

Southern Palladium Ltd (ASX:SPD, JSE:SDL A\$1.36/sh. Market cap A\$180m)

Significant value-add from final DFS metallurgical test work

The final phase of metallurgical test work has delivered a further material improvement in chromite recoveries at the Bengwenyama PGM Project, with recoveries now reaching 85.6%. This compares with earlier “up to 65%” estimates and 30% recoveries assumed in the PFS. This improvement is particularly noteworthy as it has been achieved through optimisation of the process flowsheet and grind size for UG2 ore using conventional gravity and flotation technologies. This will take chromite production from under 400ktpa to around 500Ktpa for Stage 1 of the project, potentially contributing over 20% of revenues. (Stage 1+2 is estimated to produce around 1Mtpa). Bengwenyama now becomes a PGM-chromite co-product project rather than a PGM project with incidental by-product credits.

Given that chromite prices have historically been less volatile than PGM prices, and exhibit limited correlation with them, this additional revenue source has the potential to enhance both project resilience and earnings stability.

Metallurgical recoveries for the PGMs—the primary value drivers of the project—have also improved, increasing to more than 87.6%, compared with 85% assumed in the PFS. These results are a clear win-win outcome, delivering stronger recoveries for both chromite and PGMs.

What does this mean for project value? The table below summarises the steady increase in our estimated post-tax NPV₈ for Bengwenyama, from less than US\$1 billion to over US\$1.9 billion, reflecting the optimised PFS, substantially higher chromite recoveries and our updated commodity price assumptions.

Date of valuation	BSCP NPV ₈ (US\$m)	Study	Commodity price assumptions*
October 2024	742	First iteration of the PFS	1250/1250/6000/300/18
August 2025	943	Optimised PFS	1300/1200/7500/250/18.5
April 2026	1810	DFS met study #1	1700/1400/8000/250/17.5
July 2026	1933	DFS met study #2	1700/1400/8000/220/17.5
July 2026	1688	Spot prices	1630/1280/8300/220/16.33
*BSCP commodity price/FX assumptions: US\$/oz for Pt/Pd/Rh. US\$/t for chromite. FX			

Our valuation is based on production and cost assumptions from the Optimised Prefeasibility Study, adjusted to reflect the higher chromite production volumes and associated operating costs. The Definitive Feasibility Study (DFS), expected in the December quarter, will inevitably refine these assumptions. Accordingly, investors should view our estimates as our best current assessment rather than definitive project economics.

In our view, the final DFS metallurgical test work has delivered significantly greater value than we had anticipated. The key outcomes include:

- Demonstration that conventional dense medium separation (DMS) can be incorporated into the process flowsheet, with the potential to reduce both capital and operating costs.
- Chromite recoveries exceeding 85% using conventional gravity and flotation technology.
- Production of an export-grade chromite concentrate, creating the potential for streaming or prepayment arrangements to assist with project financing.
- PGM recoveries around 87%, compared with the 85% assumed in the PFS.
- Exceptionally high PGM concentrate grades (>500g/t 6E), which should support attractive offtake agreements.

Recent weakness in PGM prices has weighed on sentiment across the sector and on SPD's share price. Bengwenyama has the potential to become a long-life, low-cost operation capable of generating attractive returns through commodity price cycles. While delays in the granting of the Mining Right by South Africa's Department of Mineral and Petroleum Resources continue to act as a significant overhang on the share price, we believe the underlying value of the Bengwenyama project remains materially underappreciated by the market.

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Getting into the detail...

SPD and its consultants continue to propose a conventional processing route, but with some clever value-adding angles:

Value add #1: Use of conventional dense medium separation – potential to reduce capex and opex

- Test work on representative ore samples has demonstrated the potential for the use of dense medium separation (DMS) as a precursor to gravity and flotation concentration.
- Consultants RM Process has demonstrated that some 24-31% of low-grade waste contained within the ore can be removed with excellent PGM and chromite recoveries. This results in an increase of the PGM feed grade from ~5.2g/t to ~7.2/t (expressed on a 3E basis).
- In theory this will require ca. 30% less milling and flotation capacity to produce the same (or similar) PGM production levels. This 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. This is an elegant design.
- So what will this look like in practice? Final plant design together with capex and opex awaits finalisation of the DFS, due in the December quarter. Good chance for more positive surprises.

