

AURUS MINING

Capital That Can Close

Project-finance structures for mines and shared infrastructure

OUR POSITION

Mine finance closes when lenders can rely on ring-fenced cash flow, completion discipline, and enforceable risk allocation, and when shared infrastructure and environmental and social conditions are structured as bankable interfaces rather than side issues.

EVIDENCE FIRST | DECISIONS MADE EXPLICIT | DELIVERY CONDITIONS STATED

Contents

S	Executive summary The paper in one decision frame	4
M	Method and boundaries Audience, method and limitations	6
01	The financing problem Capital need is large, timing is long, and the bottleneck extends beyond availability of money but the conditions under which money will commit.	7
02	The project-finance vehicle The SPV is a cash-machine with rules. The rules are built from CFADS, account control, reserves, and distribution discipline.	11
03	Debt sizing and the bankable study Size debt from evidence, not from ambition. Lenders lend against reserves, feasibility-grade costs, and a model that survives stress under coverage conventions.	15
04	The capital stack The stack is a negotiation over who carries which risk and at what price. Export credits, guarantees, streams, and royalties each change the credit shape.	19
05	Risk allocation and cover Bankability is a contracted risk map. Construction, market, operating, political, and sovereign non-payment risks must be assigned and, where needed, insured or guaranteed.	23
06	Shared-use corridor finance Corridors and shared infrastructure can dominate capital need and determine close. Bankability depends on take-or-pay anchors, tariff logic, and a clean completion interface between mine and infrastructure vehicles.	27
07	Environmental and social conditions E&S is part of credit. EP4 scope, IFC Performance Standards, and tailings governance shape conditions precedent, covenants, and operating constraints.	31
08	The financing-readiness review Readiness is a test against evidence. A gap on reserves, completion, offtake, political risk, or E&S should be closed before diligence, not argued through it.	35
R	Decision tools and references Checklist, evidence ledger, glossary and sources	39

Executive summary

Critical-minerals supply is capital-intensive on a schedule that does not match commodity cycles. The IEA's 2024 critical-minerals outlook frames the scale of mining investment required from 2024 to 2040 under scenario pathways, and it also notes that long lead times mean capital committed now delivers supply more than a decade out. That timing mismatch is why financing structures matter as much as geology and process design: the question extends beyond whether a project is economic, but whether its cash flow can be ring-fenced, measured, and contracted so debt providers can underwrite completion and repayment without relying on sponsor balance sheets.

Sources: WP17-02, WP17-03

Project finance is limited-recourse by design. Lenders look primarily to a project's own cash flows and assets for repayment, using a bankruptcy-remote special-purpose vehicle and a cash-flow waterfall that specifies who is paid, and when, before distributions to equity. Coverage ratios and reserves then translate volatility into operating rules. These are established market practices, and specific thresholds are set deal by deal, but the mechanics are consistent: define CFADS, apply it through the waterfall, and hardwire actions that preserve liquidity when performance weakens.

Sources: WP17-04, WP17-05, WP17-07

Debt sizing turns on the bankable study. Lenders typically require a feasibility-grade technical basis that connects reserves, a mine plan, and a cost estimate to a financial model that can be stress-tested. Only Mineral Reserves, not Resources, support the production schedule lenders lend against, and lenders typically require reserve life beyond loan maturity as a reserve-tail convention. An independent technical expert then reviews the feasibility package and, critically, defines the completion tests that shift a project from construction risk to operating risk for the debt.

Sources: WP17-10, WP17-11, WP17-12

Modern close also depends on two interface zones that can fail otherwise bankable deals: shared-use infrastructure and environmental and social conditions. For remote or landlocked developments, heavy-haul rail, ports, power, and water can be a dominant capital driver and is often financed in a separate vehicle supported by take-or-pay or capacity-reservation contracts. In parallel, Equator Principles scope and IFC Performance Standards expectations shape lender due diligence, while tailings governance can enter term sheets as conditions precedent and covenants through GISTM conformance expectations for projects with tailings facilities.

Sources: WP17-21, WP17-22, WP17-24, WP17-26

At a glance

Six evidence markers establish the scale, threshold or decision condition carried into the chapters that follow.

US\$590bn (APS) to~

CRITICAL-MINERALS MINING INVESTMENT NEED 2024 TO 2040 (SCENARIO-LABELLED)

Source: WP17-02

US\$94tn

GLOBAL INFRASTRUCTURE INVESTMENT NEED 2016 TO 2040 (ESTIMATE)

Source: WP17-01

Gate

BANKABILITY GATE: RESERVES PLUS BFS-GRADE ESTIMATE BEFORE SIZEABLE DEBT (STAGE-G)

Source: WP17-28

Trace

CASH WATERFALL AND CFADS DEFINE WHAT DEBT CAN BE SIZED AGAINST (PRACTICE)

Source: WP17-05

Hold

E&S CONDITIONS ENTER AS LENDER REQUIREMENTS UNDER EP4, IFC PS, AND GISTM

Source: WP17-24

Wrap

RISK ALLOCATION IS CONTRACTED TO THE PARTY BEST ABLE TO MANAGE IT (PRACTICE)

Source: WP17-18

Method and boundaries

This paper is a bounded synthesis of registered public evidence. Source identifiers remain visible so that each quantitative or framework statement can be traced to its dossier row.

INTENDED READERS

- Mine sponsors and developers
- Project-finance lenders and arrangers
- Offtakers and strategic investors in minerals supply chains and infrastructure users

READING METHOD

- Read each chapter opener as a decision frame.
- Use the three section exhibits as working review instruments.
- Return to the evidence ledger before reusing any number or requirement.

BOUNDARIES

- Coverage ratio thresholds, DSRA months, and reserve-tail sizing are presented as established market practice conventions and are negotiated deal by deal. No numeric threshold is stated as a mandated requirement of any named code. [WP17-08, WP17-06, WP17-10]
- IEA critical-minerals investment numbers are scenario-labelled (APS and NZE) and should be treated as scenario outputs, not forecasts or commitments. [WP17-02]
- OECD mobilisation figures are stated as 2023 vintage within a 2025 publication and describe observed mobilisation, not project-level availability. [WP17-13, WP17-14]
- Streaming and royalty market scale figures are secondary market commentary and are used for instrument definition and context only. [WP17-17]
- Shared-use corridor statements about infrastructure being a majority of capex are typical framings from framework sources and are not asserted as a universal measured statistic. [WP17-21]
- Equator Principles, IFC Performance Standards, and GISTM descriptions follow the cited artifacts and may evolve; re-verify if reopening the paper for an updated edition. [WP17-24, WP17-26, WP17-27]

PUBLICATION DISCIPLINE

- No client identity or company-age claim is published.
- No Aurus delivery result is inferred from public guidance.
- Dated forecasts retain their institution and vintage.

01

CHAPTER 1

The financing problem

Capital need is large, timing is long, and the bottleneck extends beyond availability of money but the conditions under which money will commit.

US\$15tn

ESTIMATED GLOBAL INFRASTRUCTURE INVESTMENT GAP TO 2040 | WP17-01

10%

GROWTH IN CRITICAL-MINERALS MINING DEVELOPMENT INVESTMENT IN 2023 (IEA VINTAGE) | WP17-03

Close

OBJECTIVE: CONVERT DEVELOPMENT UNCERTAINTY INTO BANKABLE INTERFACES | WP17-04

1.1 Scale and timing set the constraint

The financing problem starts with scale. Global Infrastructure Hub estimates about US\$94 trillion of infrastructure investment need over 2016 to 2040, with an implied gap to 2040 of about US\$15 trillion versus current trends. Mines that depend on corridors, ports, power, or water sit inside that same constraint set: the required assets compete for capital, procurement capacity, and construction bandwidth. In that environment, a project does not win funding by being interesting. It wins by being underwritable, with uses of proceeds that can be segregated, completion that can be tested, and contracts that convert uncertain variables into enforceable payment obligations.

WP17-01, WP17-04

Critical-minerals mining adds a second constraint: lead time. The IEA notes that long mine lead times mean capital committed today delivers supply more than a decade out, while year-to-year investment growth has already shown sensitivity to price conditions. Financing therefore has to survive cycles. That pushes structuring toward ring-fenced cash flow and conditionality that can ride through weaker years. It also raises the value of interface clarity between mine and infrastructure, between sponsor and contractor, and between project company and offtaker, because those interfaces decide whether capital providers can stay in the deal when markets move.

WP17-03, WP17-04

DECISION INSTRUMENT

Problem framing instrument: what prevents close

Use this table to separate capital-market constraints from project controllables before selecting a financing route.

TEST	EVIDENCE READING	DECISION RESPONSE
Capital intensity and competing infrastructure demand	Test whether required enabling infrastructure sits inside a broader investment gap and capacity constraint.	If enabling assets are a bottleneck, plan a separable infrastructure SPV or staged scope.
Lead time versus price cycle	Treat long lead times as a core credit risk and more than a schedule issue.	If cycle risk dominates, prioritise contractual revenue support and conservative debt sizing conventions.
Underwritability of interfaces	Map mine-to-infrastructure, contractor, and offtaker interfaces as credit dependencies.	If any interface lacks a contractable counterparty and remedy regime, do not start lender diligence.
Limited-recourse readiness	Assess whether repayment can rely on ring-fenced project cash flows rather than sponsor balance sheets.	If ring-fencing is not credible, pivot to corporate finance or restructure governance and accounts.

