

A Financial Viability Reassessment of Deep-Sea Mining under Realistic Cost and Price Assumptions

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Analytical Approach

(1/2) This exercise aims to re-examine the financial viability of TMC's proposed deep-sea mining project in NORI-D, Clarion Clipperton Zone

Current Status

- Nauru Ocean Resources Inc. (NORI) is a subsidiary of The Metals Company, a Canadian publicly traded company specialising in deep seabed mining.
- NORI has been granted an exploration contract area within the Clarion Clipperton Zone (CCZ) an abyssal plain in the east-central Pacific Ocean, with plans to develop commercial operations in its contracted areas to extract polymetallic nodules containing high grades of manganese, nickel, copper, and cobalt.
- In particular, Area D (henceforth called NORI-D) is the area within which the most development progress has been made, **with a Pre-Feasibility Study (PFS) being released by AMC Consultants in partnership with TMC in July 2025¹.**
- This PFS is the most recent piece of economic analysis performed for the NORI-D project. It claims a **Net Present Value of \$5.5 billion** and an **Internal Rate of Return of 26.8%**.

1. Link [here](#).

(2/2) This exercise aims to re-examine the financial viability of TMC's proposed deep-sea mining project in NORI-D, Clarion Clipperton Zone

Objective of this exercise

- Deep-sea mining has never been undertaken commercially, and few studies exist on the economics of this industry.
- This study therefore aims to **examine the financial viability of deep-sea mining**, using the NORI-D project as a case study. The methodology is as follows:
 - Develop a financial model for NORI-D, using the same model inputs (eg: extraction rates, projected metal prices, capital and operating costs) as in the July 2025 PFS. By verifying that the resulting outputs (eg: total revenue, total cost, NPV, etc) are close to those stated by TMC, we strengthen the validity and trustworthiness of our model and its mechanics.
 - Create two new scenarios, the Likely and Conservative Scenarios, which edit certain inputs from the 2025 PFS. These scenarios are based on neutral and conservative views of the market and/or technical factors affecting the project (see next slide). We then examine the result of these scenarios on NORI-D's financial viability. Justification is provided for any new assumption made.
- This study is intended to present an alternative point of view to investors and stakeholders in the deep-sea mining industry, to most accurately inform future decision-making.

We begin by modelling the NORI-D project according to the 2025 PFS, then create two new scenarios with some input assumptions changed

Each scenario uses the same model but with different cost- or price- related inputs

PFS 2025 Scenario¹

- Uses the input assumptions as provided in the [2025 NORI-D PFS](#)

Goal: To verify accurate financial modelling of the project, we check that the resulting main line items are consistent with Table 19.9 of the PFS²



Likely Scenario

- Edits certain assumptions in the PFS 2025 scenario, based on assumptions which the author believes to be the most accurate.
- Relies on scientific studies to challenge certain technical, geological or chemical assumptions.
- Price or cost-related projections are neutral, based on historical averages or average benchmark, where possible.

Goal: Analyse the resulting main line items of each scenario, as well as key financial indicators (yearly Free Cash Flow, NPV, IRR), to evaluate the attractiveness of the project



Conservative Scenario

- Further edits to the Likely Scenario.
- Considers risks which the author believes to be credible, material and plausible, but not necessarily probable. These risks are applied in order to stress test the project under adverse market- or cost-related conditions.
- Price or cost-related projections are based on historical lower quartiles or benchmark “downside” prices or costs, where possible.

1. Note that this step is necessary as the financial model required to reach the key figures stated in Table 19.9 of the PFS, the project NPV, and the IRR, is not publicly available. Hence we must create our own and verify that it does indeed come to similar outputs as those given in the PFS. This gives us a suitable base from which to create new modelling scenarios.

2. Table 19.9 summarises the annual cash flows for NORI-D.

Key assumptions

The PFS uses a discount rate which vastly underestimates the risk associated with such a novel venture

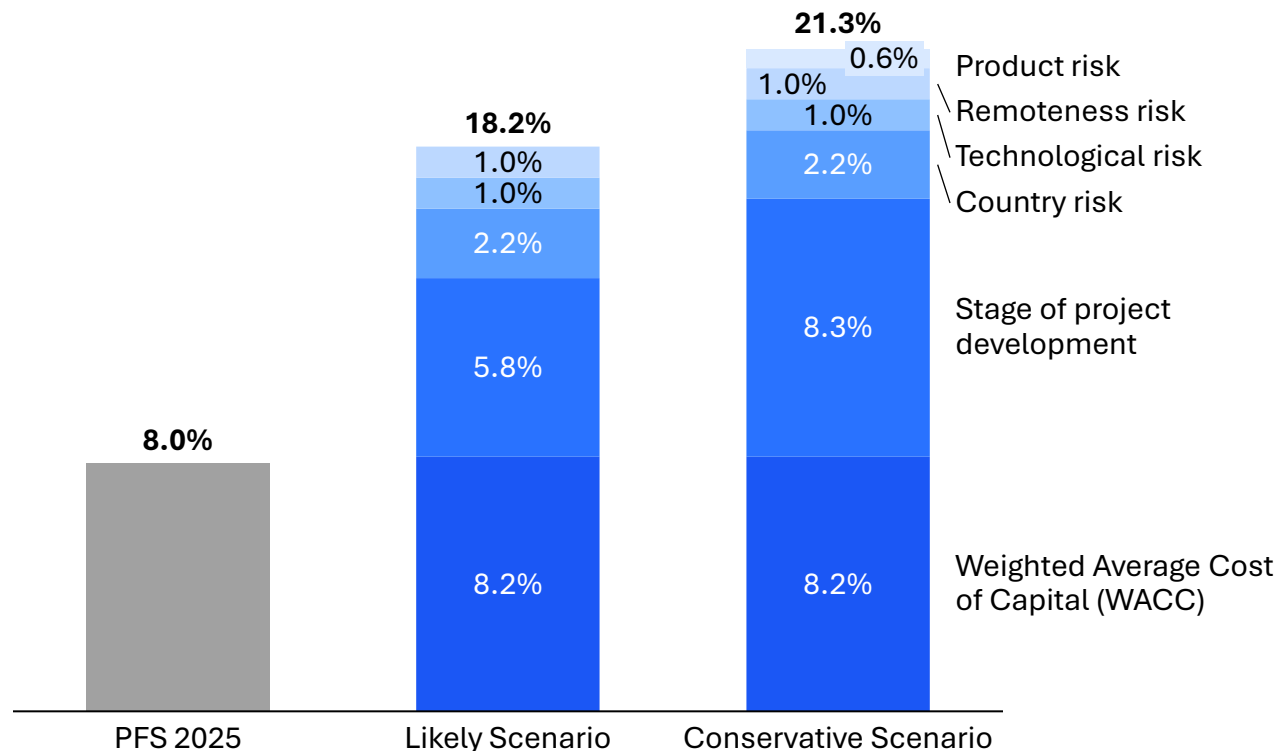
Discount rates in project finance

- Any project that generates future cash flows carries some risk: the chance that those cash flows turn out lower than expected, or do not materialise at all. To account for this, future cash flows are “discounted”, i.e. reduced by a certain percentage (**the discount rate**) each year to express their value to an investor today.
- The discount rate is therefore a modelling input that should reflect the return required by investors for committing capital to the project. This required return is captured by the project’s **cost of capital**: the return investors demand to compensate them for the risk of investing. The cost of capital therefore determines the appropriate discount rate to use in the financial model. A higher-risk project will generally have a higher cost of capital and hence a higher discount rate.
- The NORI-D 2025 PFS applies a discount rate of 8%, meaning investors would require an 8% annual return to invest in the project. For context, the average cost of capital for US businesses is 8.02%, and for US mining businesses specifically, it is 8.20% ([Damodaran, NYU, Jan 2026](#)). The **PFS therefore implicitly assumes this project carries less risk than that of a typical mining company, and roughly the same risk as the average US business across all industries.**



The Likely Scenario uses a significantly greater discount rate of 18.2%, taking into account several key risks the project is exposed to

Discount rate by scenario, broken down into risk premia



Under our approach, a project-level real discount rate is derived by starting with the company's real Weighted Average Cost of Capital (WACC) and adding incremental risk premia for specific project risks.

WACC represents the minimum return a company must generate to satisfy both its lenders and shareholders. It blends two financing costs: the cost of debt (interest paid to banks and bondholders) and the cost of equity (the return demanded by shareholders). **Therefore, the WACC sets the floor return any project must clear.**

On top of this, we add incremental risk premia for risks specific to this project. The greater those risks, the higher the premia, and the greater the return an investor would demand to take them on.

See next slide for further details on risk premia. Full methodology and sources in Annex.

Key risks factored into the new discount rate include the project's early stage, with unconfirmed mineral reserves, and a country risk stemming from operations in Indonesia

Risk	Description	Risk Premium
 Base Company Risk (WACC)	"Floor risk" taking the average US mining company cost of capital, which is already higher than the 8% discount rate applied in the PFS, despite this figure not considering any project-specific risks.	8.2%
 Project Stage	Additional risk due to the project's stage. In the Conservative Scenario, we use a risk premia which corresponds to a Scoping stage project. According to Canadian standards on mineral projects, mineral resources which are not mineral reserves do not have economic viability and hence a PFS cannot be based on mineral resources and this would not constitute a viable PFS.	Likely: 5.8% Conservative: 8.3%
 Country	As a result of significant operations in Indonesia , which carries a higher risk premium	2.2%
 Technological	The project uses a novel technology unproven at commercial scale	At least 1%
 Remoteness	The location of the project is extremely remote	At least 1%
 Product	Manganese mining projects carry a greater risk than average base metal projects.	Conservative: 0.6%
Total	Sum of all the individual sources of risk to the project's ability to achieve its promised cash flows	Likely: At least 18.2% Conservative: At least 21.3%

Two additional risks: the project's unresolved legal and political questions, and the offtake of Mn silicate into an opaque market with limited buyer depth, would increase the discount rate further

Risk	Description	Risk Premium
Total	Sum of all the individual sources of risk to the project's ability to achieve its promised cash flows (<i>previous slide</i>)	Likely: At least 18.2% Conservative: At least 21.3%

Additional risks which have not been factored into the discount rate...



Political, Legal

The project faces **significant political and legal hurdles**, for example as a result of current and future pressure on countries involved in the project whilst being signatories to the United Nations Convention on the Law of the Sea. Such countries include the Netherlands and Switzerland (Allseas' main hub and corporate headquarters), as well as Japan and Indonesia.

