International Accounting Standard 16 (IAS 16), Property, Plant and Equipment

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This article is part of a series by the Friedrichs and Stephen Spector on the move to International Financial Reporting Standards to be published on PD Net.

**Snapshot**

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**Overview of IAS 16**

**Objective**

The objective of IAS 16 is to prescribe the accounting treatment for property, plant, and equipment (PP&E) so that users of the financial statements can discern information about the entity’s investment in its PP&E and any changes in those investments.

The principal issues associated with accounting for PP&E are (¶1)

- recognition of the assets when they are acquired
- determination of the carrying amounts of these assets in subsequent periods
- determination of depreciation charges and any impairment losses to be recognized in relation to these assets.
The general principle underlying IAS 16 is that, first, an entity accounts for all costs of property, plant, and equipment at the time these costs are incurred and, second, it then allocates the costs over the useful life of the asset. These concepts should already be familiar to Canadian accountants; what IAS 16 adds to GAAP is the option to use fair value to determine the carrying value of PP&E subsequent to acquisition.

**Scope**

IAS 16 addresses accounting for property, plant, and equipment, except in cases when another standard requires or permits a different accounting treatment (¶2). It would not apply, for instance, to livestock or other assets that are accounted for in accordance with IAS 41 Agriculture or to PP&E classified as held for sale in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations. With respect to property being constructed or developed for future use as investment property, IAS 16 applies until the point where construction is complete and the asset satisfies the definition of an “investment property”; at that point, IAS 40 Investment Property takes effect.

**Highlights of the standard**

**Initial recognition of an asset**

IAS 16 recalls the basic recognition criteria when it states that the cost of an item of property, plant, and equipment is to be recognized as an asset if, and only if (¶7)

a) it is probable that future economic benefits associated with the item will flow to the entity; and

b) the cost of the item can be measured reliably.

At the time that PP&E costs are incurred, the entity evaluates these costs against this recognition principle. Costs that are expected to result in benefits lasting more than one period are capitalized, while day-to-day repair and maintenance costs are expensed as incurred.

Property, plant, and equipment that qualifies for recognition as an asset is measured at its cost (¶15), which comprises the purchase amount of the asset (less any discounts), plus any and all taxes (on a net basis), and 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. Additional “extra” costs can arise not only from installing the asset, but also from running samples or test items that are required to get the asset production-ready. Furthermore, the cost of an asset capitalized as property, plant, and equipment also includes any known or estimated costs of dismantlement, removal, or site restoration that will be required.

IAS 16 requires the use of what is called the “component” approach to recognition and measurement — something that is already part of Canadian GAAP. The component approach requires identification of those parts of an asset that may (will?) be replaced sooner than, and/or separately from, the rest of the asset. Moreover, these are parts that have a cost that is significant in relation to the total cost of the asset. Basically, IAS 16 requires an entity to carefully examine an item of PP&E and break it into its constituent components when those components have different useful lives. For example, the engines of an airplane will be rebuilt much more often than the interior. Therefore, they need to be accounted for separately, rather than treating the whole cost as one item of PP&E.

The cost of a self-constructed asset is determined using the same principles as an acquired asset (¶22). IAS 16 provides guidance that if an entity makes similar assets for sale in the normal course of business, the cost of the asset for internal use is usually the same as the cost of constructing an asset for sale (in other words, any internal profits are eliminated). Similarly, the costs of abnormal amounts of wasted material, labour, or other resources incurred in self-constructing an asset are not included in the cost of the asset. As to whether
borrowing costs incurred in respect of a self-constructed asset are a “directly attributable cost” to be capitalized, IAS 16 references IAS 23 Borrowing Costs; IAS 23 requires the inclusion of interest as part of the cost of self-construction of “qualified” assets.

The cost of an item of property, plant, and equipment is the cash price equivalent at the recognition date (¶23). If payment is deferred beyond normal credit terms, the difference between the cash price equivalent and the total payment is recognized as interest over the period of credit (unless, of course, the interest is being capitalized as discussed above).

