

Southern Palladium Ltd (ASX:SPD, JSE:SDL A\$1.84/sh. Market cap A\$230m)

Game changing results from Bengwenyama's DFS metallurgical test work

Hike in chrome production results in a +20% increase to our valuation

- SPD has released initial results from metallurgical test work on the 160kg bulk sample collected earlier in the year. The company's met consultants, RM Process (Pty) Ltd, are the 'go to' experts in the field and as we learned on our Indaba trip to South Africa, have been working with the PGM industry to optimise the extraction of valuable chromite from the UG2 (and other chrome-rich seams) within the Bushveld. In all these results continue to reinforce our view that the UG2 deposit at Bengwenyama is one of the real jewels in the Bushveld. And it seems to be getting better.
- The key initial outcomes from the DFS metallurgical studies have concluded as follows:
 - **By-product chromite recoveries have more than doubled and are now up to 65%** (against 30% assumed in the PFS). This will have a material impact on revenues with the forecast chrome production levels potentially to move to over 400ktpa. This is far higher than our previous estimates (which used numbers from the scoping study) and has resulted in a significant uplift to our valuation. With chromite prices now around US\$250-300/t this will add significantly to revenues.
 - **The use of dense media separation (DMS)** will result in the rejection of up to 31% of lower density waste and see mill feed grades increase significantly (from ~5g/t to ~7g/t, 3E basis*). This may allow a wider mining section underground, which will be beneficial to the mine planners.
 - This could result in a **smaller mill/flotation circuit** for the equivalent PGM production, thereby reducing capex and possibly opex.
- The impact of a reconfigured process flowsheet on the project's valuation must await a new resource and reserve estimates (following completion of drilling) and final flowsheet design.
- We have now incorporated what we think is a conservative 57% chromite recovery in our modelling but have not altered our PGM grade/mill throughput/PGM production assumptions which may change with the use of DMS technology. Bengwenyama seems likely to become a significant chromite producer which could provide the basis for offtake financing or a streaming deal.
- **Our after-tax project valuation has increased significantly, from US\$1.48bn to \$1.81bn (up 22%). This translates to a conceptual after tax NPV₈ of ~A\$9.80/share (debt and equity funded).** This valuation is based on commodity price assumptions which remain at a discount to current spot (Pt US\$1700/oz vs ~\$2100 spot; Pd US\$1400/oz vs ~\$1600 spot. Rh remains at around \$10,000/oz, against our assumptions of \$8000/oz. We have assumed US\$250/t for chromite).
- Note that our valuation doesn't include anything for a redesigned process plant nor for early tonnes/toll milling options as has been flagged by SPD. We have attributed no value for the residual +30 million UG2 resources ounces and only nominal value for the 15Moz PGM ounces in the overlying Merensky reef.
- **We believe SPD's market capitalisation will continue to rerate as critical hurdles are passed, most notably the granting of the Bengwenyama Mining Right, which is due shortly. SPD states that "all conditions under Section 23 of the Mineral and Petroleum Resources Development Act of 2002 for the granting of the Mining Right are now fulfilled." We also await details of the chemistry of the UG2 concentrate (which will allow offtake discussions to commence), a new resource model and the DFS with a new reserve statement, due in 2H26.**

[*Note, SPD's consultants report grades on a 3E basis, Pt, Pd and Au. Rh is not included in these studies, but it (and other minor PGMs) will be an important contributor to future revenues.]

DFS Metallurgical Test Work

The recently released test work is highly material to the Bengwenyama project. It really does demonstrate that Bengwenyama is one of the most attractive greenfields projects globally.

Potential doubling of chromite recoveries – production could be >400ktpa for Stage 1.

The PFS and OPFS were focussed on the PGM component of the project, for obvious reasons. There has been little reported about chrome production in these comprised only 12% of projected revenues. We had been working off numbers quoted in the early scoping study of ~140ktpa at a 2Mtpa milling rate. At our PGM price assumptions this comprised around 8% of revenues, so we didn't spend much time focussed on chromite. This is a PGM project after all!

