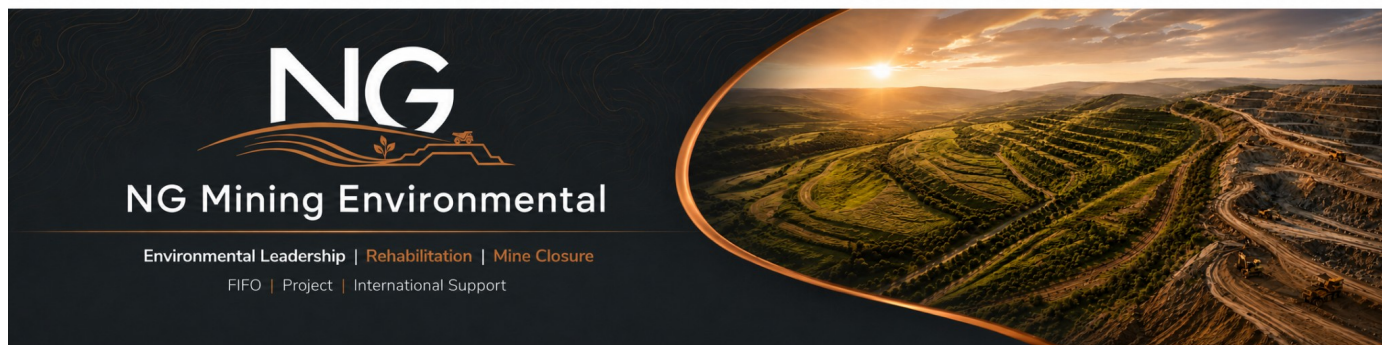




APPROVALS & FEASIBILITY STUDIES

One accountable lead across the study program

Managing the environmental and social pathway from early project definition through approval, financing and execution.

Approvals programs can look straightforward when reduced to a project schedule:

define the pathway, commission the baseline studies, complete the impact assessments, prepare the documentation and obtain the approvals required to proceed.

In reality, it is rarely that linear.

Environmental and social studies often need to commence well before the project itself is fully defined. Baseline programs may need to capture seasonal conditions. Specialist investigations can have long lead times. Approval schedules can extend over several years.

At the same time, the feasibility study continues to evolve. Mine plans change. Infrastructure moves. Processing options are tested. Engineering assumptions develop. Regulators, lenders and other stakeholders may identify additional issues that need to be addressed.

“
The challenge is making sure the studies collectively assess the same project, answer the right questions and provide the information required when the project needs it.

A mining project may require input across ecology, surface water, groundwater, air quality, noise, geochemistry, waste, rehabilitation and closure, cultural heritage, social performance, land access and other specialist areas. The individual studies may all be technically competent. That requires someone to manage the overall pathway.

The studies are not the project

Environmental and social studies do not occur in isolation from project development. In many cases, they also need to start before the project is fully defined.

Waiting until every aspect of the mine, infrastructure and operating strategy is fixed before commencing the environmental and social program may simply push the entire project schedule out. That means approvals and feasibility often need to progress in parallel.

Mine plans are refined. Infrastructure locations change. Processing options are tested. Water balances develop. Waste-rock and tailings concepts evolve. Access routes shift. Workforce assumptions change. Capital estimates are updated.

It is the reality of running approvals and feasibility in parallel.

The challenge is knowing what is sufficiently defined to allow a study to proceed, what assumptions need to be documented, and what aspects are still likely to change.

A consultant may initially need to assess a broader development envelope rather than a final footprint. A water model may need to work from assumptions that are progressively refined. Social studies may commence before final workforce numbers or accommodation arrangements are confirmed.

The approvals lead therefore needs to manage both uncertainty and change.

**Project definition needs to flow into the study program as it matures.
Study outcomes need to flow back into the project while design options still exist.**

That requires a study program that is structured enough to maintain technical integrity, but flexible enough to move with the project.

Different frameworks, same management challenge

The approval pathway varies depending on where the project is located and how it is being financed.

In Australia, the program may need to support State and Commonwealth approvals, environmental authorities or licences, EIS requirements, amendments, water approvals, rehabilitation and closure obligations, cultural heritage and land-access requirements, and other project-specific permits.

For international projects, the host-country regulatory process still needs to be satisfied, but there may also be environmental and social requirements associated with project financing. That can include alignment with the IFC Performance Standards, Equator Principles and lender due-diligence requirements, together with review by independent environmental and social advisers.

The terminology changes. The documentation may be different. The stakeholders may be different. But the management challenge is fundamentally the same.

For an Australian project, that may mean managing specialist studies toward an EIS, approval application or amendment. For an international project, it may mean managing an ESIA and associated specialist work toward host-country approval and lender review.

The framework changes, but somebody still needs to manage the pathway from the first specialist scope through to the final approval, financing or project decision.

One accountable lead

A complex approvals or feasibility program may involve numerous specialist consultants. That does not mean one consultancy needs to undertake every component.

