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Southern Palladium Ltd (ASX:SPD, $0.80. Market cap A$72.8m)

Site visit preview: Can Bengwenyama deliver a ca. US$1bn NPV?

Rerating of SPD should accompany the completion of the drilling programme by mid-2023, which should then lead to a new resource, the completion of a PFS, the start of a BFS, the granting of a Mining Right, and potentially first production within 5 years or less. As an advanced exploration/pre-development PGM company, SPD has few peers globally. At the current share price, we consider SPD to represent exceptional value, as we demonstrate in this report.

- SPD's 70%-owned Bengwenyama Project contains a PGM resource totalling just under 19Moz. It is located within the highly productive Eastern Limb of the Bushveld Intrusive Complex (BIC).
- Total potential endowment of SPD's Project has been estimated by independent consultants CSA Global at ca. 34 to 53Moz (3PGE+Au, 100% basis) incorporating an Exploration Target.
- Inferred Resources (JORC 2012) total 18.8Moz (3PGE+Au, 100% basis) in the UG2 and Merensky reefs at a combined grade of 4.07g/t. The total UG2 Inferred Resource is approximately 8.4Moz at a grade of 7.7g/t with roughly equal proportions of Pt and Pd by volume, and around 10% Rh.
- Recent drilling has identified significant levels of iridium, a minor, but increasingly valuable minor PGM.
- A recently completed internal scoping study (announced 24 January 2023) confirms that the UG2 reef alone will likely represent the best initial economic opportunity. However, the study also recognises the potential to simultaneously mine from the upper Merensky Reef. We note that the SPD board is sufficiently encouraged from the results of its internal scoping study, that it is about to initiate a Prefeasibility Study and is considering the lodgement of a Mining Right Application earlier than forecast (was to be around 2 years from the mid '22 IPO). Note that with the current ownership structure, the Project already ticks the BEE box.
- In our view the Bengwenyama project has the potential to emerge as a Tier 1 PGM operation. Strengths of the project include:
    - Well-understood geology with a large Inferred Resource hosted by the UG2 and Merensky reefs.
    - Orebodies that can be accessed from close to surface (potentially under 100m).
    - Relatively high grades from the UG2 reef (potentially around 4.5g/t) should help drive low cash costs.
    - Capital intensity for a shallow underground mine and concentrator should also be relatively low.
    - Conventional metallurgy selling concentrate to local refiners on well-established commercial terms.
    - There are several analogous orebodies currently being mined on the Eastern Limb.

- We are about to embark on our second site visit to the Bengwenyama project, and the first since drilling commenced in 3Q22. This will enable us to obtain a better understanding of the results from the current drilling programme, and the company's thinking about development options.
- We have revisited our conceptual project valuation for Bengwenyama with the following assumptions:
    - Conventional hybrid underground mining accessed by decline, with a ramp up period of 2-3 years.
    - Milling rate of 2Mtpa, which at an assumed head grade of 4.5g/t (3E+gold) and 85% met recoveries may produce ca. 240kozpa (3E + gold), in line with other PGM projects on the Eastern Limb.
    - Pre-production capex of US$450m.
    - AISC of US$1,100/3E+gold oz (2021 terms), positioned within the second quartile of the cost curve.
    - We assume first production from mid-2027.

- Using what we consider to be reasonable through-the-cycle PGM pricing (Pt at US$1,000/oz, Pd at US$1,500/oz, Rh at US$14,000/oz), we are able to generate a conceptual after tax NPV_8 of US$960m (100% basis, unfunded) and an after-tax IRR of 28%. This valuation attributes no value to the "Merensky option".
- Not surprisingly, our conceptual valuation is most sensitive to commodity prices (+29% for a 10% increase), less so for US$ costs (-12% for a 10% increase) and capex (-2% for a 10% increase).

What development options could be expected from the Bengwenyama deposit and what could it be worth?

- The impressive resource base at Bengwenyama was verified by consultants CSA Global in SPD's 2022 prospectus. A substantial exploration budget (A$13-14m) is currently being spent to improve confidence in the structural geology of the deposit and therefore to increase the resource confidence to Indicated status. This will lead to a publishable pre-feasibility study (PFS) then hopefully a bankable study together with the conversion of resources to reserves.