Value add #2: Chrome recoveries now >85% up from 30% in the PFS using conventional gravity and flotation technology.

- In the first round of met. testing SPD reported chromite met recoveries having increased from 30% (in the PFS) to 65%.
- Last week's release of final test work has delivered remarkable total chromite recoveries of over 85%. This has been achieved using a coarser grind (30% <75 microns) for the feed to the gravity circuit than had been assumed in the past. This is referred to as "interstage chromite removal". This reduces overgrinding of the chromite (fines are harder to separate) and will have the benefit of lower power consumption. A win-win. Subsequent flotation delivers over 80% recovery at 43% Cr₂O₃. Together: a total chromite recovery for this bulk sample representative of the early years of production is estimated at much improved 85.6%.
- Based on projected mill incorporating stage 1 and 2 throughput of ~2.4 Mtpa, this could deliver production of an astonishing 1Mtpa of chrome concentrate. This would position SPD as a "top 10" chromite producer in South Africa (which dominates global supply). See table below.
- Our previous estimates of chromite recovery for Stage 1 was 320ktpa and for Stages 1+2 (from 2037) was 640ktpa. We are conservatively estimating production of 450Ktpa for Stage 1 and around 950Ktpa for Stages 1+2 (against SPD's consultants estimates of 500Ktpa/1Mtpa).
- Current high grade chrome ore prices at 42% Cr content to China are ranging from US\$255 -300/tonne. We have used US\$220/t mine gate price, netting out freight costs to China.
- At this level, and based on our PGM price assumptions, chromite would then represent just over 20% of project revenues.
- As discussed below, this has seen an increase in our NPV estimate for the Bengwenyama project.

To put this into context, at ~1Mtpa chromite production (Stage 1+2) Bengwenyama would be one of the top 10 chromite producers in South Africa. South Africa is the world's largest supplier of chromite to the Chinese stainless steel industry.

	Chromite production (Kt, 2026f)
Company 1	5,200.0
Company 2	3,078.8
Company 3	2,486.7
Company 4	2,300.0
Company 5	1,800.0
Company 6	1,550.0
Company 7	1,450.0
Company 8	1,086.5
Company 9	804.9
Company 10	700.0

Source: Project Blue

Value add #3. Could a “chrome pre-pay” of premium 42% chromite concentrate assist with the funding of the project?

- The study has confirmed that a commercial grade chromite concentrate (+42% Cr₂O₃) can be produced from Bengwenyama’s UG2 reef. This should be attractive to the Chinese stainless-steel producers.
- Informal discussions we’ve had with chrome traders have suggested that a chrome stream (or pre-pay) could be negotiated in the future as a source of up-front capital for the project. At a Stage 1 production rate of say 500Ktpa (for revenue of ~US\$150mpa) there could be ample capacity to put in place a streaming deal which would provide very attractive pre-production funding for the project.
- We have not incorporated this outcome into our “per SPD” valuation, discussed below.

Value add #4. PGM recoveries now around 89% up from 85% in the PFS

- Better chromite recoveries have been enabled by relatively coarse grinding of the feed, followed by sequential gravity and flotation concentration.
- Despite this, DFS test work has demonstrated higher recoveries for the PGMs than assumed in the PFS: 87.6% against 85%.
- Again, another positive impact for our valuation.

Value add #5. Ultra-high PGM concentrate grades

- In our view there was never any doubt that Bengwenyama could produce a marketable concentrate. The UG2 reef from many mines in the Bushveld is a reliable source of PGM-rich concentrate for the smelters.
- It is now clear that the proposed Bengwenyama circuit can produce an ultra-high grade/low volume UG2 PGM concentrate which should be very attractive for third-party South African smelters. Headline concentrate grades are 444g/t on a 4E basis (a 4.4x uplift on PFS estimates) and 506g/t on a 6E basis.
- One of the very few negatives we can find in this announcement is that the Cr₂O₃ content of the concentrate is higher than the spec. required by smelters (3.2% vs 2.5%). The project’s consultants believe that chrome levels in the con can be reduced in a final cleaning circuit, thereby avoiding potential penalties. Blending with low Cr concentrate is another alternative.
- These issues will undoubtedly provide the basis for negotiation with third party smelters.
- The single most valuable disclosure between now and the DFS would be a signed offtake agreement with a Western Limb smelter.

