Managing the complexity of major capital projects in today's mining and metals landscape has never been more challenging or critical. Global demand for commodities continues to drive substantial capital investment within the sector. Many companies have announced huge commitments to capital projects – with a handful of major mining and metals companies alone announcing more than US$100 billion on expansion and greenfield developments, with a number of individual projects exceeding “mega” values of US$10 billion.

In addition to the enormous technical, commercial and funding challenges associated with projects of this nature, there are also a number of key accounting challenges. The lack of specific guidance in IFRS means significant management judgement is required to determine the appropriate accounting treatment. In this issue of Refining IFRS we explore some of these accounting challenges.

Key accounting challenges

The types of development activities that occur on these mining and metals projects and the associated nature and quantum of costs are where many of the initial accounting challenges lie. Specifically:

- How should such costs be treated, i.e., capitalised or expensed?
- How should any revenue generated during the construction/development phase be treated?
- When should capitalisation of such costs cease?

We examine each of these in more detail below. We focus specifically on those activities that occur once the technical feasibility and commercial viability of a project have been determined, i.e., once the exploration and evaluation phase has been completed and the project enters the construction and development phase.
How should such costs be treated, i.e., capitalised or expensed?

The types of costs incurred on major mining and metals projects vary significantly. These may include:

- Construction of roads, houses or hostels for employees, office buildings, workshops and related infrastructure like power lines, water services, etc.
- Contributions to the surrounding community, such as training of local people, building of schools and other community infrastructure, which tend to form part of the broader package negotiated with the host government in return for being granted the rights to construct and operate the mining project
- Construction of plant and associated facilities, which broadly speaking will consist of facilities such as: transportation, crushing and milling, treatment, refining, storage
- Construction of the actual mine, which is generally the most expensive aspect, takes the most time and the types of expenditure to be incurred varies considerably

One of the key initial decisions to make when each type of cost is incurred is whether it should be capitalised or expensed. While some costs incurred fall directly within the scope of IFRS, such as IAS 16 Property, Plant and Equipment or IAS 38 Intangible Assets, other types of expenditure are out of scope, e.g., mineral reserves. In the absence of a specifically applicable standard or an interpretation, management needs to develop an accounting policy in accordance with the hierarchy of IFRS. In practice, this generally means an entity will develop an accounting policy based on the principles underlying IAS 16 and IAS 38, which deal with similar and related issues.

In our experience, most mining and metals entities treat development costs as tangible assets, so we will focus on the IAS 16 requirements.

Development/construction costs

The principles in IFRS require that an amount of expenditure should be capitalised as an asset only if:

(i) Its cost can be measured reliably
(ii) It is probable that future economic benefits will flow to the entity
And
(iii) The expenditure is directly related to an asset under construction and is not related to either production activities or maintenance activities.

Such amounts are to be initially recognised at cost.

Cost comprises:

- Purchase price, including import duties and non refundable purchase taxes, after deducting trade discounts and rebates
- Any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management
- The initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, the obligation for which an entity incurs either when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period

If an asset is self-constructed by an entity, the same general principles apply as for an acquired asset.

For those assets that are acquired, determining the cost is usually relatively straightforward as most of the cost is generally represented by the purchase price. However, given the nature and variety of costs incurred on self-constructed assets, identifying the directly attributable costs that should form part of the total cost of the mining project will be the key issue and may require greater judgement.

Directly attributable

While IAS 16 provides some examples of the types of expenditure that are, and are not, considered to be directly attributable, there is little guidance to assist in assessing what “directly attributable” actually means. The examples of directly attributable costs provided in the standard and, therefore, may be included in cost at initial recognition include:

- Employee-related costs arising directly from the construction or acquisition of the mining project, such as labour costs of an entity’s own employees (e.g., site workers, in-house architects and surveyors)
- Costs of site preparation
- Initial delivery and handling costs
- Installation and assembly costs
- Costs of testing whether the asset is functioning properly, after deducting the net proceeds from selling any items produced while bringing the asset to that location and condition (such as samples produced when testing equipment) – this is discussed further below
- Professional fees

General overheads, e.g., corporate overheads or head office salaries, and abnormal costs are unlikely to be directly attributable. Deciding what is an abnormal cost is not always straightforward. Examples of costs that are likely to be considered abnormal may include design errors, industrial disputes, prolongation claims, take-or-pay obligations, contractor swap-out costs and penalties or additional charges that arise as a result of production delays.