SPD has now reported the potential doubling of metallurgical chromite recoveries. Coarser milling of the ore results in met recoveries of up to 65% against 30% used in the PFS. The clue to new production projections is in the JORC Table 1 from the recent release which demonstrates that annualised production ranges from ~300kt (47% recovery) to ~430kt (66% recovery).

20% <75 µm (High Grade Cr ₂ O ₃ /PGM or Primary Circuit)				
No	Stream Name	Mass (tons)	Cr ₂ O ₃ Grade (%)	Cr ₂ O ₃ Recovery (%)
1	Feed	100.0	21.7	100.0
3	DMS Floats	26.2	1.2	1.4
4 (2)	Primary Ball Discharge	73.8	29.0	98.6
5	Primary Float Feed (<150 µm)	22.4	23.4	24.1
8	Coarse Spiral Feed (>150 µm)	51.5	31.6	75.0
10	Spiral Circuit Concentrate	36.0	39.6	65.7
11	Spiral Circuit Tailings	15.4	13.0	9.2
		100.0	21.8	100.4
5+11	PGM Float Feed	37.8	19.1	33.2
The results from the Batch 2 test were that the coarse or primary chromite recovery was 46.4% with a chromite grade of 39.5%. The table below indicates the Batch 2 test data.				
40% <75 µm (High Grade Cr ₂ O ₃ /PGM or Primary Circuit)				
No	Stream Name	Mass (tons)	Cr ₂ O ₃ Grade (%)	Cr ₂ O ₃ Recovery (%)
1	Feed	100.0	21.7	100.0
3	DMS Floats	26.2	1.2	1.4
4 (2)	Primary Ball Discharge	73.8	29.0	98.6
5	Primary Float Feed (<150 µm)	37.3	26.1	44.9
8	Coarse Spiral Feed (>150 µm)	36.5	31.9	53.7
10	Spiral Circuit Concentrate	25.7	39.5	46.6
11	Spiral Circuit Tailings	10.9	14.1	7.5
		100.0	21.7	100.4
5+11	PGM Float Feed	48.2	23.4	52.4

Source: SPD announcement

[The results above show that 36t of chrome concentrate – “spiral circuit concentrate” – can be produced from 100t of feed at a grade of around 40% Cr₂O₃. This represents met recoveries of around 66% and is a ‘best case’ based on a relatively coarse grind. So, at a mill throughput at of 1.2mtpa this represents chromite production of 432ktpa.]

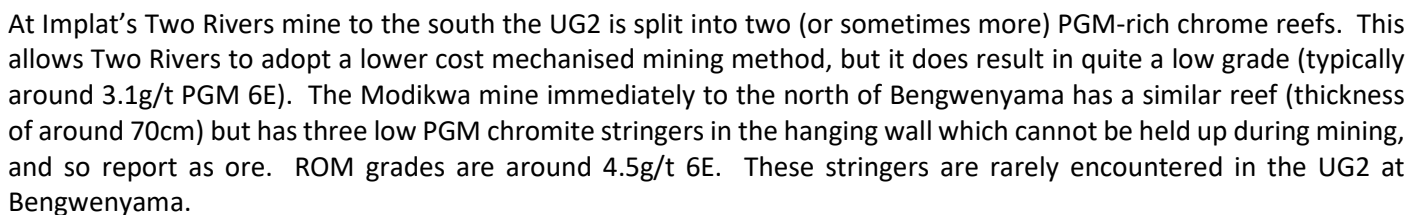
As well SPD's consultants note that a coarser grind size reduces chromite fines and reduces the risk of chrome contamination in the PGM concentrate.

Moreover, chromite fines are potentially saleable and are not included in the above numbers. Sounds like chromite into China a pretty good business. And we have a lot to learn! (Chromite 101 is presented in Appendix 1).

In the absence of further information – which will likely be published with the final met report due in a few months– we have decided to incorporate a more conservative 57% met recovery for chromite (the average of the two recovery estimates quoted above) This has translated to production rates of around 300ktpa chromite, significantly higher

On our assumptions chromite is then a 20% contributor to revenue (at US\$250/t chromite price). Our NPV₈ for the project as a result increases 27% from ~US\$1.5bn to \$1.8bn. Impressive numbers.