Often, the better approach is to engage the right specialist for each discipline, with one experienced lead managing the overall environmental and social program on behalf of the project.

That person is not there to replace the groundwater modeller, ecologist, social specialist, heritage adviser, geochemist or other technical expert. The role is to make sure their work is properly scoped, coordinated and integrated.

- establishing the approval and environmental/social strategy
- preparing scopes and procuring specialist consultants
- managing schedule, budget and dependencies
- engaging regulators, lenders and independent reviewers
- resolving gaps, overlaps and inconsistencies
- coordinating the approval or ESIA documentation through review and submission
- defining the study program
- coordinating interfaces between disciplines
- maintaining a current and consistent project basis
- reviewing technical outputs critically
- integrating findings into feasibility and engineering

The value is not simply in coordinating consultants. It is in having somebody who can challenge assumptions, recognise when one study affects another, identify when the project has changed underneath the work and keep the program focused on the decisions that matter.

One point of accountability does not mean one person does all the technical work. It means one person is accountable for making sure the technical work collectively delivers what the project needs.

Scope the work around the decision

One of the easiest ways for an approvals program to lose time and money is to commission technical work without being clear about the decision it needs to support.

Specialists will quite reasonably identify additional investigations, modelling or monitoring that could improve technical confidence. Sometimes that work is essential. Sometimes it adds cost and time without materially changing the approval pathway, project design or investment decision.

- What question are we trying to answer?
- What decision could the result influence?
- What information already exists?
- What level of technical confidence is required?
- What approval, lender or project requirement does it relate to?
- When does that decision need to be made?
- What uncertainty actually matters?
- Could the outcome materially change design, schedule, cost or risk?

This is particularly important during feasibility. A concept study does not necessarily need the same level of technical definition as a bankable feasibility study or final approval submission. Likewise, an international project preparing for lender due diligence may require greater technical depth in particular environmental and social areas than the host-country process alone would otherwise require.

The objective is not to do the minimum. It is to do the right work, at the right level of detail, at the right time.

Approval studies should influence project design

Environmental and social studies add the most value when they influence the project before key design decisions are locked in.

- A biodiversity assessment may identify an area that should be avoided.
- Geochemical characterisation may affect waste-rock placement.
- Social findings may influence workforce strategy, accommodation or community planning.
- Groundwater modelling may influence pit design or water-management infrastructure.
- Heritage or land-access constraints may alter an infrastructure corridor.
- Tailings and closure studies may affect facility location, landform geometry, material movement or rehabilitation sequencing.

The important point is that these findings need to move back into engineering and feasibility. Otherwise, the environmental and social workstream becomes reactive - explaining and mitigating a project that has already been designed rather than helping the project avoid or reduce impacts in the first place.

The earlier a material environmental or social issue is identified, the more opportunity the project has to design around it.

The objective is not for environmental considerations to override every other project driver. It is to make sure they are considered at the right time alongside technical, commercial and operational factors.

A good approvals program does more than describe the project. It helps the project make better decisions while there is still time to change them.

Managing a fluid process

Approvals and feasibility rarely progress in a straight line. The project continues to develop while the environmental and social studies are underway, and information from those studies may itself cause the project to change.

The approvals lead therefore needs to be nimble. That does not mean continually changing direction without control. It means understanding which assumptions can reasonably evolve, which changes materially affect the study program, and when work needs to be revisited.

- If the mine footprint changes, what does that mean for biodiversity surveys?
- If an access corridor moves, are heritage and land-access studies still valid?

- If the processing options or throughput change, does that affect water demand, power demand or air-quality modelling?
- If the tailings strategy changes, which studies need to be revisited?
- If workforce assumptions change, does the social assessment still represent the project?

Not every change requires starting again. Some can be accommodated within the existing study basis. Others may require modelling updates, additional fieldwork or a change to the approval strategy. The judgement is knowing the difference.

What has changed, how material is it, and what does it affect?

That may mean maintaining a current project description, recording the assumptions underpinning specialist studies, tracking material design changes and regularly testing whether the study program still reflects the project being developed.

For international projects, the same principle applies where evolving project definition can affect the ESIA basis, commitments, management measures and information being considered by lenders and independent reviewers.

A technically strong study can still become the wrong study if the project has moved beyond the assumptions on which it was based.

The goal is not to eliminate change. It is to manage it without losing control of the approval pathway, technical evidence, schedule or cost.

Regulator and lender engagement is not something that happens at the end

A strong approvals program should not be developed in isolation and presented to the regulator, lender or independent reviewer only after the technical work is complete. By then, considerable time and money may already have been committed to an approach that does not fully address their expectations.

- | | |
|---|---|
| <ul style="list-style-type: none"> • the likely assessment pathway • expectations around baseline data and methodology • submission sequencing • where additional assurance or independent review may be required | <ul style="list-style-type: none"> • key issues of regulatory or lender interest • information gaps • material project changes |
|---|---|

For Australian projects, that may involve State and Commonwealth regulators. For international projects, it may extend to lenders, independent environmental and social advisers and other parties reviewing the project against frameworks such as the IFC Performance Standards and Equator Principles.

