

Finding an appropriate contractual bedrock for procurement of mining & metals projects in Africa

With its huge mineral potential, Africa is likely to see a number of mining projects move from exploration and feasibility to construction. But mining is an inherently risky business, and finding the most appropriate procurement and contractual framework is key to ensuring that projects developed on the continent are delivered on time, on budget and to the relevant quality and purpose requirements.



By Paddy Mohen

Recent commodity price rises and a relatively positive commodity price outlook, particularly in metals, have fueled renewed interest in greenfield and brownfield expansion projects in the African mining & metals sector. But with various African jurisdictions facing their unique set of challenges—real or perceived—for the successful development of a mining or metals project, the question of how to move a project into the construction phase remains key to all new projects.

Exploring the options

One of the most common structures for procuring construction works in the mining & metals sector is where a contractor is engaged by the project owner to provide services in relation to engineering, procurement and construction management (EPCM).

Under such a structure, the EPCM contractor does not itself carry out much, if any, of the physical work, but is responsible for managing on behalf of the project owner the engineering, procurement and construction work carried out by others. The EPCM contractor itself will also often perform limited engineering services, usually in relation to whole-of-system design and integrating the various work packages.

The structure is well suited for African mining & metals projects when traditional EPCM contractors

may be reluctant to commit to deliver a project on a lump-sum “turnkey” basis. This structure has been commonly implemented in projects across Africa, including in the Nacala Corridor Railway and Port Project in Mozambique and Malawi, the Tasiast gold mine expansion in Mauritania and the Ambatovy nickel project in Madagascar.

Another common structure used for mining & metals projects is an engineering, procurement and construction (EPC) contract. In these structures, a single EPC contractor is responsible for engineering, procuring and constructing the project—or a defined part of the project—on a “turnkey” basis, undertaking to carry out all the work necessary to complete the project (or defined part).

The concept of “turnkey” contracting is similar to the purchase of a car—where the manufacturer is responsible for designing, procuring or fabricating the necessary parts, and then assembling the car. When the car is handed over to the customer, all the customer needs to do to operate the vehicle is to turn the key in the ignition.

In these arrangements, the EPC contractor takes on the majority of delivery risk and is responsible for transferring a completed project (or defined part of the project) to the owner. The EPC contractor must generally bid a fixed lump sum to



The question of how to move a project into the construction phase remains key to all new mining & metals projects in Africa



The needs of mining & metals projects are wide and varied, and range from simple to the most complex of construction works

complete the works, although hybrid pricing structures can be agreed, and must complete the works by a set date. Failure to complete the works on time means delay liquidated damages will be payable.

Entitlements to additional costs and extensions of time will generally be limited, and the EPC contractor will be responsible for any work carried out by any subcontractors as if it was doing the work itself.

While the EPCM model has been more dominant in African mining & metals projects, the “turnkey” EPC model has also been used on some projects, particularly where Chinese EPC contractors are involved, or where projects (or at least parts of them) are perceived as being less prone to time and cost overruns.

A third alternative is for the project owner to procure various contractors and consultants directly, and to manage the interface of the contractors and consultants using its own contract administration staff. A project owner may also employ a third-party project management consultant (PMC) to assist with the management of the



project owner's various contractors and consultants. However, a PMC contractor will generally not carry out any engineering or design in relation to the works, so the full technical interface and overall system design risk rests with the project owner.

Influencing factors

Various factors will be relevant to project owners when selecting a procurement strategy for a particular mining or metals project.

The needs of mining & metals projects are wide and varied, and range from simple works, such as the construction of site access roads and accommodation camps, right through to the most complex of construction works, such as deep underground tunneling and shaft-sinking for mining

projects, and refineries and process plants in the metals sector.

Perhaps most important is the type of works being procured. Generally, contractors will not price works on a lump-sum basis where the works involve risks that are either beyond the control of the contractor or cannot be reasonably quantified.