To understand the implications of some of the recent test work it helps to understand the nature of the UG2 reef itself and how it differs from occurrences in mines to the north and south of Bengwenyama. The following slide was made available to us during our recent site visit.



The Bengwenyama mining section is now likely to focus on the main reef itself, but cutting into the “pegmatoidal unit” in the footwall. In 25% of the deposit (and much of the early ore) the UG2 footwall dilution carries low grade PGMs (around 0.4-0.6g/t) and quite possibly additional chromite. The UG2 grade assumed in the PFS reserves is 6.17g/t (6E). We understand the mining cut will still be in the range of 0.9-1m. This will be a key outcome from the DFS.

The initial break-through from the current test work is the use of dense media separation (DMS) of crushed ore prior to it entering the milling and flotation section. The DMS units are typically heavy-duty cyclones using ferrosilicon as the dense media. These are able to split the dense chromite (together with the PGMs) from the less dense silicate waste material.

This is very much conventional technology and is analogous to coal washing where lower density coal is separated from higher density waste rock. We understand DMS is used successfully in the platinum industry notably at Sibanye Stillwater's two Kroondaal plants on the Western Limb.

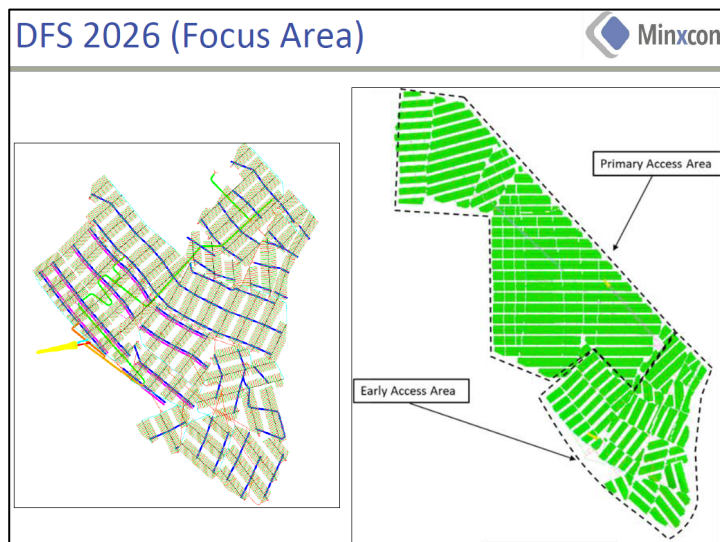
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of the feed grade from ~5.1-5.5g/t to ~7.1-7.3g/t. So, in theory this will require ca. 30% less milling and flotation capacity to produce the same (or similar) PGM production levels. This in turn may translate to lower capex for the back end of the plant, offset by the cost of the DMS plant itself. Cash costs may be lower as well.

There is not enough information as yet to incorporate these benefits into our valuation for the project. The full details will be available in the DFS due for completion in the second half of 2026.

