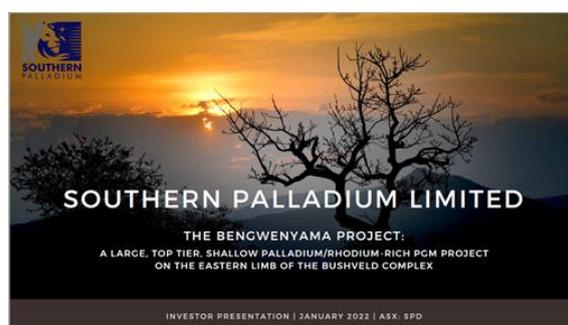


## **Southern Palladium Ltd (ASX: SPD) – Initial Public Offering**

### **Educational Overview: an emerging Tier 1 resource on the Eastern Limb**

Southern Palladium proposes to undertake an initial public offer of shares<sup>1</sup> and dual list on the Australian (ASX) and Johannesburg Stock Exchanges (JSE) in March/April 2022 upon completion of the raising of A\$19m in new equity. The primary listing will be on the ASX.

- The Bengwenyama palladium-rhodium-rich project is one of the last large, outcropping deposits along the Eastern Limb of South Africa’s prolific Bushveld Complex. The UG2 Reef on the Central Eastern Limb is particularly attractive with over 80% of the metal content made up of high value palladium and rhodium.
- With a high resource grade in the UG2 and relatively high suggested mineable grades within a deposit close to surface the project should be low cost and highly competitive with its South African peers.
- Inferred Resources (JORC 2012) total 18.8Moz (3PGE+Au) in the UG2 and Merensky Reefs at a combined grade of 4.07g/t and a UG2 grade of 7.7g/t. Total potential endowment of SPD’s tenements is estimated by independent consultants CSA Global at ca. 34 to 53Moz (3PGE+Au) incorporating an Exploration Target.
- At recent prices the basket for metals within the UG2 Reef is valued at US\$3,331/oz, dominated by rhodium (51%) and palladium (31%) and the balance platinum and gold. The Merensky basket price is US\$1,994/oz (platinum 33%, palladium 31%, rhodium 35%, gold 7%).
- Capital intensity for the project is likely to be low, with underground development by decline from surface, and no requirement for on-site smelting/refining. The project should sit low on the PGM cost curve.
- Metallurgical characteristics of both reefs is likely to be typical of other orebodies in the area.
- Drilling to upgrade at least 2Moz of UG2 resources to Indicated status will commence immediately after the IPO. SPD management is aiming to complete a prefeasibility study (PFS) and lodge a Mining Right Application within two years of the IPO and advance the project to production. This will be funded by the \$19m raised in the IPO which will also aim to upgrade the current 15-34Moz Exploration Target to Inferred Resources.
- At the proposed IPO price of A\$0.50/share the EV for SPD will be approximately A\$26m (ca. US\$19m). This represents a remarkably inexpensive value of the contained JORC Resource (around US\$1.40 per oz 3PGE+Au) for an advanced exploration project which we think can proceed to PFS within 12 months.
- The project will be owned directly (30%) and indirectly (12.3%) by a single local community, a group who are very supportive of the development. Directors will own approximately 13% of the company following IPO.
- SPD will have an impressive board, headed by NE Chairman, Terence Goodlace and CEO/MD Johan Odendaal.

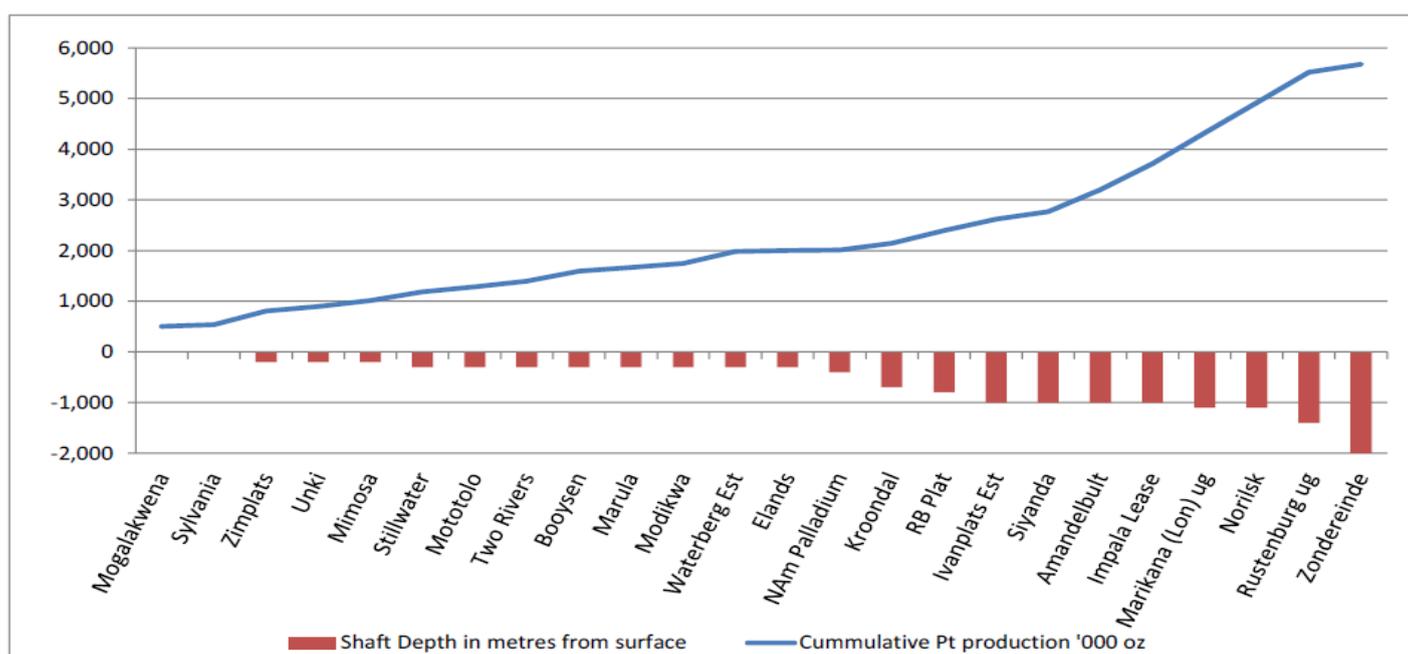


**Terminology.** In this report (and others) there is reference to PGMs or the platinum group metals, and the term PGE (platinum group elements). Both are interchangeable. PGM grades will be commonly referred as 3E or 3PGE plus gold (Au), which is the sum of the grades of platinum, palladium, rhodium and gold. These might also be labelled “4E”. “6E” refers to the sum of the grades of Pt, Pd, Rh, Ru and Ir plus Au.

<sup>1</sup> A prospectus for the offer will be made available when the offer is made. Anyone who wants to acquire shares under the offer will need to complete the application form that will be in or will accompany the prospectus. A copy of the prospectus will be made available by Bridge Street Capital upon request.

## Introduction

- The platinum-group metals (PGMs)—platinum (Pt), palladium (Pd), rhodium (Rh), ruthenium (Ru), iridium (Ir), and osmium (Os)—have many industrial applications, and in particular are used in catalytic converters to reduce carbon monoxide, hydrocarbon, and nitrous oxide emissions in automobile exhaust. As well, the chemical industry requires platinum or platinum-rhodium alloys to manufacture chemicals used in fertilisers and explosives. In the petrochemical industry, platinum-supported catalysts are needed to refine crude. Alloys of PGMs are exceptionally hard and durable, making them the best known coating for industrial crucibles. PGMs are used by the glass manufacturing industry in the production of fiberglass and flat-panel and liquid crystal displays. In the electronics industry, PGMs are also used in computer hard disks, integrated circuits, and multilayer ceramic capacitors.
- PGMs are used in such other fields as health, consumer goods, and investment purposes. Platinum alloys are an ideal choice for jewellery because of their white colour, strength, and resistance to tarnish. Platinum, palladium, and rhodium (as coins and bars) are also used as investment commodities, and various financial instruments based on the value of these PGMs are traded on major exchanges.
- The PGMs are among the rarest metals. From 1900 to 2020 it is estimated that approximately 14,300 metric tonnes of PGMs have been produced, and roughly 95 percent of that production has taken place after 1960. The PGM mining industry is highly concentrated with around 85-90% of the production from South Africa and Russia. Recycling of catalytic converters from end-of-life vehicles, jewellery, and electronic equipment is an important secondary source.
- Almost all PGM production is associated with deposits within three geologic features—the Bushveld Complex, a layered mafic-to-ultramafic intrusion in South Africa, the Great Dyke in Zimbabwe, and sill-like intrusions in the Noril’sk-Talnakh area of Russia. Recently a large ultramafic hosted palladium rich/base metals deposit called Julimar was discovered on the western margin of WA’s Yilgarn Craton.
- South Africa supplies around 4Moz Pt, 2.5Moz Pd and 600kozpa Rh per year. The industry globally, and in South Africa in particular, is mature. Few expansion projects have been seen over the past 5 years due to subdued commodity prices. Sieberana Research believes just 600koz of Pt and Pd will be added from 3 brownfield expansions, and with the possibility of new supply from the Ivanplats Limpopo development from 2024.
- The following chart illustrates the dilemma faced by the global PGM industry with well over half the supply coming from shafts 1km deep, or more. It should therefore come as little surprise that the industry is under significant productivity and cost pressures. We are left to conclude that SPD’s Bengwenyama project represents an important potential source of low cost/low capital intensity platinum group metals.



Source: Commodity price report and Industry Review of PGMs, Sieberana Research, December 2021 in the SPD draft prospectus

## SECTION 1.

### The PGM industry: demand and supply.

#### PGM demand: impact of the automotive industry and the new generation emission control and EVs

- Automotive use is currently the largest demand component for the PGMs: roughly 85% of palladium (Pd), nearly 90% of rhodium (Rh) and 34% of platinum (Pt) demand is employed in emission controls for gasoline and diesel engines.

2019	Platinum (koz)	%	Palladium (koz)	%	Rhodium (koz)	%
Autocatalyst	2858	34%	9672	85%	1023	89%
Jewellery	2065	24%	130	1%	0	0%
Industrial	2415	29%	1702	15%	132	11%
Investment	1131	13%	-87	-1%	0	0%
<b>Total gross demand</b>	<b>8469</b>		<b>11417</b>		<b>1155</b>	
Recycling	-2062		-3407		-357	
% of net demand recycled		32%		43%		45%
<b>Total net demand</b>	<b>6378</b>		<b>8010</b>		<b>798</b>	
Movement in stocks	-301		-893		-38	

Source: Johnson Matthey Annual Report 2021

(In this table we have used 2019 statistics as there was significant disruption as a result of COVID related supply chain issues and disruptions to mining operations from early 2020).