An entity is required to measure an item of PP&E acquired in exchange for a non-monetary asset or assets (or a combination of monetary and non-monetary assets) at fair value unless the exchange transaction lacks commercial substance or neither asset’s fair value can be reliably measured. This may be the case, for example, if a company trades in one truck for another plus a nominal amount of cash. An exchange would be deemed as having no commercial substance if there is no significant impact on future after-tax cash flows in terms of risks, timing, and amount.

Carrying value after initial recognition

So far, all of this should sound comfortably familiar to you. The real difference between IAS 16 and current Canadian GAAP is that IAS 16 offers management a choice of accounting policy with respect to the carrying value after initial recognition (note that it is one of the few standards that provides for such a choice).

Paragraph 29 stipulates that for PP&E, an entity can choose either the cost model or the revaluation model. Once the policy is chosen, it must be applied to an entire class of PP&E. A class would involve items of a similar nature or use in an entity (for example, land, buildings, machinery).

The cost model (¶30)

We begin (as always) by recognizing the asset at cost (as discussed above). Subsequent to recognition as an asset, an item of PP&E accounted for under the cost model must be carried at its cost less any accumulated depreciation and any accumulated impairment losses.¹

Under the cost model, residual value is defined as the estimated amount the entity could currently expect to receive for the asset if it were already at the age and condition expected at the end of its useful economic life. In other words, residual value is not discounted or adjusted for changes in price levels or future inflation.

The revaluation model (¶31)

Subsequent to recognition as an asset, an item of PP&E accounted for under the revaluation model, and whose fair value can be measured reliably, is to be carried at a revalued amount — namely, its fair value at the revaluation date — less any accumulated depreciation and any accumulated impairment losses. Revaluations need to be made often enough to ensure that the carrying amount is not materially different from fair value at the end of the reporting period. Depending on the volatility of the asset’s value, this may mean revaluing at least annually, or only every three to five years.

If an item of property, plant, and equipment is revalued, the entire class of PP&E to which that asset belongs must be revalued (¶36). This avoids the reporting of amounts in the financial statements that reflect a mixture of costs and values as at different dates. Note that a rolling revaluation schedule can also be used to meet this objective. For example, assume that your company owns a fleet of vehicles, and you decide to revalue them every three years.

¹ Impairment losses are covered in IAS 36 Impairment of Assets, which is the topic of the fifth article in this eight-part series. In brief, an impairment loss is recognized when the recoverable amount of an asset is lower than its carrying value.
Under IAS 16, you may do all vehicle revaluations at the same time, or one third of the vehicles may be revalued each year.

Revaluation is restricted to situations in which fair value can be measured reliably. This is straightforward when a market value for the asset can be determined, but paragraph 33 stipulates that if there is no market-based evidence of fair value, it is acceptable to estimate fair value using an income approach (that is, discounted future income estimates) or a depreciated replacement cost approach. This is less stringent than in the case of intangible assets, where an active market is required in order to be able to apply the revaluation model. Note that intangible assets are the subject of the next article in this eight-part series.

So what happens when revaluations occur? Generally speaking, if an asset’s carrying value is increased as a result of revaluation, the increase is recorded as a component of other comprehensive income, and is carried in equity as an item of other comprehensive income under the heading “Revaluation surplus.” If an asset’s carrying amount is decreased as a result of revaluation, the decrease is to be recognized in profit or loss (¶39 and 40).

Note, however, that if an increase or decrease reverses a previously recognized revaluation, the treatment is different. Paragraph 39 requires an increase to be recognized in profit or loss to the extent that it reverses a revaluation decrease of the same asset that was previously recognized in profit or loss. Similarly, paragraph 40 requires a decrease to be recognized in other comprehensive income to the extent of any credit balance existing in the revaluation surplus in respect of that asset.

For example, if the current revaluation results in a decrease in an asset’s value, but there was an increase previously recognized in other comprehensive income, the decrease would be recognized in other comprehensive income, where it would reduce the revaluation surplus previously accumulated in respect of that asset. Once the original “increase” is reversed, any additional decreases would be recognized in profit and loss. Obviously, if there are no previous increases to reverse, decreases are reflected immediately in profit and loss.