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
Total		**143.89**	**4.07**	**18.80**	
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						
Reef	Minimum tonnes (Mt)	Maximum tonnes (Mt)	Minimum grade (g/t)	Maximim 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
Total	**134**	**201**	**3.5**	**5.2**	**15.1**	**33.6**
Note: Geological losses applied to the Exploration Target is 40% and 35% for the UG2 and Merensky, respectively.						

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

- The initial drilling programme is starting to broadly confirm earlier geological interpretations, particularly on the N and NW sections of the orebody. To the SE, potentially a significant additional resource of UG2 reef has been found in early drill holes ("the Far East Block" as referred to in recent releases). To the SW a modest tonnage within the 'exploration target' may well not exist due to a doming feature. This was discussed in our December 2022 report, and we expect to get a better understanding following our forthcoming site visit.
- Drilling recommenced in mid-January following a Christmas/New Year break and we are expecting a rapid increase the number of UG2 and Merensky intercepts into early 2023.
- Based on the prill splits of the UG2 and Merensky, it has always been assumed that the UG2 would be the target for an initial operation at Bengwenyama. This has been confirmed in SPD's recent release which describes in very general terms that the UG2 is likely to represent the most economic proposition.
- To quote from SPD's recent release, four scenarios were evaluated by the study:

  - Scenario 1. Mining the UG2 reef alone.
  - Scenario 2. Mining Merensky reef alone.
  - Scenario 3. Mining UG2 and Merensky simultaneously
  - Scenario 4. Mining UG2 to completion followed by Merensky.

- The results of the Scoping Study have led to the following conclusions:

  - A standalone UG2 project (Scenario 1) has excellent potential, and it has been recommended that a pre-feasibility study is to be started immediately, concurrent with the mid-year completion of the drilling programme. Trade-off studies, metallurgical test work, environmental studies and a social and labour plan are to be initiated during the current quarter, significantly earlier than was estimated in the SPD prospectus.
  - Scenario 2: The Merensky Only option may be viable but significantly less attractive than the UG2 Only scenario.

- Scenario 3: UG2 and Merensky combined may be more attractive than the UG2 Only option which has significant upside potential in a higher platinum price environment. The study concluded that access infrastructure and capital footprint should be designed such that access to the Merensky reef could be added at any time in the future.
- Scenario 4: UG2 followed by Merensky is less attractive than the UG2 and Merensky combined option.

- With much higher proportions of palladium and rhodium it's no surprise that the UG2 is the prime target. As shown below, the UG2 prill split generates a basket price of around US$2,500/oz at recent metal prices, over 50% higher than that from the Merensky.

UG2 Reef (3E+Au)				
19/01/2023	**Split**	**US$ price**	**Basket price US$/oz**	**Value %**
Pt	44	1043	459	18%
Pd	44	1709	752	30%
Rh	10	12400	1240	50%
Au	2	1904	38	2%
	100		2489	100%
Merensky (3E+Au)				
19/01/2023	**Split**	**US$ price**	**Basket price US$/oz**	**Value %**
Pt	61	1043	636	39%
Pd	29	1709	496	30%
Rh	3	12400	372	23%
Au	7	1904	133	8%
	100		1637	100%

Source: Updated from CSA Global Independent Export Report, Southern Palladium prospectus, 2022 PGM prices as at 19 January 2023

- Subject to a successful drill campaign, we can see the following as a possible initial development strategy.
  - Access: twin declines from surface, likely into the hanging wall of the UG2. This will allow low capex access to the Merensky reef should metal prices allow that to become an economic proposition.
  - Mining method: The mining philosophy for the UG2 is likely to be by a narrow tabular underground mining method that has been successfully implemented across the BIC. The underground mining method is dependent on various parameters such as orebody width, operating cost, optimised to maximise early cashflows.
  - Mining/processing rate: around 180kt/month (2.0mtpa) from the UG2 Reef.
  - Production grade from the UG2: around 4.5g/t (3PGE+gold), driven by dilution of the resource grade to a mining width of 1-1.2m. In recent releases, SPD makes the point that over most of the resource and exploration target area, hanging wall chromite stringers appear to be absent within the Bengwenyama tenements, suggesting narrower widths of higher grade ore can be mined.
  - Metallurgical recovery: 85%.
  - Potential PGM production: around 240,000 3PGE+gold ounces per year.
- This scope is not dissimilar to neighbouring operations, which are all based on the UG2 reef. The following table summarises the approximate production capacity of the five operating mines located on the Eastern Limb. Note these data are from 2019, effectively mitigating the impact of the pandemic. See Appendix 1 for the location of these operations. (Note 4E is the equivalent of 3PGE + gold in the table below.)