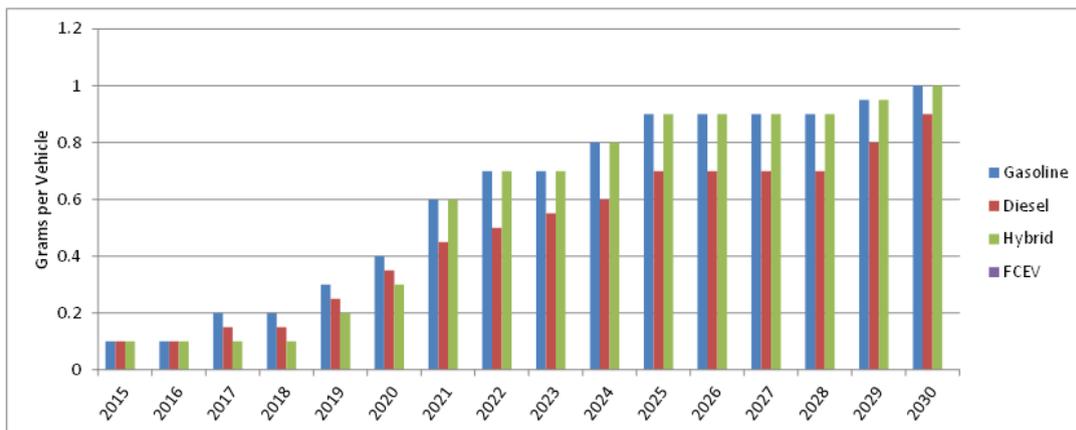
- While PGM prices largely track each other, a broader demand profile by Pt typically results in lower price volatility. The Pt investment component acts as both swing supply and demand.
- Pd and Rh have generally been regarded as a by-product of Pt production but this appears to be changing as new production from the Bushveld's Eastern Limb delivers more Pd. A recent shortfall in supply was driven in part by a wind down in Russian Pd stocks and also by disruptions to Norilsk's mining operations in early 2020. PGM supply was also constrained during 2020 with problems at Anglo American Platinum's (JSE: AMS) Waterval smelter in Rustenburg.
- Together this translated to significant price moves in the PGMs during 2020-21 with Pt moving from around US\$900/oz to \$1,300/oz. Pd prices rallied from under \$1,000/oz to nearly US\$3,000/oz. Rh was the strongest performer with prices up from \$5,000 to \$25,000/oz.
- Since late 2020, disruptions to global supply chains, especially with the persistent shortage of semi-conductor chips for the auto industry, has seen a dramatic drop in demand for the PGMs, and Pd and Rh in particular. The World Platinum Investment Council reports that in 3Q21 Pt demand declined 4% on 2Q largely due to decreased auto demand.
- Prices have since rebounded with Pt prices now around \$900-1000/oz while Pd has recovered to a \$1,900-2,000/oz range suggesting the auto makers are already rebuilding inventory.
- 2020's star performer, rhodium, has recently jumped to over \$16,000/oz.





- Much has been spoken about the impact of global decarbonisation and its potential impact on the demand for PGMs. The growth in internal combustion engines (ICEs) will begin to decline over the next 10 years, as the mobile fleet progressively converts to battery and hybrid electric vehicles. However, despite government targets, we believe that the phasing out of ICEs will be over a much longer timeframe than is currently believed and therefore exhaust catalysts will remain an important market for PGMs.
- As an aside, we do need to be watchful of substitution, and recent reports (for example Johnson Matthey, February 2021) highlight the increasing use of non-PGM technology, selective catalytic reduction (SCR) in smaller vehicles.
- However, as emission control becomes even more important for the developed and developing world, the intensity of use of PGMs seems likely to increase, especially in the heavy vehicle sector, according to Johnson Matthey. We expect to see more stringent emissions control legislation and note that China 7 and Euro 7 standards are to be implemented in 2024 and China 8/Euro 8 in 2028. India, which has a large and antiquated vehicle fleet, is rolling out BS VI standards by 2023. Indian demand for PGMs is forecast to grow strongly.
- Independent consultants Sieberana Research is that platinum and palladium catalyst loadings are likely to flatten going forward, but rhodium loadings are forecast to increase quite strongly as more stringent emission controls emerge.

Figure 5: Forecast Rhodium Loading (No Rh in an FCEV)



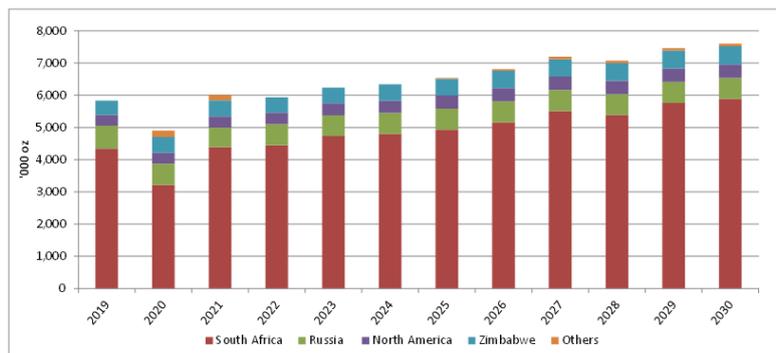
Source: Sieberana Research

Source: Commodity price report and Industry Review of PGMs, Sieberana Research, December 2021, SPD draft prospectus

- Emerging platinum demand is forecast from the fuel cell industry, and the requirement to store hydrogen as an alternative energy source for vehicles or stationary power storage. A fuel cell is a device that generates electricity through an electrochemical reaction, rather than combustion. In a fuel cell, hydrogen and oxygen are combined to generate electricity, heat, and water. A typical fuel cell works by passing hydrogen through the anode of a fuel cell and oxygen through the cathode. At the anode site, a catalyst (commonly powdered platinum) splits the hydrogen molecules into electrons and protons. The electrons are forced through a circuit, generating an electric current and excess heat. At the cathode, the protons, electrons, and oxygen combine to produce water molecules. As there are no moving parts, fuel cells operate silently and with high reliability.
- Sieberana Research estimates demand for platinum for fuel cells will grow at a rate of some 600koz per year or around 7% of current demand. Sibanye Stillwater (TSX: SSW) a major PGM producer presents a less bullish view in its 23 September 2021 presentation, with Pt demand by the fuel cell industry exceeding 1Moz, or 13% of total demand by 2030 against 1% currently.

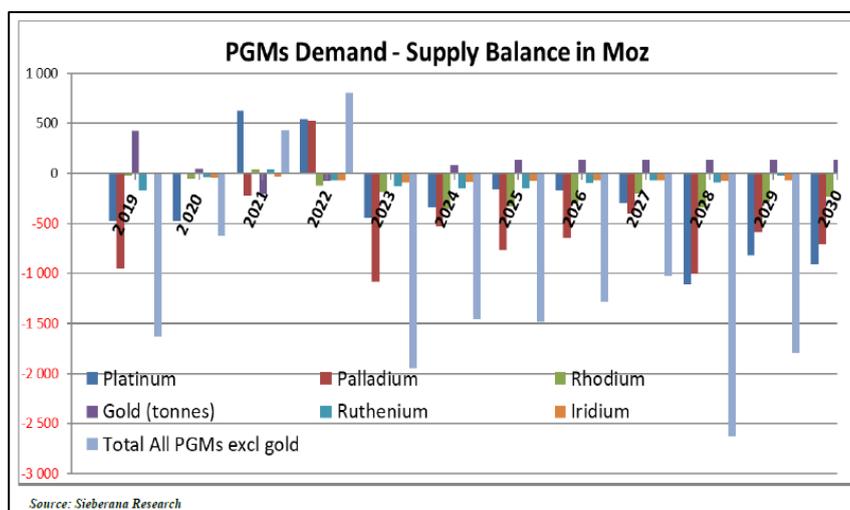
### Supply/demand balance

- Sieberana Research presents a bullish outlook for demand against a backdrop of modest increases in PGM production. Pt supply is forecast to grow by 25% into 2030 (CAGR of 2.5%), as shown in the following chart. Over the same period, Sieberana has Pd supply growing by 31% (from a low base in 2021) and Rh supply growing at around 40%.



Source: Commodity price report and Industry Review, Sieberana Research, December 2021. SPD prospectus

- In its report in the SPD prospectus, Sieberana concludes that “total PGMs (light blue bars in the chart below) will be in deficit from 2023 onwards. In the next 2 years, because of the global supply chain disruption for semi-conductor chips, the consultants see car sales around 80 million vehicles a year in 2021, rising to 90 million vehicles by 2022 with an oversupply of PGMs in these two years and a resultant softening of PGM prices.” Thereafter, Sieberana sees deficits in all PGM markets due mainly to the high autocat demand and rising demand for platinum due to the hydrogen economy.



Source: Commodity price report and Industry Review, Sieberana Research, December 2021. SPD prospectus

- This presents a bullish outlook for PGM prices, particularly for palladium which again is forecast to see

roughly a 1 million ounce deficit in 2028 and rhodium which will have been in deficit for over 12 years by the end of the decade.

- As with most commodity forecasts, Sieberana’s view is not necessarily consensus. The following views on palladium demand have been expressed by the major PGM producers:
  - **Sibanye Stillwater** (SSW: JSE): In its September 2021 presentation, SSW presents its view of a market deficit in palladium out until 2023 with a surplus emerging in 2024-25. Thereafter it sees the market in surplus for its forecast period (to 2030) with the extent of the surplus driven by substitution of Pd by Pt.
  - **Impala Platinum** (JSE: IMP): “Rising primary and secondary supply in the long term, together with metal optimisation in catalyst formulations and a rising battery-powered electric vehicle market share, will likely result in easing market tightness.” (2021 Annual Report)
  - **Anglo American Platinum**: “For the full year, palladium is expected to remain in significant deficit, with the deficit growing again in 2022.” (26 July 2021)
- Commentary by these three producers have both platinum and rhodium in deficit going forward, consistent with Sieberana’s view.

## Structure of the global PGM supply side

- PGM supply is dominated by South Africa, with over 72% of global Pt production, 37% of global Pd and 82% of global Rh derived from the geologically unique Bushveld Complex.

2019	Platinum (koz)	%	Palladium (koz)	%	Rhodium (koz)	%
South Africa	4398	72%	2626	37%	624	82%
Russia	721	12%	2987	42%	68	9%
Others	958	16%	1504	21%	68	9%
Total primary supply	6077		7117		760	

Source: Johnson Matthey Annual Report 2021

- Outside South Africa, other key sources include:
  - The Noril’sk-Talnakh nickel/copper/PGE complex of Nor Nickel (around 15% of global supply).
  - The Great Dyke in Zimbabwe, dominated by Impala, Angloplats and Zimplats (9%)
  - Stillwater in the US, owned by Sibanye Stillwater (6%).
- Other than the recently discovered Pd-dominated Julimar deposit (Chalice 100%. ASX: CHN) we know of no significant (>5-10Moz) greenfield PGM projects outside South Africa.
- PGM prices will need to remain reasonably firm to ensure that existing operations remain in production and also to incentivise brownfields and low capital intensity green fields projects.
- In the following section we discuss the South African PGM supply side and examine the opportunities for growth to satisfy a steady demand growth profile.