Not counted due to uncertainty in quantifying these premia. **Would further increase the discount rate applied.**



Offtake

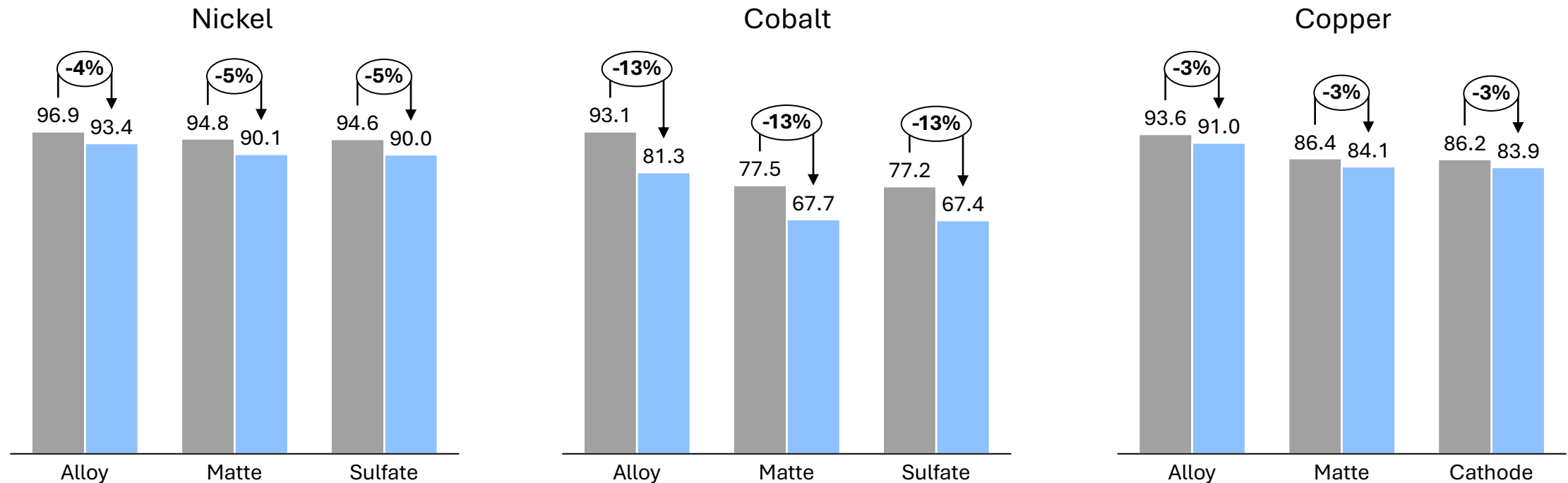
The market for manganese silicate is relatively small, illiquid, and opaque in comparison to exchange-traded commodities such as nickel, cobalt and copper, and therefore this revenue line warrants further due diligence. **The 2025 PFS concedes that suitable offtakers for this product have yet to be confirmed.** Risks also exist around the effect of oversupply on prices, with the **PFS stating that the product “could be challenging to place without impacting pricing”.**

Multiple published studies suggest that the likely recovery rates achieved would be lower than those stated in the PFS

Recovery rate per metal per scenario, % of metal in dry nodule

■ PFS

■ Likely Scenario

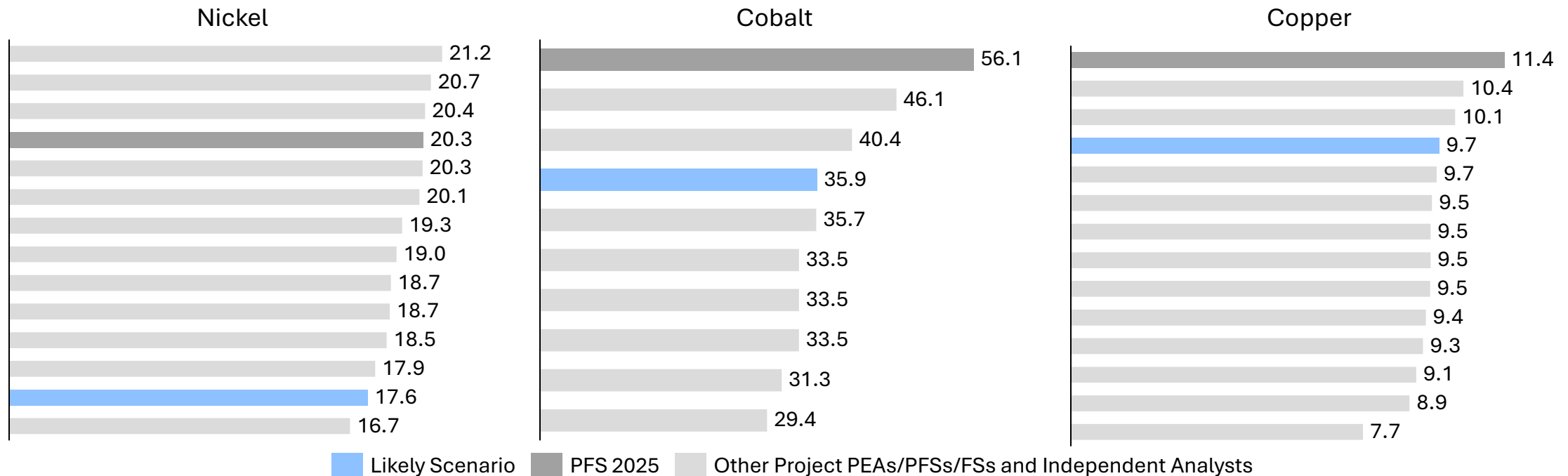


The recovery rate is the percentage of metal in the dry nodule which is remaining following conversion to alloy, matte or sulfate/cathode form. We have taken **averages from published scientific studies** to propose a new alloy recovery rate, which has a knock-on effect on matte and sulfate/cathode recoveries. Full methodology and sources in Annex.

The NORI-D PFS uses metal price projections which are significantly higher than what is seen in the market by other mining PFSs

Avg LOM metal prices, Likely Scenario vs NORI-D PFS vs other benchmarks, thousands of US\$/tonne, real 2025

The NORI-D PFS assumes prices which are at the upper end of recent market benchmarks (which are composed of other mining project PEAs, PFSs, FSs and some independent expert market views), and consistently above the Likely Scenario, which is based on a neutral view of the market (using forward curves blended with the 4-year historical trailing median price).



See Annex for sources. All sources and project scoping studies, PFSs and FSs used as benchmarks are public. Benchmark reports are all from September 2023 or later.

Proposed contingency costs are below typical mining project cost overruns, with this risk exacerbated by the project's first-of-a-kind nature

New capital and operating cost assumptions

	PFS 2025	Likely Scenario	Conservative Scenario
Operating Cost Contingency, % of op costs	2%	2%	16%
Capital Cost Contingency, % of System 1 & US Refinery CAPEX	15%	26%	43%
MGO Fuel Cost, US\$/tonne, real 2025	\$700	\$767	\$894

We have researched typical contingencies used in mining project PFSs and average and downside cost overruns to estimate the % contingency to apply to the Likely and Conservative Scenarios.

The capital cost contingency has the greatest effect on project economics. Moreover, whilst we used recognised mining studies/surveys to estimate cost overruns in the Likely and Conservative Scenarios, other studies (eg: [McKinsey, 2024](#)) suggest that megaproject cost overruns can be even greater (at least 79% higher).

The Marine Gas Oil (MGO) price has also been adjusted in the Likely and Conservative Scenarios. These new prices are based, respectively, on a 3-year rolling median and upper quartile of the midpoint between the Los Angeles and Singapore MGO prices.

See Annex for full methodologies and sources.

Summary of changes made in each scenario (1/2)

Input Variable	PFS 2025	Likely Scenario	Conservative Scenario
Discount Rate	8%	18.2%	21.3%
Nickel Grade	1.40%	- ¹	1.28%
Cobalt Grade	0.14%	-	0.12%
Manganese Grade	31.15%	-	30.58%
Nickel Recovery to Alloy	96.91%	93.38%	-
Nickel Recovery to Matte	94.76%	90.13%	-
Cobalt Recovery to Alloy	93.06%	81.25%	-
Copper Recovery to Alloy	93.55%	91.00%	-
Nodule Production – Total (Mwtpa)	164.1	152.9 ²	145.3 ³
Nickel Price (US\$/tonne) ⁴	20,295	17,580	16,091
Nickel Sulfate Premium ⁴	7.0%	-	1.2%
Cobalt Price (US\$/tonne) ⁴	56,117	35,851	29,083

1. “ – ” indicates the assumption is unchanged from the previous scenario (to its left). 2. Adjustment for new nodule collector ramp-up schedule (see page in Annex). 3. Adjustment for risk of lower production due to lower nodule abundance (see page in Annex). 4. Average LOM prices, see slides in Annex for yearly price projections.

Summary of changes made in each scenario (2/2)

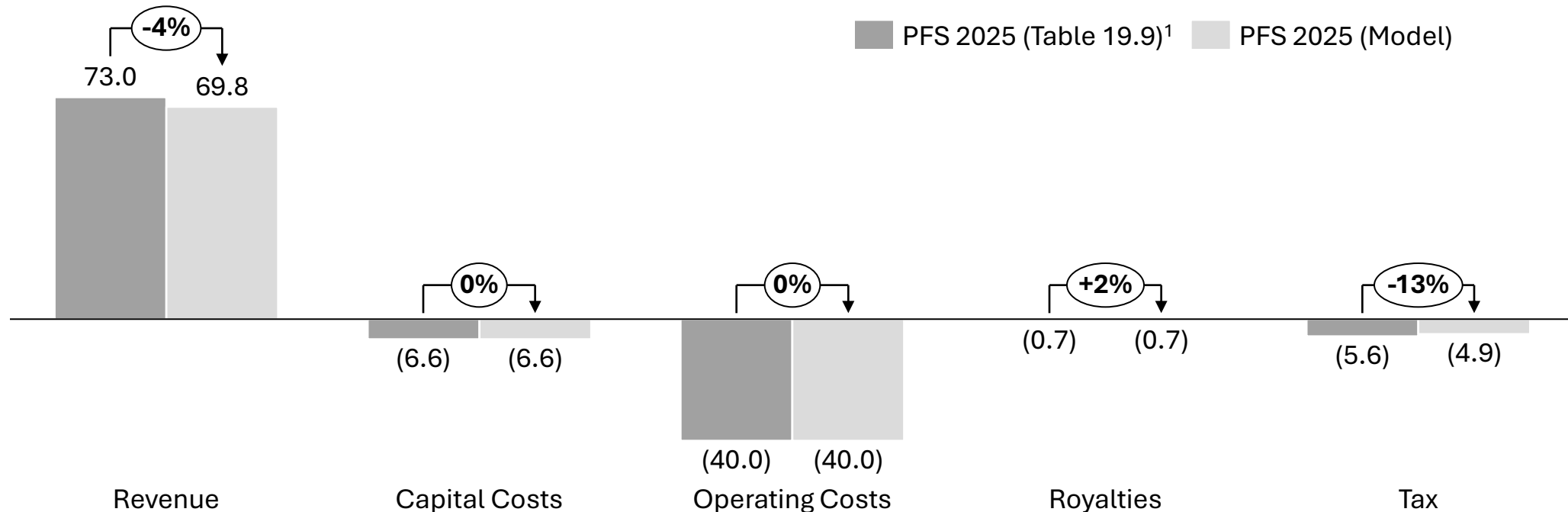
Input Variable	PFS 2025	Likely Scenario	Conservative Scenario
Copper Price (US\$/tonne) ²	11,440	9,721	9,305
Manganese Silicate Price (US\$/dmu) ²	5.46	5.06	4.05
Nickel Alloy Payability	65.00%	- ¹	52.00%
Cobalt Alloy Payability	42.00%	-	33.60%
Copper Alloy Payability	59.98%	-	47.98%
Capital Cost Contingency	15%	26%	43%
Operating Cost Contingency	2%	2%	16%
MGO Fuel Price (US\$/tonne)	\$700	\$767	\$894
US Royalty (% of revenues)	None	-	4.4%

1. “-” indicates the assumption is unchanged from the previous scenario (to its left). 2. Average LOM prices, see slides in Annex for yearly price projections.