Other costs that will not necessarily be considered abnormal but will have to be assessed on a case by case basis include those that arise from unforeseen technical difficulties, overly optimistic construction schedules or cost overruns.

How we see it

In our experience, there can be a tendency to simply assume that all costs incurred in the development/construction phase of a mining and metals project, and especially all mine-based costs, form part of the capitalised cost. For most costs this will be true, but, for others, while there may be some connection to the project, they may not actually satisfy the directly attributable criteria. They may possibly meet the criteria to be recognised as an asset in their own right, but if not, they should be expensed. This assessment will require a significant amount of judgement.
How should any revenue generated during the construction/development phase be treated?

It is not uncommon during the development or pre-commissioning phase of a mining project for a certain amount of saleable product, e.g., gold, copper, coal, etc., to be extracted or produced. There are numerous ways in which this could occur. For example:

- An entity may trial mine to determine which method would be most profitable and efficient in the circumstances and which metallurgical process would be most efficient.
- When developing the mine itself, e.g., sinking a mine shaft to the depth where the main ore-bearing rock is located; or for block-caving, developing the undercut and extraction levels where the main ore body is intersected and extracted.
- When commissioning the project, e.g., to test the individual plant components and the complete circuit to ensure the crushing and milling is to the correct standard so the chemical treatment process can work, that the chemical treatment process produces a product that can be smelted, and the smelter is able to produce semi-refined material.
- Sale of product during the ramp-up phase where it can take months or even years (depending on the nature of the operation) to reach the commercial production capacity.

IAS 16 provides some guidance on the treatment of pre-commissioning revenue. Firstly, when prescribing what comprises the cost of an asset, it includes the costs of testing whether the asset is functioning properly, after deducting the net proceeds from selling any items produced while bringing the asset to that location and condition. Some interpret this requirement quite narrowly as only applying to income earned from actually “testing” the asset, while others interpret this more broadly to include other types of pre-commissioning revenue.

Secondly, IAS 16 notes that, during the construction or development of an asset, an entity may enter into incidental operations that are not, of themselves, necessary to bring the asset itself into the location and condition necessary for it to be capable of operating in the manner intended by management. An example of such incidental revenue in the mining sector would be revenue earned from leasing out land surrounding the mining project. Because such operations are not necessary to bring the mine itself into the location and condition necessary for it to be capable of operating in the manner intended by management, the associated income and related expenses are to be recognised in profit or loss and included in their respective classifications of income and expense. The incidental income is not to be offset against the cost of the asset.

As noted earlier, it is possible that some income may be generated wholly and necessarily as a result from activities that are part of the process of bringing the asset into the location and condition for its intended use, i.e., they are integral to the construction or development of the mine. An example is ore extracted through the process of sinking a shaft. While not specifically discussed in IAS 16, given the accounting required for income generated from incidental operations, some interpret this to mean that income earned from activities that are considered integral to the development of the mine should be credited to the cost of the mine. This is on the basis that the main purpose of the activities is the development of the mine, not the extraction of ore. The income earned from the extraction of ore is an unintended benefit.

In our experience, the way in which entities account for pre-commissioning revenue varies. These various treatments have evolved as a result of the way in which the relatively limited guidance in IFRS, as outlined above, has been interpreted and applied. In some instances, this has been influenced by approaches that originated in previous and other GAAPs, where guidance was/is somewhat clearer.

The key challenge tends not to be how to measure the revenue, it tends to be more about how entities view this revenue and, more significantly, how to distinguish those costs incurred in the pre-commissioning phase that are directly attributable to developing the operating capability of the mine from those that represent the cost of producing saleable material. It can be extremely difficult to apportion such costs. Consequently, there is a risk of misstatement of gross profits.

As noted above, other GAAPs either have provided or continue to provide further guidance that has influenced some of the approaches adopted under IFRS. For example, the old Australian GAAP (AGAAP) standard on extractive industries (that was directly applicable to mining entities) and guidance in the UK OIAC SORP (that was directly applicable to oil and gas entities, but has, undoubtedly, influenced practices adopted by mining entities reporting under UK GAAP), provided more specific guidance. The former clearly required, and the latter recommended, that any proceeds earned from the sale of product obtained during the exploration, evaluation or development phases should be treated in the same manner as the proceeds from the sale of product in the production phase, i.e., recognised in profit or loss as part of income.