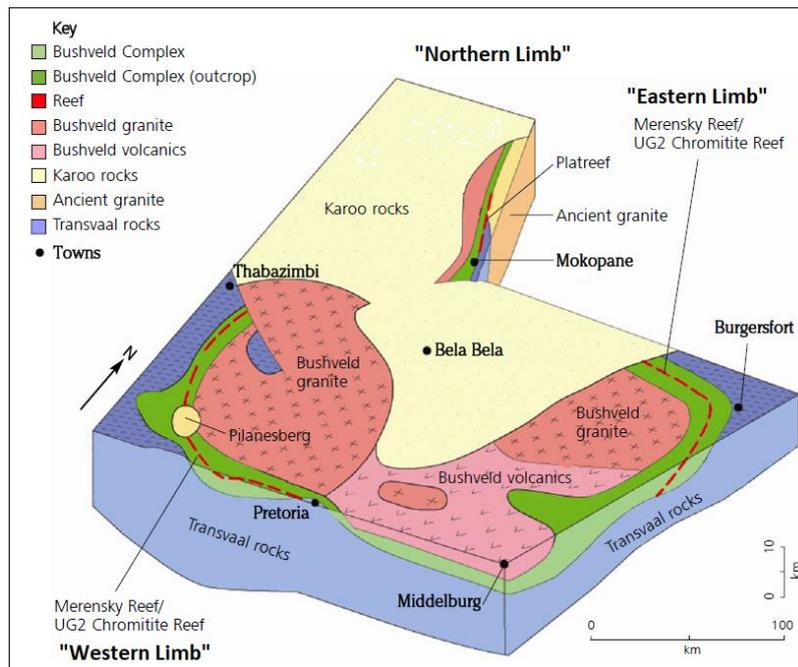
## An overview of the South African mining industry

In this section we will provide a brief overview of the South African PGM deposits, their geology and the mines developed to extract them. Where it’s relevant we will draw comparisons with SPD’s Bengwenyama PGM deposit on the Eastern Limb of the Bushveld complex. There is a more comprehensive discussion of the Bengwenyama project in Section 2, which follows.

### Geology

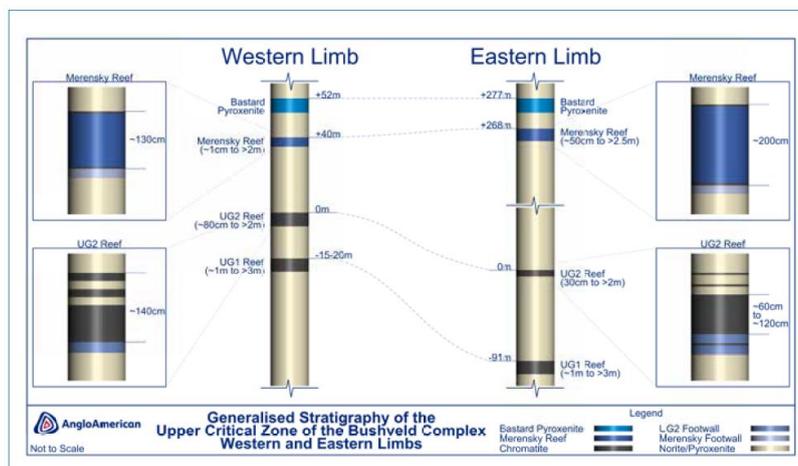
- The Bushveld Complex represents an enormous emplacement of magma sourced deep within the Earth’s mantle. The extent of the magma chamber is at least 300 km in diameter and can be thought of as frying-pan in shape, with a northern extension (the handle), known as the Northern Limb.
- In the order of 1 million km<sup>3</sup> of magma was emplaced in a (geologically) very short period of time. As this enormous volume of Bushveld magma slowly cooled, different minerals began to solidify, then accumulated in thin, parallel layers at the base of this huge magma chamber.

- The following diagram is a schematic representation of the geology of the Bushveld with the three main areas of PGE extraction, the main Western Limb, the traditional 'home' of the major PGM mines, the new growth area, the Eastern Limb and the Northern Limb.



Source: modified by Bridge Street Capital

- The Bushveld complex is a so-called layered intrusive, with successive sequences of mafic and ultramafic rocks interlayered with numerous chromite rich units and several units enriched in PGMs.
- The most important geological unit is the so-called Critical Zone which consists of a repetitive series of chromite bands interlayered with ultramafic igneous rock types. The Merensky Reef, an upper unit, is described as varying in width between 15 and 40cm (although it is mined over wider intervals) and is made up of a PGE bearing pyroxenite (an iron-magnesium rich rock). The greater proportion of the PGMs occur as complex sulphides within base-metal sulphides. Three principal base-metal sulphides occur in the Merensky Reef including pyrrhotite (iron sulphide), pentlandite (iron nickel sulphide), and chalcopyrite (copper iron sulphide). As the platinum minerals occur within and associated with these sulphides, the Merensky Reef yields substantial copper and nickel as by-products, together with minor amounts of cobalt and selenium. The Merensky Reef has been the backbone of South African PGM production for decades.
- A second, and increasingly important ore source is one of the PGM-rich chromitite layers, known as the UG2 Reef, located some 200 to 300 metres stratigraphically below the Merensky. It is typically narrower but with a higher in situ grade. It is present on the Western and Eastern Limbs and is the dominant source of ore on the Eastern Limb.



Source: Anglo American Platinum reserves report, 2020

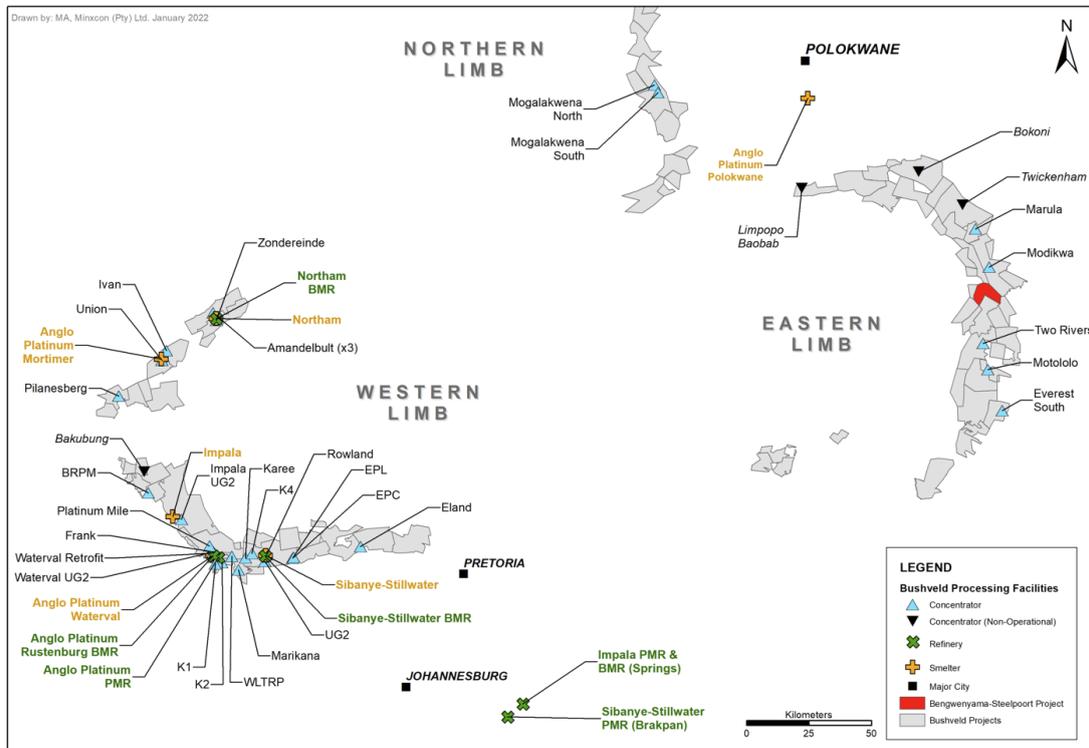
- The Merensky and UG2 Reefs are also present at SPD's Bengwenyama project with the UG2 the more economic, enriched in Pd and Rh and delivering a higher product (or basket) price.
- The Northern Limb of the Bushveld is characterised by a different style of mineralisation, the so-called Platreef. In comparison to the Merensky and UG2 reefs, the Platreef is a far thicker and more variable orebody. At Angloplat's world class Mogalakwena mine, the economic thickness of the Platreef supports open-pit mining operations to depths exceeding 400m below the surface.
- The distribution of PGMs within the two reefs – known as the prill split - is quite distinct. In the central portion of the Eastern Limb the ratio of Pt to Pd is around 1:1 for the UG2 reef. However for the Merensky the ratio is around 2:1. Note as well that the UG2 is relatively rich in rhodium which can be up to 8-10% of the prill split.
- On the Western Limb, where the Merensky has been the dominant ore source, the prill splits for the Merensky are similar, at around 2 Pt: 1Pd. The UG2 here is typically slightly less enriched in Pd, but as in the east contains higher levels of rhodium.
- Note that the prill splits are described on a volumetric basis. On a value basis the impact of Pd and Rh on revenues can be quite dramatic, especially at recent commodity price peaks. This is discussed in more detail in Section 2, which follows.

### **Geological issues within the PGM Reefs.**

- The PGM deposits of the Bushveld complex are often thought to be analogous to coal seams, relatively narrow but laterally very extensive. However, geological complexities are recognised and in places can impact the economic viability of the reefs. Important geological issues which should be questioned include:
  - Faulting, both major, camp-scale faults and smaller faults which might offset reefs a few metres and disrupt the layout of mining areas.
  - Roof conditions, impacted by proximity to faulting and the presence of chromitite bands in the hanging wall which can generate roof stability issues.
  - Potholes, which are localised erosional features within the reefs, in some cases eliminating the reefs entirely. These are common throughout the Bushveld and can be difficult to prospect by surface exploration.
  - The presence of crosscutting dykes, which can cause mine stability issues.