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

- Assuming reasonable reef consistency, we suggest that there is a good possibility that the Bengwenyama mine costs will be relatively low, advantaged by:
  - Attractive head grades. At 4.5g/t (3PGE+gold) in the UG2 this would be amongst the highest grades on the Eastern and Western Limb.

    - Moderate mining widths.
    - Shallow level of extraction, reducing transport and haulage costs and without the need for refrigeration of ventilation air, required in the deep shaft mines.
    - Lower access capital.
    - Attractive metallurgical characteristics, likely to be comparable to the nearby Modikwa mine.
    - Availability of a trained local workforce.
    - Well-established power and water network.
- For this preliminary assessment we have assumed all-in sustaining costs (AISC) of US$1,100/oz at full life of mine production rates. This would put the mine mid-curve on the 2020 cost curve (the latest we have available). Given relatively high grades and access from near surface we think this is easily defendable and could be quite conservative. We concede that we have more work to do to fully understand the potential cost structure of an operation at Bengwenyama. See Appendix 2, Bengwenyama Capex and Opex Assumptions.
- 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 refiners on established commercial terms.
- In this analysis, we have assumed pre-production capex at US$450m. Sustaining capex is included in the AISC estimate. See Appendix 2 for further commentary.
- A mine life of 20 years has been assumed which will require a reserve of around 5.6Moz. (The current UG2 resource is 8.4Moz). Clearly this is contingent on the success of the current drilling programme.
- Third party smelting and refining assumed, with payabilities of 85%. These, we understand, are well-established commercial terms with the major PGM companies (Implats, Amplats, Sibanye Stillwater and Northam).
- Fiscal terms: 5% State royalty and a 27% tax rate. The ability to accelerate capital write-downs result in nil tax payable for the initial 2-3 years, based on our analysis.
- Modest additional revenues have been assumed for chrome or minor PGM by-products (especially iridium). Together these could add 5 to 10% to revenues. Note that payabilities for the minor PGMs are lower than the 85% quoted above.

The Merensky option

- In its recent release, SPD states that we should not rule out the possibility of the Merensky Reef being included in the Bengwenyama development (Scenarios 3 and 4, described above). The Merensky is still the dominant source of PGMs on the Western Limb, but has produced only minor PGMs historically on the Eastern Limb.
- Three operations on the Eastern Limb are currently developing into the Merensky (associated with pre-existing UG2 operations). The Two Rivers mine of Implats and ARM are currently commissioning the Merensky development which should be in production at a 182kozpa (6E) rate by mid-2023.
- At the Angloplats/ARM Modikwa mine the bord-and-pillar Merensky shaft had been reopened on a trial basis after a prefeasibility study. The shaft has been dewatered, and infrastructure established to ramp up production to 30,000 tonnes per month while confirming the project viability before starting a bankable feasibility study.
- At Northam's Booysendaal mine, the southernmost operation on the Eastern Limb, a small operation has been established at the North Merensky mine at a rate of around 25kozpa (3PGE+gold), expanding to ca. 50kozpa. A 55kozpa production rate is proposed for the South Merensky mine.
- As discussed below, we apportion no value to SPD's Merensky option.

"What if" valuation for Bengwenyama

Based on the above assumptions we have put together a 'what if' valuation for SPD's Bengwenyama PGM project, just to illustrate what could emerge from the success case. Note that we have modelled the project in USD terms, which takes no account of the USD/Rand exchange rate.

We have run NPV evaluations at an 8% discount rate at two sets of commodity price assumptions: our internal estimates (BSCP) and recent spot prices. Note, the model has been prepared in after-tax real terms and does not inflate costs nor commodity prices and is based on a 100% basis. It is an unfunded valuation.

Prices (US$/oz)	BSCP assumptions	Spot
Platinum	1000	1043
Palladium	1500	1709
Rhodium	14000	12400
Gold	1750	1904
NPV(8), US$m, post tax	**$960**	**$912**
NPV(8), A$m at 70c	**$1,372**	**$1,303**
IRR (%), post tax	**28%**	**27%**

Source: BSCP estimates. Spot prices as at 19 January 2023

It must be stressed that these numbers are highly conceptual in nature, and a lot can change as drilling progresses and as SPD engineers complete pre-feasibility and feasibility studies. Nonetheless it demonstrates how attractive a project this could become should the planets align for Bengwenyama.