Results

The key line items of our replica model of the 2025 PFS are close to those in the PFS' own cash flow table, confirming our model's reliability

Key cash flow line items, NORI-D PFS versus our replica model², billions of US\$, real 2025 dollars

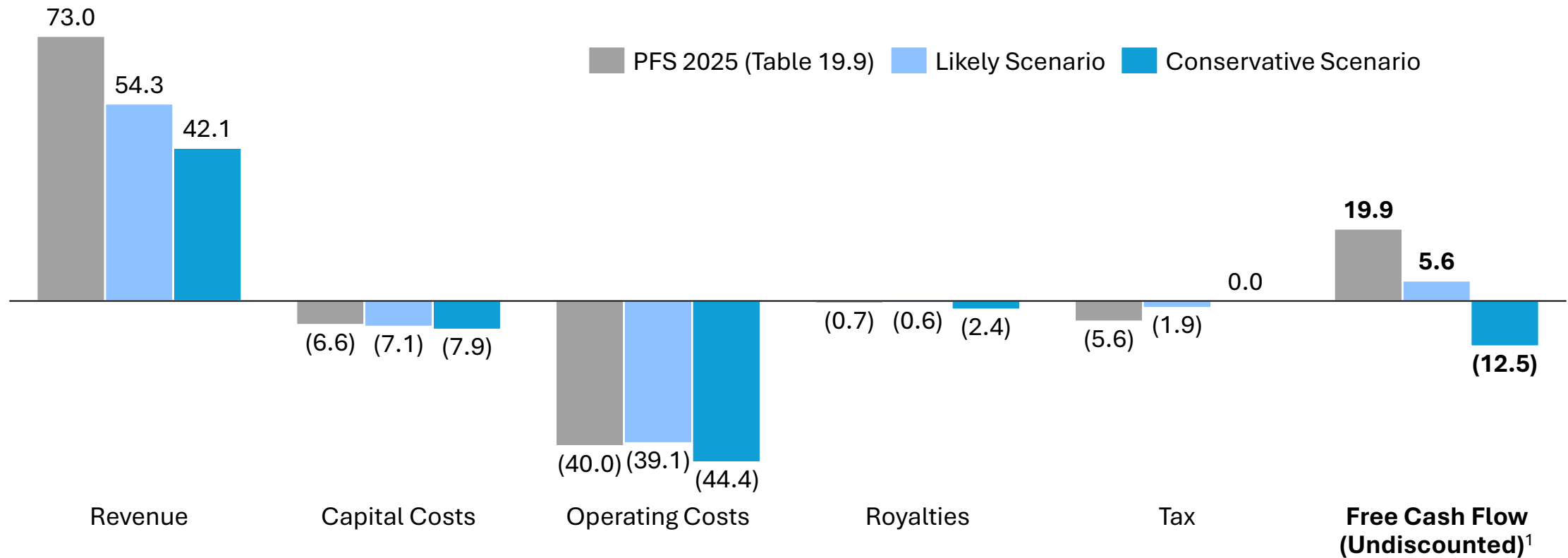


This provides a robust basis from which to adjust assumptions in the Likely and Conservative Scenarios

1. Table 19.9 of the PFS summarises the project cash flows. Cash flows are undiscounted and in real June 2025 terms. 2. As a reminder, we first built a replica financial model using the inputs from the 2025 PFS to confirm that it produced headline outputs broadly consistent with those stated in the PFS. This was necessary because the financial model used to calculate the headline outputs in the 2025 PFS is not publicly available. The fact that our replica model produces similar outputs to those reported in the PFS provides additional confidence that the underlying model mechanics have been replicated correctly.

Undiscounted free cash flows fall significantly in the Likely Scenario and further in the Conservative Scenario, driven largely by a drop in revenues

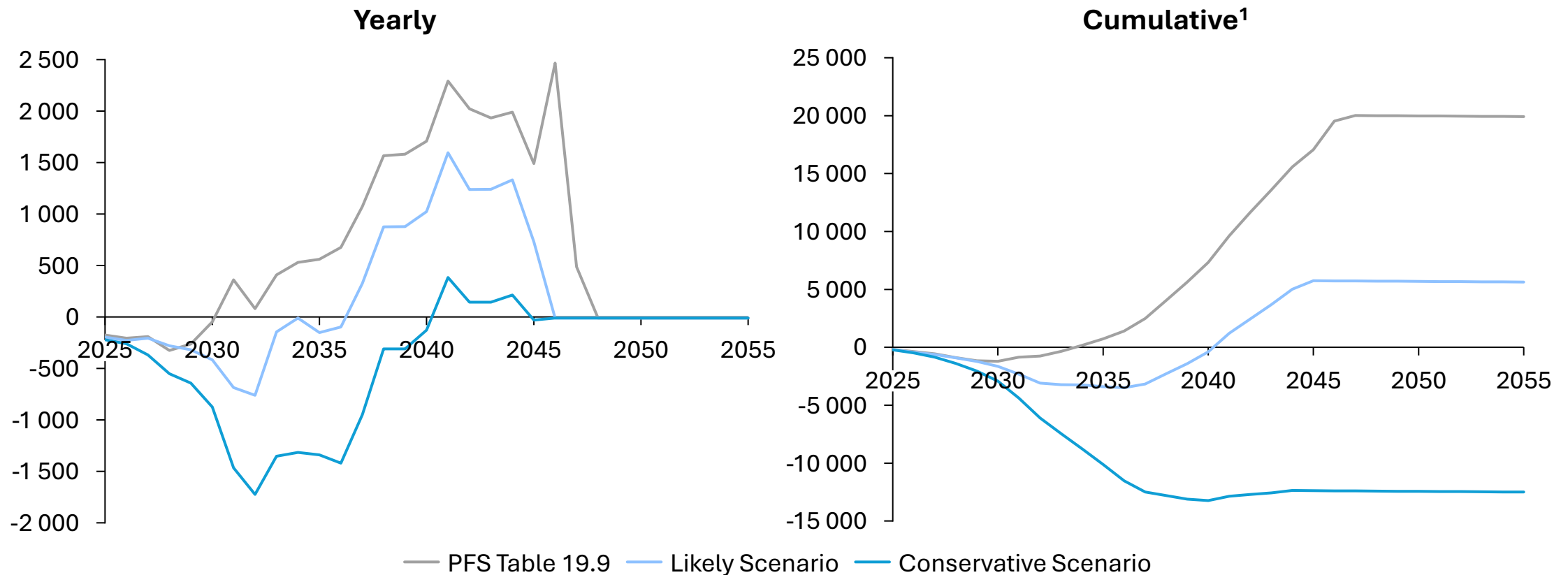
Key cash flow line items by scenario, *billions of US\$, real 2025 dollars*



1. The total amount of cash generated by the project, in real June 2025 terms. Calculated by summing the project's revenue (positive cash flow) with its negative cash flows: capital costs, operating costs, royalties and taxes.

Yearly free cash flows remain negative until the late 2030s / early 2040s in the Likely and Conservative Scenario

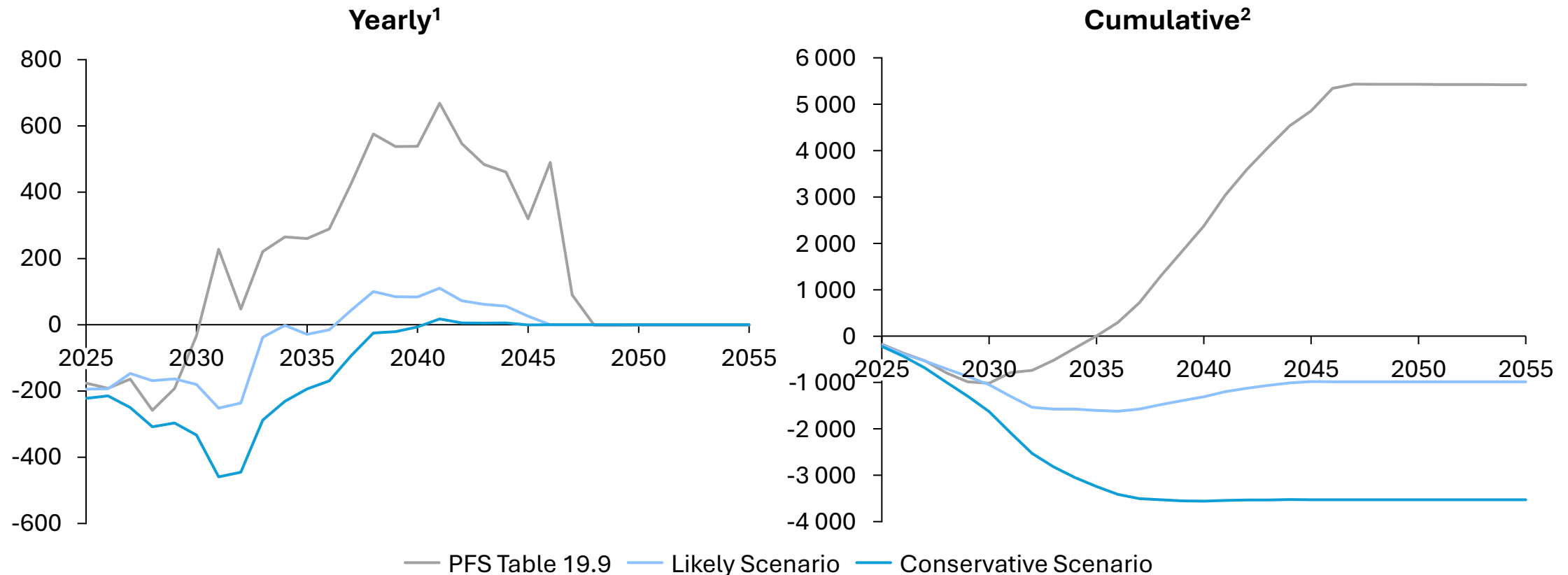
Undiscounted Free Cash Flow by scenario, millions of US\$, real 2025 dollars



1. Sum of yearly undiscounted free cash flows (in real 2025 terms) from the start of the project. Negative cumulative free cash flows indicate that the project is loss-making. However discounted free cash flows are generally a more useful indicator of a project's financial viability (see next slide).

