades and leveraging synergies with the current Beatrix West Operation. The principle driver for the Beisa project remains an increase in future in the uranium price. The environmental permitting process for the project including the updating of the Beatrix Environmental Management Programme (EMP) will be progressed through 2017.

Gold Mineral Reserves for the De Bron Merriespruit project were reviewed in December 2015 with the mine design and schedule re-planned in line with revised geological and estimation models. The revised design and updated costing supports the Mineral Reserve for this project, which remains at 2.1Moz.

The Bloemhoek project, which is adjacent to Beatrix North, has a Mineral Resource of 4.3Moz. A prefeasibility study to access the Mineral Resource below infrastructure at Beatrix North, and potentially a portion of this southerly Bloemhoek area with a decline system from Beatrix North, is due for completion mid-2017. Concurrently, an exploration-drilling programme designed to improve geological confidence in the immediate vicinity of the planned decline system will also be completed.



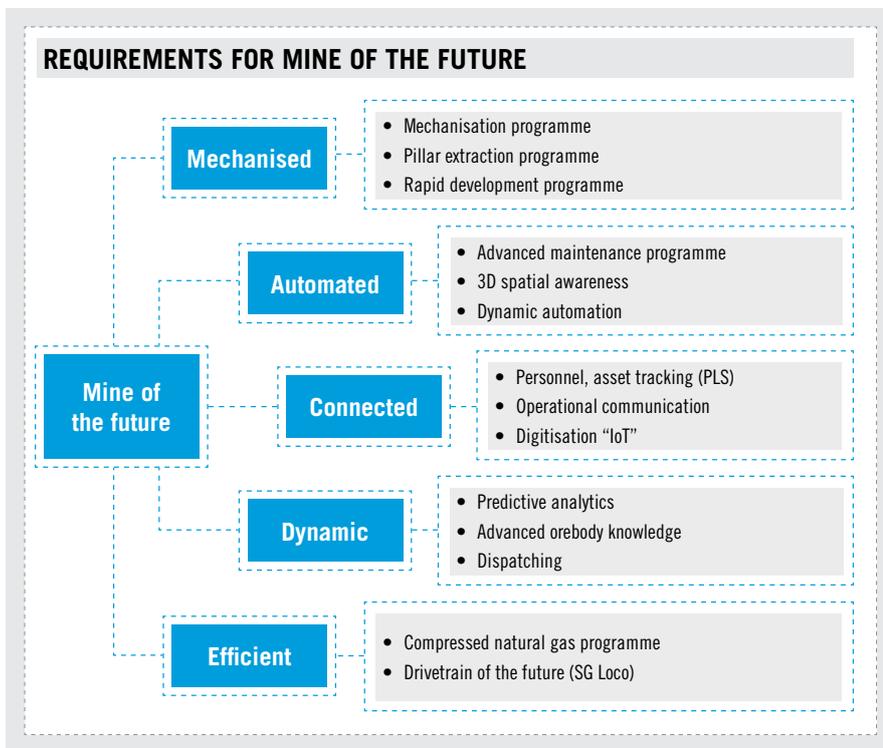
CREATING VALUE FROM OPERATIONS, PROJECTS AND TECHNOLOGY CONTINUED

TECHNOLOGICAL INNOVATION AND MODERNISATION

APPROACH

Despite an illustrious multi-decade operating history in the West Wits gold mines, there is still substantial value to be unlocked through the development and adoption of new technologies. In recognition of this, Sibanye has committed to further advance various developments and projects initiated since June 2014.

Although the overall strategy – based on three pillars, namely “capitalising on legacy mining”, “optimising current mining horizons” and “developing the future state mining method” – remains unchanged, the team has revised its vision for the mine of the future and adjusted its direction to include projects that satisfy the requirements in the diagram below.



Achieving the mine of the future will have a number of value-adding benefits:

- First and foremost, safety performance will improve markedly as employees are removed from dangerous work areas
- High-efficiency, remote and low-cost mining systems will allow access to previously inaccessible mining areas such as white areas, low-grade areas, those below-infrastructure, stability pillars and sections that are inaccessible owing to seismicity and these advanced mining systems will enable a drastic increase in the convertibility and sustainability of Sibanye’s resources
- Operational transparency, greater insights, through digitisation, would enable informed, real-time decision making and dynamic responses to changing operating conditions
- Drastically reduced environmental impact through efficient and renewable energy consumption
- Upskilled job creation
- Generation of secondary industries to manufacture and service the mechanised mining equipment, and the associated need for highly skilled workers, will contribute to local community development and have an economic multiplier effect

INNOVATION IN MINING

In addition to the work done internally, Sibanye, as a leading producer in the sector, has actively participated and assisted with the innovation aspect of government’s Mining Phakisa*. The Mining Phakisa encompasses several exciting developments, including the establishment of an innovation hub, which is a collaborative initiative involving the Chamber of Mines, government and our counterparts in the mining industry. This hub, supported by an initial R17 million grant from government, is based at the former (Chamber of Mines Research Organisation) COMRO facility. In addition, government has committed additional funding of R150 million, over three years, in support of this collaborative approach to innovation in mining.

The innovation hub has registered a number of quick win projects, facilitated by participating mining companies and illustrating the mining industry’s commitment to technological development. These projects are supported by resources from the overarching mining hub with information shared among participating companies. The aim is to maximise the value of the research and development funding committed.

* Refer to the glossary, available online at <http://reports.sibanyegold.co.za>, for an explanation of the Mining Phakisa



Compressed natural gas locomotive



MT100: Dozer attachment



MT100: Sweeper attachment

AT SIBANYE

In order to derive maximum value from the resources committed, the organisational structure will form part of the resources function and facilitate cross-divisional technology project management and information sharing between the Platinum and Gold divisions, eliminating duplication of effort and propagating divisional successes throughout the Group. The Safe Technology department will also assist with safety-related project implementation that may not form part of the original strategy such as proximity detection systems on trackless mobile machinery.

In particular, our mining innovation projects include the following:

- **Mechanised pillar extraction** aimed at enabling us to extract an estimated 2.2Moz in resources that are contained within strike and stability pillars at our gold operations
- **Advanced transport programme** to develop more cost-efficient, environmentally friendly means of transport of ore and material in particular
- **Stope mechanisation programme** to develop a suite of mechanised machinery, especially for the narrow tabular environments prevalent in both gold and conventional platinum mining, that is also capable of performing drilling and cleaning operations. Increased efficiency and accuracy of such units will improve the rate and quality of mining, reduce pay limits and allow for additional resource to reserve conversion. Most importantly, a significant advantage will be the removal of employees from dangerous work areas, thus contributing to greatly increased safety performance
- **Mine digitisation** involves capitalising on the increased availability of data to enable development of comprehensive asset and behavioural management tools to enhance the efficiency and safety of mobile machinery
- **Mining horizon improvement programme** involves several short-term projects aimed at improving current mining methods