### **Location of PGM mine/concentrator/smelting/refining infrastructure**

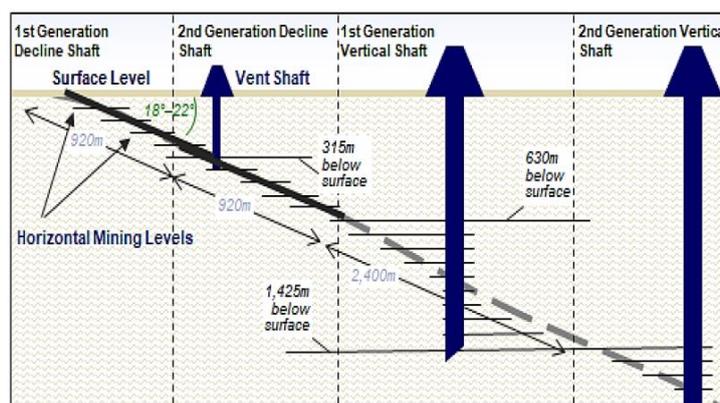
- The oldest PGM mines in the Bushveld are focussed along the outcropping extent of the Merensky Reef on the Western Limb. Open pit ore reserves have largely been exhausted and all ore sources (with the exception of tailings retreatment) are derived from underground operations. Several of these extend to significant depths with Northam's Zondereinde and SSW's Rustenburg operations now below 2000 metres where refrigeration of the ventilation air is required. This adds significantly to operating costs.
- An extended period of declining PGM prices (2011-2019) saw the deep mines under extreme pressure and the abandonment of high capital deep shaft sinking programmes, particularly on the Western Limb.
- Mines of the Eastern Limb are significantly younger, with the deepest mines still well under 1000 metres. The mines closest to SPD's Bengwenyama project, Impala's Two Rivers and Amplats/ARM JV, Modikwa, are mining from depths averaging around 500m.
- The major miners are largely fully integrated, from mine to concentrator, then to smelting and refining. The process flowsheet for the PGM industry is far from simple and employs significant capital. While the PGMs are designated 'precious metals' the comparison from an industrial viewpoint is more with the integrated nickel and copper producers. Project economics bear little resemblance to those in the well-known gold industry.
- Historically the smaller PGM mines operated by independent producers will typically undertake mining and commonly mining themselves. As we discuss below, there is a ready market for PGM smelting and refining of third party ores in South Africa.
- The following plan shows the location of the major PGM producing assets. Concentrators are typically located adjacent to mine mouths. Concentrate is then trucked to one of the five smelters owned by the major miners, Angloplats, Impala, Northam and now by Sibanye Stillwater following the acquisition of Lonmin.



Source: Minxcon

## PGM mines and mining methods

- With only a few exceptions, mining of the PGMs occurs by narrow reef underground mines. One of South Africa's largest platinum operation is Angloplats' Mogalakwena open cut operation, located on the Northern Limb. Mogalakwena produced around 1.2Moz PGE per year in 2019 and is Angloplats' flagship. There are also smaller tailings retreatment operations. Otherwise, all production is from underground mining complexes.
- Where a reef outcrops on surface, an inclined-shaft system is ideally suited to the exploitation of the tabular, gently dipping orebody. In order to gain access to the first 1200 m or so of ore inclined shafts are sunk on or below the reef at intervals of about 2-2.5 km along the reef outcrop. This is likely to be the development style for SPD's Bengwenyama project.
- Inclined shafts become uneconomic to operate beyond a certain depth (700-800m). Vertical shafts are then sunk at specific locations to take over from these inclined shafts when the shallower ore has been exhausted.
- Many of the Western Limb operations are now shaft mines whereas the much younger Easter Limb operations are dominantly inclined shaft operations.
- Not surprisingly, the cost of mining increases with depth, partly due to increased haulage and hoistage distances but also because of increased underground support and, for the very deep mines, the use of refrigerated air to cool the workings. Productivity in the deep mines is also impacted by long travel times to the workface. The following chart gives us guidance as to the levels at which consideration needs to be given to the use of high capex shafts to access the mine workings.

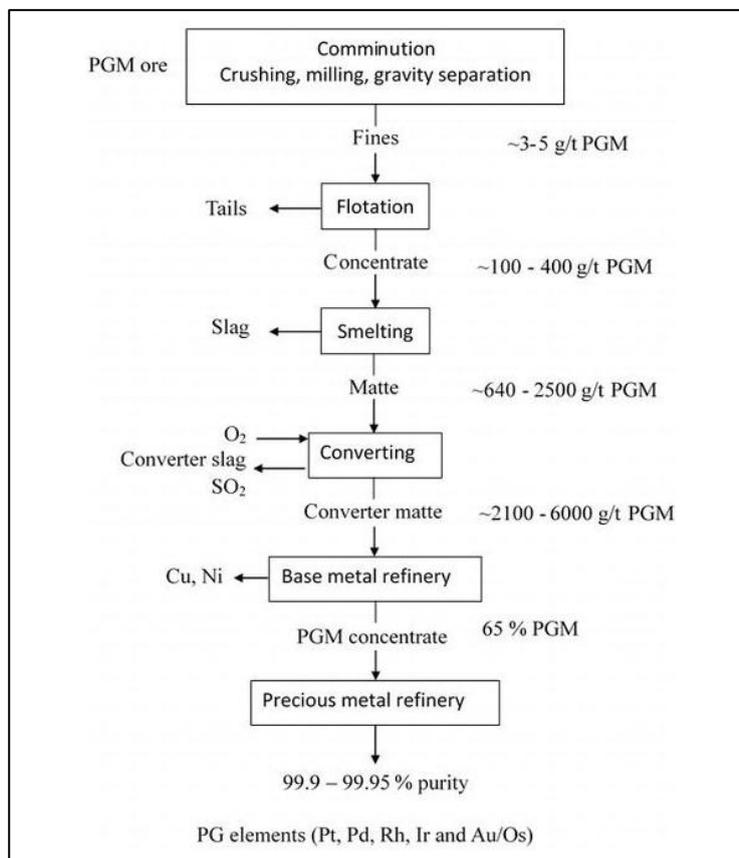


Source: "The Business of Mining", Angloplats, 2019

- As discussed below, much of the existing resource at SPD's Bengwenyama project is at a depth of less than 700-750m (especially the resources within the Eerste Geluk farm) which should not require vertical shaft access over 20 years. At that point, vertical shaft sinking at Bengwenyama will be less costly as it can be achieved with the use of raise bores from the existing operations.
- Underground mining in the platinum (and gold) operations is typically very labour intensive, although significant advances have been made to improve mechanisation of ore extraction using low profile tracked and trackless equipment. Typical mining methods include bord and pillar (perhaps the commonest), the longwall method (suited to the exploration of large, geologically undisturbed areas of reef) and up dip mining.
- Access to the narrow reefs is by development drives in the reef footwall (beneath the reef). This provides the means by which the workforce can access the mining sections and the means by which ore is extracted to surface.

**Extraction of the PGMs: processing/smelting/refining**

- The metallurgical extraction of PGMs in South Africa is a well-trodden path. However, the two dominant source of PGMs the Merensky and the UG2 reef are compositionally quite different. Notwithstanding, the processes required to produce PGMs from run-of-mine ore are much the same.
- Metallurgical recoveries are typically quoted at around 85% though a typical floatation plant. We note that in 2021, recoveries from the Modikwa concentrator, SPD's northern neighbour, was reported at 87%. This suggests that the metallurgy for Bengwenyama will be quite attractive.
- Merensky ore is characterised by a greater proportion of base metals (nickel and copper, as sulphides) whereas the UG2 is a chrome-rich reef. UG2 can present smelting challenges with high levels of the more refractory chrome. Smelting practices have changed to deal with the increased proportion of UG2 ore in the mix.
- The following chart shows how the PGMs are progressively enriched. We would expect that the Bengwenyama operation will consist simply of a concentrator, involving crushing, grinding with gravity and froth flotation separation. The concentrate will then be sold to one of several smelters and refiners in South Africa.
- Chromite is also a minor by-product from processing the UG2 reef and can add as much as 5% to the revenue stream.



Source: BSCP

### Third party smelting

- The increasing maturity of the South African PGM industry can present opportunities for the smaller, independent miner. There are five smelters/refiners serving PGM mines in the Bushveld and many (especially those owned by Angloplats, Impala and Northam) provide third party treatment facilities. We understand that capacity utilisation of the smelters is relatively low so the market for third party concentrate can be quite competitive. For example, Ivanplats (the PGM division of Ivanhoe Mines, TSX: IVN) recently announced that it has entered into a 10 year third party deal with Northam for 20,000t of PGM concentrate from its Platreef mine from 2024 at “normal commercial terms”.
- We believe that SPD will enter into an offtake agreement with a refinery to smelt and refine the concentrate produced at the Bengwenyama concentrator. SPD will agree to supply concentrate to the refinery which has quantities and grades on the terms and conditions set out in quite a conventional agreement.
- Payabilities are typically around the 82-82% mark for Pt, Pd, Rh and gold but this is dependent of prevailing metal prices. The minimum payability level, we understand, is around 79-80%.
- As well, credit is given for the minor PGEs (eg ruthenium and iridium, around 50% payability) and for the base metals. We have seen quoted figures around 72-73% for contained nickel and 67-68% for contained copper.

### Fiscal terms

- South African corporate tax is 28%, with immediate deductions for capital expenditure.
- Royalties for mineral products in South Africa are charged at a rate of between 0.5% and 7% based on gross sales, less allowable deductions, and depending on the refined nature of the product. The formula for an unrefined mineral resource (as will be the case for SPD) is:

$$0.5 + [\text{EBIT}/\text{Gross sales} \times 9] \times 100$$

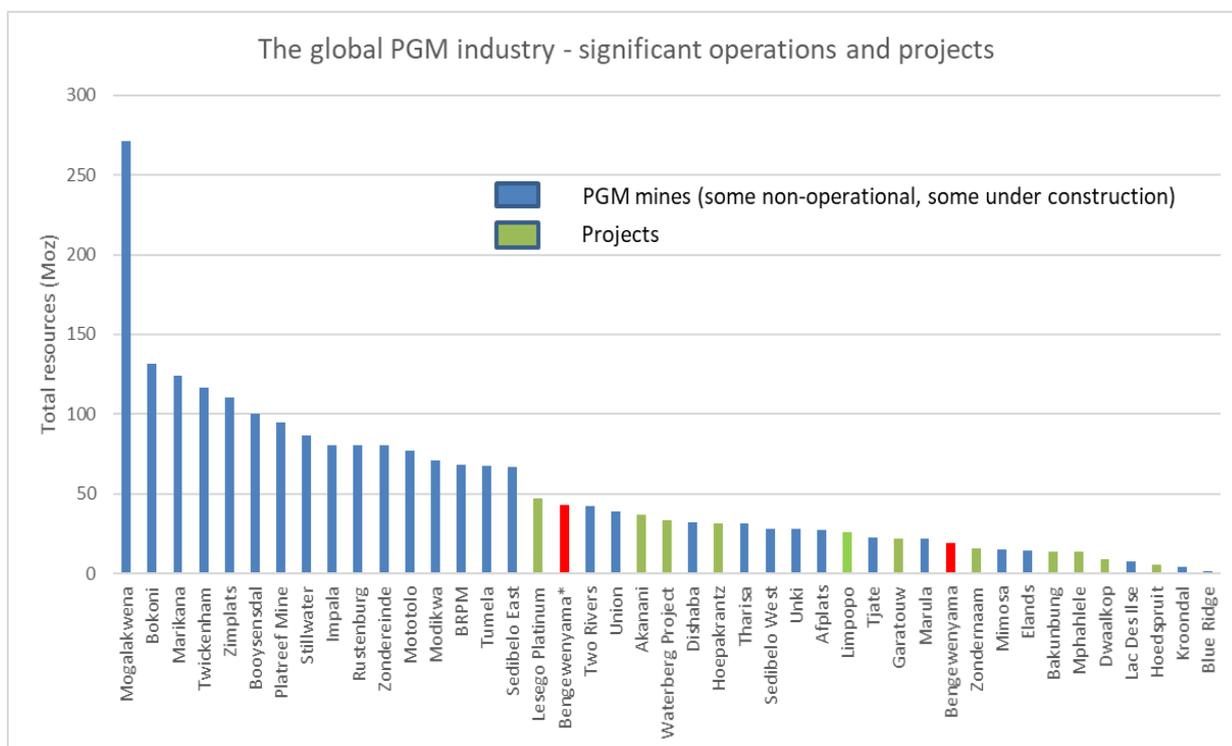
- So, for a mine with a 50% EBIT/sales margin the royalty will be 5% of gross sales.