Sources: WP17-01, WP17-03, WP17-04, WP17-21

1.2 Why limited-recourse is hard for mines

Limited-recourse finance is built on a simple proposition: lenders look primarily to the project’s own ring-fenced cash flows and assets for repayment through a bankruptcy-remote special-purpose vehicle. Mines stress that proposition because both price and volume can move, and because construction often includes long-duration works and multiple packages. The lender problem is not whether a model shows value. The lender problem is whether the model variables can be controlled, observed, and enforced. That is why mines that reach close tend to treat contract architecture, reporting, and completion testing as primary engineering outputs, not as legal afterthoughts.

WP17-04, WP17-18

The IEA’s scenario-labelled capital numbers for critical-minerals mining from 2024 to 2040 illustrate why debt providers focus on repayability rather than narratives. When the aggregate investment requirement is measured in hundreds of billions of dollars, capital rationing is normal. In practice, sponsors have to present a project that can carry debt through a downside case using conventional project-finance tools. Those tools are familiar across sectors, but mining adds sharper stress on offtake quality, reserve certainty, and completion risk around processing plants and logistics links.

WP17-02, WP17-04, WP17-18

DECISION INSTRUMENT

Limited-recourse readiness screen

A decision screen for whether to proceed down a project-finance route at all.

TEST	EVIDENCE READING	DECISION RESPONSE
Ring-fenced cash flows and assets	Confirm SPV structure and lender access to project accounts and security package.	If ring-fencing cannot be implemented, stop and re-scope financing approach.
Controllable completion scope	Identify whether construction can be wrapped into date-certain obligations.	If completion cannot be contracted, hold debt sizing and focus on delivery restructuring.
Revenue contractability	Check whether sales can be supported by enforceable offtake or take-or-pay terms.	If revenue cannot be contracted, size debt on conservative assumptions or defer financing.
Bankability path	Place the project on the study ladder and confirm what evidence is still missing.	If the project is below feasibility-grade evidence, do not begin lender syndication.

Sources: WP17-04, WP17-18, WP17-28

1.3 Where the capital comes from and what it demands

Not all capital behaves the same way. OECD tracking of private finance mobilised by official development-finance interventions reports about US\$70 billion mobilised in 2023 and identifies the dominant mobilisation mechanisms as direct investment in companies, guarantees, and syndicated loans. That mix matters for mines because it shapes what is negotiable. Guarantee-backed structures can tolerate risks commercial lenders will not carry alone, but they also impose documentation and compliance expectations that can surface gaps in studies, contracting, and E&S delivery. Knowing the likely instrument set early keeps the project from designing itself into an unfinanceable corner.

WP17-13, WP17-14

Blended finance is not a permission slip to ignore bankability. OECD guidance defines blended finance as the strategic use of development finance to mobilise additional commercial finance, with concessional capital held to the minimum needed to crowd in commercial capital and avoid market distortion. In editorial terms, that pushes sponsors toward disciplined use of support: apply it to risks that cannot be priced efficiently by the market, and keep the remainder of the structure commercially recognisable. A project that asks for subsidy to cover normal execution risk signals weak control, and lenders read that signal clearly.

WP17-15, WP17-13

DECISION INSTRUMENT

Capital-source fit map

Choose instrument families based on what they can credibly solve, not on label appeal.

TEST	EVIDENCE READING	DECISION RESPONSE
Commercial senior debt	Best suited to ring-fenced CFADS with enforceable completion and revenue support.	Proceed only when feasibility evidence and contracts can support coverage conventions.
Guarantees and DFI mobilisation	OECD data shows guarantees as a major mobilisation channel; they shift risk allocation and conditions.	Use where political or offtaker risks need credit enhancement and documentation capacity exists.
Concessional or blended components	OECD blended guidance warns against over-subsidy; concessionality should be minimal and targeted.	Confine to specific market failures and preserve a commercial core term sheet.
Equity and quasi-equity	Equity absorbs residual risk that cannot be contracted away in limited-recourse structures.	Increase equity where completion or commodity exposure remains outside bankable controls.

Sources: WP17-13, WP17-14, WP17-15

02

CHAPTER 2

The project-finance vehicle

The SPV is a cash-machine with rules. The rules are built from CFADS, account control, reserves, and distribution discipline.

CFADS

CORE METRIC UNDERLYING COVERAGE RATIOS AND COVENANTS (PRACTICE) | WP17-05

6 to 12 months

DSRA PRE-FUNDING CONVENTION RANGE (PRACTICE; DEAL-SPECIFIC) | WP17-06

Lock-up

EQUITY DISTRIBUTION SUSPENSION MECHANISM UNDER DSCR STRESS (PRACTICE) | WP17-07

2.1 SPV logic and ring-fenced cash flow

The project-finance vehicle exists to make cash flow observable and controllable. Project finance is limited-recourse, with lenders relying primarily on ring-fenced project cash flows and assets rather than sponsor balance sheets, implemented through a bankruptcy-remote special-purpose company. For a mine, this means the project company has to be more than a holding entity. It must be the counterparty to the construction contracts, the offtake, the key permits and land rights, and the operating regime, so that lenders can see how value is created and can enforce remedies if performance deviates.

WP17-04, WP17-18

Ring-fencing is made real through accounts and a cash-flow waterfall. Established practice defines Cash Flow Available for Debt Service as the single quantity that coverage ratios are built on, with revenues applied in a fixed order: operating costs, senior debt service, reserve-account top-ups, then subordinated debt, before any distribution to equity. The ordering is not cosmetic. It is the credit mechanism that prevents leakage during stress and provides lenders with a predictable repayment priority. In mining, the discipline also forces early alignment on what counts as operating cost versus capital, and how sustaining capital is treated in CFADS.

WP17-05, WP17-04

DECISION INSTRUMENT

SPV architecture checklist: ring-fencing

A control-focused exhibit for designing the project company as a lender-facing credit entity.

TEST	EVIDENCE READING	DECISION RESPONSE
Counterparty mapping	SPV must sit as the obligor under EPC, O&M, and revenue contracts to keep risk inside the security perimeter.	If key contracts sit outside the SPV, restructure before term sheet negotiations.
Account control and waterfall	Define waterfall steps and account bank arrangements around CFADS as the controlling metric.	If CFADS cannot be defined cleanly, stop and resolve accounting and scope boundaries.
Security and step-in logic	Limited-recourse relies on enforceable security and contractual step-in rights.	If remedies are not credible, lenders will reprice or refuse sizing assumptions.
Cash leakage prevention	Ensure all material cash uses route through the waterfall and permitted payments schedule.	If leakage paths exist, close them before inviting lender diligence.

Sources: WP17-04, WP17-05, WP17-18

2.2 Reserves, DSRA, and liquidity discipline

Project finance does not assume perfect performance. It assumes performance will deviate and defines what happens when it does. Reserve accounts are part of that operating logic. Established practice commonly uses a Debt Service Reserve Account pre-funded to cover about 6 to 12 months of forward debt service, and may add a maintenance-reserve or major-maintenance reserve for long-life infrastructure assets. The exact period and funding mechanics are deal-specific, but the intent is constant: protect scheduled debt service from short-term cash shocks and prevent maintenance deferral from quietly converting into a future failure.

WP17-06, WP17-05

Liquidity discipline extends into distribution controls. Established practice uses a distribution lock-up that traps cash and suspends equity distributions when DSCR falls below a set threshold, with a lower threshold triggering an event of default. The thresholds are negotiated, not mandated by any code, but the mechanism is central for mines because it limits the temptation to extract cash in good quarters and then ask for waivers in bad quarters. The technical implication is that the model must show more than returns, but quarter-by-quarter compliance under stress so that lock-up triggers are understood and managed before they occur.

WP17-07, WP17-05

DECISION INSTRUMENT

Liquidity rulebook instrument

A lender-style framework for setting reserves and distribution discipline as operating rules.

TEST	EVIDENCE READING	DECISION RESPONSE
DSRA sizing convention	Apply the established 6 to 12 month convention as a starting range, then calibrate to volatility and lender appetite.	If volatility is high, propose a higher DSRA or stronger revenue support rather than optimistic forecasts.
Maintenance reserve	Treat major maintenance as a pre-funded obligation where asset integrity drives availability.	If maintenance scope is uncertain, require an independent review before locking the reserve mechanism.
Lock-up mechanics	Define DSCR-linked lock-up and default tiers as clear, testable triggers.	If triggers are ambiguous, rewrite to avoid disputes during stress.
Permitted distributions	Align distribution tests with reporting and covenant test dates.	If reporting cadence cannot support testing, tighten reporting before allowing distributions.

Sources: WP17-06, WP17-07

2.3 Covenants as operating controls, not penalties

Covenants in project finance are designed to maintain the repayment engine rather than punish the borrower. Coverage ratios and reserve requirements translate cash flow into constraints that keep the project inside a lender-defined operating corridor. In established practice, this starts with CFADS and the waterfall, then adds forward-looking requirements such as reserve top-ups and distribution lock-ups. For mines, the operational meaning is that finance documents will reach into dispatch, inventory, maintenance scheduling, and even product quality management when those variables affect cash conversion. Sponsors should treat covenant design as an engineering of controllable behavior.

WP17-05, WP17-07

The practical drafting lesson is to connect covenants to measurable evidence. If an obligation cannot be observed through accounts, reporting, or independent verification, it will become a waiver discussion. The established market approach relies on defined cash-flow calculations, controlled accounts, and clear triggers so that both borrower and lender can see compliance. This interacts with the independent technical expert role later in the process because many covenants depend on technical evidence, including completion certification and reserve reporting conventions. A covenant that depends on a disputed technical input is not a control. It is a future argument.

WP17-05, WP17-12

DECISION INSTRUMENT

Covenant design test

Use this test to convert covenant intent into measurable, dispute-resistant obligations.