Some detail of our model is included in Appendix 3. Note that the model is prepared in real terms, and does not take into account South African cost inflation. Given South Africa is such a large producer of PGMs, we believe that over the long term industry cost pressures will ultimately filter through to pricing, so we have modelled flat margins going forward. A 20-year mine life is assumed.

Sensitivities

Not surprisingly our NPV_8 is most sensitive to commodity prices, and almost insensitive to initial capex.

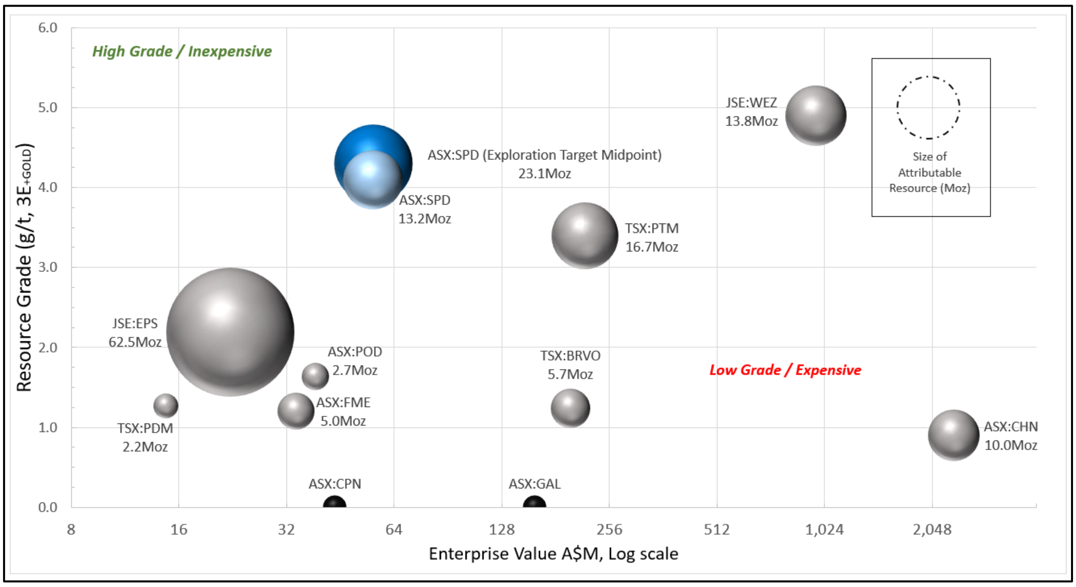
	+10%	Base NPV (US$)	-10%
Commodity prices	29%	960	-29%
Capex	-2%	960	2%
Opex	-12%	960	12%

Source: BSCP estimates.

Sector comparatives

We have written extensively in previous reports demonstrating that (1) the peer group for pre-development PGM companies is quite limited and (2) that SPD represents a very inexpensive exposure to the sector. We have updated our Grade vs EV chart for the sector, and little has changed over recent months.

The following chart highlights the attractive resource grades with its significant resource position offered by the Bengwenyama project compared with its peer group. See our SPD initiation report (August 2022) for further details.



Source: Company reports

The following table highlights how inexpensive SPD is when measured on an enterprise value/resource ounce. We acknowledge that a valuation rule of thumb such as this provide a very approximate guide to the ultimate valuation of a mineral deposit. However, it has proved to be a good identifier of under-priced (and over-priced) equity exposures, especially in the gold sector.

Company	Exchange/Ticker	Mkt Cap (A$,M)	Cash (A$,M)	Total Debt (A$,M)	Enterprise Value (A$,M)	Attributable Resource (4PGE,Moz)	Grade (4PGE,g/t)	Enterprise Value (A$)/Resource Oz
EASTERN PLATINUM LTD	JSE:EPS	$22.9	$1.7	$1.1	$22.3	62.5	2.2	$0.4
SOUTHERN PALLADIUM LTD (EXPLORATION TARGET)	ASX:SPD	$71.8	$15.9	$0.0	$55.9	23.1	4.3	$2.4
SOUTHERN PALLADIUM LTD	ASX:SPD	$71.8	$15.9	$0.0	$55.9	13.2	4.1	$4.2
PALLADIUM ONE MINING INC	TSX:PDM	$28.9	$14.2	$0.0	$14.7	2.2	1.3	$6.7
FUTURE METALS NL	ASX:FME	$39.9	$5.8	$0.0	$34.1	5.0	1.2	$6.8
PLATINUM GROUP METALS LTD	TSX:PTM	$236.1	$17.5	$0.1	$218.7	16.7	3.4	$13.1
PODIUM MINERALS LTD	ASX:POD	$43.8	$5.1	$0.0	$38.6	2.7	1.6	$14.1
BRAVO MINING CORP	TSX:BRVO	$245.5	$46.1	$0.0	$199.4	5.7	1.2	$35.2
WESIZWE PLATINUM LTD	JSE:WEZ	$139.2	$34.3	$863.5	$968.4	13.8	4.9	$70.2
CHALICE MINING LTD	ASX:CHN	$2,473.3	$120.5	$0.0	$2,352.8	10.0	0.9	$235.3
GALILEO MINING LTD	ASX:GAL	$181.8	$23.5	$0.0	$158.3	-	-	-
CASPIN RESOURCES LTD	ASX:CPN	$45.3	$1.6	$0.0	$43.7	-	-	-