Regarding the costs to be allocated to such production, AGAAP then stated that the estimated cost of producing the quantities concerned was to be deducted from the accumulated costs of such activities and included as part of costs of goods sold. In contrast, UK GAAP was more specific and stated that an amount equivalent to such revenues should be both charged to cost of sales and credited against appraisal costs to record a zero net margin on such production. From a US GAAP perspective, a review of some recent SEC comment letters received by some mining companies indicated the crediting of revenue to the asset earned during pre-commissioning was not acceptable.

The various practices that are adopted and accepted include:

- All pre-commissioning revenue is considered integral to the development of the mine and is therefore credited to the mine asset, i.e., it is considered an unintended benefit.
- Only revenue genuinely earned from the testing of assets, e.g., product processed as a result of testing the processing plant and associated facilities, is credited to the associated asset, with all other revenue being recognised in profit or loss.
- All pre-commissioning revenue is recognised in profit or loss.

1 AASB 1022 Accounting for the Extractive Industries (now superseded)
2 Oil Industry Association Committee Statement of Recommended Practice Accounting for Oil and Gas Exploration, Development, Production and Decommissioning Activities (July 2001)
For entities that recognise pre-commissioning revenue in profit or loss, various approaches are applied to determine the amount to be included in cost of goods sold and include:

- An amount equivalent to such revenues is charged to cost of sales and credited against the mine asset to record a zero net margin on such production
- Using some standard or expected cost of mining to ascribe to the volumes produced, e.g., weighted average cost per tonne based on actual results over some historical period, e.g., the last two or three years; or for new mines, the expected cost per tonne as set out in the business/mine plan (producing a standard margin)
- Recognising only the incremental cost of processing the product
- Recognising nothing in cost of goods sold

The net effect of all the approaches above is that any excess of the total cost incurred over the amount recognised in profit or loss as cost of goods sold, is effectively capitalised as part of the mine asset. It is interesting to note that the first approach, i.e., where cost of goods sold is recognised at the same amount as the revenue, produces the same net balance sheet and profit or loss result as if the revenue had been credited to the asset in its entirety.

In our view, while diverse treatments may be adopted and accepted, it is unlikely the third and fourth cost of goods sold approaches would be appropriate because they would not provide a fair reflection of the cost to produce the saleable product.

### How we see it

There is a significant degree of divergence as to how entities account for pre-commissioning revenue. Significant judgement is required to identify what is incidental revenue, and when the asset is in the location and condition intended by management. In the absence of specific guidance this divergence will continue.

There is some discussion as to whether the new revenue recognition project will impact the accounting for pre-commissioning revenue, i.e., whether it will require such amounts to be presented as part of revenue rather than being credited to the asset. However, it is our understanding that this has not been specifically considered by the project at this stage. Based on our current review of the exposure draft, the answer remains unclear.

### When should capitalisation of such costs cease?

**Commissioning**

The recognition of costs as part of the carrying amount of a mining project is to cease when the mine assets are in the location and condition necessary for it to be capable of operating in the manner intended by management. IFRS provides the following examples of costs that are not to be included in the carrying amount of an asset:

- Costs incurred while an item capable of operating in the manner intended by management has yet to be brought into use or is operated at less than full capacity, e.g., a smelter has been completed and commissioned, but the ore feedstock is not yet available
- Initial operating losses, such as those incurred while demand for the item’s output builds up
- Costs of relocating or reorganising part or all of an entity’s operations

Given the nature of mining and metals projects, the key area of judgement is determining exactly when an asset is in the location and condition necessary for it to be capable of operating as intended by management.

The commissioning date is important since this is when:

- Costs cease to be capitalised unless they provide an enhancement of the economic benefits of the asset
- Borrowing costs cease to be capitalised
- Production costs begin to stabilise and the cost of inventory added to stockpiles begins to more closely resemble the average production costs
- Those who credit pre-commissioning revenue to the mine asset cease to do so
- Depreciation of the asset commences
- The accounting for stripping costs changes

For some larger mining and metals entities, determining the commissioning date may not be as critical as it may be for a smaller entity, particularly when that smaller entity only has one major mining project. In some instances, a difference of a week could have a material impact.