TEST	EVIDENCE READING	DECISION RESPONSE
Measurability	Every covenant input should trace to defined accounts, reports, or independent certificates.	If inputs are subjective, replace with objective proxies or third-party verification.
Actionability	Triggers should produce defined actions: lock-up, reserve top-up, or cure process.	If a trigger does not force action, it will not protect the credit in stress.
Consistency with waterfall	Covenants should reinforce the priority of payments and not create parallel payment paths.	If a covenant conflicts with the waterfall, redraft before documentation.
Alignment with technical assurance	Technical-dependent covenants should align with the independent engineer review and reporting cadence.	If verification timing mismatches covenant tests, adjust reporting or covenant dates.

Sources: WP17-05, WP17-12, WP17-07

03

CHAPTER 3

Debt sizing and the bankable study

Size debt from evidence, not from ambition. Lenders lend against reserves, feasibility-grade costs, and a model that survives stress under coverage conventions.

1.20 to 1.40x

DSCR MINIMUM COVENANT CONVENTION RANGE (PRACTICE; DEAL-SPECIFIC) | WP17-08

LLCR / PLCR

NPV-BASED LIFE COVERAGE RATIOS USED TO SCULPT DEBT (PRACTICE) | WP17-09

Class 5 to Class 1

AACE ESTIMATE CLASS LADDER AND ACCURACY RANGES (GUIDANCE) | WP17-11

3.1 Coverage ratios start with CFADS and end with repayment shape

Debt sizing begins with definitions. Established market practice defines DSCR as CFADS in a period divided by debt service in that period, and it is used as a covenant and as a design target for sculpted amortisation. Practitioner references commonly cite minimum covenant levels near 1.20 to 1.40 times, with about 1.30 times often cited for infrastructure and higher levels for commodity-exposed mining cash flows. These figures are conventions, not mandated requirements, and the precise level depends on the commodity, the cost curve, and the strength of contracts and completion package.

WP17-08, WP17-05

Life coverage ratios add a second lens. Established practice defines LLCR as the net present value of CFADS over the remaining loan life divided by debt outstanding, while PLCR extends the NPV over the whole project life. These ratios support sculpting, where scheduled repayments track a target coverage profile rather than using flat amortisation. For mines, LLCR and PLCR discussions quickly become discussions about reserve confidence, operating cost realism, and capital discipline because those are the variables that drive CFADS stability over life. Coverage analysis is therefore inseparable from the technical basis of the mine plan.

WP17-09, WP17-10

DECISION INSTRUMENT

Debt sizing workflow instrument

A lender-style workflow from CFADS definition to repayment sculpting, with explicit decision points.

TEST	EVIDENCE READING	DECISION RESPONSE
Define CFADS and waterfall	Lock the CFADS calculation and the priority of payments before ratio analysis.	If CFADS is disputed, pause sizing and reconcile accounting treatment and sustaining capital.
Set coverage conventions	Use DSCR and life coverage ratios as conventions calibrated to volatility and contract strength.	If required coverage implies too little debt, revisit risk allocation before changing assumptions.
Sculpt amortisation	Align repayment schedule to target DSCR and LLCR profile rather than flat repayment.	If sculpting depends on aggressive ramp-up, require stronger completion evidence or reserves.
Stress and covenant testing	Test lock-up and reserve mechanics under downside cases to see when controls activate.	If triggers activate early and often, strengthen revenue support or increase equity.

Sources: WP17-05, WP17-08, WP17-09, WP17-07

3.2 Bankable feasibility: reserves, cost class, and model integrity

Lenders lend against reserves, not hopes. Under CRIRSCO-family codes and the CIM Definition Standards incorporated by NI 43-101, only Mineral Reserves, Proven and Probable, support the production schedule a lender will lend against, not Mineral Resources. In parallel, lenders typically require a reserve tail extending beyond loan maturity as an established convention, with the exact tail length negotiated deal by deal. The reason is straightforward: repayment risk increases sharply when loan maturity approaches the end of proven mine life, because operational surprises have no remaining time to be absorbed.

WP17-10

The bankable feasibility study is the technical spine for the financial model. Established BFS practice links reserves and the mine plan to capital and operating cost estimates, and AACE Recommended Practice 18R-97 defines estimate classes from Class 5 order-of-magnitude through Class 1 definitive, keyed to project definition maturity and published accuracy ranges. The financing implication is that early-stage estimates extend beyond less accurate. They are not acceptable as the basis for large debt because they translate directly into drawdown risk and completion uncertainty. The study ladder needs to advance before the debt quantum can.

WP17-11, WP17-28

DECISION INSTRUMENT

Bankable study evidence map

A decision instrument to confirm whether the technical package can support debt sizing discussions.

TEST	EVIDENCE READING	DECISION RESPONSE
Reserve basis	Confirm the production schedule is backed by Mineral Reserves under a CRIRSCO-family code or CIM standards.	If the mine plan relies on Resources, stop and re-base the schedule before engaging lenders.
Reserve tail convention	Apply the reserve-tail concept as a negotiated credit protection for loan life.	If tail cannot be demonstrated, shorten tenor or increase equity support.
Estimate class maturity	Place capex and schedule on the AACE class ladder and disclose accuracy range.	If capex is below feasibility-grade maturity, defer close and advance definition work.
Model traceability	Ensure the financial model ties directly to the feasibility technical basis and operating assumptions.	If model inputs are not traceable to study outputs, rebuild before due diligence.

Sources: WP17-10, WP17-11, WP17-28

3.3 Independent technical review and completion tests

Independent review is a core lender control. Established project-finance practice uses an Independent Technical Expert, often called the Lender’s Engineer, to review the feasibility study, reserves, cost estimate, schedule, and financial model on lenders’ behalf. The intent is not to redesign the project. It is to confirm that the technical basis is coherent, that assumptions are disclosed, and that the plan can be executed within the proposed contracts and contingencies. For a mine, the independent review tends to focus on ramp-up realism, process performance margins, tailings and water management, logistics reliability, and the interfaces between mine and shared infrastructure.

WP17-12, WP17-11

Completion tests define the hinge between construction risk and operating risk. Established practice has the independent engineer certify the tests that move the project from construction to operation, which then affects distributions, refinancing options, and the risk profile lenders carry. Sponsors should treat completion tests as design requirements because they influence commissioning plans, performance guarantees, spares strategy, and reporting evidence. If the completion tests are weak, lenders retain construction risk longer and price accordingly. If the tests are strong but unrealistic, the project can become trapped in technical default despite producing value. Precision matters.

WP17-12, WP17-18

DECISION INSTRUMENT

Completion test design instrument

A framework for defining completion tests that are enforceable, measurable, and aligned with operational reality.

TEST	EVIDENCE READING	DECISION RESPONSE
Performance criteria	Define measurable throughput, recovery, product quality, and availability criteria relevant to CFADS.	If criteria are not measurable, revise instrumentation and reporting before finalising tests.
Duration and stability	Require stable operation over a defined period rather than a single peak performance point.	If the test can be passed by short-term tuning, tighten to demonstrate sustainable operation.
Interface completion	Include mine-to-infrastructure and utilities readiness as explicit completion components where relevant.	If interfaces are outside the test, lenders will hold residual completion risk and reduce sizing.
Certification and evidence	Assign certification to the independent engineer with clear data and audit requirements.	If evidence is not auditable, strengthen reporting and data governance.

Sources: WP17-12, WP17-05, WP17-21

04

CHAPTER 4

The capital stack

The stack is a negotiation over who carries which risk and at what price. Export credits, guarantees, streams, and royalties each change the credit shape.

US\$70bn

PRIVATE FINANCE MOBILISED BY OFFICIAL INTERVENTIONS IN 2023 (OECD VINTAGE) | WP17-13

85%

EXPORT CREDIT OFFICIAL SUPPORT CAP AS SHARE OF EXPORT CONTRACT VALUE (OECD) | WP17-16

US\$44.7bn

STREAMING AND ROYALTY CAPITAL DEPLOYED SINCE 2004 (SECONDARY MARKET CONTEXT) | WP17-17

4.1 Senior debt, mobilisation, and what shifts bank appetite

In many mine financings, the question is not whether senior debt exists in principle, but whether it can be mobilised to the tenor and pricing the project needs. OECD tracking reports about US\$70 billion of private finance mobilised by official development-finance interventions in 2023, with direct investment, guarantees, and syndicated loans together accounting for almost 70 percent of the total over 2012 to 2023. That pattern matches deal reality: senior debt syndication improves when specific risks are carved out and covered through recognised instruments rather than left inside generic sponsor support.

WP17-13

Guarantees are particularly relevant because they can shift the credit profile without changing the underlying asset. OECD reports guarantees mobilised about US\$17 billion in 2023 and were the second most-used mechanism, while also noting that mobilisation has tended to skew toward middle-income countries. For frontier or higher-risk contexts, this reinforces a technical point: the structure has to be document-ready. Guarantees and DFI-linked mobilisation bring their own due diligence and monitoring expectations, including around E&S compliance and reporting, which must be built into governance and budgets from the start.

WP17-14, WP17-13

DECISION INSTRUMENT

Mobilisation pathway instrument

A decision framework for when and how to introduce official-sector risk sharing into a commercial stack.

TEST	EVIDENCE READING	DECISION RESPONSE
Identify the binding risk	Locate whether the constraint is political risk, tenor, offtaker credit, or completion confidence.	If the constraint is execution risk, fix delivery package before seeking guarantees.
Select mobilisation mechanism	Use OECD mechanism categories as a practical menu: guarantees, syndicated loans, direct investment.	If the mechanism adds complexity without addressing the binding risk, remove it.
Plan conditionality and reporting	Assume increased monitoring and compliance expectations where official involvement exists.	If governance cannot carry the burden, simplify the structure or invest in reporting capability.
Preserve commercial recognisability	Keep core terms and controls aligned with established project-finance practice.	If terms become bespoke beyond lender comfort, expect pricing and time penalties.