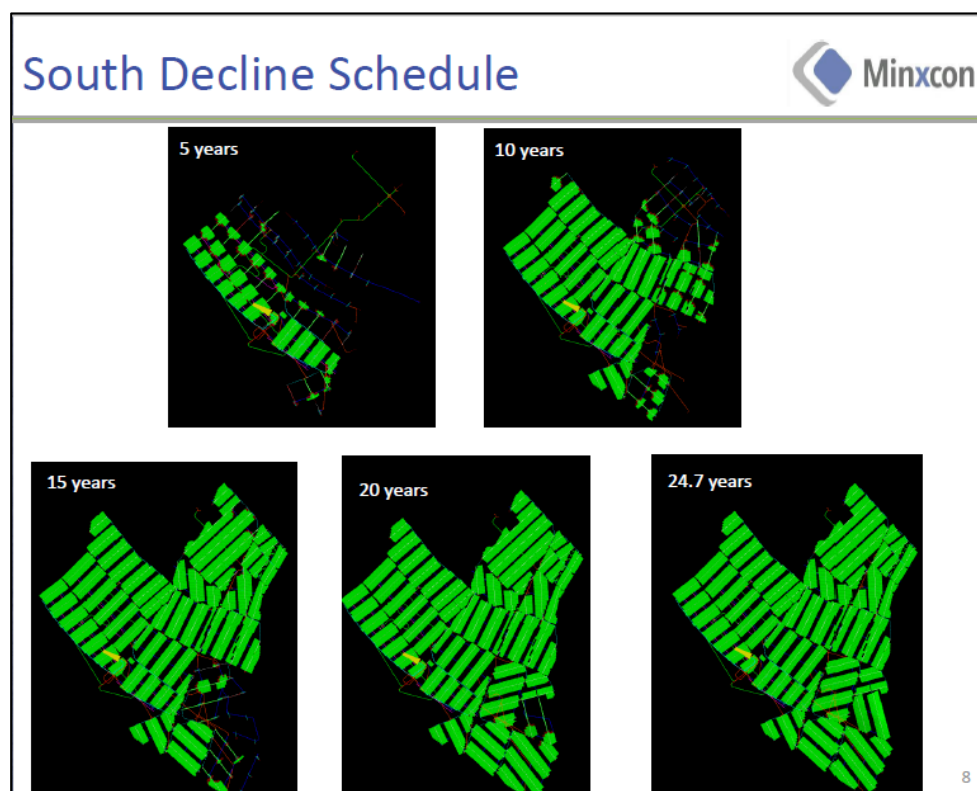
Mine design – well advanced

On our recent site visit we learned that mine planning for Stage 1 of the project is well advanced.



This slide summarises the current mine plan for the entire of the mineral reserve and includes a proportion of resources. The “early access area” – the location of the South Decline – is highlighted.

The consultants also provided a more detailed mine plan over time, which demonstrates the initial tonnages emerging from the SW section of the orebody from an initial depth of around 80m.



As a caveat, these plans pre-date the current drill-out of the near-surface ore. This drilling is nearing completion and will be incorporated in a new resource model and then a new reserve statement.

Valuation

In our last report we announced that we'd increased our post tax NPV₈ with a new commodity price deck. (We lifted our long-term platinum price assumption from US\$1300 to \$1700/oz, palladium from US\$1200/oz to \$1400/oz and rhodium from US\$7500/oz to \$8000/oz. We also assumed a stronger South African Rand (+11% against the US\$).

We have further increased our project NPV₈ by around 22% with the incorporation of additional chromite sales. Our project NPV₈ is now US\$1.88bn.

But what might this be worth to SPD shareholders? As with past estimates we continue to assume 50% of the project will be funded by debt, 50% by equity. We assume SPD retains a full 70% equity in the project, with some A\$230m in equity raised to fund Stage 1 of the project, supplementing around A\$200m in debt. The recent market correction has resulted in a higher cost of equity. We now use \$1.67/share, a 10% discount to the recent close to fund a A\$230m equity raise at FID. Our conceptual valuation (and we stress conceptual) is now A\$9.80/share.

Note in this valuation there is no incremental value for:

- “Early tonnes” with the potential commencement of a decline sink in 3Q26.
- The possibility of toll milling/ore sales.
- The impact of an up-front DMS circuit and with it potential capital cost reductions of the milling/flotation sections of the plan.
- The use of chromite stream funding.
- The residual +30 million UG2 resources ounces.

We have incorporated a nominal value only for the 15 million PGM ounces in the overlying Merensky reef (~21c/share).

Southern Palladium, conceptual valuation			
Bengwenyama (NPV8), post tax, 100% equity	A\$m	\$2,586.97	US\$1,810m
Bengwenyama (NPV8), post tax, 70% equity	A\$m	\$2,123.27	Community's 30% 'carry' recovered over 10 years
Add back capex (70%)	A\$m	\$400.00	
Bengwenyama (NPV8), unfunded, 70% share	A\$m	\$2,523.27	Unfunded NPV
Project debt, 100% basis	A\$m	-\$200.00	50% debt/capex, SPD to fund 100% of debt
NPV less debt	A\$m	\$2,323.27	
Current ownership	A\$m	70%	
Implied SPD equity	A\$m	\$2,323.27	
Cash	A\$m	\$22.60	As at Dec 25
Cash from exercise of options	A\$m	\$6.77	
PV of corporate costs	A\$m	-\$50.00	Estimate, post tax
Other exploration	A\$m	\$50.00	Nominal value for Merensky ounces
Corporate NAV	A\$m	\$2,352.64	
Number of shares	m	125.2	
Options	m	7.9	
Total shares, fully diluted		133.1	Excluding incentive rights
New equity required	A\$m	\$230.00	Estimate. Leaves \$30m in w/c.
Number of new shares	m	138.9	Issued at \$1.67/share
Total number of shares	m	264.1	
Conceptual valuation adding new cash	A\$m	\$2,582.64	
Conceptual valuation/share	A\$/share	\$9.78	