Data as at close of market 23/01/2023
** Caspin Resources IPO 25 November 2020 @ A20c*
** Southern Palladium IPO 8 June 2022 @ A50c*
** Bravo Mining Corp IPO 25 July 2022 @ CAD 1.75, Resource is estimate and Non-JORC*

We remain unconvinced that any of the Australian exploration/pre-development projects will see the light of day within the next 3-5 years (Chalice's Julimar project included). Chalice in our mind is plainly overvalued, and does not discount the very real metallurgical and marketing risk associated with Julimar. We also have doubts about the future of PTM's Waterberg project, which seems to be struggling to attract capital. Yet PTM ounces trade at 4 times SPD ounces in the ground.

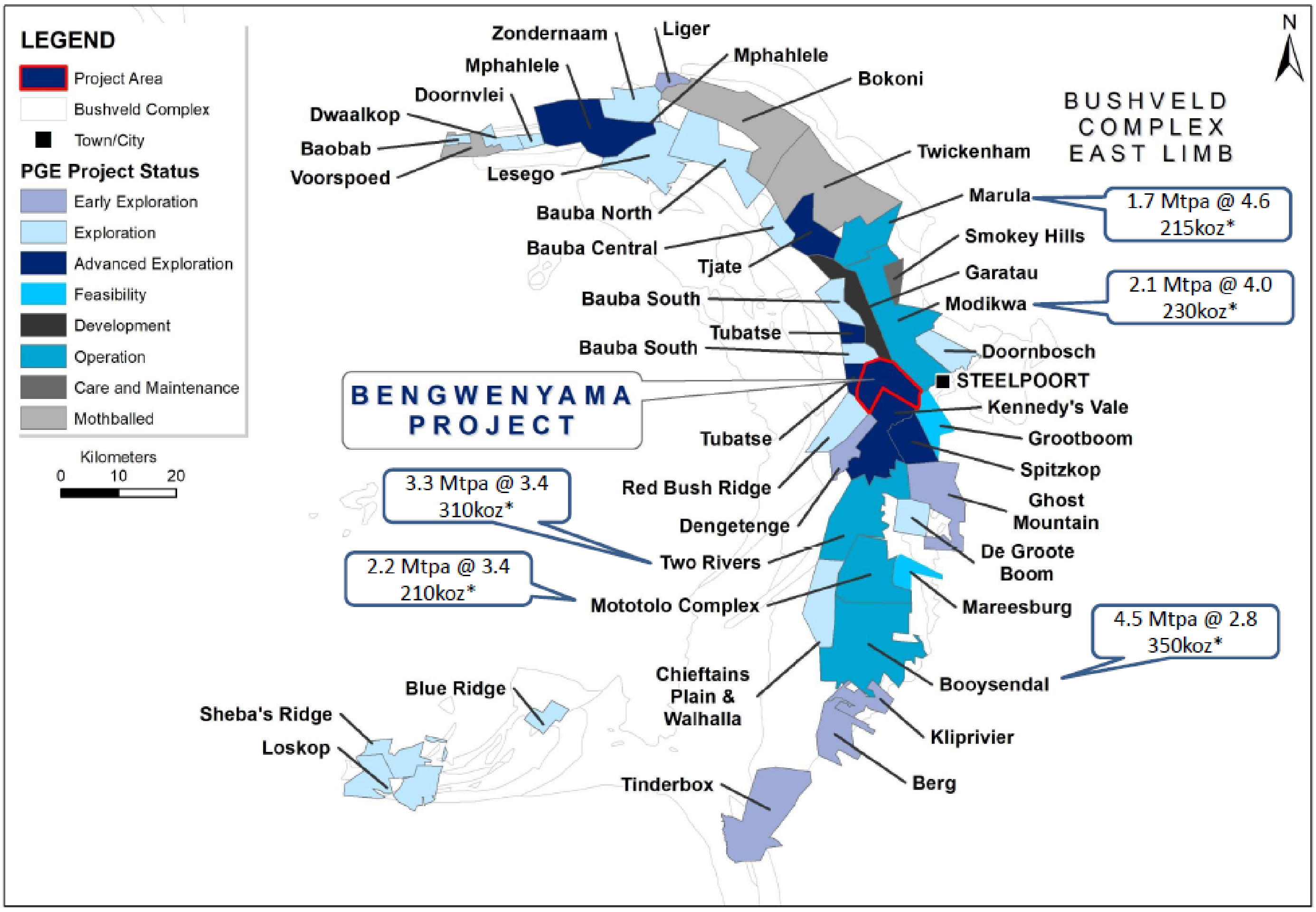
Please see our August 2022 report for further comparative analysis.