Sources: WP17-13, WP17-14, WP17-18

4.2 Export credits as a structured funding tool

Export credit can be a decisive component where a project includes eligible imported equipment and services. Under the OECD Arrangement on Officially Supported Export Credits, official support is capped at about 85 percent of the export contract value, implying a minimum 15 percent cash payment, and maximum repayment terms are defined, including 2023 changes that allow up to 22 years for green transactions and up to 15 years for most others. The Arrangement also sets risk-based Minimum Premium Rates keyed to an eight-category country-risk scale. These rules shape procurement strategy and payment schedules as much as they shape finance.

WP17-16

The technical integration point is timing and interface. Export credit draws often follow equipment delivery milestones, while mine construction cash flow follows civil works and commissioning logic. If the procurement plan is not aligned to the construction critical path and completion tests, the project can become over-funded early or under-funded when it matters. Sponsors should therefore treat ECA eligibility and contract packaging as part of the finance engineering. Where export credits are used, the project team also needs to respect the boundaries of what the Arrangement governs versus what is still negotiated in the loan agreements.

WP17-16, WP17-12

DECISION INSTRUMENT

ECA integration instrument

A framework to align export-credit constraints with mine delivery and lender controls.

TEST	EVIDENCE READING	DECISION RESPONSE
Eligible scope definition	Separate export contract value from local works and owner costs early.	If eligible scope is uncertain, avoid basing the funding plan on maximum cover assumptions.
Payment and drawdown schedule	Align supplier payment milestones to construction progress and completion logic.	If schedules misalign, repackage contracts or add bridging finance with clear take-out.
Tenor and premium implications	Test whether Arrangement tenors and MPR logic fit the project's cash flow profile.	If tenor is insufficient, revise amortisation sculpting or add complementary instruments.
Country-risk context	Use the Arrangement's country-risk scale as an input to pricing expectations, not as a guarantee of support.	If risk category implies high premiums, explore PRI or guarantee layering.

Sources: WP17-16, WP17-09, WP17-12

4.3 Streams, royalties, and subordinated layers

Streaming and royalty instruments can add non-dilutive capital, but they reshape project economics and operating flexibility. McKinsey market commentary describes a stream as an upfront sum for the right to buy a fixed share of future production at a low pre-agreed price, and a royalty as a right to a percentage of revenue, both described as non-dilutive and off balance sheet. The same source reports about US\$44.7 billion deployed since 2004, with roughly 72 percent via streams and 27 percent via royalties. These figures are market context, not a prescription for any individual mine.

WP17-17

In a project-finance context, these instruments behave like fixed claims on future value and therefore interact with CFADS and covenant capacity. A stream reduces available revenue per unit for the streamed volume, and a royalty takes a top-line slice regardless of cost performance. That can tighten coverage ratios unless the structure is calibrated carefully. Sponsors should therefore test streaming and royalty terms inside the same cash-flow waterfall logic used for senior debt. If the instrument is introduced to reduce equity needs, it should not silently increase the probability of lock-up, reserve draws, or covenant pressure under downside cases.

WP17-17, WP17-05, WP17-07

DECISION INSTRUMENT

Stream and royalty decision instrument

A framework to decide whether and how to add streams or royalties without breaking senior debt capacity.

TEST	EVIDENCE READING	DECISION RESPONSE
Value transfer mapping	Quantify how stream pricing or royalty percentage changes revenue available for CFADS.	If CFADS reduces materially, resize senior debt or renegotiate terms before proceeding.
Intercreditor alignment	Confirm how the instrument ranks in the waterfall and security package.	If ranking creates disputes, resolve intercreditor terms before signing.
Operational flexibility impact	Assess whether delivery, blending, or product changes are constrained by the instrument.	If constraints interfere with meeting completion or operating targets, redesign terms.
Downside resilience	Run downside cases to see whether lock-up or DSRA draw triggers become frequent.	If covenant pressure increases, treat the instrument as debt-like and price risk accordingly.

Sources: WP17-17, WP17-05, WP17-07

05

CHAPTER 5

Risk allocation and cover

Bankability is a contracted risk map. Construction, market, operating, political, and sovereign non-payment risks must be assigned and, where needed, insured or guaranteed.

Allocate

CORE PRINCIPLE: ASSIGN EACH RISK TO THE PARTY BEST ABLE TO MANAGE IT (PRACTICE) | WP17-18

4 categories

MIGA POLITICAL-RISK INSURANCE COVERAGE CATEGORIES | WP17-19

Catalyse

PRI AS CREDIT ENHANCEMENT TO LENGTHEN TENOR AND SUPPORT CLOSE (PRACTICE) | WP17-20

5.1 Contracted allocation is the project-finance core

Project finance treats risk as a design variable. Established principle allocates each risk to the party best able to manage it and then wraps it in a contract: construction risk to an EPC contractor under a fixed-price date-certain wrap, market risk to an offtaker under an offtake or take-or-pay agreement, operating risk to an O&M contractor, and residual risk to equity. This is not theory. It is how lenders justify limited-recourse: they do not accept unmanaged risk sitting in the project company. For mining, the challenge is that not every risk can be fully wrapped, so the remaining exposures must be visible and priced.

WP17-18

The practical consequence is that term sheets are negotiated around interfaces, not around narratives. If construction scope is not wrap-ready, lenders seek sponsor support, more contingency, or less debt. If offtake is weak, lenders seek more conservative pricing assumptions, stronger covenants, or alternative revenue support. If operating risk cannot be benchmarked or supported by credible capability, lenders seek stronger reporting and reserve accounts. The finance structure is therefore a mirror of project discipline: the fewer unmanaged interfaces remain, the more the debt can behave like infrastructure debt rather than venture risk.

WP17-18, WP17-07, WP17-06

DECISION INSTRUMENT

Risk allocation map instrument

Use this to turn a generic risk register into a lender-facing contract map with decision outcomes.

TEST	EVIDENCE READING	DECISION RESPONSE
Construction and completion	Define which party carries cost and schedule overruns and what remedies exist.	If completion risk remains with the project, increase equity or require stronger wrap terms.
Market and offtake	Confirm whether an offtake or take-or-pay obligation shifts price or volume risk.	If market exposure remains high, size debt to conservative coverage conventions.
Operations and maintenance	Assess whether O&M capability is contracted or evidenced to maintain availability.	If O&M risk is unmanaged, add reserves, reporting, and performance incentives.
Residual risk to equity	Identify risks no counterparty can credibly take and ensure equity is sized to carry them.	If residual risk is too large, do not force debt sizing to meet a capital target.

Sources: WP17-18, WP17-22, WP17-08

5.2 Political risk insurance as a structuring tool

Political risk is often the binding risk in frontier jurisdictions, especially where state entities touch the value chain through permits, land, utilities, or transport. MIGA, part of the World Bank Group, provides political-risk insurance across four categories of non-commercial risk: currency inconvertibility and transfer restriction; expropriation including creeping expropriation; war, terrorism and civil disturbance; and breach of contract, with additional cover for non-honouring of financial obligations by a sovereign or state-owned entity. The categories matter because they define what can be moved off the balance sheet and what must still be managed through contracts and governance.

WP17-19

Established credit-enhancement logic treats political-risk insurance as a way to transfer specific non-commercial risks to a highly rated multilateral, which can lower cost of capital, lengthen achievable tenors, and catalyse commercial lenders. This does not remove the need for a bankable study and completion discipline. It changes the risk-weighting and the lender committee conversation. In practical drafting terms, PRI interacts with lender security, termination provisions, and political-force-majeure regimes. If those clauses are not aligned, the policy will not deliver its intended credit effect, and the project will still struggle to close.

WP17-20, WP17-12, WP17-18

DECISION INSTRUMENT

PRI fit test instrument

A decision tool to determine whether PRI can address the binding risk and what must change in documentation.

TEST	EVIDENCE READING	DECISION RESPONSE
Risk category match	Map project threats to MIGA categories such as transfer restriction, expropriation, disturbance, and breach of contract.	If the binding risk is commercial, PRI will not solve it; fix contracts or economics.
Tenor and pricing objective	State whether the objective is longer tenor, lower margin, or lender mobilisation.	If objectives are unclear, PRI procurement will drift and delay close.
Document alignment	Align force majeure, termination, and security provisions with policy requirements.	If alignment cannot be achieved, do not assume credit benefit in sizing.
Counterparty behaviour	Treat PRI as part of a broader state interface plan, not a substitute for stakeholder management.	If state-interface risks are unmanaged, prioritise governance and contract clarity.

Sources: WP17-19, WP17-20, WP17-18

5.3 Coverage, reserves, and remedies under stress

A lender’s downside case is where structure is proven. Coverage ratios, reserve accounts, and lock-up mechanics are designed to preserve cash in the project when performance weakens, and these tools are established market practice. For mining, downside can be driven by price, grades, recoveries, logistics disruptions, or ramp-up delays. Each driver hits CFADS differently, which is why disciplined definitions and reporting are essential. If the project cannot calculate CFADS consistently and on time, lenders cannot enforce covenants, and the structure loses its primary control mechanism. Good reporting is not decoration. It is how limited-recourse survives volatility.