**Depreciation**

IAS 16 requires that each part of an item of PP&E with a cost that is significant in relation to the total cost of the item be depreciated separately (¶43). Significant parts of an item of PP&E that have the same useful lives and depreciation methods may be grouped in determining depreciation (¶45).

An entity allocates the depreciable amount of an asset (or each significant part, as applicable) on a systematic basis over its useful life. The depreciation method used should reflect the pattern in which the asset’s future economic benefits are expected to be consumed by the entity (¶50 and ¶60). The residual value and the useful life of an asset must be reviewed at least at each financial year end and any changes from previous estimates are accounted for prospectively in accordance with IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors. Paragraph 61 also requires that the depreciation method applied to an asset be reviewed at least at each financial year end and, if there has been a significant change in the expected pattern of consumption of the future economic benefits embodied in the asset, the method must be changed to reflect the changed pattern. Such a change is also to be accounted for as a change in accounting estimate (but if the method is changed for a reason other than a change in the consumption pattern, this would still be considered a change in accounting policy, which requires retroactive application).

When an item of property, plant, and equipment is revalued, any accumulated depreciation at the date of the revaluation is treated in one of two ways (¶35):

a) restated proportionately with the change in the gross carrying amount of the asset so that the carrying amount of the asset after revaluation equals its revalued amount. This
method is often used when an asset is revalued by means of applying an index to
determine its depreciated replacement cost; or

b) eliminated against the gross carrying amount of the asset and the net amount restated to
the revalued amount of the asset. This method is often used for buildings.

As an illustration of the first method, assume that a machine cost $10,000 and has accumulated
amortization of $2,000, resulting in a net book value of $8,000. This class of assets is accounted
for using the revaluation model, with a general price index. The index has risen by 10% since
the machine was bought. The new value is therefore $11,000 ($10,000 x 110%). Accumulated
amortization should be increased to $2,200 ($2,000 x 110%) and the carrying amount would
therefore be $11,000 – $2,200 = $8,800 or 110% times the original net book value.

The entry to record the revaluation would be

Dr Property, plant, and equipment — machinery 1,000
  Cr Accumulated amortization 200
  Cr Other comprehensive income — Revaluation surplus 800

To illustrate the second method of adjusting depreciation, assume that a building cost
$5,000,000 and the accumulated amortization is $1,000,000, resulting in a net book value of
$4,000,000. Based on an appraisal, it is revalued to $5,500,000.

The entry to record the revaluation would be

Dr Property, plant, and equipment — buildings 500,000
Dr Accumulated amortization 1,000,000
  Cr Other comprehensive income — Revaluation surplus 1,500,000

Impairment

As previously mentioned, carrying values need to reflect any impairment losses. To determine
whether an item of PP&E is impaired, an entity should refer to IAS 36 Impairment of Assets.
However, IAS 16 adds specific directions regarding any potential recoveries related to
impairment. Compensation from third parties for PP&E that became impaired, lost, or given
up is treated as an economic event separate from the impairment and is to be accounted for
separately (¶65 and ¶66). In other words, no right of offset exists and the impairment loss is to
be recognized separately from any recovery. This would apply, for example, to insurance
proceeds received for a fire-damaged plant, or funds received on the expropriation of land.

Derecognition

An item of PP&E is removed from the balance sheet (that is, derecognized) when it is
disposed of or when no future economic benefits are expected from its use or disposal. The
gain or loss arising from derecognition is included in profit or loss when the item is
derecognized; moreover, gains are not to be classified as revenue (¶67 and ¶68).

Presentation and disclosure

IAS 16 provides a long listing of disclosure requirements for property, plant, and equipment.
For each class of PP&E, the financial statements must disclose the following:

- the measurement bases used for determining the gross carrying amount
- the depreciation methods and rates or useful lives
- the gross carrying amount and the accumulated depreciation (aggregated with accumulated
  impairment losses) at the beginning and end of the period
- the detailed reconciliation of the carrying amount at the beginning and end of the period
  (showing, for example, additions, depreciation, impairment losses, revaluation information,
  foreign currency translation impacts, and so on) (¶73)
The financial statements must also disclose restrictions and contractual commitments related to PP&E, as well as details of self-constructed assets, and any compensation received from third parties for items of property, plant, and equipment that were impaired, lost, or given up.