Source: BSCP estimates

Next steps

There should be plenty of news flow from SPD over the next few months:

- Granting of the Mining Right. We understand that there are no impediments and expect this in shortly (but we've been saying that for a while!). We get the impression that this delay is starting to impact on other activities and may lead to delays in completion of the DFS.
- Assays of the high and medium grade PGM concentrates, which will allow the commencement of off-take discussions with the South African smelters.
- An updated resource model.
- Further information from the metallurgical test work, including commercialisation of chromite fines.
- Finalisation of the process flow sheet.
- Completion of the DFS incorporating the use of DMS and including higher chrome recoveries (likely during 2H depending on timing of the grant of the Mining Right).

Conclusion

As we discussed in earlier reports, SPD's high grade/low cash cost Bengwenyama project is about to hit a sweet spot. The granting of a Mining Right is due shortly we believe. The company will then be positioned to complete a DFS (hopefully during 2H26) while simultaneously derisking the project with the construction of a decline to intersect the UG2 reef at around 80m depth. This should be achievable with SPD's existing cash balance and could present an even more attractive proposition for debt providers.

We are always reluctant to use our valuations as share price targets. There are too many variables at play. Nonetheless, our ~A\$9.80/share conceptual valuation (funded and after tax), is based on commodity price assumptions at discounts to current spot prices. Furthermore, we've incorporated no value for the potential for early tonnes and toll milling options, nor have we included any value for the residual +30 million UG2 resources ounces.

We believe these factors provide a robust foundation for continued share price appreciation by SPD.

Appendix 1 Chromite 101

Chromite, or iron chromium oxide (FeCr_2O_4), is the mineral source of chromium. In its purest form, chromite comprises chromium (Cr_2O_3) at 68% and iron oxide (FeO) at 32%. The majority of the world's identified economic chromite reserves are located in southern Africa (South Africa and Zimbabwe), Turkey, Kazakhstan, Oman, India and the Philippines.

Most deposits contain a range of chromite grades, including:

- Metallurgical grade (high chromium chromite, minimum 40% Cr_2O_3)
- Chemical grade (high iron chromite, 46% Cr_2O_3)
- Foundry grade (low silica chromite, 45% Cr_2O_3)
- Refractory grade (high aluminium chromite, 46% Cr_2O_3)

Global chromite production was estimated to be 51 million tonnes in 2025, according to the US Geological Survey (USGS), while global reserves of chromite are thought to exceed 12 billion tonnes.

Most chromite is consumed in the production of ferro-chrome (of which 12.7 million tonnes was manufactured globally in 2020, according to the USGS).

Ferro-chrome is used to make steel alloys, and mainly stainless steel (75%), of which 56.3 million tonnes was produced in 2021, according to the International Stainless Steel Forum. It is also used in engineering and alloy steels (20%) and other steels (5%).

Chromite is also used directly in industrial foundry sands and refractory applications, and is converted into sodium dichromate for refinement into other chemicals and chromium metal.

Production hubs

South Africa is the world's leading chromite producer, mining an estimated 23 million tonnes in 2025, according to the USGS. Most of South Africa's chromite mines are located in the northeast of the country, in Mpumalanga Province and Northwest Province, tapping reserves that form part of the Bushveld Igneous Complex.

The second largest producers were Turkey and Kazakhstan followed by India and Finland. (Note figures in the following table from the USGS are expressed in '000 tonnes).