WP17-05, WP17-07

Remedies must be credible. Lock-up preserves liquidity by suspending distributions when DSCR falls below a negotiated threshold, and a lower tier can trigger default. DSRA conventions provide time to cure. These are not the only remedies, but they are common and they shape behaviour. Sponsors should ensure that cure rights, reporting timelines, and independent verification align with the actual operational rhythm of the mine and any shared infrastructure. If the project’s data cannot support covenant testing, the result is either lender distrust or overly conservative terms. Both outcomes reduce achievable debt size and increase cost.

WP17-07, WP17-06, WP17-12

DECISION INSTRUMENT

Downside control instrument

A framework for validating whether covenant and reserve mechanics are workable under realistic stress scenarios.

TEST	EVIDENCE READING	DECISION RESPONSE
Data readiness	Confirm CFADS can be produced reliably and audited to covenant dates.	If data is late or inconsistent, invest in reporting systems before close.
Trigger calibration	Test how often lock-up triggers under downside cases and whether cures are feasible.	If triggers are frequent, increase resilience through contracts, reserves, or equity.
Liquidity runway	Assess whether DSRA and other reserves provide enough time to implement corrective actions.	If runway is short, resize reserves or adjust amortisation sculpting.
Independent verification	Use independent engineer oversight where technical performance drives covenant compliance.	If verification is unclear, define certificate content and timing in documentation.

Sources: WP17-05, WP17-07, WP17-06, WP17-12



06

CHAPTER 6

Shared-use corridor finance

Corridors and shared infrastructure can dominate capital need and determine close. Bankability depends on take-or-pay anchors, tariff logic, and a clean completion interface between mine and infrastructure vehicles.

Separate SPV

INFRASTRUCTURE OFTEN FINANCED SEPARATELY FROM THE MINE (FRAMEWORK) | WP17-21

Take-or-pay

CONTRACT FORM THAT CONVERTS USAGE RISK TO PAYMENT OBLIGATION (FRAMEWORK) | WP17-22

Interface

KEY QUESTIONS: RAMP-UP, VOLUME RISK, REGULATION, AND EXPANSION LUMPINESS (FRAME) | WP17-23

6.1 Why corridors change the financing equation

Remote and landlocked mines often fail or succeed on their enabling infrastructure. World Bank and partner shared-use infrastructure work notes that mine-associated bulk infrastructure, heavy-haul rail, bulk export ports, power, and water can be a majority of total project capital for such developments, which is why infrastructure is frequently financed as a separate entity from the mine. This is a typical framing, not a universal statistic, but it captures a recurring credit reality: infrastructure creates different risks, different cash flows, and often different counterparties than the mine. Combining them into one SPV can dilute bankability rather than strengthen it.

WP17-21

Separating the infrastructure vehicle forces clarity. The mine becomes a shipper and a payer, the corridor becomes a service provider, and the connection between them becomes a completion and ramp-up interface that can be contracted and monitored. Lenders can then evaluate two sets of risks with different mitigations: mining and processing risks in one place, and corridor availability, tariff structure, and third-party access issues in another. The separation also supports phased build-out where expansion is lumpy, but only if the take-up of capacity and the tariff regime are defined with enough precision to underwrite revenue.

WP17-21, WP17-23

DECISION INSTRUMENT

Corridor separation decision instrument

Use this to decide whether to finance infrastructure inside the mine SPV or as a separate project.

TEST	EVIDENCE READING	DECISION RESPONSE
Capital dominance test	Assess whether enabling infrastructure is a dominant share of total capital in the development concept.	If yes, design an infrastructure SPV and define interface contracts early.
Cash flow separability	Check whether corridor revenues can be defined as tariffs or capacity payments independent of mine margins.	If separable, pursue independent financing; if not, keep within mine structure with stronger support.
Counterparty and governance fit	Determine who can credibly own, operate, and regulate the corridor.	If governance is unclear, prefer structures with clear concession and remedy regimes.
Interface complexity	Map physical and operational handoffs between mine, corridor, port, and utilities.	If interfaces are complex, invest in contract and completion test design before financing.

Sources: WP17-21, WP17-23

6.2 Take-or-pay and capacity reservation as the revenue engine

Infrastructure debt needs a payment obligation that survives volume swings. World Bank and partner guidance describes take-or-pay and capacity-reservation contracts as mechanisms that convert usage risk into a contractual payment obligation, where the anchor shipper pays whether or not it ships. That is what makes an infrastructure SPV financeable. Open-access or multi-user models add third-party users and tariff regulation, which can improve utilisation but also adds regulatory and collection risk. For mines, the anchor contract is often the main underwriting input, so its term, remedies, and credit support are central to the corridor’s debt capacity.

WP17-22

The technical negotiation is about what the anchor shipper is paying for. If the corridor must be built to a high specification for future users, the anchor may resist paying for unused headroom. If expansion is expected but uncertain, the corridor must manage lumpy capital additions without breaking coverage. These are not legal details. They define tariff path, maintenance standards, and availability incentives. Sponsors should therefore treat the take-or-pay term sheet as a design document that sets performance standards, dispatch rules, and measurement systems, aligned with the same CFADS and waterfall logic used in mining project finance.

WP17-22, WP17-05, WP17-23

DECISION INSTRUMENT

Take-or-pay term sheet instrument

A framework to draft take-or-pay and capacity-reservation terms in a way lenders can underwrite.

TEST	EVIDENCE READING	DECISION RESPONSE
Payment obligation clarity	Define whether payments are for capacity, throughput, or availability, and how they are measured.	If measurement is disputed, redesign metering and reporting before signing.
Credit support for anchor	Assess the anchor shipper’s credit and whether additional support is needed.	If anchor credit is weak, add security, guarantees, or diversify users.
Availability and performance regime	Set availability metrics, penalties, and maintenance obligations to protect service quality.	If availability is not incentivised, lenders will haircut revenue assumptions.
Open access and tariff governance	Define third-party access rules and tariff adjustment mechanisms where applicable.	If regulation risk is high, prefer contracted revenues over exposed tariffs.

Sources: WP17-22, WP17-23

6.3 Shared-use structures and the completion interface

Shared-use structures span a spectrum. World Bank, AfDB, and partner frameworks describe models from sole-use where the anchor miner owns and operates, through multi-user negotiated access, to independent infrastructure companies holding take-or-pay contracts, and to government or PPP build-operate-transfer concessions. Across these models, the central questions are who bears ramp-up and volume risk, how tariffs are set and adjusted, how expansion lumpiness is funded, and how the mine-to-infrastructure completion interface is managed. Each question has a financing consequence: it changes which entity can carry debt and what security and remedies lenders can rely on.

WP17-23

The completion interface is often the failure point. If the corridor SPV reaches mechanical completion but the mine is delayed, corridor revenues may not start, triggering liquidity stress. If the mine completes but the corridor does not, the mine cannot sell product, destroying CFADS. The only defensible approach is to treat the interface as a bankable package with aligned schedules, defined handover tests, and clear responsibility for delay and underperformance. Independent engineer certification practice supports this by making completion evidence opposable. Sponsors should also recognise that corridor financing may require different E&S and permitting sequencing than the mine, which must be managed explicitly.

WP17-23, WP17-12, WP17-21

DECISION INSTRUMENT

Mine-to-corridor interface instrument

A decision-oriented framework for contracting and testing the completion interface between two financeable SPVs.

TEST	EVIDENCE READING	DECISION RESPONSE
Aligned critical paths	Integrate mine and corridor schedules and identify mutual dependencies.	If critical paths diverge, create contingency plans and liquidated damages aligned to the dependency.
Interface completion tests	Define handover and readiness tests for rail loadout, port shiploading, power, and water as applicable.	If tests are missing, lenders will hold completion risk and reduce debt capacity.
Delay allocation	Contract who pays for delay when one SPV prevents the other from generating revenue.	If delay risk is unallocated, expect higher equity and tighter covenants.
Expansion and third-party access	Define how capacity upgrades are triggered and funded, and how third parties access the corridor.	If expansion governance is unclear, constrain scope to a financeable base phase.

Sources: WP17-23, WP17-12

07

CHAPTER 7

Environmental and social conditions

E&S is part of credit. EP4 scope, IFC Performance Standards, and tailings governance shape conditions precedent, covenants, and operating constraints.

US\$10m

EP4 PROJECT-FINANCE APPLICABILITY THRESHOLD FOR TOTAL PROJECT CAPITAL COSTS | WP17-24

8 standards

IFC PERFORMANCE STANDARDS COUNT (PS1 TO PS8) | WP17-26

77 requirements

GISTM AUDITABLE REQUIREMENTS COUNT (TAILINGS) | WP17-27

7.1 Equator Principles scope and what it changes

EP4 sets a practical baseline for many project-finance lenders. The Equator Principles are a risk-management framework adopted by financial institutions, and EP4 applies to Project Finance and Project Finance Advisory Services at total project capital costs of US\$10 million or more, reduced from US\$50 million under EP3. EP4 also applies to Project-Related Corporate Loans at commitments of at least US\$50 million. For mines, the implication is simple: E&S due diligence and documentation are not optional add-ons once the project is large enough. They are part of the lender process and can determine timetable and close conditions.

WP17-24

EP4 also defines how non-Designated Country projects are assessed. For such projects, EP4 requires assessment against the IFC Performance Standards and the World Bank Group EHS Guidelines, and EP4 added enhanced climate-change risk assessment aligned to TCFD recommendations and human-rights due diligence referencing the UN Guiding Principles. These are lender expectations embedded in a framework, not government permits. If the project team treats them as late-stage compliance tasks, the finance process will discover gaps too late. Sponsors should instead treat EP4 scope as an early design input to studies, stakeholder engagement, and management systems.