After applying a discount factor, the total free cash flow for the Likely Scenario turns negative

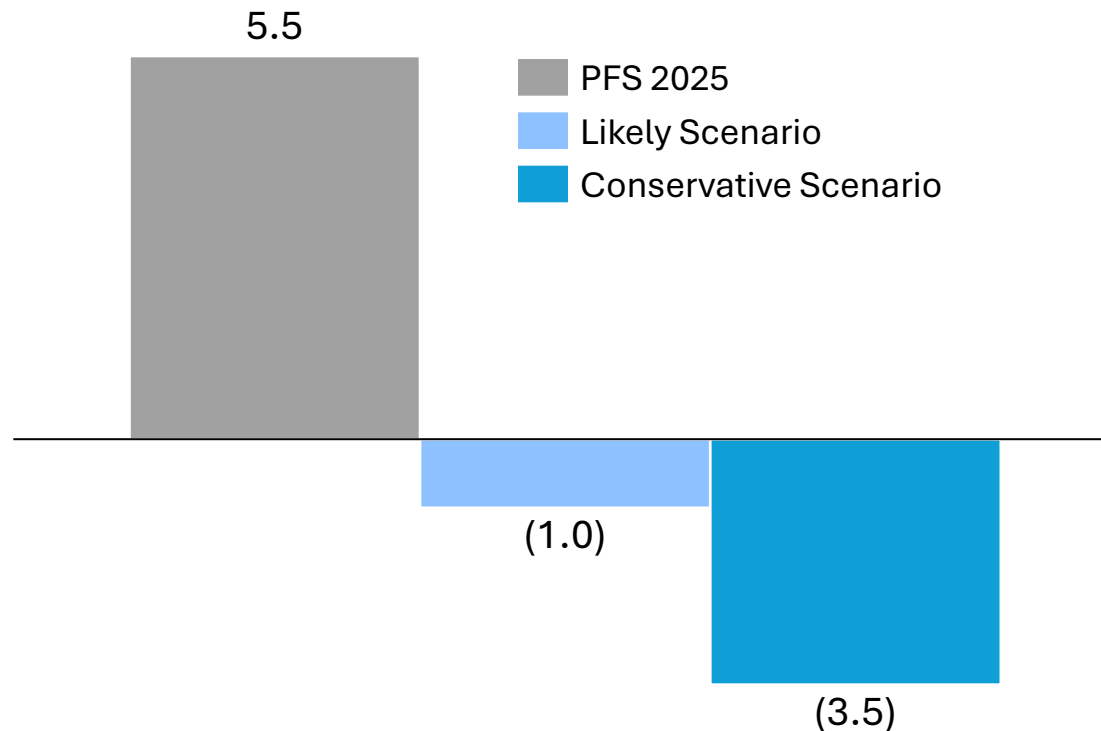
Discounted Free Cash Flow by scenario¹, millions of US\$, real 2025 dollars



1. Yearly free cash flows (see previous slide) are “discounted” at a certain rate to arrive at their equivalent value today. The yearly rate of discounting (known as the discount rate) reflects the yearly return which investors require to invest in this project. Higher-risk projects have higher discount rates as investors demand greater returns to make up for the risk they are taking. For higher risk projects, a certain future cash flow is worth less today than the equivalent cash flow in a lower risk project. 2. Over the lifetime of the project, if cumulative discounted free cash flows are positive, the project has a positive Net Present Value (see next slide).

To summarise, in both the Likely and Conservative Scenarios, the Net Present Value (NPV) is negative and the project IRR unattractive

NPV by scenario¹, billions of US\$, real 2025 dollars



Internal Rate of Return by scenario², %

PFS 2025 (Section 19.13)

26.8%

Likely Scenario

8.9%

Conservative Scenario

● Negative returns. Unable to calculate an IRR given the model's resulting free cash flows

1. Net Present Value (NPV): The sum of all discounted free cash flows across the project life. A positive NPV means the project is expected to generate more value than the minimum return required by investors i.e. it creates wealth above and beyond the cost of capital. 2. Internal Rate of Return (IRR): The single discount rate at which the project's NPV equals exactly zero: in other words, the project's implied annual return on investment over its lifetime. It is compared against the investor's required return to assess viability: an IRR above the investor's required return indicates a value-creating project.

Annex

Acronyms (1/2)

Acronym	Definition
BOP	Beginning of Period
CAPEX	Capital Expenditure
CCZ	Clarion-Clipperton Zone
CIM MES	Management and Economics Society (MES) of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM)
Co	Cobalt
CPI	Consumer Price Index
Cu	Copper
dmtu	dry metric tonne unit
DSHMRA	Deep Seabed Hard Mineral Resources Act
DSM	Deep-Sea Mining
EBIT	Earnings Before Interest & Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation & Amortization

Acronym	Definition
EOP	End of Period
FCF	Free Cash Flow
FFG	Free-fall grab samplers
FS	Feasibility Study
GAO	Government Accountability Office
IRR	Internal Rate of Return
ISA	International Seabed Authority
kg	kilogram
LCF	Losses Carried Forward
LCR	Low Carbon Royalty
LME	London Metals Exchange
LOM	Life of Mine

Acronyms (2/2)

Acronym	Definition	Acronym	Definition
m2	square metre	PFS	Pre-Feasibility Study
m3	cubic metre	PP1/2	Pre-Production (year) 1/2
Mn	Manganese	PV	Production Vessel
MGO	Marine Gas Oil	RKEF	Rotary Kiln-Electric Furnace
Mwt	million wet metric tonnes	SMM	Shanghai Metals Market
Mwtpa	million wet metric tonnes per annum	TMC	The Metals Company
Ni	Nickel	UNCLOS	United Nations Convention on the Law of the Sea
NOAA	National Oceanic and Atmospheric Administration	US	United States
NORI-D	Nauru Ocean Resources Inc., Area D	US\$	US dollars
NPV	Net Present Value	US\$/dm ³	US dollars per dry metric tonne unit
OPEX	Operating Expenditure	US\$/t	US dollars per tonne
PAMCO	Pacific Metals Co., Ltd.	US\$M	million US dollars
PEA	Preliminary Economic Assessment (also known as Scoping Study)	WACC	Weighted Average Cost of Capital

Discount rate estimation for the Likely and Conservative Scenarios used a recognised method involving summing individual project risk premia...

Discount rate estimation methodology - Formula

The formula below, from [a presentation to the Canadian Institute of Mines by Larry Smith in 2016](#), illustrates a method of estimating the discount rate to apply to a mining project based on various risk premia.

+ WACC Expected return for <u>company</u> (real) ^(1,2)	X%
+ Adjust for metal	X%
+ Adjust for stage of project development	X%
+ Adjust for technology risk ⁽³⁾	X%
+ Adjust for remoteness ⁽³⁾	X%
+ <u>Adjust for country risk</u>	X%
= Risk adjusted discount rate for <u>project</u> (real) ⁽²⁾	X%

Note that other identified risk premia could be added, provided the associated risks do not overlap with those associated with other risk premia (this would be double counting). The aim would be to add up all the incremental, mutually exclusive risk premia in order to arrive at the suitable discount rate.

... which we used to estimate Likely and Conservative discount rates of 18.2% and 21.3%, respectively, with potential for further increases

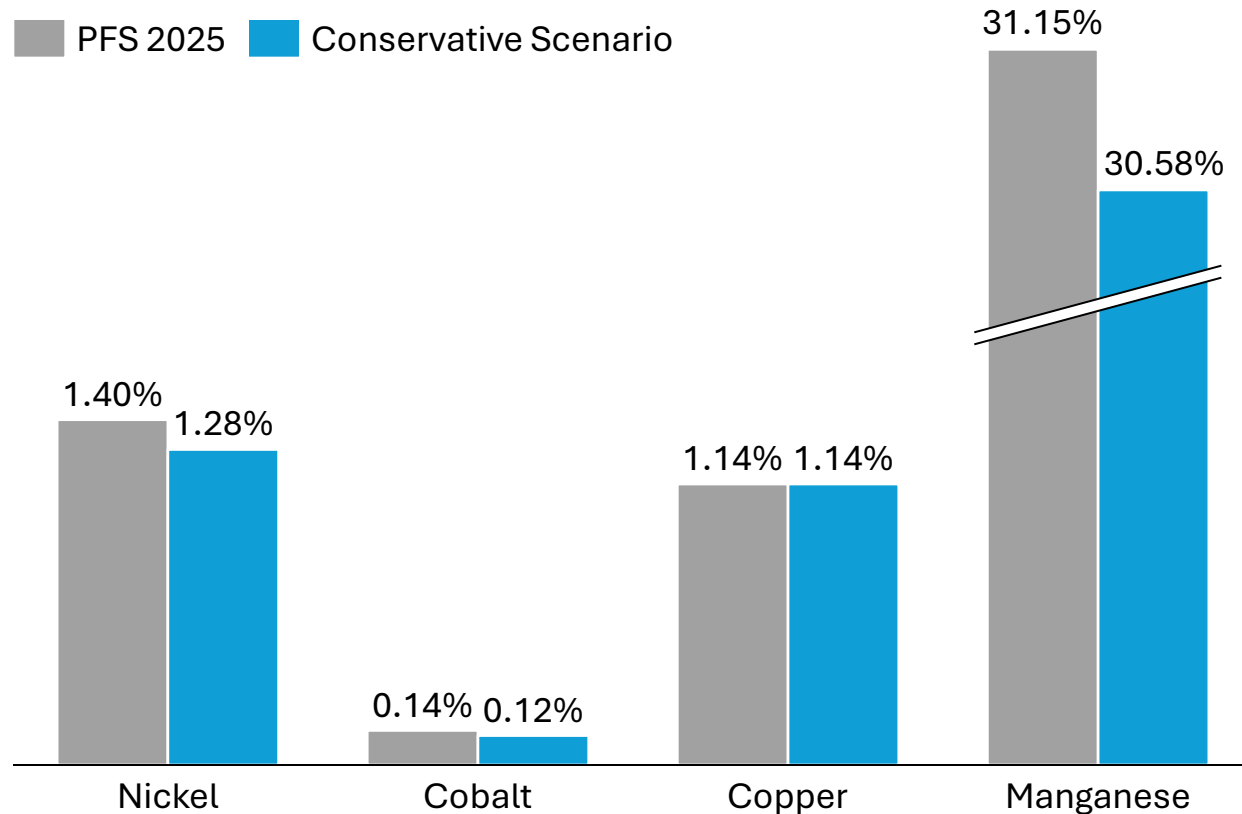
Discount rate estimation methodology - Application

Risk Premium	Likely Scenario	Conservative Scenario	Source
WACC		8.2%	Average US Metals & Mining company discount rate from Damodaran, NYU Stern, 2026 .
Project Stage	5.8%	8.3%	Uses the average project-stage premia from Smith's presentation and (Taheri et al, 2009). The Likely Scenario takes the PFS premium. The Conservative Scenario takes the PEA premium, with the argument that the economic case for the project is not based on mineral reserves and hence cannot be assigned the same risk premium as a typical PFS , as justified by Canadian standards on the disclosure of mineral projects ¹ .
Country		2.2%	Difference between US and Indonesia risk premium from (Damodaran, NYU Stern, 2026)
Technology		1.0%	Smith's presentation – upper bound taken due to nature of first-of-a-kind operation
Remoteness		1.0%	Smith's presentation – upper bound taken due to remote location (Clarion Clipperton Zone)
Product	-	0.6%	Additional premium as a result of the risk associated specifically with Nickel, Copper and Manganese, above typical base metal risk (Ovalle, 2020). In particular, Manganese projects carry a greater risk premium than typical base metals. Note that Manganese Silicate likely carries an even greater risk premium, as questions exist surrounding the existence of offtakers in the US as well as the possibility of oversupply causing a collapse in prices.
Total	18.2%	21.3%	← <i>Not considering legal/political risk and Mn Silicate offtake risk described above</i>

1. Although the TMC study is presented as a Pre-Feasibility Study, its economic case relies materially on production from mineral resources that have not been converted into mineral reserves. This reduces the confidence normally associated with a reserve-backed PFS and makes the economic risk profile closer to a PEA / scoping-stage analysis. This treatment is consistent with [British Columbia Securities Commission 43-101 - Standards of Disclosure for Mineral Projects](#) (updated 2023), which states that inferred mineral resources are “too speculative geologically” to have economic considerations applied to them that would enable them to be categorised as mineral reserves, and that “mineral resources that are not mineral reserves do not have demonstrated economic viability.”

Metal grades are slightly reduced in the Conservative Scenario

Assumed nodule metal grades, % of metal in dry nodule



- In the Likely Scenario, no change is made to the metal grades assumed in the PFS' economic analysis.
- In the Conservative Scenario, metal grades are taken from the free-fall grab sample taken by the Pioneer Investors within the NORI area (PFS Table 5.1).
- The Pioneer Investors dataset was not used in the 2025 Mineral Resource estimate. However, the historical samples provide an independent reference point for NORI Area D grades and indicate a risk of lower nickel, cobalt and manganese grades than those assumed in the PFS Mineral Resource estimate.
- On this basis, they have been used as a conservative downside sensitivity to reflect the possibility that realised project grades are lower than the PFS base case.