The objective is not to ask the regulator or lender to design the study program. It is to make sure the project understands the expectations it will ultimately need to satisfy.

Good engagement does not replace technical evidence. It helps make sure the evidence being developed is relevant, timely and capable of supporting the approval or financing decision.

Technical QA is more than proofreading

Specialist reports need technical review, but approvals-program QA is not simply checking formatting and references. Someone needs to read the work in the context of the whole project.

- | | |
|--|--|
| <ul style="list-style-type: none"> • Does this study assess the current project? • Does it answer the requirement it was commissioned to address? • Are mitigation measures practical? • Does one recommendation create a problem elsewhere? | <ul style="list-style-type: none"> • Are assumptions consistent across disciplines? • Do the conclusions follow from the evidence? • Are commitments being made that the project can realistically deliver? • What does the outcome mean for design, schedule, cost or operations? |
|--|--|

A specialist may produce a very good report within their discipline but not necessarily see how their recommendations interact with the broader project. Different consultants may also use different assumptions, terminology or levels of conservatism. Individually, each report may be defensible. Collectively, they can still create an inconsistent story.

Good technical QA looks across the study program, not just down into each individual report.

The question is not simply: Is this a technically competent report? It is also: Does this report do what the project needs it to do, and does it fit coherently with everything around it?

The submission needs one narrative

Eventually the individual studies need to become one coherent approval story. The regulator, lender or independent reviewer should not have to work out how dozens of specialist reports fit together.

The documentation needs to explain consistently what the project is, what environmental and social values may be affected, what the material risks and impacts are, how those impacts will be avoided or managed, what commitments the project is making and how those commitments will ultimately be implemented and monitored.

That narrative needs to be developed progressively, not assembled at the last minute. The approvals lead needs to keep the overall story in view while the specialist work is still underway.

For Australian projects, that may mean integrating specialist findings into an EIS, approval application or amendment. For international projects, it may mean bringing the ESIA and associated documentation together so the project can clearly demonstrate how environmental and social risks are being managed against host-country and lender requirements.

The final submission should read like one project assessed through multiple disciplines - not multiple reports trying to describe the same project independently.

Approval is not the finish line

Obtaining the approval is a major milestone, but the commitments made through that process eventually need to become practical requirements for design, construction and operations.

That may include management plans, monitoring, design controls, reporting, rehabilitation and closure commitments, biodiversity measures, cultural heritage controls, stakeholder commitments, contractor requirements, training, assurance and lender reporting.

A commitment can look reasonable in an approval document but become difficult or expensive to implement once the project moves into construction or operations.

Can the project actually deliver what it is committing to?

The aim is to maintain a clear line from:

study finding → project response → commitment → accountable owner → operating control

That is why approvals and operational readiness should not be treated as completely separate activities.

A successful approval is not simply one that gets the project through the assessment process. It is one that leaves the project with commitments it understands, can resource and can actually deliver.

The practical lesson

The strongest approvals and feasibility programs are not necessarily the ones with the most studies or the largest consultant teams. They are the ones where environmental and social work has been managed as one integrated project program.

That means one clear strategy, one current project basis, specialist scopes tied to real decisions, the right expertise for each discipline, clear ownership of interfaces, disciplined schedule and budget management, consistent assumptions, effective regulator and lender engagement, findings fed back into feasibility and engineering, and commitments the project can ultimately implement.

Someone needs to remain accountable for bringing the whole program together.

The project does not need every specialist to sit within the same organisation. It needs the right specialists doing the right work, with one experienced lead making sure their work collectively supports the project, the approval pathway and the decisions that need to be made.

From technical studies to project decisions

Environmental and social studies should not simply document a project after the major decisions have already been made. They should help shape those decisions while alternatives still exist.

That is where effective approvals management adds the most value: connecting specialist technical work with engineering, feasibility, regulators, lenders, stakeholders and the business itself.

The objective is not simply to complete the studies. It is to develop a defensible pathway, reduce avoidable approval and financing risk, support better project decisions and leave the future operation with commitments it can actually deliver.

Because the real value is not in managing a collection of reports. It is in managing the pathway from project concept through to an approvable, financeable and ultimately executable project.

NG Mining Environmental

Client-side support for Australian and international mining approvals and feasibility studies - establishing the approvals and environmental/social pathway, defining and managing specialist studies, procuring and coordinating consultants, managing schedule and budget, engaging regulators and project stakeholders, reviewing technical outputs, challenging assumptions and integrating findings into project design and feasibility decisions.

For international projects, this can also include management of environmental and social study programs supporting alignment with the IFC Performance Standards, Equator Principles and lender due-diligence requirements.

One accountable lead across the study program - from defining the work through to bringing the technical pathway together.

+61 477 841 028 | nathan@ngminingenvironmental.com.au | www.ngminingenvironmental.com.au