No specific guidance exists within IFRS, particularly as to what it means for an asset to be “in the location and condition necessary for it to be capable of operating as intended by management”. Consequently, various approaches have evolved. It is common for many entities to simply refer to the achievement of “commercial production” as the point at which the assets are commissioned, i.e., ready for their intended use, without providing any detail as to exactly what commercial production means. Having said this, some entities identify “production start date” as a significant judgement and provide more detailed disclosures.

In our experience, many entities distinguish start-up/commissioning from post-commissioning costs, which can also be referred as ramp-up or operating costs. Start-up/commissioning costs are often capitalised when the asset is available for use, but is incapable of operating at normal levels without the necessary start-up/commissioning period. Generally, this allows costs associated with the physical capabilities of a mining and metals project to be capitalised, but not the costs incurred as a result of the need to build up demand. Deliberate or avoidable delays in achieving physical completion or obtaining necessary approvals to operate the mine are likely to be deemed abnormal and expensed as incurred.

While disclosures may sometimes be limited, as part of the process of assessing when a mining and metals project is ready for its intended use, a variety of factors are considered with varying degrees of emphasis placed on each. The specific factors used are generally determined by the unique nature of each mine and is impacted by the complexity of the project and its location.

While not specifically contained in any IFRS guidance, some examples of the range of factors that are sometimes considered include:
The level of capital expenditure compared to the estimated construction cost
A majority of the assets making up the mining project are substantially complete and ready for use
Completion of a reasonable period of testing of the mine plant and equipment
The project has been turned over to operations from the development team
A specified percentage of design capacity for the mine and/or mill, e.g., 50% to 70%, has been achieved over a continuous period, e.g., three months
The percentage grade (metal content) of ore being mined is sufficiently economic and consistent with the overall mine plan
The ability to produce the commodity in a saleable form (within specifications and the de minimis rule)
The ability to sustain ongoing production over a certain period, e.g., one to three months

Generally, no single factor is considered more important than another. Entities must be cautious in how they apply these factors as they can sometimes be open to abuse. Each factor must be considered in context with the facts and circumstances of the specific project.

How we see it
Entities should be cautious about applying too many bright lines, e.g., percentage of name plate capacity, as this would be inconsistent with the general trend in IFRS to try to avoid bright lines. Given the significance of this judgement, leading practice would be to disclose production start date/commissioning as a significant judgement. This would involve providing sufficiently detailed information to enable users to understand which factors are considered when making this assessment.

Subsequent expenditure
While determining the commissioning date is important and will impact the point that most costs will cease to be capitalised, given the nature of mining projects, it is highly likely that ongoing expenditure will continue to be incurred.

IAS 16 makes no distinction in principle between the initial costs of acquiring or constructing an asset and any subsequent expenditure. In both cases, any and all expenditure has to meet the recognition rules to be capable of being capitalised as an asset otherwise it must be expensed in profit or loss.

Therefore, any development costs incurred after the commencement of production are capitalised where they provide an enhancement of the future economic benefits to flow from the asset. An enhancement may result from extending the asset’s useful estimated life, e.g., expenditures incurred to deepen an underground mine to access additional reserves; increasing an asset’s capacity, e.g., expenditure to expand a processing plant so it can process greater volumes; substantially improving quality of output; or reducing previously assessed operating costs.

How we see it
The nature and complexity of major mining and metals projects means not all assets needed in the mining operation move into production at the same time. There is not always one cut-off point that will clearly distinguish the costs of preproduction activities from those associated with post-commissioning activities. Simple assumptions about whether costs incurred before or after production commences should be capitalised or expensed should not be made. Given the importance of this, the basis upon which an entity makes this judgement should be fully disclosed.

Final thoughts
The complexity and size of major mining projects, combined with the attention they attract from a broad range of stakeholders means effective capital project execution is critical. Understanding the key accounting issues, and ensuring they are properly applied and disclosed, will be essential. A failure to effectively manage these and transparently communicate to shareholders may negatively impact future earnings and therefore business value.

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EY’s Global Mining & Metals Center

With a volatile outlook for mining and metals, the global sector is focused on cost optimization and productivity improvement, while poised for value-based growth opportunities as they arise. The sector also faces the increased challenges of changing expectations in the maintenance of its social license to operate, skills shortages, effectively executing capital projects and meeting government revenue expectations.

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