WP17-25, WP17-26

DECISION INSTRUMENT

EP4 applicability and action instrument

A decision tool to determine whether EP4 likely applies and what preparatory actions are needed for lender due diligence.

TEST	EVIDENCE READING	DECISION RESPONSE
Product and threshold test	Check whether financing fits EP4 product types and exceeds the stated thresholds.	If thresholds are met, plan an EP-aligned E&S workstream from feasibility onward.
Designated Country logic	Determine whether IFC PS and WBG EHS Guidelines assessment is required under EP4 rules.	If non-Designated Country treatment applies, align ESIA scope and management plans to IFC PS.
Climate and human rights expectations	Recognise EP4 additions aligned to TCFD and UN Guiding Principles references.	If capability is missing, procure specialist support before lender site visits.
Documentation readiness	Prepare a document set that can be reviewed and monitored through the loan life.	If documents are incomplete, do not set an aggressive close date.

Sources: WP17-24, WP17-25

7.2 IFC Performance Standards as the lender baseline

The IFC Performance Standards are the de facto global norm for private-sector E&S risk management in many project-finance settings. IFC states the standards were approved by member countries in 2011 and effective January 2012, and they comprise eight standards that a client must meet throughout the life of the investment. The sequence runs from an environmental and social management system in PS1 through labour, resource efficiency, community health and safety, land acquisition and involuntary resettlement, biodiversity, Indigenous Peoples, and cultural heritage in PS2 to PS8. For mines, the lifecycle requirement is central: compliance is not a one-time box at close.

WP17-26

From a finance perspective, IFC PS requirements become conditions precedent, covenants, monitoring plans, and sometimes drawdown constraints. The technical consequence is that management systems, stakeholder engagement, and impact mitigation must be resourced with the same seriousness as metallurgical test-work or geotechnical investigation. Projects that rely on shared infrastructure also face compounded stakeholder and land issues across a longer footprint. If these are not scoped early, the project may reach a strong technical feasibility position but still fail to satisfy lender E&S due diligence. That outcome wastes time and erodes sponsor credibility.

WP17-26, WP17-21

DECISION INSTRUMENT

IFC PS readiness instrument

A framework to translate PS1 to PS8 into deliverables lenders can monitor and enforce through the loan life.

TEST	EVIDENCE READING	DECISION RESPONSE
PS1 management system	Confirm ESMS governance, risk identification, and monitoring capacity are defined.	If ESMS is immature, build it before diligence rather than promising future upgrades.
Footprint and stakeholder mapping	Map impacts across mine, corridor, port, power, and water where applicable.	If footprint is incomplete, re-scope studies and engagement to avoid late surprises.
Mitigation and commitments register	Create a traceable register linking impacts to commitments, owners, and schedules.	If commitments are not costed and scheduled, lenders will treat them as execution risk.
Life-of-loan monitoring plan	Define reporting cadence and independent verification expectations.	If monitoring cannot be delivered, adjust governance and budgets before close.

Sources: WP17-26, WP17-25

7.3 Tailings governance and GISTM in financing conditions

Tailings is now a financing topic, more than an operating topic. The Global Industry Standard on Tailings Management was launched in August 2020 by ICMM, UNEP and the PRI after the Brumadinho failure. The standard sets 15 principles and 77 auditable requirements across the facility lifecycle, with consequence-based classification. The dossier notes lenders increasingly make GISTM conformance a condition precedent and a covenant for projects with tailings facilities. For project teams, this moves tailings governance into early design, data management, and assurance planning because financiers can demand evidence before first draw.

WP17-27

The bankability lesson is that tailings conformance must be engineered. Auditable requirements imply auditable records, clear accountability, and independent review capacity. This connects directly to the independent engineer role and to reporting systems: lenders will look for evidence that the project can sustain conformance through operations, more than at commissioning. For mines that share infrastructure corridors, tailings risks can also influence social licence and therefore corridor reliability and security. Sponsors should therefore treat tailings governance as part of integrated risk allocation and as a permanent covenant compliance obligation rather than an isolated technical work package.

WP17-27, WP17-12, WP17-18

DECISION INSTRUMENT

GISTM financing interface instrument

A decision tool to prepare tailings governance evidence for lender conditions precedent and covenants.

TEST	EVIDENCE READING	DECISION RESPONSE
Consequence classification	Apply consequence-based classification as a foundation for governance intensity.	If classification is uncertain, prioritise data collection and independent review early.
Auditable evidence plan	Define what records, monitoring, and assurance evidence will exist at each lifecycle stage.	If evidence cannot be produced, redesign management systems before seeking close.
Covenant packaging	Anticipate GISTM conformance entering CPs and covenants for facilities with tailings.	If conformance cannot be committed credibly, revisit facility design or financing strategy.
Independent review integration	Integrate tailings assurance with lender independent engineer and reporting processes.	If assurance is fragmented, consolidate under a single governance and reporting plan.

Sources: WP17-27, WP17-12

08

CHAPTER 8

The financing-readiness review

Readiness is a test against evidence. A gap on reserves, completion, offtake, political risk, or E&S should be closed before diligence, not argued through it.

Stage-gate

SCOPING TO CLOSE LADDER USED TO MANAGE EVIDENCE MATURITY (FRAMEWORK) | WP17-28

Matrix

READINESS REVIEW ACROSS RISK DOMAINS TIED TO EVIDENCE (AURUS FRAMEWORK; ILLUSTR.) | WP17-29

Audit-ready

LENDER-GRADE REPORTING AND EVIDENCE DISCIPLINE (ANONYMIZED CREDENTIAL) | WP17-33

8.1 Stage-gate logic: when debt becomes possible

A project becomes financeable through a sequence of evidence gates. The study ladder governing a financeable project runs Scoping or PEA, Pre-Feasibility, Feasibility, FEED, Final Investment Decision, and financial close, and each rung raises estimate-class accuracy and reduces the residual risk that equity must hold. The dossier framework states that debt is only sizeable once reserves and a feasibility-grade cost estimate exist. This is not a preference. It reflects how lenders justify limited-recourse exposure. If the project is below feasibility-grade definition, the right action is to advance studies, not to shop term sheets.

WP17-28, WP17-11, WP17-10

The stage-gate view also prevents schedule self-deception. Sponsors sometimes attempt to compress feasibility, FEED, ESIA, and contracting into parallel workstreams to meet an internal close date. Some parallelism is possible, but only if dependencies are mapped and evidence quality is protected. AACE estimate-class guidance makes clear that accuracy bands are tied to definition maturity, and lenders will test maturity through independent review. Where shared infrastructure is involved, the ladder applies twice, once for the mine and once for the corridor. If either side lags, the interface risk will dominate lender concerns.

WP17-28, WP17-11, WP17-21

DECISION INSTRUMENT

Stage-gate readiness instrument

A decision tool to determine whether the project is at the right rung to start lender diligence.

TEST	EVIDENCE READING	DECISION RESPONSE
Reserve and plan gate	Confirm reserves and mine plan are lender-lendable inputs rather than conceptual outputs.	If reserves are not the basis, advance technical work before financing outreach.
Estimate class gate	Place capex and schedule on the AACE class ladder and confirm definition maturity.	If estimate class is early, plan additional engineering and cost development before sizing debt.
Contracting gate	Check whether EPC and key interfaces are ready for date-certain obligations.	If contracts are not mature, treat close date as provisional and focus on procurement strategy.
E&S gate	Confirm EP and IFC PS aligned work products are in train for lender review.	If E&S deliverables lag, reschedule financing process to avoid late conditions.

Sources: WP17-28, WP17-11, WP17-18, WP17-24

8.2 The readiness matrix: test each risk against its evidence

A financing-readiness review is a structured read across the risk matrix, with each domain tested against its evidence. The dossier framework defines the domains as resource and reserve, completion, market and offtake, operating, political, and environmental and social, and it sets an explicit rule: each must be supported by evidence such as a code-compliant reserve, a date-certain EPC wrap, a signed offtake, a bankable study, political-risk insurance, and an Equator-compliant ESIA. The value of the review is that it stops the team from treating diligence as a place to fix fundamentals. Diligence is where lenders verify, not where they design.

WP17-29

The review should be intolerant of gaps that cannot be closed quickly. If reserves are not code-compliant, the production schedule is not lendable. If completion risk is not allocated through contracts, lenders will reduce debt or demand sponsor support. If political-risk exposure dominates and no credible PRI pathway exists, tenor and lender appetite will be constrained. If EP4 and IFC PS expectations are not met, lender processes can stall regardless of economics. The readiness review therefore acts as a sequencing tool: close the binding gaps first, then invite independent review and lender diligence when evidence is ready to withstand it.

WP17-29, WP17-10, WP17-18, WP17-19

DECISION INSTRUMENT

Readiness matrix instrument

A decision-oriented matrix for converting readiness into a finite set of close-critical actions.

TEST	EVIDENCE READING	DECISION RESPONSE
Resource and reserve evidence	Require code-compliant reserves as the basis of the production schedule and financial model.	If reserve evidence is incomplete, pause debt sizing and complete reserve work.
Completion package evidence	Require a contractable completion plan and independent engineer completion tests.	If completion evidence is weak, restructure contracting and commissioning plan.
Market and offtake evidence	Require enforceable offtake or take-or-pay support where market exposure is material.	If revenue support is absent, reduce debt or secure stronger commercial contracts.
Political and E&S evidence	Require PRI pathway where relevant and EP4 or IFC PS aligned ESIA and management systems.	If political or E&S gaps remain, address them before lender diligence to avoid late failure.