### Black Economic Empowerment provisions

- South Africa’s exploration and mining industry is governed by the Mineral and Petroleum Resource Development Act of 2002 (MPRDA). One of the key objectives of the Act is the pursuance of the government’s policy of furthering Black Economic Empowerment (BEE) within South Africa’s minerals industry, by encouraging mineral exploration and mining companies to enter equity partnerships with BEE companies. The minimum BEE shareholding is 26%. The Act also makes provision for the implementation of social responsibility procedures and programs by resource companies.
- SPD is able to start with a clean sheet of paper. Project ownership is structured with the full 30% directly owned by the Bengwenyama community with a further 12.3% owned in SPD by the community. The Bengwenyama community will therefore own directly and indirectly 42.3% of the new PGM project. This is comparable to the holding company for the Royal Bafokeng nation which through RB Holdings owns 40% of Royal Bafokeng Platinum. RB Holdings has become a textbook example as to how good management of core assets can generate significant wealth for local historically disadvantaged South African (HDSA) communities. RB Holdings, the investment group owned by the Nation had funds under management of around US\$1.9bn at the end of 2020. The platinum assets now make up around 40% of the assets of the company.

### PGM development opportunities in the Bushveld

- As shown in the chart below, the largest PGM resources are associated with the existing mines. The potential development opportunities are relatively few in number and these tend to cluster amongst the smaller end of the resources league table.



Source: Minxcon, 2021. Bengwenyama in red.

Note: Bengwenyama\* is inferred resource plus mid-point of CSA's Exploration Target.

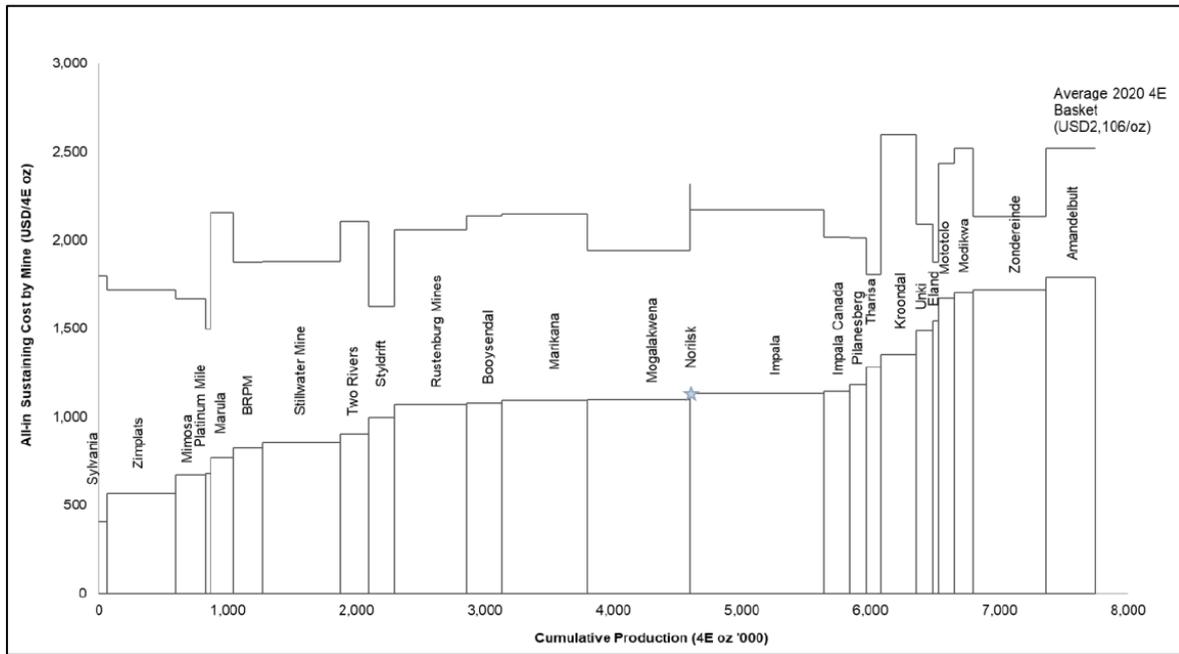
- Four of the new projects are located on the Northern Limb and are based on the Platreef. The Platreef deposits are characterised by relatively high levels of base metals (nickel and copper) and are enriched in palladium. These will be aiming to replicate the very large Ivanplats 64%-owned Platreef project (TSX: INV), currently under construction. Ivanplats is forecast to produce some 500-600koz PGE/year with DFS capex of US\$1.4bn. Production is due to commence in 2024.
- Platinum Group Metals (TSX: PTM) has been working on the Waterberg project for several years. A DFS was completed in 2019 showing reasonable, but not stellar rates of return. As with IVN's Platreef project, the deposits are deep, requiring vertical shaft access. Waterberg's capex is stated at around US\$1bn, with no sign as to how this is to be funded. A decision by Impala Platinum not to participate in a recent fund raising by PTM suggests to us that the project will be subject to further delays.
- Two large resources Akanani (on the Platreef) and Lesego (on the northern Phosiri Dome), await the completion of feasibility studies. Again, both resources are relatively deep and seem likely to require deep vertical shaft access.
- Three of the projects in the comparison above are located on the Eastern Limb. Garatouw and Hoepakrantz are large resources of quite reasonable grade, but are down-dip extensions of the Modikwa mine so will be deep mines and will need significant capital for development. These projects are owned by Nkwe Platinum, now owned by Chinese precious metal producer, Zijin Mining.
- The third project is SPD's Bengwenyama deposit, the subject of this report. Highlighted on the chart above is the existing inferred resource (18.8Moz 4E) and the inferred resource plus the midpoint of the independently determined additional exploration target (signified as Bengwenyama\*). In total, these sum to 43Moz PGE (4E).
- As we discuss in the following section, Bengwenyama is the only resource of any substance where both the Merensky and UG2 reefs outcrop/subcrop. This should allow the development of a relatively low capital intensity project, with decline shafts (rather than deep vertical shafts) to access the orebodies. The bulk of the inferred resource is 700 metres or less in depth. Of all the potential new PGM projects, we believe Bengwenyama offers the best prospects for development. This can only be demonstrated with the completion of a detailed drilling programme and definitive feasibility study over the next 2 years. This is the purpose of the current A\$19m capital raising.

### Cost structure of the industry

- On average around 65 to 70% of the total on-site costs for a fully integrated PGM producer come from the mining operation itself. Some 20% of the costs are associated with the production of a PGM-rich base metals

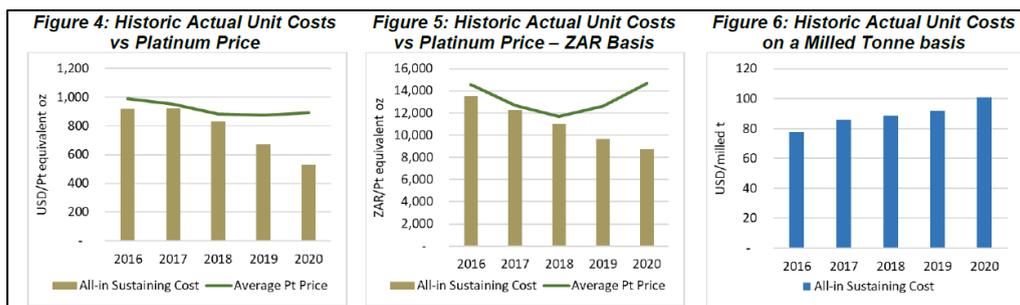
concentrate, with the balance associated with smelting and refining.

- The following cost curve (reported on a US\$/3E plus gold oz basis is derived from costs for the period of January to December 2020 for most of the world's PGM operations. Note that production for the world's largest producer of palladium, Norilsk, has been excluded as it hides the detail from the other operations.



Source: Minxcon, 2021

- Key points to emerge from this cost curve are:
  - The curve is steep and demonstrates how vulnerable are the deeper mines to closure during periods of low metal prices. Two of the Eastern Limb's highest cost producers, Twickenham and Bokoni are now excluded from the curve as they are currently on care and maintenance. (Note added: SSW has just agreed to purchase Bokoni from Amplats and its partners and is aiming to have the project back in production in 2024).
  - Two of South Africa's deepest mine complexes, Angloplats' Amandelbult and Northam's Zondereinde now sit at the highest end of the cost curve.
  - 2020 and 2021 proved to be an exceptional year for the PGM sector, where none of the operating mines showed costs higher than the average spot price.
  - As reported by Minxcon (Newsletter September 2021), all-in sustaining costs (AISC) decreased by around 21% YoY for the September 2021 quarter on a US\$/oz basis, largely due to a weak South African Rand. However, AISC per milled tonne increased by nearly 10% YoY. This is an industry under continual cost pressure.
- Historic cost trends demonstrate how challenging the latter part of the last decade was where margins were extremely tight. This resulted in the closure of high-cost shafts and actually saw costs (on a per ounce basis) decline, despite escalating unit costs.
- 2018-19 saw the bottom of the last PGM price cycle with supply constraints and reasonably consistent demand by the auto manufacturers (despite the onset of COVID) converging to see rapid increases in PGM prices.