Recovery rates were estimated using the average of figures quoted in published papers

Summary of recovery rate assumptions changed in the Likely Scenario

	PFS 2025	Likely Scenario	>	Sources (with the Likely Scenario taking the average)
Nickel – Recovery to Alloy	96.91%	93.38%		Agarwal et al, 2009 , Keskinkilic, 2019 , Marzoughi & Pickles, 2024 , Wei et al, 2020
Cobalt – Recovery to Alloy	93.06%	81.25%		Agarwal et al, 2009 , Wei et al, 2020
Copper – Recovery to Alloy	93.55%	91.00%		Agarwal et al, 2009
Nickel – Recovery to Matte	94.76%	90.13%		Dry & Taylor, 2016 , Marzoughi & Pickles, 2024 , Zhang et al, 2024

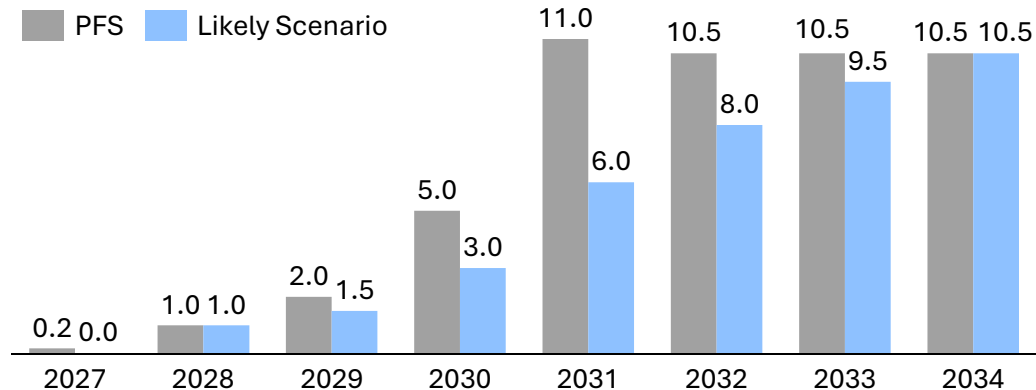
Downstream recoveries are affected by these new recovery rates. If we reduce the nodule-to-matte recovery for nickel, the nodule-to-sulfate recovery falls as a direct consequence, since sulfate is produced from matte. No new assumptions have been made about the efficiency of the matte-to-sulfate conversion step itself. Note that all recovery rates are expressed as a percentage of the original metal in the dry nodule. See slide 15.

Two factors, a slower ramp-up of seafloor nodule collectors and a risk of lower nodule abundance, could impact nodule production rates

Slower nodule collector ramp-up

TMC's [May 2026 commercial agreement](#) with Allseas specifies a production system ramp-up which is slower than the ramp-up implied by the production figures in the PFS (Table 12.13). **The Likely Scenario applies the revised ramp-up profile to each future production system.** While the contract only covers the first production system, it also states that the parties intend the contract to “form the foundation for future scaling up and continuation of production, to an ultimate greater production capacity, as per the Life-of-Mine Plan”. On this basis, the model assumes that the same staged ramp-up profile used for the first production system (which itself already differs from the ramp-up stated in the PFS up to 2030) is a reasonable proxy for future PVs.

Production rate, Mwt/yr



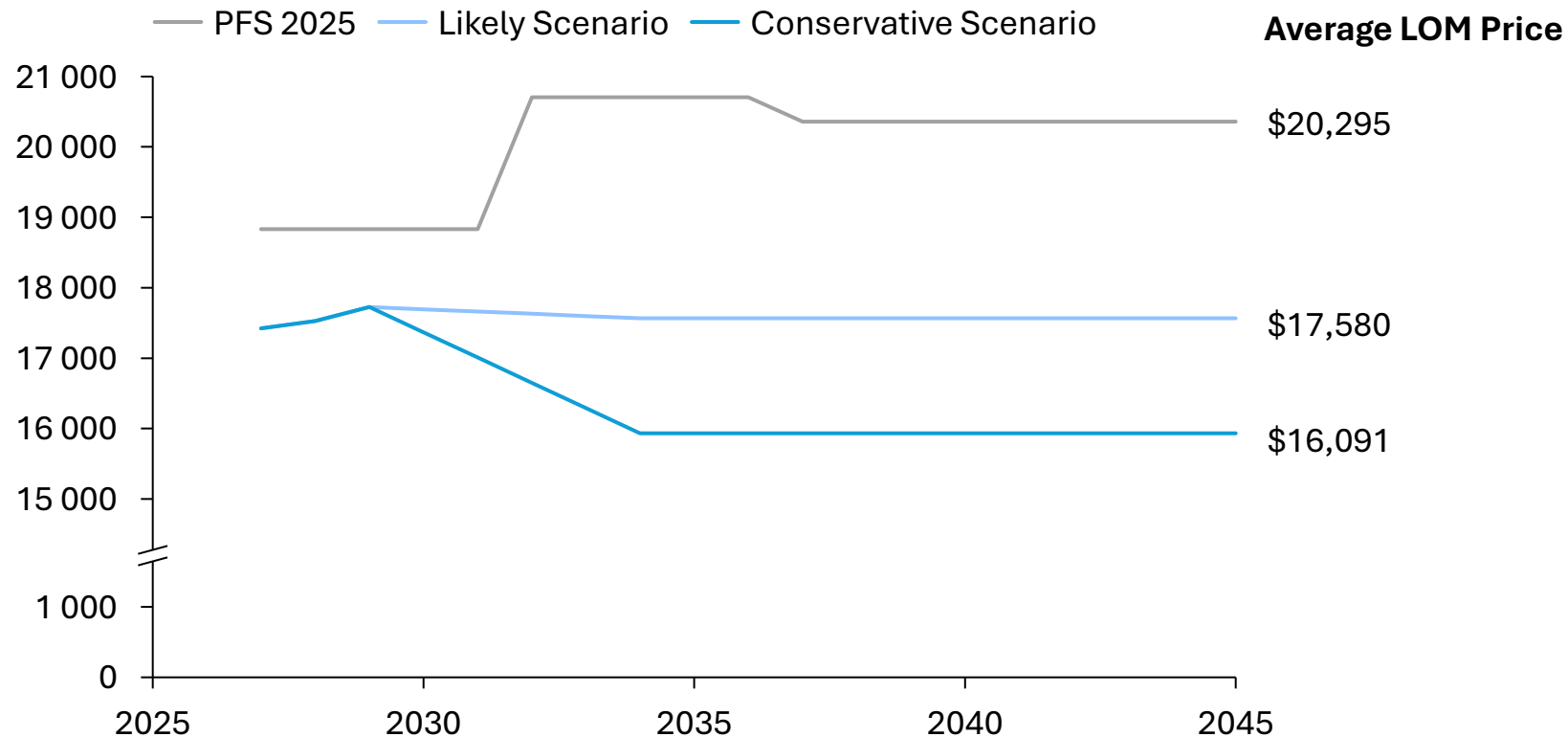
Risk of lower abundance affecting production

Nodule extraction has been reduced by 5% in the Conservative Scenario only, to reflect the possible risk that lower nodule abundance may not be fully offset operationally. This is because:

- The PFS uses a collector design abundance of 17.0 kg/m², but Table 5.1 indicates historical abundance of approximately 14.1 kg/m² sample supplied by Pioneer Investor.
- The Pioneer Investor dataset was not used in the 2025 Mineral Resource estimate. However, the historical samples provide an independent reference point for NORI Area D nodule abundances which we are using as a conservative-case figure.
- Section 12.2.7 states that lower abundance can potentially be compensated through higher collection speed, meaning that we do not reduce nodule production by the same factor for which abundance has been reduced in the Conservative Scenario. However, the PFS also states that further path simulator and Monte Carlo tool development will be used to confirm that production from lower-abundance areas does not impact achievement of yearly production targets, meaning this compensation assumption **has not yet been proven**.
- At 14.1 kg/m², maintaining full production would require increasing collection speed from 0.4 m/s to around 0.482 m/s, close to the maximum of 0.5 m/s. Given this limited buffer, the Conservative Scenario assumes partial rather than full compensation. A conservative 95.0% extraction factor is therefore applied.

The Likely Scenario projects average nickel prices of US\$17.6k/tonne, significantly below the PFS

London Metals Exchange (LME) nickel price projections by scenario,
US\$/tonne, real 2025 dollars

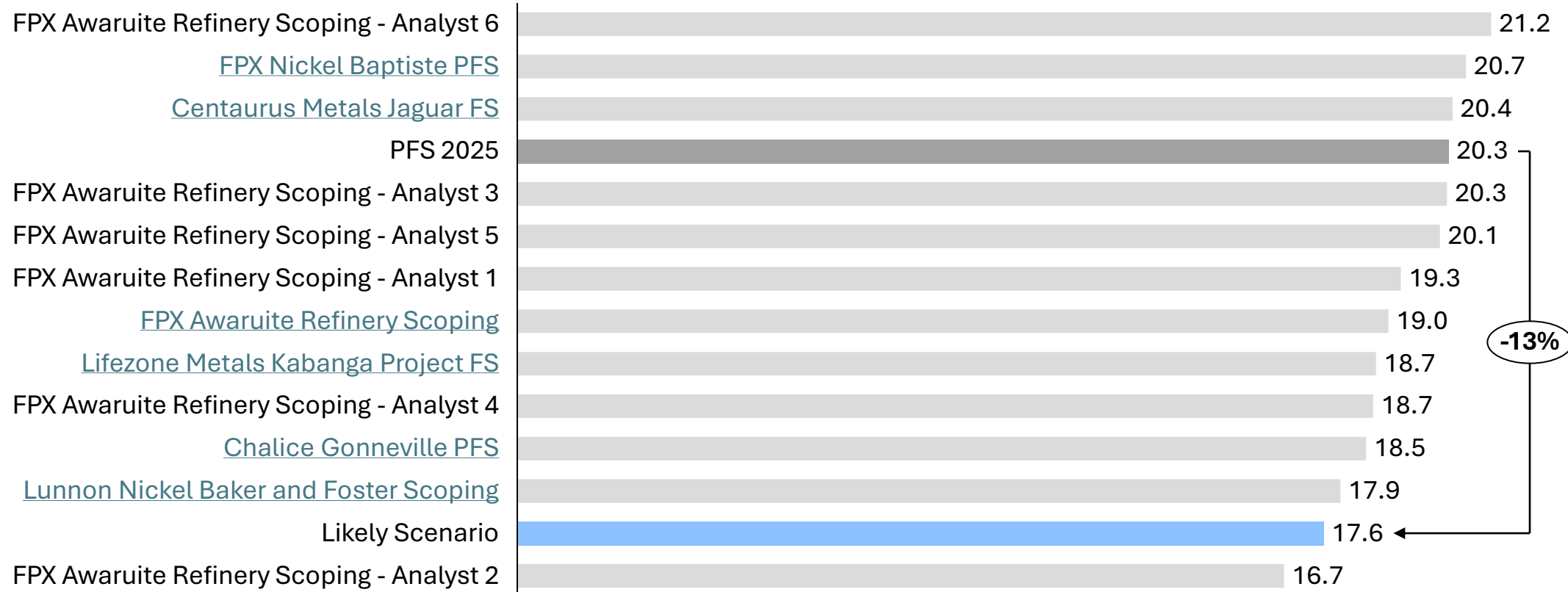


Methodology:

- In the Likely Scenario, we take forward prices until 2029, then settling over 5 years to the historical average (the trailing 4-year median price, in real terms).
- In the Conservative Scenario, we do the same but settle instead to the historical lower quartile (the trailing 4-year lower quartile price).
- Historical metal prices from [S&P CapIQ](#), forward curves from [LME](#).