Sources: WP17-29, WP17-10, WP17-12, WP17-22

8.3 Aurus practice altitudes: reporting, corridors, and lender evidence

Lender confidence depends on the quality of the evidence trail, more than on the technical concept. The dossier includes an anonymized credential that monthly technical reporting and cost-control programmes have been structured for resource developments so that the record a lender’s independent engineer relies on, including reserves, cost to AACE class, schedule and draw-down, is legally opposable and audit-ready. This is a practice altitude statement, not a third-party fact claim. The technical point for sponsors is general: if reporting cannot withstand audit and dispute, covenant compliance and completion certification become fragile, and lenders will price that fragility.

WP17-33, WP17-12, WP17-11

Corridor work benefits from the same evidence discipline. The dossier also records anonymized experience at study and design stage on shared-use and bulk-export assets in Central Africa, and on a trans-boundary rail corridor studied at pre-feasibility and feasibility altitude, where the corridor is the single largest financing question in a landlocked development. These statements are bounded and anonymized. Their relevance is structural: corridor finance fails when interface evidence is weak. Sponsors should apply the readiness matrix to corridor SPVs with the same rigor as the mine, including take-or-pay term clarity, completion interfaces, and E&S footprint management across the full corridor length.

WP17-30, WP17-31, WP17-23, WP17-29

DECISION INSTRUMENT

Evidence governance instrument

A framework to keep lender evidence complete, current, and opposable from feasibility through close.

TEST	EVIDENCE READING	DECISION RESPONSE
Reporting architecture	Define monthly technical, schedule, and cost reporting as a single controlled record set.	If reporting is fragmented, consolidate systems before independent engineer review begins.
Version control for studies and models	Maintain traceable links between feasibility outputs, reserve statements, and financial models.	If traceability is weak, rebuild the model-data chain before lender distribution.
Corridor interface evidence	Apply the same evidence standards to shared infrastructure SPVs and interfaces.	If corridor evidence lags, do not rely on mine-only readiness to proceed.
Lender diligence sequencing	Invite lender diligence only when evidence packages are stable and review-ready.	If packages are moving targets, delay market soundings to protect credibility.

Sources: WP17-33, WP17-29, WP17-31

Decision checklist

Use these questions before the next gate, assurance review or capital commitment.

- | | |
|---|--|
| <p>01 Confirm the financing route is appropriate for limited-recourse and that ring-fencing can be implemented through an SPV and controlled accounts. [WP17-04, WP17-05]</p> | <p>02 Lock the CFADS definition, waterfall, and permitted payments schedule before negotiating coverage ratios and distributions. [WP17-05, WP17-07]</p> |
| <p>03 Advance the technical basis to feasibility-grade, including AACE estimate class maturity and code-compliant Mineral Reserves supporting the mine plan. [WP17-11, WP17-10]</p> | <p>04 Engage an independent technical expert scope early and align completion tests to measurable performance and interface readiness. [WP17-12]</p> |
| <p>05 Size debt using DSCR and life coverage conventions as negotiated market practice and stress-test lock-up and reserve mechanics. [WP17-08, WP17-09, WP17-06, WP17-07]</p> | <p>06 Select capital stack components intentionally, including guarantees, export credits, and any stream or royalty layer, and test their effect on CFADS and covenants. [WP17-13, WP17-16, WP17-17]</p> |
| <p>07 If shared infrastructure is material, decide early whether to finance it in a separate SPV and build take-or-pay or capacity-reservation terms that lenders can underwrite. [WP17-21, WP17-22]</p> | <p>08 Treat EP4 applicability, IFC Performance Standards, and tailings governance expectations as finance conditions, with deliverables scheduled before close. [WP17-24, WP17-26, WP17-27]</p> |
| <p>09 Where political risk is binding, map risks to PRI categories and align documentation so the policy delivers credit enhancement. [WP17-19, WP17-20]</p> | <p>10 Run a financing-readiness review that tests each risk domain against its required evidence and close gaps before lender diligence. [WP17-29]</p> |
| <p>11 Implement lender-grade reporting and evidence governance so independent review, covenant testing, and drawdown control are audit-ready. [WP17-33]</p> | <p>12 If export credits are used, align procurement packaging, payment milestones, and construction critical path to avoid drawdown and completion mismatches. [WP17-16, WP17-12]</p> |

Evidence ledger 1 of 2

Only dossier rows used in this edition are listed. Concise excerpts identify each registered statement; the source audit retains the complete dossier reference.

ROW	REGISTERED EVIDENCE EXCERPT	REGISTERED SOURCE
WP17-01	Global infrastructure investment need is estimated at about US\$94 trillion over 2016 to 2040, an average near US\$3.7 trillion a year, roughly 19% above what current trends would...	Global Infrastructure Hub with Oxford Economics, Global Infrastructure Outlook, 2018...
WP17-02	Cumulative capital investment required for critical-minerals mining over 2024 to 2040 is about US\$590 billion in the Announced Pledges Scenario and nearly US\$800 billion in the...	IEA, Global Critical Minerals Outlook 2024 (APS/NZE scenarios)
WP17-03	Investment in critical-minerals mining development grew about 10% in 2023, down from about 30% in 2022 as prices fell, while investment by lithium-focused specialists rose about...	IEA, Global Critical Minerals Outlook 2024
WP17-04	Project finance is limited-recourse finance: lenders look primarily to the project's own ring-fenced cash flows and assets for repayment, not to the balance sheets of the...	Established project-finance principle (Yescombe, Principles of Project Finance; Practical...
WP17-05	Cash Flow Available for Debt Service (CFADS) is the single quantity every coverage ratio is built on; the cash-flow waterfall applies project revenue in a fixed order: operating...	Established market practice (Practical Law, Financial Covenants: Project Finance)...
WP17-06	A Debt Service Reserve Account (DSRA) is typically pre-funded to cover about 6 to 12 months of forward debt service; a maintenance-reserve or major-maintenance reserve is funded...	Established market practice (Practical Law) [flagged: exact months are deal-specific]
WP17-07	Distribution lock-up traps cash and suspends equity distributions when the DSCR falls below a set threshold (below the base-case target); a lower threshold triggers an event of...	Established market practice (Practical Law) [flagged]
WP17-08	Debt Service Coverage Ratio (DSCR) equals CFADS in a period divided by debt service in that period; minimum lender covenants commonly sit near 1.20 to 1.40 times, with about 1.30...	Established market practice (Practical Law; Yescombe) [flagged: deal-specific]
WP17-09	Loan Life Coverage Ratio (LLCR) equals the net present value of CFADS over the remaining loan life divided by debt outstanding; Project Life Coverage Ratio (PLCR) extends the NPV...	Established market practice (Practical Law; Yescombe) [flagged]
WP17-10	Only Mineral Reserves (Proven and Probable), not Mineral Resources, support the production schedule a lender will lend against; reserves are estimated under a CRIRSCO-family code...	CRIRSCO / JORC Code 2012; CIM Definition Standards 2014 (incorporated by NI 43-101);...
WP17-11	The bankable feasibility study (BFS/DFS) is the technical basis for debt: it sets reserves, a mine plan, capital and operating cost to an AACE estimate class, and a financial...	AACE International, Recommended Practice 18R-97; established BFS practice
WP17-12	An Independent Technical Expert, the Lender's or Independent Engineer, reviews the feasibility study, reserves, cost estimate, schedule and financial model on the lenders' behalf...	Established project-finance practice (Lender's Independent Engineer scope) [flagged]
WP17-13	Private finance mobilised by official development-finance interventions reached about US\$70 billion in 2023, a 28% rise on 2020; over 2012 to 2023, direct investment in companies...	OECD, Tracking Private Finance Mobilisation, 2025 (2023 vintage)
WP17-14	Guarantees mobilised about US\$17 billion of the US\$70 billion in 2023 and were the second most-used mechanism; middle-income countries received more than half of all private...	OECD, Tracking Private Finance Mobilisation, 2025
WP17-15	Blended finance is the strategic use of development finance to mobilise additional commercial finance for sustainable development; concessional capital should be held to the...	OECD DAC Blended Finance Principles (2018) and Guidance (2025)
WP17-16	The OECD Arrangement on Officially Supported Export Credits caps official support at about 85% of the export contract value (a minimum 15% cash payment), fixes maximum repayment...	OECD, Arrangement on Officially Supported Export Credits (2023 modernisation)

Evidence ledger 2 of 2

Only dossier rows used in this edition are listed. Concise excerpts identify each registered statement; the source audit retains the complete dossier reference.