If items of property, plant, and equipment are stated at revalued amounts, paragraph 77 requires the entity to disclose the following:

a) the effective date of the revaluation
b) whether an independent valuer was involved
c) the methods and significant assumptions applied in estimating the items’ fair values
d) the extent to which the items’ fair values were determined directly by reference to observable prices in an active market or recent market transactions on arm’s-length terms or were estimated using other valuation techniques
e) for each revalued class of property, plant, and equipment, the carrying amount that would have been recognized had the assets been carried under the cost model
f) the revaluation surplus, indicating the change for the period and any restrictions on the distribution of the balance to shareholders

**Differences from Canadian GAAP**

As discussed above, the most significant difference between IAS 16 and current Canadian GAAP is that the former allows for property, plant, and equipment to be valued using either the cost method or the fair value method if fair value can be measured reliably.

The majority of other differences tend to be disclosure-oriented. Typically, IAS 16 provides more specific guidance in certain areas:

- provides broader requirements for the inclusion of dismantlement, removal, and restoration costs as part of the cost of an asset than does current Canadian GAAP
- requires that estimated residual values reflect prices at the reporting date, whereas current Canadian GAAP does not specify whether residual values should reflect future inflation
- requires that estimates of useful life, residual value, and the method of depreciation be reviewed at least at each annual reporting date; current Canadian GAAP requires periodic review only of the useful life and method of depreciation, and stipulates that residual values are to be reviewed only when events or changes in circumstances indicate that the current estimates may no longer be appropriate
- provides more guidance than Canadian GAAP with respect to the level at which component accounting is required, the cost of a component, and the replacement of components

Articles in this series will discuss:

- IFRS 1 *First-time Adoption of IFRS*
- IFRS 3 *Business Combinations*
- IFRS 7 *Financial Instruments: Disclosures*
- IAS 1 *Presentation of Financial Statements*
- IAS 16 *Property, Plant and Equipment*
- IAS 27 *Consolidated and Separate Financial Statements*
- IAS 32 *Financial Instruments: Presentation*
- IAS 36 *Impairment of Assets*
IAS 37 Provisions, Contingent Liabilities and Contingent Assets
IAS 38 Intangible Assets
IAS 39 Financial Instruments: Recognition and Measurement

For a more comprehensive introduction to the adoption of IFRSs, see the online course IAS 16/IAS 38, available on PD Net. You must be registered to access and purchase the course.

If you are not registered on PD Net, register now — it’s fast, easy, and free.

Brian and Laura Friedrich are the principals of friedrich & friedrich corporation, an accounting research, standards, and education firm. The firm provides policy, procedure, and governance guidance; develops courses, examinations, and other assessments; and supports the development of regional public accounting standards in Canada and internationally. Brian and Laura have served as authors, curriculum developers, lecturers, exam developers, and markers for numerous CGA and university courses in Canada, China, and the Caribbean and have also presented at IFRS conferences in Ecuador. Their volunteer involvement with the Association has earned them CGA-BC’s inaugural Ambassador of Distinction Award (2004) and the JM Macbeth Award for service at the chapter level (Brian in 2006 and Laura in 2007).

Stephen Spector is a Lecturer currently teaching Financial and Managerial Accounting at Simon Fraser University. He became a CGA in 1985 after obtaining his Master of Arts in Economics from SFU in 1982. In 1997, CGA-BC presented him with the Harold Clarke Award of Merit for recognition of his service to the By-Laws Committee for 1990-1996. In 1999, Stephen received the Fellow Certified General Accountant (FCGA) award for distinguished service to the Canadian accounting profession. He has been on SFU’s Faculty of Business Administration’s Teaching Honour Roll for May 2004 to April 2005 and May 2006 to April 2007. In August 2008, he was one of the two annual winners of the Business Faculty’s TD Canada Trust Distinguished Teaching Award. Stephen has held a number of volunteer positions with CGA-BC; he currently sits on CGA-BC’s board of governors where he is CGA-BC’s President.