We are greatly encouraged that the SPD board has decided to accelerate studies leading to a full economic appraisal of the project and to consider an early application for a Mining Right (note that a BFS is not required for an MRA – just an operational plan). Given the proximity of Bengwenyama to other Tier 1 projects, we find it hard to imagine that there are major risks associated with the likes of metallurgy and environmental issues. In our view it is down to the rocks themselves and the current drilling programme establishing the mine-ability of the deposit.

It's possible we may see first production from Bengwenyama sometime in 2027, but we await projections from SPD.

Our view remains unchanged. At the current share price, we consider SPD to represent exceptional value. On-going re-rating should accompany the completion of the 2022/23 drilling programme, an updated resource statement, which should then lead to the compilation of a publishable PFS, the start of a BFS, the granting of a Mining Right, and then towards production.

Appendix 1. Location of key PGM mines on the BIC Eastern Limb



Note: *Typical 4E oz in concentrate after considering plant recovery of 85%-87%

Source: SPD IPO presentation

Note: Individual mine production numbers are approximate only

Appendix 2. Bengwenyama Capex and Opex Assumptions

Capital cost estimate

Capital costs represent one of the greatest uncertainties in this evaluation. There have been few recent developments in the PGM industry for mines of this scale. The following comparatives have been used in deriving our capex estimate:

- **Mototolo/Der Brochen** brownfields development. In late 2021, Amplats gave the go-ahead for the Der Brochen development to extend the mine life of the Mototolo complex for a further 30 years. Capex is estimated at US$245m for a 2.9Mtpa underground production rate, roughly twice our assumed production rate from Bengwenyama. Amplats provides no detail here, but we guess the bulk of the capex will be directed at the new Der Brochen underground with some capital applied to updating the Mototolo concentrator. On this basis we would expect the Bengwenyama underground pre-production capex to perhaps be around the US$140-150m mark.
- **Platinum Group Metals' Waterberg project.** PTM's Waterberg project has been controversial, to say the least. With proposed production rates ramping up to around 400,000t/month (4.8Mtpa) from a multiple mine complex on the Northern Limb's Platreef, pre-production capex was estimated to be over US$1bn. Of this some $400m was attributed to mine development, and given the need for multiple mine entries, it's not surprising capital intensity is higher than that for Der Brochen. Again, our US$140-150m capex for the Bengwenyama mine seems to be of the right order of magnitude. PTM estimated capital cost for a 4.8Mtpa concentrator was US$172m. We feel comfortable with a number around the US$120m mark for a plant one-third the size and hold some reservations that PTM can build a concentrator of that size for under US$200m.
- **Ivanhoe Mines/Platreef development.** In early 2022 Ivanhoe Mines (IVN:TSX) released its final feasibility study. The Platreef 2022 feasibility is a phased development based on continued development and earlier production from Shaft 1 which starts with a modest 770ktpa production (2024–2027) and then two 2.2Mtpa concentrator streams will be added in 2028 and 2030, increasing the production rate to 5.2 Mtpa. During Phase 1 the main access to the mine will be via a 996m deep, 7.25m diameter ventilation shaft (Shaft 1). Development will be commenced around Shaft 1 via the principal access/ haulage levels (the 750m, 850m, and 950m) and a series of interconnecting ramps. Shaft 1 was completed mid-2020 and development towards the so-called Flatreef orebodies has commenced. Capital cost estimates for the first phase development are instructive:
    - Mine development cost, including a ca. 1km deep shaft. Capex estimate US$195m. This makes our $140-150m estimate for Bengwenyama look quite conservative.
    - Concentrator cost. Capex estimate for a 770ktpa concentrator plus tailings facility is US$73m. Scaling this to 1.6Mtpa, we again feel quite comfortable with our estimate of US$160m.
    - Total capital cost for Stage 1: The 2022 estimates capex for Stage 1 at US$488m for a modest 770ktpa mine/mill throughput. We believe that the Bengwenyama project could offer significant savings in mining and infrastructure costs (Platreef is quite remote). In this context we are quite comfortable with a US$450m capex estimate.