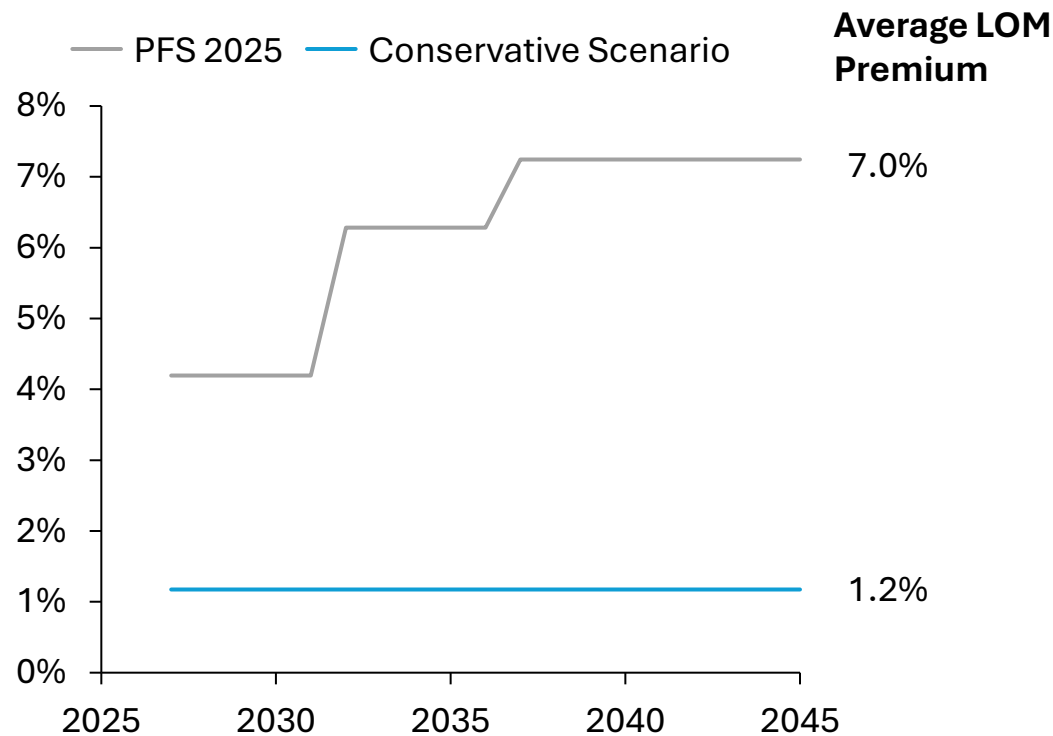
The PFS-assumed average nickel price is in the upper half of prices in other project feasibility studies and independent analysts

Average LOM nickel prices, Likely Scenario vs PFS vs other benchmarks, thousands of US\$/tonne, real 2025 dollars



Ni sulfate premium is unchanged in the Likely Scenario; in the Conservative Scenario, it is reduced to reflect demand and supply-side risks

Price premium of one tonne of nickel contained in nickel sulfate, over the LME price of nickel, by scenario, %

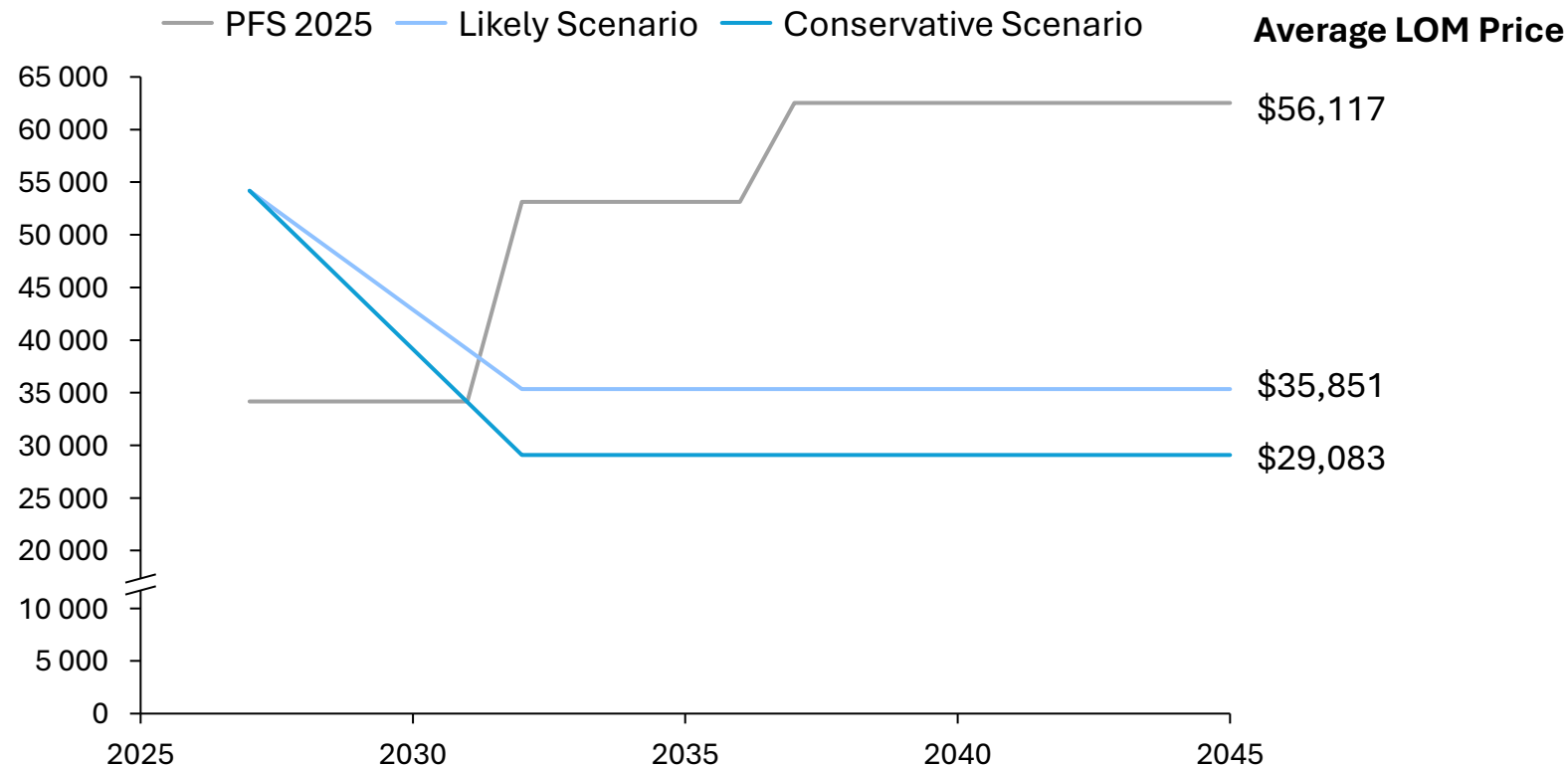


Methodology:

- Likely Scenario is unchanged from the premium taken in the PFS.
- For the Conservative Scenario, we have taken the Low Case premium in [FPX Nickel's Awaruite Refinery](#) project scoping study. Whilst the author generally believes the premium assumed in the PFS to be fair, there are a risks facing the market which could result in a price closer to the Conservative Scenario materialising:
 - [SMM's](#) June 2026 analysis states that battery-grade nickel sulfate prices were "not optimistic", citing weakening cost support, front-loaded downstream stockpiling, increased import supplementation and higher volumes of nickel sulfate converted from refined nickel. SMM also notes that if the high premium persists, refined nickel producers may expand conversion into nickel sulfate, "thus impacting the nickel sulfate market from the supply side." This supports reducing the PFS assumed premium.
 - The share of nickel in electric vehicle batteries is also steadily falling ([MinMet](#)), due to competition from LFP batteries, and most recently, sodium-ion, which has achieved superior performances versus nickel-manganese-cobalt (NMC) batteries ([Korea Herald](#)).

The projected Cobalt price diverges significantly between the PFS and Likely Scenario

LME cobalt price projections by scenario, US\$/tonne, real 2025 dollars

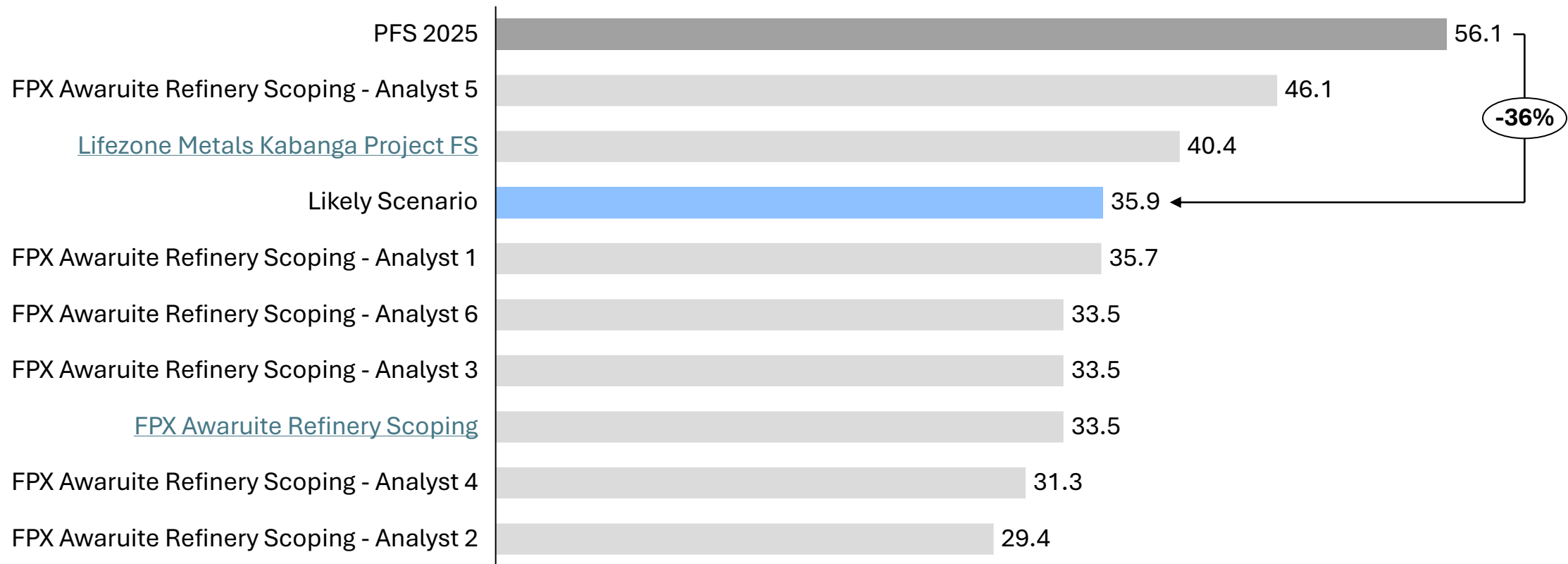


Methodology:

- In the Likely Scenario, we take forward prices until 2027, then settling over 5 years to the historical average (the trailing 4-year median price, in real terms).
- In the Conservative Scenario, we do the same but settle instead to the historical lower quartile (the trailing 4-year lower quartile price).
- Historical metal prices from [S&P](#) [CapIQ](#), forward curves from [LME](#).
- Note that the current high cobalt prices are in large part due to the recent supply restrictions imposed by DR Congo, rather than a long-term shift in supply or demand ([Reuters](#)).