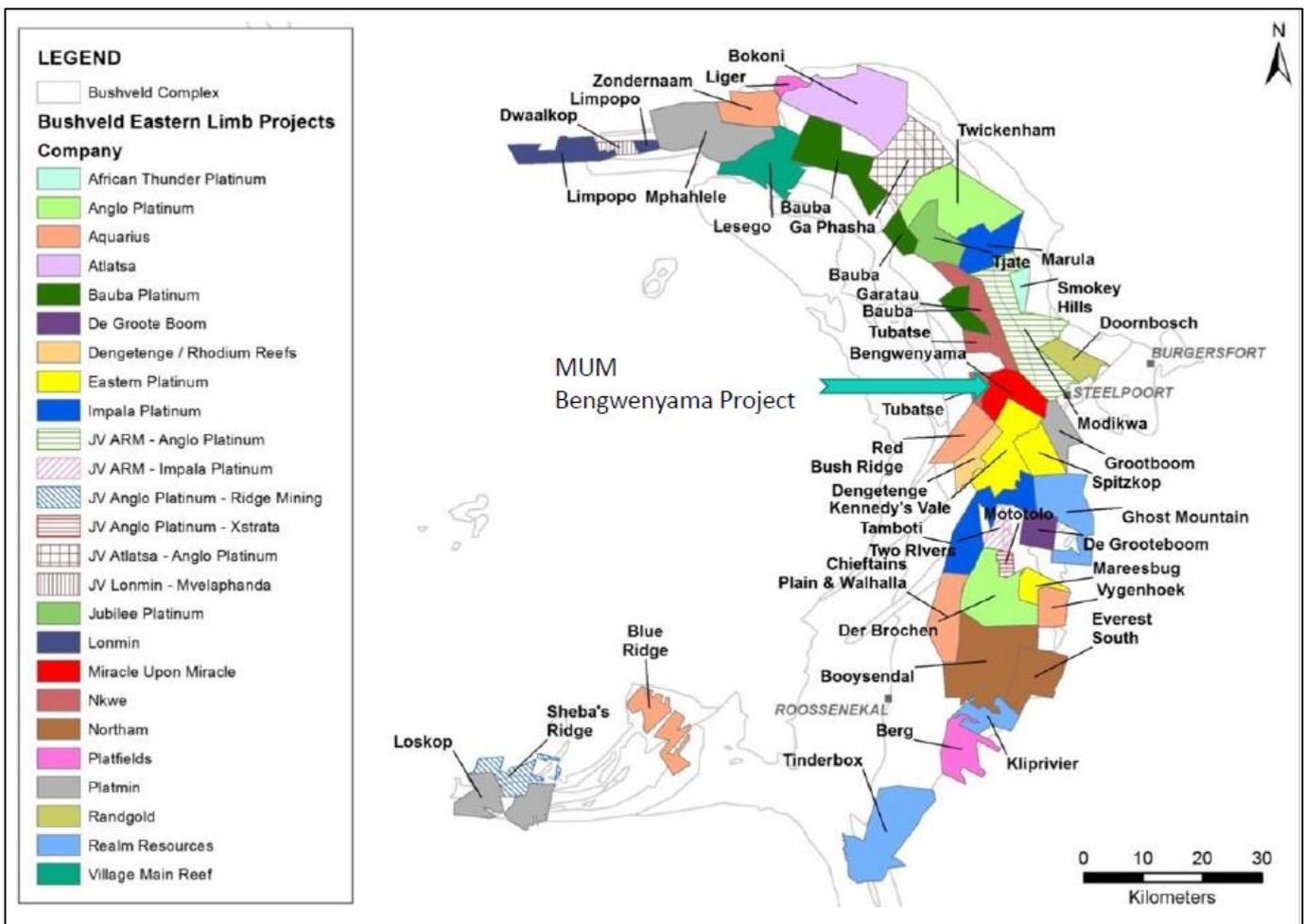
Source: Minxcon, 2021

## SECTION 2: Southern Palladium's Bengwenyama project

In the following section we discuss the geology and development opportunity presented by SPD's 70% owned Bengwenyama project.

### Location and infrastructure

- SPD's Bengwenyama project is located on the Eastern Limb of the Bushveld complex and is one of the very last outcropping extensions of the Merensky and UG2 reefs. The project consists of two farms, Eerste Geluk and Nootverwacht. The local Bengwenyama community are the traditional owners of the two farms.
- As show below, the project appears to be a southern extension of the Modikwa mine (owned by African Rainbow and Angloplats, with the local community). Early in the project's history it was incorporated into the Modikwa project area.
- Modikwa is one of the larger mines on the Eastern Limb and in 2020 year produced just over 250,000 6E ounces from both the UG2 and Merensky reefs at a cash cost of around US\$950/6Eoz.



- Immediately to the south are Eastplats' Kennedy's Vale/Spitzkop projects, which lie to the south of a major structural feature, the Steelpoort Fault. The Kennedy's Vale deposit is downthrown to depths of around 1000m. The neighbouring Spitzkop resource appears to be heavily faulted near surface.
- Further to the south is the ARM/Impala Two Rivers mine, a very large underground operation mining from the UG2 reef and producing (in 2021) around 300,000 6E ounces at cash costs of around US\$660/oz.
- Bengwenyama is well located with regard to infrastructure and is in close proximity to the Lebalelo water pipeline which is likely to source water from the nearby De Hoop Dam. The project area is crossed by roads and grid power is available. There is a railway siding at the main town of Steelpoort.
- The reefs outcrop to the east of the Eerste Geluk farm as shown in the following diagram:



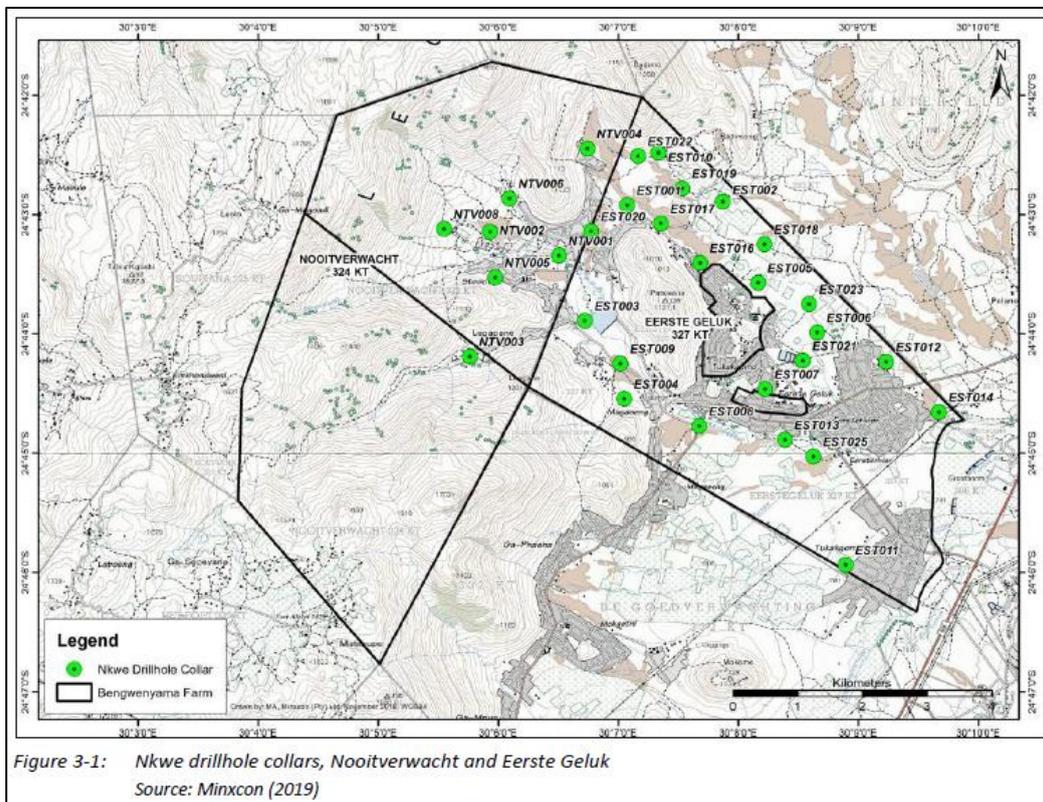
Source: Modified using information from CSA Global Independent Expert Report, SPD draft prospectus, 2021

### Tenure and ownership

- The deposits are held under a Preferent Prospecting Right (PPR) which was issued to the Bengwenyama community in 2015. This has since been renewed with a 3 year extension from February 2021.
- It is important to understand that there is only one community which has ownership of the project, and this has been tested in the courts. Ownership of the project has been quite contentious and was eventually secured following many years in court. This history is summarised in Appendix 1. We have undertaken a detailed review of this history and have spoken with several groups involved in the litigation, including a representative of the Bengwenyama community. We can confirm that the project is owned 100% by Miracle Upon Miracle Investments (Pty) Ltd (MUM). Post IPO, the local community will own 30% of the project directly (the BEE initiative) and 12.3% through its shareholding in SPD.
- There are two important conditions precedent for the MUM shareholders to retain their full holding in SPD:
  - A 2Moz (3E + gold) Indicated resource is to be identified within the \$19m budget allocated.
  - A formal application for a Mining Right must be lodged over the project ideally within a 2 year timeframe (although a 4 year period has been allowed to deal with any unforeseen issues).
- Should these conditions not be met the directors of SPD can claw back a proportion of shares issued to MUM shareholders. This we judge provides strong encouragement for the rapid advancement of the project towards the application of a Mining Right.

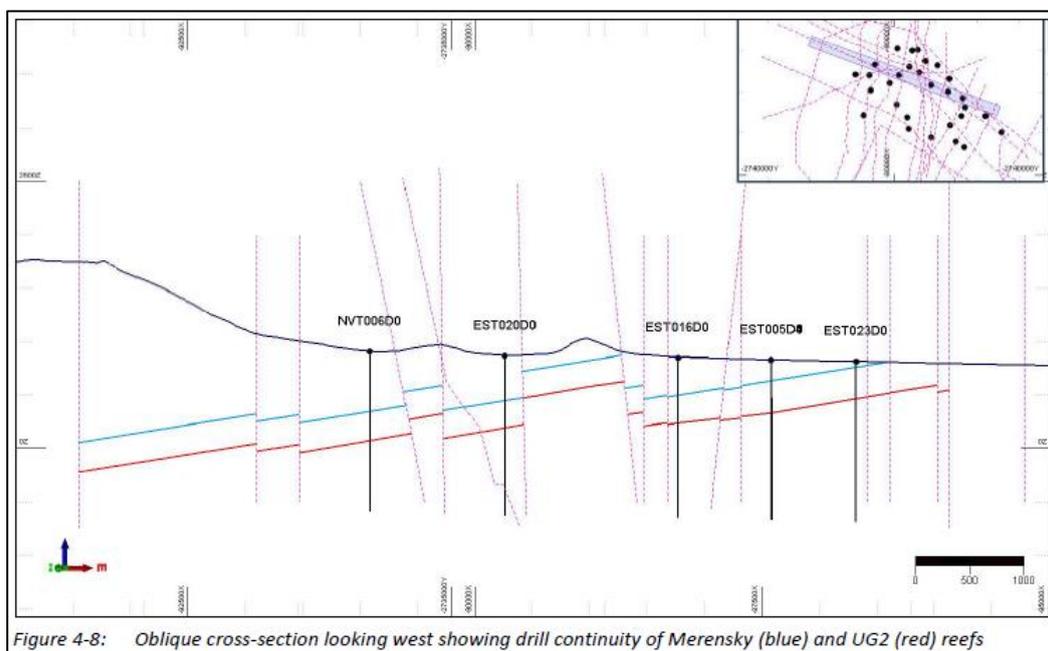
### Historic exploration and local geology

- The deposit has been explored historically and both the Merensky and UG2 reef have been intersected by 30 drillholes. Geological logs and assay results are available for the majority of the drill holes, which has allowed the preparation of an independent resource estimate to JORC (2012) status.