Sub-surface ground risk is one such area, particularly if a mining project involves long underground tunnels or deep shafts, where it may not be feasible to use bore holes to profile the sub-surface conditions to a high enough level of certainty to enable a contractor to accurately price the cost of carrying out the works. Similarly, in the metals sector, EPC contractors may be reluctant to take on performance risk for certain



metallurgical technologies provided by third-party vendors.

Other, more defined, parts of a mining project may be more suitable for lump-sum fixed-price EPC contracting. These could include site access roads, certain civil works, site camps, back-up power generators and power solutions, key pieces of equipment, and even major related port and rail facilities.

Examples of parts of African mining & metals projects being let on an EPC basis include the works for a gold processing facility and associated power and water utilities at the North Mara Gold Project in Tanzania and back-up power facilities for the Lefa gold mine in Guinea.

In addition to the above, the size of a project may limit the number

of creditworthy contractors able to assume project delivery risk under an EPC contract. For some mega-projects, there may well be no contractor able or willing to deliver the project under a fixed lump-sum EPC structure, even if the project owner was prepared to pay an appropriate risk premium. In such cases, the project would need to be procured either under an EPCM structure, or directly, using a number of separate work packages.

Mining & metals projects effectively financed through a project owner's balance sheet will generally have the benefit of more flexibility in terms of the types of procurement structure that can be accommodated, particularly where the project owner is a mining major.

If a limited-recourse project

financing structure is used to finance a mining or metals project, financiers will look for the construction procurement structure to demonstrate limited risk of there being an unfunded cost overrun. This could be either by having a single EPC contract, or through an EPCM contractor managing a limited number of works packages, each with appropriately defined technical interfaces, a (relatively) fixed price and an appropriately sized project contingency to account for possible increases.

With Africa firmly within the sights of China's Belt and Road Initiative, Chinese lenders and EPC contractors have become increasingly prominent across the continent. For certain projects, Chinese EPC contractors have also enabled mining companies

to access lines of Chinese debt and export credit agency cover, which would not be available without the EPC contractor's involvement on the project. The attraction of securing both a turnkey delivery model and financing can be a deciding factor for proceeding with a Chinese EPC contractor and (significant Chinese content) for the construction of African mining projects, particularly in frontier resources-rich markets, such as the Democratic Republic of the Congo, where financing options can be limited.

For any major mining or metals project, the direct procurement approach should be reserved for project owners who have a strong appetite for construction risk, the capacity to absorb that risk and a strong internal contract management capability. This really limits the suitability of the direct procurement approach to the mining majors, or to junior miners carrying out discreet works.

The EPCM or PMC approach can be a more suitable option for project owners who are willing and able to take a reasonable level of project delivery risk, but lack the internal capability to manage construction contracts directly. For those with limited appetite or capacity to accept construction risk, and limited internal contract management capability, the EPC approach is often more appropriate (if available).

Mitigating risk outside a turnkey procurement structure

While the time and cost certainty offered by a conventional turnkey EPC contract structure is appealing to many project owners, particularly those with more limited financing options, the nature of the construction works required for many major mining & metals projects will mean that an EPC contract solution is not commercially feasible. Where this is the case, the project owner's



Previous in-country experience is particularly important for international contractors working in Africa: This should reduce the likelihood of disputes with the project owner and/or the host government

procurement strategy should focus on other approaches to mitigate against retained project delivery risk.

While many separate suppliers and contractors are usually required to deliver a mining or metals project, project owners can limit or pass interface risk down to their contractors by minimizing the number of contractors either directly engaged or engaged by the EPCM contractor.

The project owner should ensure that there are clearly defined battery limits for the works to be carried out by these "tier 1" contractors, and that the technical interfaces between work packages of the tier 1 contractors are minimized and sensible from a technical perspective.

For African mining projects, which often require the construction of significant amounts of related infrastructure, this usually means separating the construction of the infrastructure out from the construction of the actual mine.