ROW	REGISTERED EVIDENCE EXCERPT	REGISTERED SOURCE
WP17-17	Streaming and royalty companies have deployed about US\$44.7 billion since 2004, roughly 72% via streams and 27% via royalties; a stream is an upfront sum for the right to buy a...	McKinsey Metals & Mining, streaming-and-royalty financing (instrument definitions and...
WP17-18	The governing principle of project finance is that each risk is allocated to the party best able to manage it, and is then wrapped in a contract: construction risk to the EPC...	Established project-finance principle (Yescombe; Practical Law) [flagged]
WP17-19	MIGA (World Bank Group) provides political-risk insurance across four categories of non-commercial risk: currency inconvertibility and transfer restriction; expropriation,...	MIGA, World Bank Group, guarantee product suite
WP17-20	Political-risk insurance is a credit-enhancement instrument: transferring political risk to a highly rated multilateral can lower a project's cost of capital, lengthen achievable...	MIGA / IFC mobilisation practice; established credit-enhancement principle [flagged]
WP17-21	Mine-associated bulk infrastructure, heavy-haul rail, bulk export ports, power and water, can be a majority of total project capital for remote or landlocked resource...	World Bank / PPIAF and CCSI shared-use infrastructure work (framework) [magnitude flagged...]
WP17-22	Take-or-pay and capacity-reservation contracts convert usage risk into a contractual payment obligation, the anchor shipper pays whether or not it ships, which is what makes an...	World Bank / PPIAF; CCSI, shared-use of mining infrastructure (framework)
WP17-23	Shared-use structures range across sole-use (the anchor miner owns and operates), multi-user with negotiated third-party access, an independent infrastructure company holding...	World Bank / PPIAF; AfDB; standard PPP guidance (framework)
WP17-24	The Equator Principles, EP4 effective 1 October 2020, are a risk-management framework adopted by financial institutions; they apply to Project Finance and Project Finance Advisory...	Equator Principles Association, EP4, 2020 (artifact on disk)
WP17-25	For projects in non-Designated Countries, the Equator Principles require assessment against the IFC Performance Standards and the World Bank Group EHS Guidelines; EP4 added...	Equator Principles Association, EP4, 2020
WP17-26	The IFC Performance Standards, approved by all 185 IFC member countries in 2011 and effective January 2012, comprise eight standards a client must meet throughout the life of the...	IFC, Performance Standards on E&S Sustainability, 2012 (artifact on disk)
WP17-27	The Global Industry Standard on Tailings Management, launched August 2020 by ICMM, UNEP and the PRI after the Brumadinho failure, sets 15 principles and 77 auditable requirements...	Global Tailings Review (ICMM/ UNEP/PRI), GISTM, 2020 (artifact on disk)
WP17-28	The study ladder that governs a financeable project runs Scoping/PEA, Pre-Feasibility, Feasibility (DFS/BFS), FEED, Final Investment Decision and financial close; each rung raises...	AACE 18R-97; CRIRSCO/JORC; established stage-gate practice (framework)
WP17-29	A financing-readiness review reads a project across the risk matrix, resource and reserve, completion, market and offtake, operating, political and E&S, and tests each against its...	Aurus framework instrument (synthesises WP17-10, -11, -18, -19, -24 to -27);...
WP17-30	Aurus disciplines have supported multi-billion-dollar deep-water mineral terminal and bulk-export programmes in Central Africa at study and design stage, the class of asset whose...	PC-infrastructure (deep-water terminal / port programme, study-grade)
WP17-31	A trans-boundary rail corridor of several hundred kilometres has been studied at pre-feasibility and feasibility altitude for a resource-export mandate, the corridor being the...	PC-corridor (rail corridor APS/PFS study)
WP17-33	Monthly technical-reporting and cost-control programmes have been structured for resource developments so that the record a lender's independent engineer relies on, reserves, cost...	PC-reporting (turnkey technical-reporting programme)

Glossary

CFADS

Cash Flow Available for Debt Service. Established market practice treats CFADS as the core cash-flow measure used to calculate coverage ratios and to operate the cash waterfall. [WP17-05]

DSCR

Debt Service Coverage Ratio. Established market practice defines DSCR as CFADS in a period divided by debt service in that period; covenant levels are conventions negotiated deal by deal. [WP17-08]

LLCR and PLCR

Loan Life Coverage Ratio and Project Life Coverage Ratio. Established market practice defines them as NPV-based ratios of CFADS over the remaining loan life or full project life divided by debt outstanding. [WP17-09]

DSRA

Debt Service Reserve Account. Established market practice commonly pre-funds a DSRA to cover about 6 to 12 months of forward debt service, with exact sizing deal-specific. [WP17-06]

Limited-recourse project finance

A financing structure where lenders look primarily to ring-fenced project cash flows and assets for repayment, typically through a bankruptcy-remote special-purpose vehicle. [WP17-04]

Take-or-pay

A contract mechanism in shared infrastructure where an anchor shipper pays for capacity whether or not it ships, converting usage risk into a payment obligation that can support infrastructure finance. [WP17-22]

Equator Principles (EP4)

A lender-adopted risk-management framework effective 1 October 2020, applicable to defined financing products and thresholds, and requiring IFC Performance Standards assessment for certain projects. [WP17-24, WP17-25]

IFC Performance Standards

Eight environmental and social performance standards effective January 2012 that set lifecycle requirements for private-sector E&S risk management in many lender processes. [WP17-26]

GISTM

Global Industry Standard on Tailings Management, launched August 2020, with 15 principles and 77 auditable requirements; lenders may require conformance for projects with tailings facilities. [WP17-27]

Political-risk insurance (PRI)

Insurance transferring defined non-commercial risks, such as those covered by MIGA categories, used as credit enhancement to support tenor and lender mobilisation. [WP17-19, WP17-20]

Export credit official support cap

Under the OECD Arrangement, official support is capped at about 85% of the export contract value, with defined maximum repayment terms and minimum premium rate logic. [WP17-16]

AACE estimate classes

AACE Recommended Practice 18R-97 defines estimate Classes 5 to 1 with published accuracy ranges tied to project-definition maturity; used to assess whether cost estimates are financeable. [WP17-11]

Financing-readiness review

A framework instrument that tests project risk domains against required evidence such as reserves, bankable study, completion wrap, offtake, PRI, and Equator-compliant ESIA. [WP17-29]

Study ladder

A stage-gate sequence from Scoping/PEA through close, used to manage evidence maturity for financeability. [WP17-28]

Streaming and royalty

Instrument definitions per secondary market commentary: a stream is an upfront payment for rights to buy a fixed share of production at a pre-agreed price; a royalty is a right to a percentage of revenue. [WP17-17]

Independent Technical Expert

Established practice role, often the Lender's Engineer, that reviews the feasibility basis and certifies completion tests for lenders. [WP17-12]

Distribution lock-up

Established practice mechanism that traps cash and suspends equity distributions when DSCR falls below a negotiated threshold, preserving liquidity in stress. [WP17-07]

Reserve tail

Established practice convention requiring reserves to extend beyond loan maturity so repayment is not dependent on end-of-mine-life production. [WP17-10]

References and limitations

Global Infrastructure Hub and Oxford Economics (2018)

Global Infrastructure Outlook. Provides global infrastructure investment need and gap estimates to 2040. [WP17-01]

International Energy Agency (IEA) (2024)

Global Critical Minerals Outlook 2024. Scenario-labelled critical-minerals mining capex needs and investment trends. [WP17-02, WP17-03]

OECD DAC (2025)

Tracking Private Finance Mobilisation. Mobilised private finance totals and mechanism shares; 2023 vintage figures. [WP17-13, WP17-14]

OECD DAC (2025)

Blended Finance Principles (2018) and Guidance. Defines blended finance and minimum concessionality principle. [WP17-15]

OECD (2023)

Arrangement on Officially Supported Export Credits. Official support cap, maximum repayment terms, and risk-based premium concepts. [WP17-16]

IFC (World Bank Group) (2012)

Performance Standards on Environmental and Social Sustainability. Eight performance standards effective January 2012. [WP17-26]

Equator Principles Association (2020)

The Equator Principles EP4. Applicability thresholds and requirements for IFC PS assessment in certain contexts; climate and human-rights expectations. [WP17-24, WP17-25]

Global Tailings Review (ICMM, UNEP, PRI) (2020)

Global Industry Standard on Tailings Management. 15 principles and 77 auditable requirements; lender use as CP and covenant noted in dossier. [WP17-27]

MIGA (World Bank Group) (Undated)

Political Risk Insurance and Credit Enhancement Product Descriptions. Four PRI categories and NHFO cover description. [WP17-19, WP17-20]

AACE International (Undated)

Recommended Practice 18R-97, Cost Estimate Classification System. Estimate classes and accuracy ranges used in feasibility maturity assessment. [WP17-11]

CRIRSCO and code family references (JORC, SAMREC) and CIM Definition Standards (NI 43-101) (Undated)

Reserve and resource reporting standards. Basis for lender reliance on Mineral Reserves rather than Resources. [WP17-10]

World Bank and partner programmes (PIAF, CCSI) and AfDB (Undated)

Shared-use mining infrastructure and corridor finance frameworks. Shared-use structures, take-or-pay mechanisms, and corridor interface considerations. [WP17-21, WP17-22, WP17-23]

USE LIMITATIONS

- Coverage ratio thresholds, DSRA months, and reserve-tail sizing are presented as established market practice conventions and are negotiated deal by deal. No numeric threshold is stated as a mandated requirement of any named code. [WP17-08, WP17-06, WP17-10]
- IEA critical-minerals investment numbers are scenario-labelled (APS and NZE) and should be treated as scenario outputs, not forecasts or commitments. [WP17-02]
- OECD mobilisation figures are stated as 2023 vintage within a 2025 publication and describe observed mobilisation, not project-level availability. [WP17-13, WP17-14]
- Streaming and royalty market scale figures are secondary market commentary and are used for instrument definition and context only. [WP17-17]
- Shared-use corridor statements about infrastructure being a majority of capex are typical framings from framework sources and are not asserted as a universal measured statistic. [WP17-21]
- Equator Principles, IFC Performance Standards, and GISTM descriptions follow the cited artifacts and may evolve; re-verify if reopening the paper for an updated edition. [WP17-24, WP17-26, WP17-27]

EDITION STATUS

This technical paper is an editorial synthesis for decision support. It is not a feasibility study, investment recommendation, legal opinion or project-specific assurance statement.



AURUS MINING

Capital That Can Close

Published as part of the Aurus Mining technical paper series. Mining, infrastructure, engineering and environment decisions are treated as one connected system, with evidence boundaries stated and source rows preserved.

Prepared for digital distribution in A4 format. Edition 1, 2026.

WP17 | EVIDENCE-BOUNDED TECHNICAL PAPER