Source: CSA Global Independent Export Report, Southern Palladium draft prospectus, 2022

- It is important to note that this deposit is shallow and outcrops toward the east. There appears to be several crosscutting faults which actually serve to elevate the reefs closer to surface.
- As shown in the following section from CSA Global (from the SPD prospectus), there appears to be several large, kilometre scale, unfaulted blocks containing the UG2 and Merensky Reefs which should allow underground development.



Source: CSA Global Independent Export Report, Southern Palladium draft prospectus, 2022

- CSA Global state in the IER: “Publicly available drillhole information for the UG2 and Merensky Reef provide confirmed down-dip continuity to greater than 920 m and 650 m below surface, respectively.”
- CSA Global have reviewed the resource estimate undertaken by consultants Minxcon and broadly agree with Minxcon’s resource estimates. CSA state that the inability to source the drill core and all original date results

in the deposit being no better than inferred in status, regardless of data spacing.

- Nonetheless the following resource has been classified to be of JORC 2012 status. As well, CSA have estimated an Exploration Target, mainly within the western section of the deposit.
- CSA's resources and resource targets for the Bengwenyama project are as follows:

Resource classification	Reef	Tonnes	3PGE+Au		Reef width
		(Mt)	g/t	Moz	(cm)
Inferred	UG2	33.87	7.7	8.38	71
Inferred	Merensky	110.02	2.96	10.42	191
<b>Total</b>		<b>143.89</b>	<b>4.07</b>	<b>18.80</b>	
Notes:					
•3PGE+Au refers to platinum + palladium + rhodium + gold					
• Mineral Resource cut-off is 2.2 g/t 3PGE+Au for UG2 and 1.2 g/t 3PGE+Au for Merensky					
• Basket price used for the cut-off calculation is US\$1,126/oz for UG2 and US\$1,270/oz for Merensky					
• Geological losses of 17% for the UG2 and 10% for the Merensky have been applied					

Exploration target	Minimum tonnes (Mt)	Maximum tonnes (Mt)	Minimum grade (g/t)	Maximum grade (g/t)	Minimum ounces (Moz)	Maximum ounces (Moz)
UG2	45	68	5.9	8.9	8.5	19.5
Merensky	88	133	2.2	3.4	6.2	14.5
<b>Total</b>	<b>134</b>	<b>201</b>	<b>3.5</b>	<b>5.2</b>	<b>15.1</b>	<b>33.6</b>

Note: Geological losses applied to the Exploration Target is 40% and 35% for the UG2 and Merensky, respectively.

Source: CSA Global Independent Expert Report, Southern Palladium draft prospectus, 2022

- The total resource potential for the Bengwenyama project is there between 33.9Moz and 52.4Moz. This is a remarkable deposit, especially considering the deposit effectively daylight to the east of the project area.
- The bulk of the Inferred Resource is within 700-800 metres depth from surface, suggesting the mining costs should be relatively low.

#### What development options could be expected from the Bengwenyama deposit?

- The impressive resource base at Bengwenyama has been classified as inferred by CSA Global. As discussed in the following section ("Exploration Budget"), an A\$19m exploration budget has been proposed to increase the resource confidence to Indicated status, allow the completion of a pre-feasibility study and convert resources to reserves.
- One of the conditions of acquisition is that a reserve of at least 2 million ounce (4E) is to be identified. As part of the transaction, the company is required to lodge a formal application for a Mining Right over the project. This is expected to be achieved within a two-year timeframe.
- Based on the prill splits of the UG2 and Merensky, it is quite clear that the UG2 is likely to be the initial target for an initial operation at Bengwenyama. With much higher proportions of Pd and Rh the UG2 is the real prize for mines of the central section Eastern Limb. As shown below, the UG2 prill split generates a basket price of over US\$3,300/oz at recent metal prices, nearly 70% higher than that from the Merensky.

UG2 Reef				
Mar-22	Split	US\$ price	Basket price US\$/oz	%
Pt	44	1014	446	11%
Pd	44	2446	1076	26%
Rh	10	17700	1770	43%
Au	2	1936	39	1%
	100		3331	80%

<b>Merensky</b>				
<b>Mar-22</b>	<b>Split</b>	<b>US\$ price</b>	<b>Basket price US\$/oz</b>	<b>%</b>
Pt	61	1014	619	27%
Pd	29	2446	709	31%
Rh	3	17700	531	24%
Au	7	1936	136	6%
	100		1994	89%

Source: Modified from CSA Global Independent Expert Report, Southern Palladium draft prospectus, 2022

- At current PGM prices, the basket price for the Merensky reef is around US\$2,000/oz which suggests this could become an important co-product from the future mine (as it is at the Impala/ARM Two Rivers mine to the south).
- In order to understand what might be possible for the Bengwenyama project, we have undertaken a brief review of the existing projects on the Eastern Limb. The following table summarises the resource and reserve position for the existing operations (including Angloplats' Twickenham mine which is now on care and maintenance).

<b>Resources</b>						
Company	Mine/project	Reef	Resources			
			Mt	4E grade (g/t)	4E Moz	Width (cm)**
AMS	Twickenham	Merensky	301.4	5.26	51.1	105
		UG2	348.2	6.02	67.6	95
IMP	Marula	Merensky	47	4.21	6.4	100
		UG2	74.2	6.33	15.2	99
ARM/AMS	Modikwa	Merensky	213.9	2.89	19.9	180
		UG2	216	6.01	41.9	103
SPD	Bengwenyama	Merensky	110.0	2.96	10.5	191
		UG2	33.9	7.70	8.4	71
SPD	Bengwenyama*	Merensky	220.5	2.93	20.9	n/a
		UG2	90.4	7.70	22.5	n/a
AMS/ARM	Two Rivers	Merensky	137.1	3.51	15.5	181
		UG2	184.1	4.57	27.1	133
AMS	Mototolo	Merensky	172.9	4.58	25.5	90
		UG2	402.6	3.99	51.8	180
NHM	Booyendal	Merensky	258.94	3.66	30.6	n/a
		UG2	569.81	3.83	70.4	n/a
<b>Reserves</b>						
Company	Mine/project		Reserves			
			Mt	4E grade (g/t)	4E Moz	Width (cm)**
AMS	Marula	Merensky	-	-	-	-
		UG2	18	4.1	2.4	126
IMP	Modikwa	Merensky	-	-	-	-
		UG2	45.1	4.21	6.1	119
ARM/AMS	Two Rivers	Merensky	49.6	2.65	4.2	305
		UG2	71.1	2.85	6.5	241
SPD	Mototolo	Merensky	-	-	-	-
		UG2	25.7	3.47	2.9	206
SPD	Booyendal	Merensky	28.03	2.29	2.1	n/a
		UG2	104.55	2.79	9.4	n/a
*Includes midpoint of CSA Global's resource target						
** Average width for IMP and SPD; minimum width quoted by AMS. See text.						

Source: company data

- The total resource at Bengwenyama is relatively small by comparison to other operations on the Eastern Limb. However, incorporating the mid-point of the resource target (ca. 43Moz 3E plus gold) Bengwenyama's endowment is larger than the Marula mine and comparable to Two Rivers. Both are considered to be Tier 1 projects.
- The reported grade from what is likely to be the most economic reef at Bengwenyama at 7.7g/t (3E+gold) is significantly higher than other projects on the Eastern Limb. This is partly driven by the relatively narrow reef width (at 71cm). Diluting this grade to what we think could become a reasonable minimum mining width of 120cm, the grade would be diluted to around 4.5g/t (3E+gold) for the UG2 Reef. This would be amongst the highest grades on the Eastern Limb.
- The following table summarises the approximate production capacity of the five operating mines located on the Eastern Limb. Note that the production and cost parameters are indicative only as the past 18 months has been impacted by Covid issues.

Mine/project	Approx. concentrator throughput (Mtpa)	Typical grade (g/t, 4E)	Typical production (4E) in con (koz)	Typical total cost (US\$/oz 4E)
Marula	1.8	4.4	230	810
Modikwa	2.2	4.0	300	850
Two Rivers	3.3	3.4	300	690
Mototolo	2.0	3.3	220	730
Booysendal	4.5	2.8	350	810

Source: company data

- Subject to a successful forthcoming drilling campaign, we can see the following as a possible development strategy.
  - Access: twin declines from surface, possibly into the footwall of the UG2.
  - Mining method: conventional narrow seam stope mining with tracked and trackless equipment.
  - Mining/processing rate: in the range 130-170kt/month (1.6-2.0mtpa) from the UG2 and possibly from the Merensky Reef.
  - Production grade from the UG2: 4.5 to 4.6g/t (3E+gold), driven by dilution of the resource grade to a mining width of 1.2m.
  - Metallurgical recovery: 85%.
  - Potential PGM production: 200 to 250,000 3E+gold ounces per year.
- Assuming good reef consistency, we would suggest that there is a good possibility that the Bengwenyama mine costs will be relatively low, advantaged by:
  - Attractive grades.
  - Moderate mining widths.
  - Shallow level of extraction, reducing haulage costs.
  - Attractive metallurgical characteristics, likely to be comparable to the nearby Modikwa mine.
  - Availability of a trained local workforce.
- We would also infer that the capital intensity of the project to be relatively low, assisted by:
  - Shallow levels of initial extraction requiring declines rather than deep vertical shafts.
  - Proximity to water (the Lebalelo water pipeline lies adjacent to the project which is likely to source water from the nearby De Hoop dam) and power.
  - The ability to sell PGM-rich concentrate to local smelters using well established commercial terms.

### Moving the PGM industry toward carbon neutrality?

- We have seen volumes written recently about reducing the carbon footprint over the mining and smelting industries worldwide. The PGM sector is no exception. In a recent presentation by Sibanye Stillwater (SSW) we learnt that the company's South African operations currently account for power demand of some 310MW and that 97% of current operational emissions are from Eskom coal fired power.
- SSW appears to be serious about its target of carbon neutrality (as do the other major PGM producers) and has set a goal to achieve zero net emissions by 2040. SSW propose to achieve that in the following ways:
  - Strategic energy sourcing (including studies into 175MW of solar power projects).
  - Wind energy/wheeling.
  - Looking at alternative coal inputs to the Marikana smelter.

- Advanced energy management at its various operations.
- Adoption of new technology (eg battery EVs and locomotives).
- We note with interest that as part of South Africa’s renewable energy plan the country is looking at employing pumped hydro storage technology at its many now disused deep and ultradeep gold mines. A PFS is currently being prepared by a Thyssenkrupp/Wismut JV to examine this possibility.
- We would imagine that the green fields Bengwenyama project will be able to take advantage of ‘second mover advantage’ and engineer a low carbon (quite possibly net zero Scope 1 emissions) project from day 1. Scope 2 emissions will be in the hands of the smelters themselves. But as we have heard from the integrated PGM producers, decarbonisation of the downstream is being evaluated.