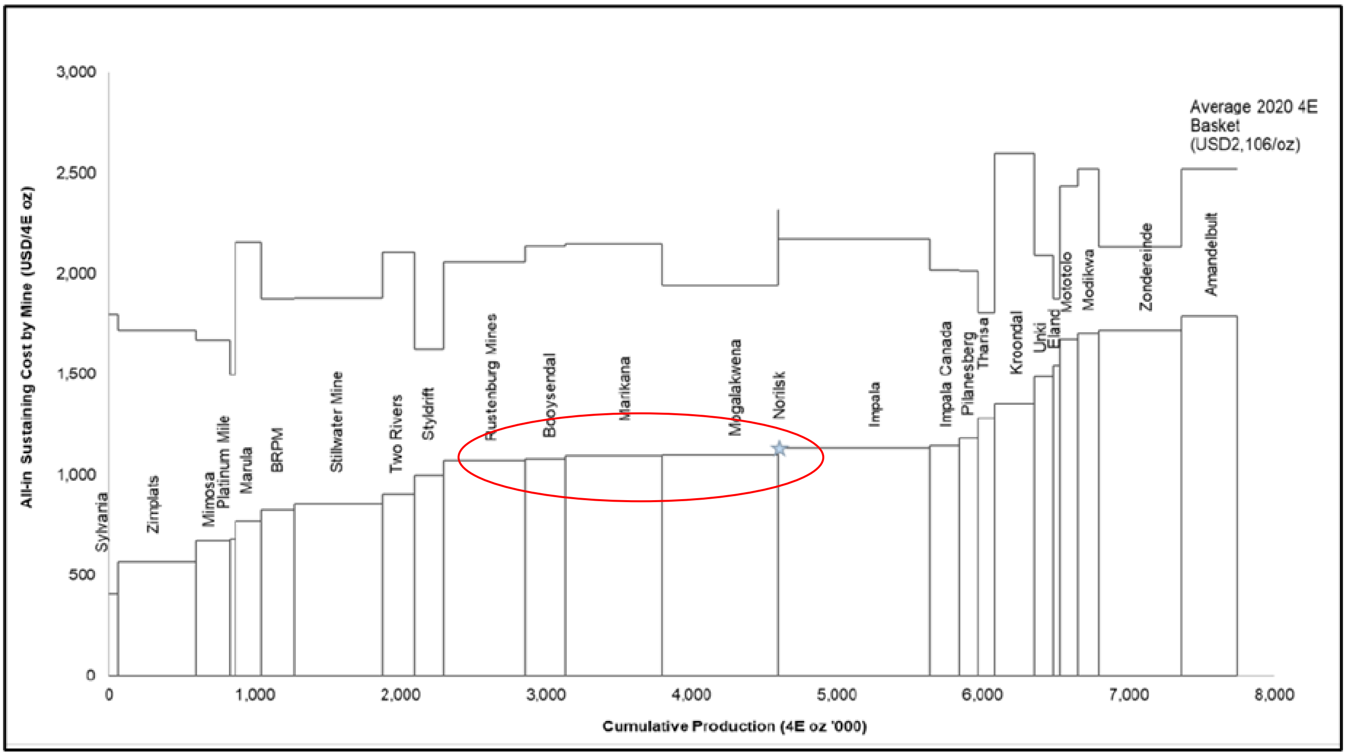
  It is worth noting that the total capex bill for the total Platreef development is estimated in the 2022 DFS at US$2.9Bn.