	Mine production		Reserves ¹³	
	2024	2025 ^e	Ore	Cr_2O_3 content
United States	—	—	8,500	630
Brazil	*1,400	2,000	3,900	1,000
Finland	1,940	1,900	63,000	16,000
India	3,370	3,000	79,000	27,000
Kazakhstan	*6,100	7,000	¹⁴ 230,000	100,000
South Africa	22,900	23,000	350,000	110,000
Turkey	9,300	9,000	27,000	5,700
Zimbabwe	1,600	2,000	140,000	78,000
Other countries	3,000	3,000	NA	NA
World total (rounded)	49,600	51,000	>1,200,000	>540,000

Demand

Over 95% of chromium consumption goes into metallurgical applications, with the balance going into non-metallurgical markets. Stainless steel production accounts for around 78% of metallurgical chromium demand (via ferrochrome).

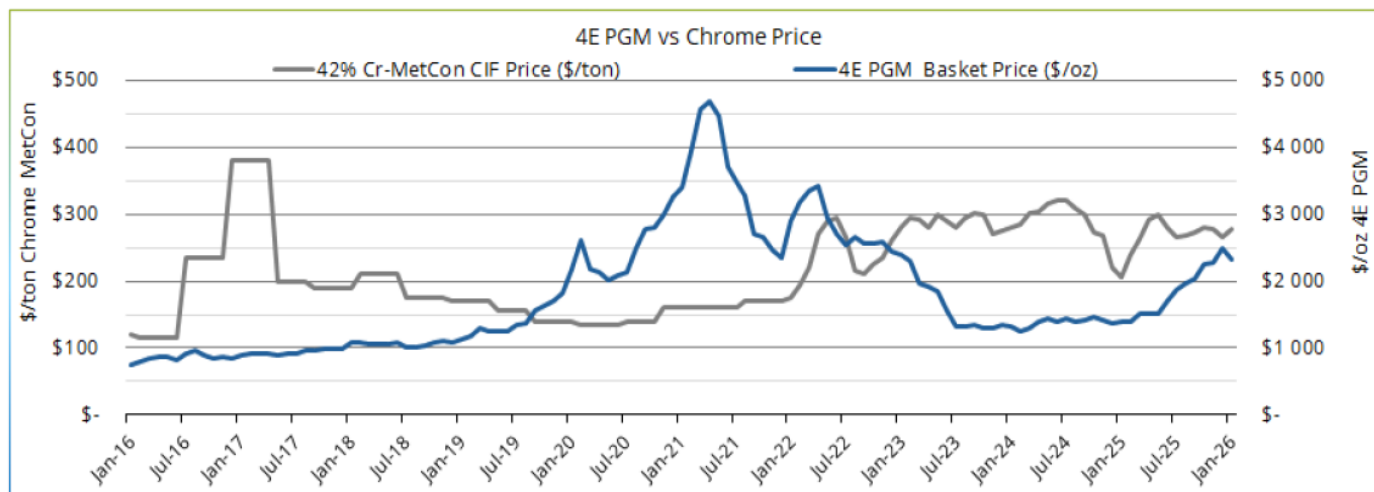
Niche chromium chemical and refined metal markets comprise around 3% of global chromium consumption, with foundry grade chromite accounting for about 2% of the market and 1% used in refractories. Chemical grade chromite is used in leather tanning, metal finishing, wood preservatives, light-stable and corrosion-inhibiting pigments, paints, coloured glass and ceramic glazes.

Foundry grade chromite is used to make foundry sand, which is in turn is used to produce manganese, carbon and alloy steel castings and non-ferrous metal castings. Refractory grade chromite is used to manufacture refractory bricks used in converters and furnaces for platinum, copper and lead production, and secondary steelmaking processes.

Pricing

The chromite producers appear to be quite secretive, in some ways comparable to the Australian iron ore industry, itself commonly described as a “cosy oligopoly”. The chromite producers appear to protect prices carefully.

The following chart – and there is very little freely available data – demonstrates the developing strength in chromite prices over the past two decades. Chromite prices are currently around US\$260-280/t (CIF). We assume US\$250/t in our analysis.



Source: Sylvania Platinum. Note the PGM basket price is for Sylvania only.

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