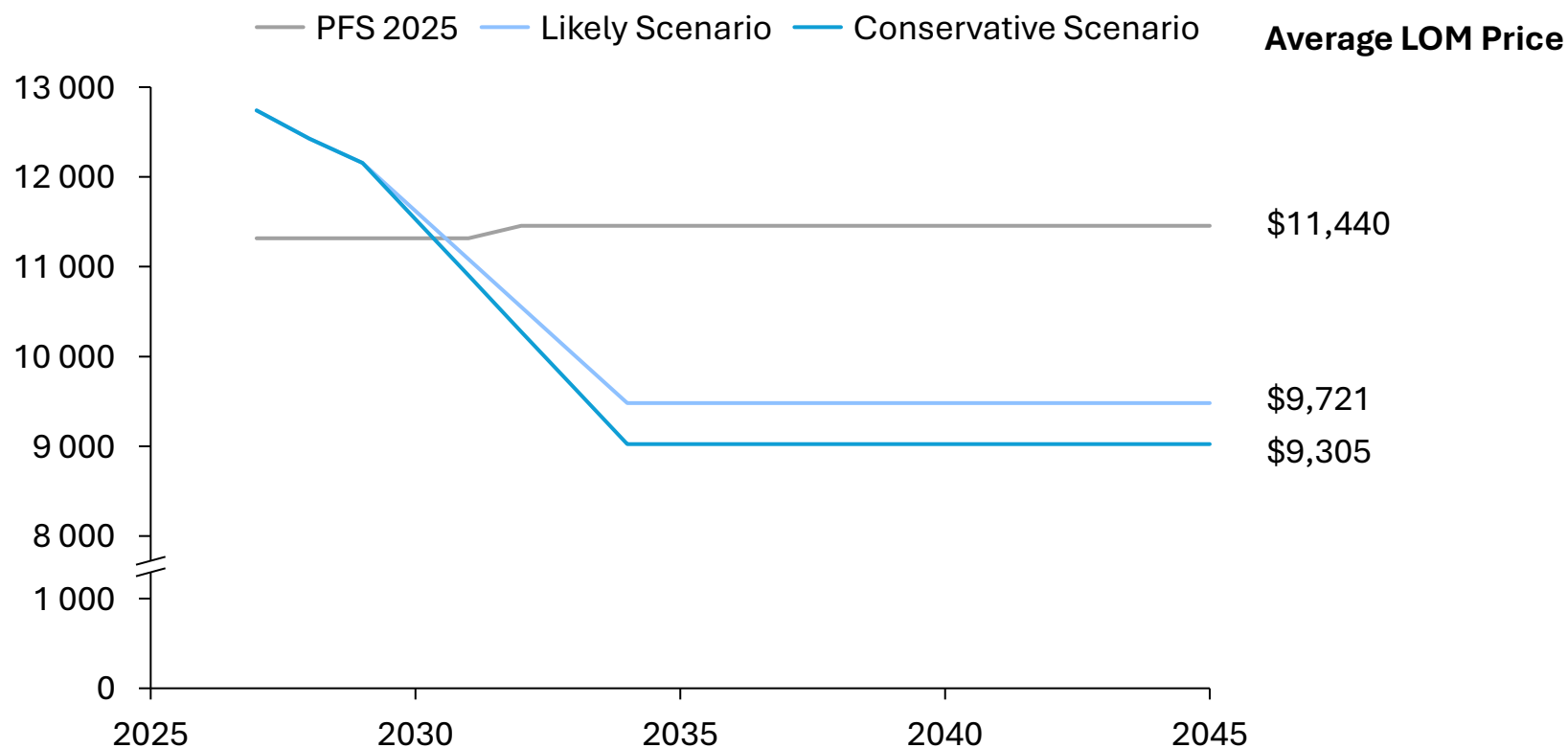
The PFS-assumed cobalt price exceeds projections from other recent scoping studies, feasibility studies and independent analysts

Average LOM cobalt prices, Likely Scenario vs PFS vs other benchmarks, thousands of US\$/tonne, real 2025 dollars



The NORI-D PFS assumes that the copper price stays at its current high level, above the historical average price taken in the Likely Scenario

LME copper price projections by scenario, US\$/tonne, real 2025 dollars



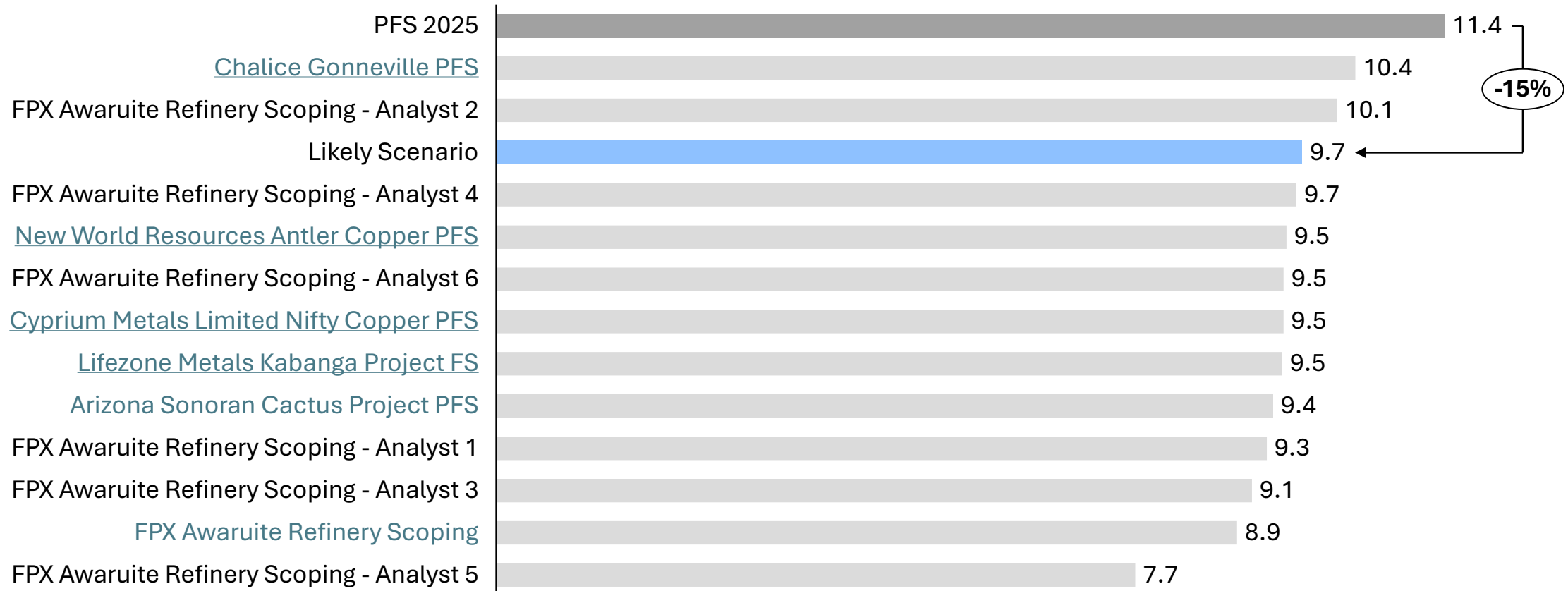
Methodology:

- In the Likely Scenario, we take forward prices until 2029, then settling over 5 years to the historical average (the trailing 4-year median price, in real terms).
- In the Conservative Scenario, we do the same but settle instead to the historical lower quartile (the trailing 4-year lower quartile price).
- Historical metal prices from [S&P CapIQ](#), forward curves from [LME](#).

1. Note that current copper prices are higher than prices projected in the Likely Scenario, in real 2025 terms. Copper prices as of July 2026 are near record highs, driven by strong demand growth and a supply squeeze partly attributable to trade and tariff disruptions. The Likely Scenario instead uses a consistent methodology based on a four-year trailing historical median, reflecting a neutral, long-run view of the market. This is appropriate because commodity prices tend to revert toward the marginal cost of production over time: elevated prices incentivise new supply, which brings prices back down. Assuming today's elevated spot price persists indefinitely would be an optimistic, non-neutral assumption.

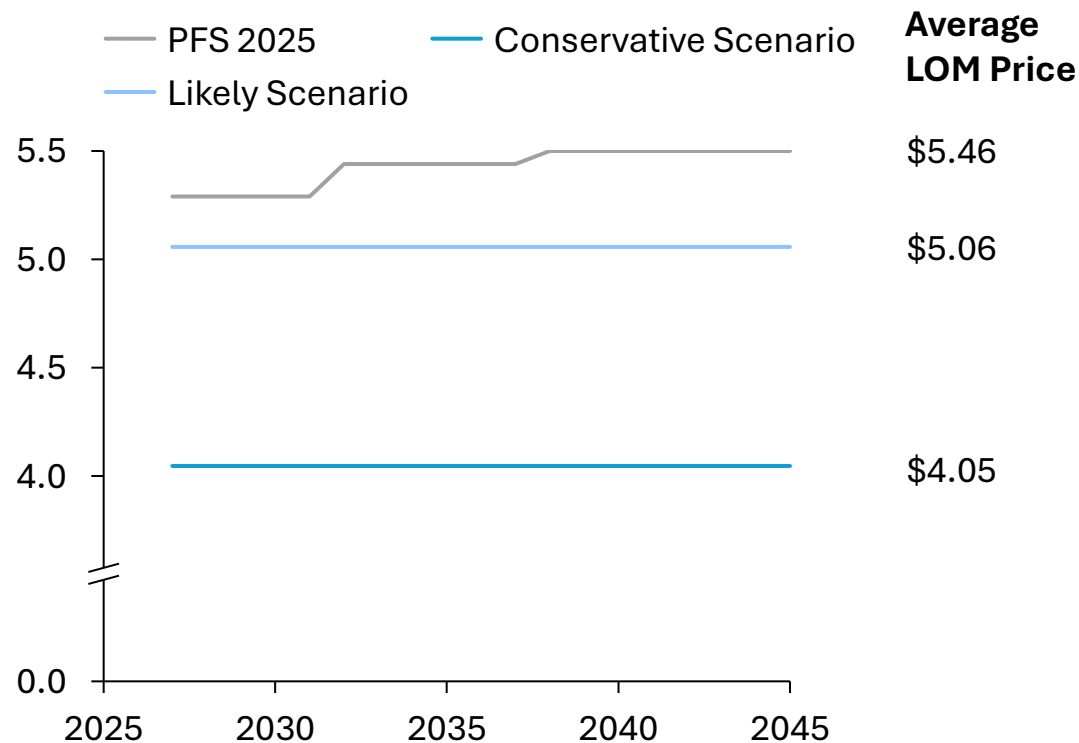
The PFS-assumed copper price is above that of the benchmark studies we have found

Average LOM copper Prices, Likely Scenario vs PFS vs other benchmarks, thousands of US\$/tonne, real 2025 dollars



The Mn silicate price proxy used in the Likely Scenario is 7% lower than the PFS price, with downside risk factored into the Conservative Scenario

Mn silicate price projections by scenario, US\$/dm_{tu}, real 2025 dollars



Methodology:

- The market for manganese silicate is significantly smaller, more opaque and less liquid than that of Nickel, Cobalt, and Copper.
- To estimate the Likely Scenario Mn silicate price, we took a 44% Mn ore as a proxy, given that the PFS states that the product's price is expected to align "closely with the 44% Mn ore benchmark price". We estimated this using MN ore price data from [SMM](#), running a regression of ore grade (%) as the dependent variable and price as the dependent, then finding the price which intersected a grade of 44%.
- In the Conservative Scenario, the Mn silicate price is reduced through a discount of 20% to reflect product-specific marketability and volume-placement risk. The PFS states that nodule-sourced Mn silicate is expected to align closely with the 44% Mn ore benchmark price, but only "provided it is integrated into optimized ore blends", and notes that value could vary depending on market conditions and processing costs for other feedstocks. The PFS also states that the large volume TMC aims to produce "could be challenging to place without impacting pricing" (i.e. it could flood the market), especially in a well-supplied manganese market with limited forecast growth in silico-manganese imports. A discount to the Likely Scenario price is therefore applied to reflect uncertainty around customer acceptance, blending requirements, offtaker availability and the potential pricing impact of large new supply volumes.