Where projects are procured using an EPCM structure, the role of the contractor is central to mitigating any time and cost overruns, and

to ensuring that quality and overall "fitness for purpose" requirements are achieved across the project.

EPCM contractors will not normally take material responsibility for the performance of the contractors they manage, and the contractor's liability in relation to the performance of its own management services will also generally be limited by reference to a percentage of the total fees paid to the EPCM contractor. These fees are usually relatively low when compared to the overall cost of the project.

While the limitations on liability under an EPCM contract mean that the bulk of project delivery risk ultimately remains with the project owner, the EPCM contractor can be further incentivized under the EPCM contract to deliver the project successfully.

What will be appropriate will depend on the specifics of the project and the project owner's priorities. However, there is plenty of choice when it comes to incentive mechanisms, including an incentive payment to the contractor if the project is completed ahead of schedule.

Delay liquidated damages can be charged if the project is completed behind schedule, although usually only where such failure is attributable to the EPCM contractor. Unlike under an EPC contract, the delay liquidated damages payable may well not be significant in comparison to the overall project costs and the likely losses suffered by the owner.

Cost-saving sharing schemes can also be attractive. In these, the EPCM contractor is entitled to a percentage of the costs saved if the project is delivered under the projected budget. This scheme should be self-funding, but project owners need to make sure that quality is not compromised, so they may want to build in other key performance requirements or similar into these types of incentive schemes.

On the other hand, if actual project costs exceed the budget, there can be a reduction to the percentage of profit

paid to the contractor on any elements of the EPCM contract price calculated on a reimbursable cost-plus basis.

Contractors could also receive bonus payments for achieving certain other key performance indicators, such as requirements relating to health and safety, environmental, community engagement and so on. All these areas are being increasingly scrutinized in the delivery of African mining & metals projects, and need to be closely managed to maintain good relations with host governments and key stakeholders.

Management of contractors

The capability of the project owner's team, including the EPCM contractor or PMC where appointed, to administer the various contracts and manage the interface and integration of the various works packages is key to mitigating the project delivery risk retained by the project owner.

Obligations relating to interfacing can also be built into the various works contracts, through detailed site access protocols; detailed requirements for contractors to exchange information in relation to the design of interface works where there are complex technical interfaces; and including general obligations in relation to cooperating with other contractors engaged by the project owner.

Project owners can mitigate project delivery risk by selecting contractors with strong track records. Contractors should have the technical and financial capabilities to deliver on their contractual promises, and experience with working on comparable projects. Ideally, the key contractors should also have a track record of successfully working together.

Previous in-country experience is particularly important for international contractors working in Africa. If international contractors can adequately demonstrate how they have—or will—deal with local laws and regulations in relation to country-

specific issues, this should reduce the likelihood of disputes with the project owner and/or the host government. Issues that could give rise to disputes during the construction phase include taxation, employment of local labor and migration of foreign labor, currency control issues, local content requirements, incorporation of local subsidiaries or branch offices, and the acquisition of local permits.

Making sure there is an appropriate float or buffer in the project schedule and budget for critical items can also help mitigate against the risk of time and cost overrun, and help address most unexpected outcomes. Appropriate float in the project schedule will also reduce the risk of contractors claiming prolongation costs for delay and interference caused by other project owner contractors.

Settling on a structure for new projects

Despite exploration activities in Africa reportedly dipping during the COVID-19 pandemic, S&P Global Market Intelligence still reported an approximate US\$1 billion spend on exploration activities across the continent in 2020. With growing demand and a generally positive outlook for commodity prices, a pipeline of African mining & metals projects can be expected to ultimately reach the construction phase.

Exploring the procurement options for the construction of any mining & metals project is an important issue, and should be considered when assessing the feasibility of a project and kept under review during the construction phase.

Mining & metals projects are wide and varied in nature, and different solutions, including a combination of models, will be appropriate for different projects. However, regardless of the project, a considered and appropriate construction strategy will help underpin the successful delivery of any project, not just for the project owner, but for all stakeholders.