**Environmental issues for Bengwenyama**

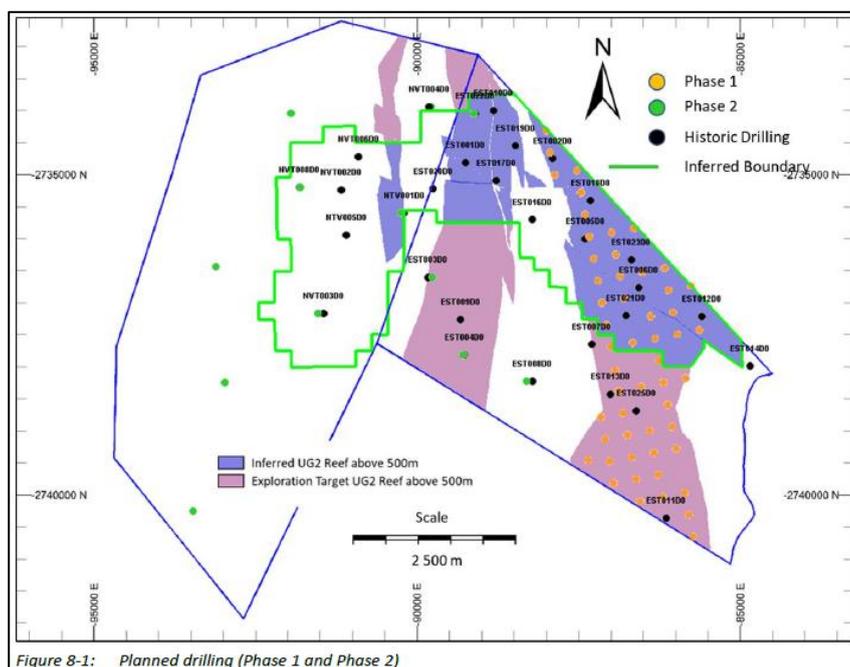
- Exploration activities are to be undertaken in a manner that takes into account the social and physical environment of the farms. Measures will be taken to mitigate negative impacts and alternatives that promote environmental stewardship are preferred. Members of the Community will be encouraged to apply for suitable positions throughout the exploration programme.
- Following completion of the exploration programme, an application for a Mining Right will be prepared which requires simultaneous application for an Environmental Authorisation. This will be completed over two major phases, namely an initial 44-day Scoping Phase followed by a comprehensive 106-day Environmental Impact Assessment (“EIA”) Phase. The total regulated timeframe for the Environmental Authorisation process, including review and decision-making by the competent authorities, is 300 days. Application will be made simultaneously for a Water Use Licence.

**The proposed exploration programme**

SPD has planned a drill program targeting the following milestones:

- Phase 1: Infill drilling of the shallowest portion of the deposit with the aim of upgrading the Mineral Resource confidence in this area to Indicated, to provide sufficient confidence to support downstream mining and economic studies. Provision has been made for some potential validation drilling of historic intersections. The primary focus of Phase 1 drilling is the UG2 at depths less than 500 m, with the aim to identifying at least 2Moz and advance the project to a preliminary feasibility study.
- Phase 2: Widely spaced drilling within the Exploration Target area to potentially support upgrading this material to Inferred Mineral Resources.

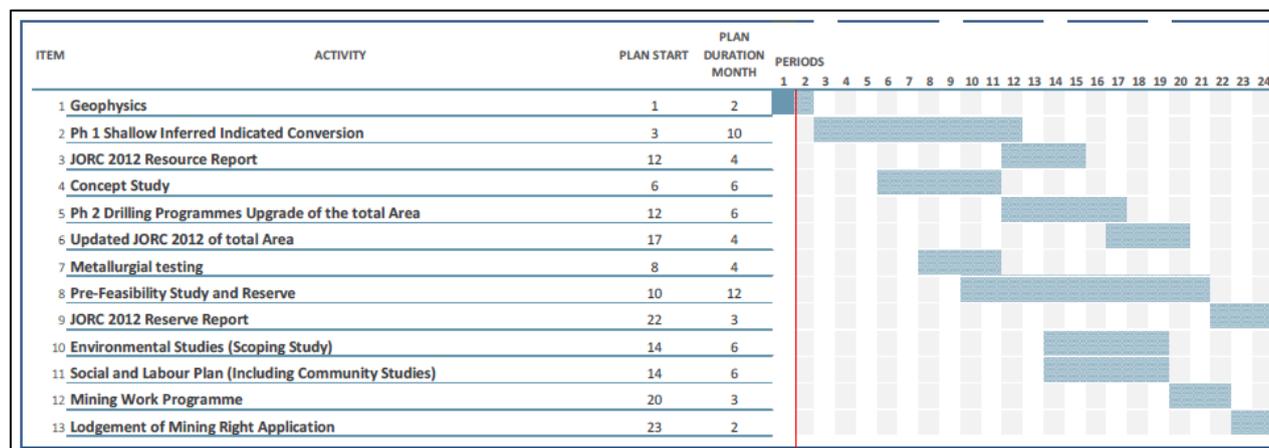
Conceptual plans for Phase 1 and Phase 2 drill programs are shown below. Approximately 38,000m of drilling is proposed.



Importantly we understand that suitable exploration contractors are available to complete this work. An initial geophysical survey has already commenced. Quotes are currently being obtained from South African drilling companies.

### Proposed timetable

SPD has presented the accompanying timetable in its recent presentation.



Source: Southern Palladium draft presentation, 2022

Key points from this timetable include the following:

- High-resolution airborne geophysical survey is now completed.
- Drilling is scheduled to commence in May/June 2022.
- A concept/scoping study is due for completion within 12 months.
- A prefeasibility study is to be commenced in 1Q 2023.
- A minimum 2Moz Probable reserve (JORC 2012) is expected by 4<sup>th</sup> Q 2023.
- A Mining Right Application is to be lodged within 2 years of the IPO, subject to a satisfactory outcome from the PFS.
- This will trigger the start of a Bankable Feasibility Study.

### Board and Management

SPD has put together a very experienced board and management team to ensure the objectives of the new company can be met.

The Managing Director for the company will be **Johan Odendaal**, currently CEO of the holding company MUM, which owns title to the Bengwenyama project. Johan has a background in geology and mineral economics and has worked for many years as a financial analyst before establishing Minxcon, a South African mining consultancy. He is based in Johannesburg.

**Terence Goodlace** has been appointed to the role of Non-executive Chairman. Mr Goodlace has an extensive background in African mining operations. A mining engineer by background, he has been COO of Gold Fields and CEO of Metorex. He was CEO of platinum major Impala and was on the Impala board for over 6 years. Mr Goodlace is also a non-executive director at Gold Fields Limited, Kumba Iron Ore Limited and AfriTin Limited. We believe Mr Goodlace's interest in taking on this role speaks volumes for the quality of the project. He is based in Johannesburg.

**Mike Storzaker** has been appointed non-executive director and has been responsible for coordinating the listing of SPD on the ASX and JSE. He is an executive with over 40 years of international commercial experience in mining finance and investment. He is currently an NED on four other mining company boards, three of which operate in Africa. Mr Storzaker is based in Sydney.

Other non-executive directors are:

- **Daan van Heerden**, has significant experience in managing underground and open pit operations and heads the Mining Engineering group at consultants Minxcon. Johannesburg based.
- **Rob Thomson**, an experienced mining engineer and board director. Sydney based.
- **Geoff Hiller**, a mining/civil engineer with 25 years of mining industry experience, currently CEO of Pacific Nickel Mines Limited. Sydney based.

Directors will own around 16.4% of SPD at IPO.

Geologist, **Uwe Engelmann**, will take on the role of Exploration Manager and coordinate the drill-out and resource estimate of the Bengwenyama project. Mr Engelmann has over 23 years' experience in mining and exploration in South Africa and heads up the Exploration and Resource group at Minxcon.

SPD's company secretary will be **Andrew Cooke**, who is based in Sydney.

## **Appendix 1**

### **History of Project Ownership**

The history of ownership of the Bengwenyama is important as it is the main reason why the project has remained undeveloped. As we discuss in this report, it is one of the last remaining outcropping potentially economic occurrences of the two PGM-bearing reefs of the Bushveld, the Merensky and UG2.

- The local community, the indigenous Bengwenyama-ye-Maswazi tribe, were displaced from the two farms (Nooitverwacht and Eerste Geluk) in the 1940s. After several attempts the community managed to gain a successful land claim in 1996. Despite a contest to land access in 2011, the Bengwenyama community retained those rights.
- The two farms were held under old order prospecting rights by Angloplats (with several other neighbouring farms) as it adjoins the northern Modikwa mine (owned jointly by Angloplats, African Rainbow Minerals and another community).
- The Bengwenyama community expressed interest to Angloplats of becoming involved in mining in 2003 and 2005.
- Mineral rights were transitioned to new order rights in 2004. Applications for prospecting rights came from a number of parties (including Angloplats).
- Under the Mineral and Petroleum Resource Development Act (2002) preferent prospecting or mining rights must be granted to a community who wishes to obtain such rights on land registered (or to be registered) in the name of that community if they have lodged a valid application for such rights. An application was lodged for a preferent prospecting right (PPR) in 2006 in the name of Miracle Upon Miracle Pty Ltd (MUM). The shareholders were Nurinox (the local community) and Atlantic (the advisors to Nurinox, including several of the directors of Minxcon). A Canadian company Legacy Platinum became a small shareholder in MUM in return for funding MUM's legal costs.
- Later in 2006 the PPR was awarded to a private group, Genorah Resources, which then entered a farm-out agreement with ASX-listed Nkwe Platinum Ltd. Nkwe began exploration of the two farms, completing the 30 drillholes referred to in this report.
- The Bengwenyama community and its affiliates obtained a court interdict against Genorah/Nkwe in early 2007 and exploration halted. Genorah vacated the farms entirely by the end of 2007.
- In an unfortunate event in 2011 the Department of Minerals and Energy re-awarded a PPR over one of the farms to Genorah in JV with another community which claimed to be indigenous to the farm. This was contested by MUM and the ruling in favour of MUM was upheld in two courts. This was finally appealed to the Constitutional Court by Genorah, which was unsuccessful.
- Complicating matters was Angloplats which attempted to secure mineral rights to both farms. This was unsuccessful and Angloplats withdrew its appeal.
- In June 2015 a PPR was awarded to MUM, which was then registered for a 5 year period in 2017. The PPR was renewed for a further 3 year period in February 2021.

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Dr Chris Baker, an authorised representative of BSCP, certifies that the advice in this report reflects his honest view of the company. He has 29 years investment experience in wholesale capital markets. He worked as a mining analyst for brokers BZW and UBS for 11 years and has a further 16 years' experience as a mining analyst and portfolio manager with Colonial First State and Caledonia Investments. He now provides independent financial advice on a part time basis. He may own securities in companies he recommends but will declare this when providing advice. He currently owns shares in SPD. He is remunerated by BSCP but is not paid a specific fee for providing this report. BSCP are Corporate Advisors to SPD and may receive fees from SPD for services provided. BSCP, its directors and consultants may own shares and options in SPD and may, from time to time, buy and sell the securities of SPD.

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