The Conservative Scenario applies a 20% reduction to the alloy product's payability to account for significant downside market risks

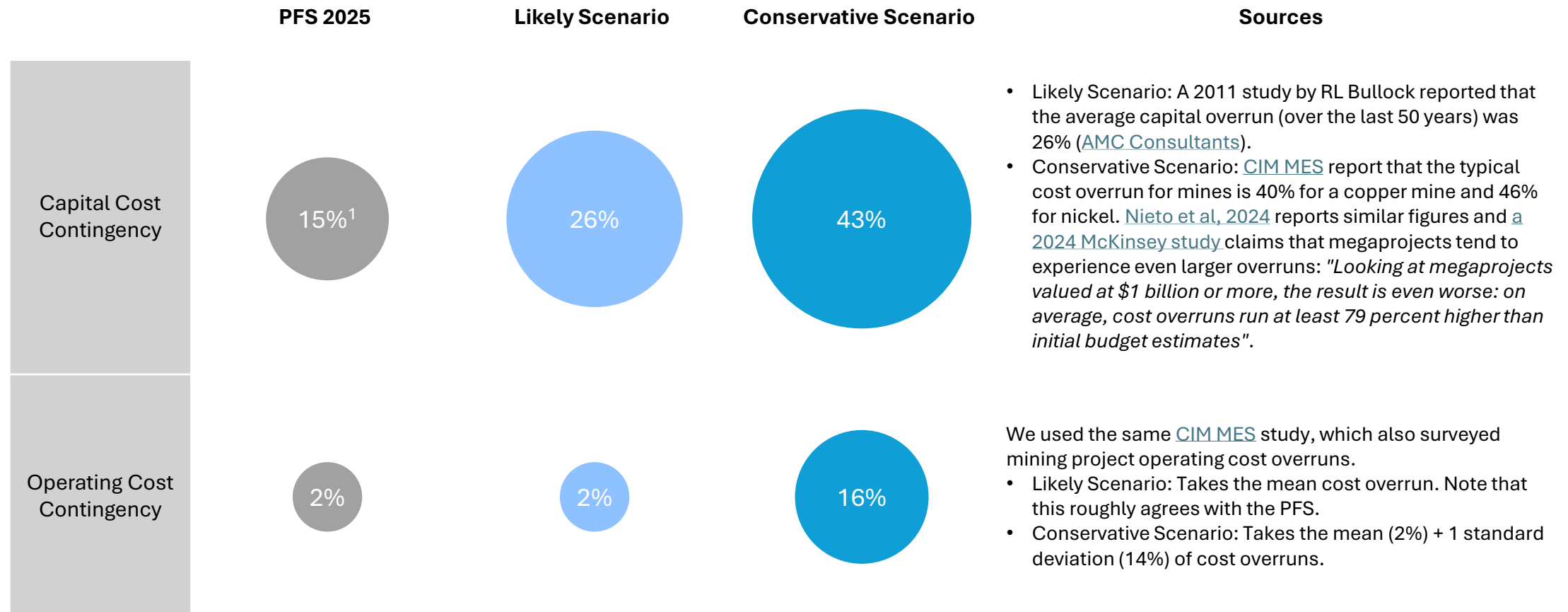
Alloy Payabilities, %

	PFS 2025	Conservative Scenario
Nickel	65.00%	52.00%
Cobalt	42.00%	33.60%
Copper	59.98%	47.98%

Methodology:

- Alloy payability has been reduced in the Conservative Scenario to reflect market-acceptance risk for TMC's early-stage alloy product.
- The PFS itself notes that the alloy product has “limited immediate demand” and “may require discounts to establish a market presence, especially in the early years of operation”.
- The Conservative Scenario therefore applies lower alloy payabilities to reflect the risk that buyers require a discount during the initial commercialisation period. Given that the alloy product is only sold in the first 3 years, we can apply a blanket change in alloy payability as this will not affect later years.

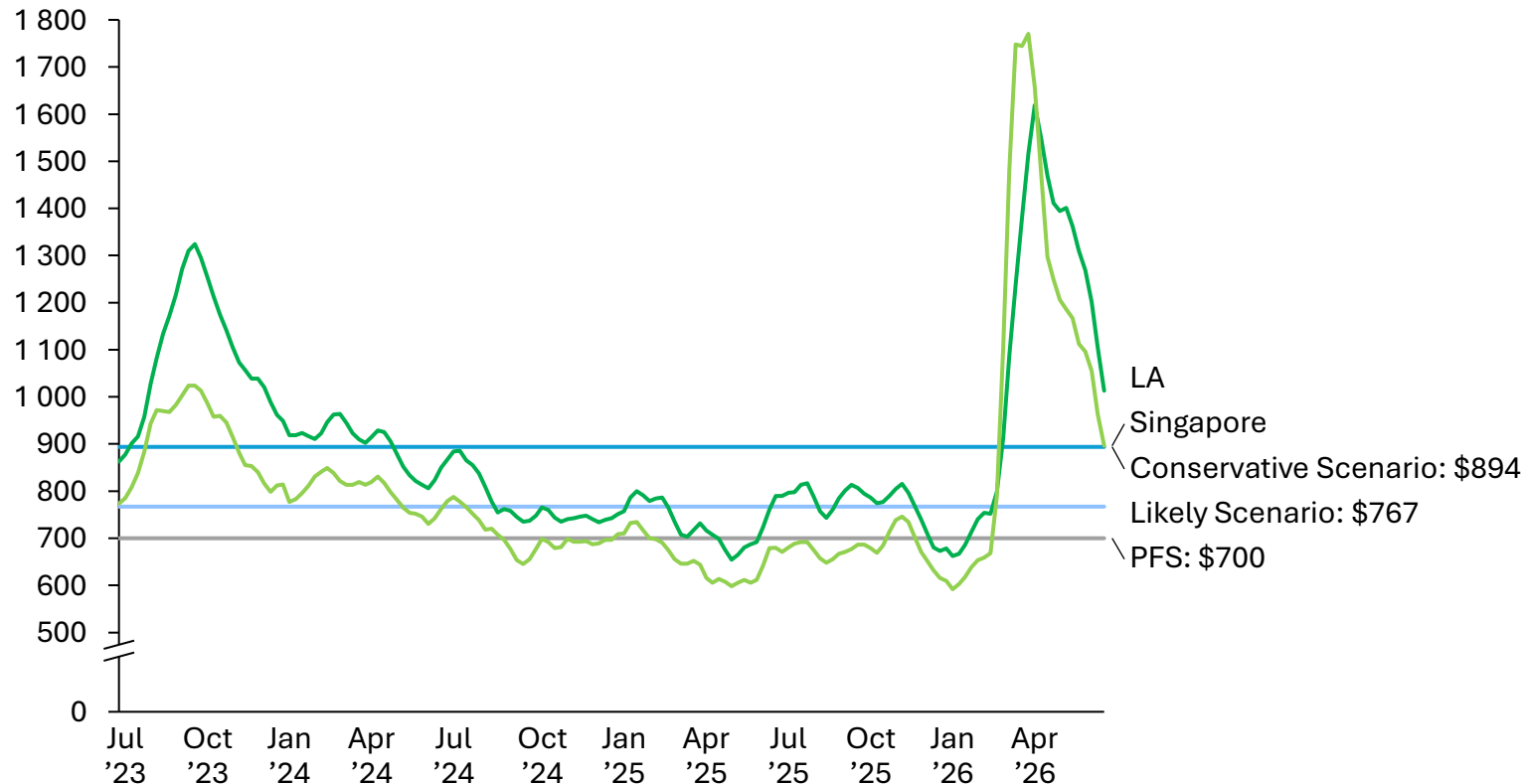
Mining studies suggest that typical capital cost overruns can be significantly higher than the PFS' assumed contingency of 15%



1. The PFS stated that a 15% contingency was applied. Given the exact contingency figure in the PFS, a 14.9% contingency was applied to System #1 CAPEX and 14.6% to US Refinery CAPEX.

The PFS assumes lower fuel prices than the averages seen in the past 3 years

Historical MGO Fuel Prices, US\$/tonne, real 2025 dollars
Overlaid with price projections for each modelling scenario



Methodology:

- Our Likely Scenario calculates the daily average (mean/midpoint) of the historical Los Angeles and Singapore Marine Gas Oil (MGO) prices, converted into real 2025 dollars. It then takes the 3-year median. The Conservative Scenario takes the 3-year upper quartile.
- The result is higher than the MGO prices taken in the NORI-D PFS.
- Note that we do not know which regional MGO price was taken in the PFS. We have chosen LA and Singapore due to these locations being closest in proximity to the project's main operations (in the CCZ & Indonesia), with the largest shipping journeys being from NORI Area D to Indonesia and Indonesia to the US.
- MGO prices from [Ship & Bunker](#).
- In the model, changes in fuel prices are factored into Transfer & Shipping and Consumables (Offshore Fuel) costs.

The Conservative Scenario takes into account the material risk of a royalty being imposed on NORI-D under DSHMRA

PFS 2025

- The **PFS does not assume that any royalties will be paid** to the US government under DSHMRA, though it does acknowledge that this is not guaranteed in the future: *“NOAA’s regulatory framework under DSHMRA includes provisions for public comment and environmental review but does not currently mandate a fixed royalty or taxation regime akin to the ISA’s proposed ad valorem models. As such, financial terms are negotiated individually and may evolve with future legislative or executive directives”*.
- The author believes that the imposition of a royalty regime to be paid to the US government, as with land-based mining projects in the US, is a plausible and material risk.



Conservative Scenario

- Given these risks, the Conservative Scenario assumes **a fixed 4.4% royalty on all future revenues**.
- This has been estimated through a land-based mining proxy. We have taken the mean of all the revenue-based royalty rates¹ for individual western US states. This information is summarised by the [US GAO](#) in a 2019 letter.

1. US state mining royalty rates are not structured consistently; some are given as a % of gross revenue, whilst others a % of, for example, net proceeds. Royalty rates are also usually decided on a case-by-case basis, with the rates used in this calculation often in fact *minimum* royalties.

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