	US$m
Mining, pre-production	150
Concentrator	120
Tailing storage facility	40
Infrastructure	50
Management costs	25
Other costs	25
SUB-TOTAL	410
Contingency (10%)	41
TOTAL	451

Source: BSCP estimates

Operating cost assumption

For this preliminary assessment we have assumed all-in sustaining costs (AISC) of US$1,100/oz at full life of mine production rates. This would put the mine mid-curve on the 2020 cost curve (the latest we have available). Given relatively high grades and access from near surface we think this is easily defendable and could be quite conservative.



Appendix 3. Conceptual Development model for the Bengwenyama project

It must be stressed that the following assumptions and forecasts are conceptual in nature, and as discussed in the text, are based around benchmarking capex against comparable projects and opex against the existing cost curve.

The model is prepared in real terms, and does not take into account South African cost inflation. Given South Africa is such a large producer of PGMs, we believe that over the long term cost pressures will ultimately filter through to pricing.

Production year (20 years assumed)		**-1**	**0**	**1**	**2**	**3**	**4**	**5**
		2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Prices (US$/oz)								
Platinum			1000	1000	1000	1000	1000	1000
Palladium			1500	1500	1500	1500	1500	1500
Rhodium			14000	14000	14000	14000	14000	14000
Gold			1750	1750	1750	1750	1750	1750
Chrome (42% bulk, FOB)			200	200	200	200	200	200
Production								
Production rate (monthly)	Kt			0	60	120	160	160
Production rate (annual)	Kt			0	720	1440	1920	1920
Mined grade	g/t			0.0	4.0	4.6	4.6	4.6
Processed tonnes	kt			0	720	1440	1920	1920
Milled grade	g/t			0.0	4.0	4.6	4.6	4.6
Prill split	*%*							
Platinum				*44%*	*44%*	*44%*	*44%*	*44%*
Palladium				*44%*	*44%*	*44%*	*44%*	*44%*
Rhodium				*10%*	*10%*	*10%*	*10%*	*10%*
Gold				*2%*	*2%*	*2%*	*2%*	*2%*
Met recoveries	%			80%	80%	85%	85%	85%
Metal production								
Platinum	Koz			0.0	32.6	79.7	106.2	106.2
Palladium	Koz			0.0	32.6	79.7	106.2	106.2
Rhodium	Koz			0.0	7.4	18.1	24.1	24.1
Gold	Koz			0.0	1.5	3.6	4.8	4.8
Total	Koz (4E)			0.0	74.1	181.0	241.4	241.4
Payability	%			0%	85%	85%	85%	85%
Chrome production	Ktpa			-	40	98	130	130
Revenue	US$m							
Platinum				0.0	32.6	79.7	106.2	106.2
Palladium				0.0	48.9	119.5	159.3	159.3
Rhodium				0.0	103.7	253.5	337.9	337.9
Gold				0.0	2.6	6.3	8.4	8.4
Total, after payabilities				0.0	159.6	390.1	520.1	520.1
Minor PGMs (2% of PGM revenue)				0.0	3.2	7.8	10.4	10.4
Chrome				0.0	8.0	19.5	26.0	26.0
Total revenue				0.0	170.8	417.4	556.5	556.5
Minor PGMs + Cr as a % of total revenue					*7%*	*7%*	*7%*	*7%*
Royalty				5%	5%	5%	5%	5%
Revenue net of royalty				0.0	162.3	396.5	528.7	528.7
Revenue	US$/oz (4E)			0	2190	2190	2190	2190
Cash costs (AISC basis)	US$/oz (4E)			0	1800	1650	1450	1100
	US$m			0	133	299	350	266
Margin	US$/oz (4E)			0	390	540	740	1090
EBITDA	US$m			0.0	28.9	97.8	178.7	263.2
D&A	US$m			0.0	30.0	30.0	30.0	30.0
EBIT	US$m			0.0	-1.1	67.8	148.7	233.2
Interest	US$m			0.0	0.0	0.0	0.0	0.0
EBT	US$m			0.0	-1.1	67.8	148.7	233.2
Tax	US$m			0.0	0.0	0.0	0.0	32.0
NPAT	US$m			0.0	-1.1	67.8	148.7	201.2
Cashflow, after tax				0.0	28.9	97.8	178.7	231.2
Capital		-50.0	-150.0	-150.0	-100.0			
Sustaining capital (included in costs)				0.0	0.0	0.0	0.0	0.0
Net cashflow		-50.0	-150.0	-150.0	-71.1	97.8	178.7	231.2

Source: BSCP estimates

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