Valuation

Our project NPV₈ is now US\$1.933bn (previously \$1.81bn up ~7%) and is based on the production outcomes from the Optimised PFS, which sees PGM production starting at around the 200kozpa level from late 2027 expanding to ~400koz from 2034. The valuation lift has largely been driven by increased chromite production, but also the slightly higher met. recoveries for the PGMs. It has been offset in our model by a modest increase in costs to allow for materials handling of the larger volume of chromite. We have also dropped our mine gate price assumption for chromite to US\$220/t to allow for freight costs to China and until we get a better understanding of pricing of UG2 chromite concentrate.

Otherwise, our commodity price assumptions remain unchanged. We use US\$1700/oz for Pt (spot is ~\$1630/oz), \$1400 for Pd (spot ~\$1280/oz) and \$8000 for Rh (spot ~\$8300/oz). Our currency assumptions are ZAR17.5 against the USD compared with spot which sits at 16.3.

Our capex assumptions remain unchanged and largely reflect those outlined in the Optimised PFS. We’d imagine there will be swings and roundabouts in the new numbers: additional capex for the DMS circuit possibly offset by lower capex for a smaller processing plant. As we said earlier in this report, these are only our estimates, which will no doubt vary from what we will see in the final DFS.

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 a price of \$1.40/share to fund a A\$230m equity raise at FID. This has contributed significant dilution compared with our last valuation where we assumed equity would be raised at \$1.67/share. Our conceptual valuation (and we stress conceptual) remains around A\$9.20/share.

Note in this valuation there is no incremental value for:

- “Early tonnes” with the potential commencement of a decline sink in 3-4Q2026.
- The possibility of toll milling/ore sales.
- The use of chromite for stream funding.
- The residual +30 million resources ounces in the UG2.

Southern Palladium, conceptual valuation			
Bengwenyama (NPV8), post tax, 100% equity	A\$m	\$2,761.41	US\$2bn
Bengwenyama (NPV8), post tax, 70% equity	A\$m	\$2,269.38	Community's 30% 'carry' recovered over 10 years
Add back capex (70%)	A\$m	\$400.00	
Bengwenyama (NPV8), unfunded, 70% share	A\$m	\$2,669.38	Unfunded NPV
Project debt, 100% basis	A\$m	-\$200.00	50% debt/capex, SPD to fund 100% of debt
NPV less debt	A\$m	\$2,469.38	
Cash	A\$m	\$25.00	Estimate
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	\$2,501.15	
Number of shares	m	132.3	
Options	m	0.8	
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	164.3	Issued at \$1.40/share
Total number of shares	m	296.6	
Conceptual valuation adding new cash	A\$m	\$2,731.15	
Conceptual valuation/share	A\$/share	\$9.21	

Source: BSCP estimates

The Mining Right

Disappointingly, no update on the status of the Mining Right. SPD continues to reassure us that it is just a matter of time. They have ticked all the boxes. South African bureaucracy moves slowly. The project is also awaiting water usage and waste removal licences. Granting of these we believe will be a formality.

Next steps

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

- Granting of the Mining Right.
- An updated resource model.
- Finalisation of the process flow sheet.
- Completion of the DFS incorporating the use of DMS and including higher chrome recoveries (in 4Q2026).
- Discussions with Western Limb smelters regarding offtake.
- Discussions with chrome traders regarding streaming/pre-pay financing.

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 (due in the December quarter this year) while simultaneously derisking the project with the construction of a decline to intersect the UG2 reef at around 80m depth. This may be achievable with SPD's existing cash balance and could present an even more attractive proposition for debt providers.

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

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