

2014

IFRS Foundation: Framework-based IFRS Teaching Material

Stage 1— Property, plant and equipment



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Part 2: teaching material

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This material has benefited greatly from the feedback and comments from people attending a series of workshops on the Framework-based approach to teaching International Financial Reporting Standards (IFRS) organised by the IFRS Foundation and others and from peer reviews by a number of anonymous reviewers.

Stage 1: teaching material

In this part we present teaching material on accounting for property, plant and equipment that could be used in Stage 1 classes (for example, a first financial reporting course for CA/CPA stream students). The material includes:

- extracts from the IASB's *Conceptual Framework for Financial Reporting* and the main principles in IAS 16 *Property, Plant and Equipment* and Section 17 *Property, Plant and Equipment* of the *IFRS for SMEs*;
- notes for students—explanations, examples and discussion questions relating to the identification, recognition, measurement, and derecognition of property, plant and equipment (PPE) and indications of some judgements and estimates in accounting for PPE; and
- tutorial questions and suggested solutions.

Stage 1: reference material

The following extracts from the *Conceptual Framework* and Standards provide students with the main concepts and principles relevant to accounting for PPE. The authors envisage that students would have access to copies of these extracts in class and when they are being assessed. This open-book approach is consistent with focussing on developing students' ability to apply IFRS requirements, rather than having them learn and recite IFRS requirements and mechanically perform repetitive examples. An open-book approach is also more reflective of the 'real world' in which accountants must *apply* IFRS and analysts interpret IFRS financial statements, rather than recite its requirements. Furthermore, IFRS requirements are likely to change over time and memorising the older versions of such material may not be helpful in future.

The *Conceptual Framework* sets out the concepts that underlie the preparation and presentation of financial statements for external users. IAS 16 *Property, Plant and Equipment* and Section 17 *Property, Plant and Equipment* of the *IFRS for SMEs* set out requirements for accounting for PPE.

Extracts from the *Conceptual Framework*

Objective

The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. Those decisions involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit (paragraph OB2 of the *Conceptual Framework*). Other aspects of the *Conceptual Framework* (a reporting entity concept; the qualitative characteristics of, and the constraint on, useful financial information; elements of financial statements; recognition; measurement; presentation and disclosure) flow logically from the objective (see paragraph OB1 of the *Conceptual Framework*).

To a large extent, financial reports are based on estimates, judgements and models rather than exact depictions. The *Conceptual Framework* establishes the concepts that underlie those estimates, judgements and models. The concepts are the goal towards which the Board and preparers of financial reports strive (*Conceptual Framework* paragraph OB11).

General purpose financial reports

General purpose financial reports provide information about the financial position of a reporting entity, which is information about the entity's economic resources and the claims against the reporting entity. Financial reports also provide information about the effects of transactions and other events that change a reporting entity's economic resources and claims. Both types of information provide useful input for decisions about providing resources to an entity (paragraph OB12 of the *Conceptual Framework*). Furthermore, information about the entity's cash flows also helps users to assess the entity's ability to generate future net cash inflows (see paragraph OB20 of the *Conceptual Framework*).

Financial performance

Information about a reporting entity's financial performance during a period, reflected by changes in its economic resources and claims other than by obtaining additional resources directly from investors and creditors, is useful in assessing the entity's past and future ability to generate net cash inflows. That information indicates the extent to which the reporting entity has increased its available economic resources, and thus its capacity for generating net cash inflows through its operations rather than by obtaining additional resources directly from investors and creditors (paragraph OB18 of the *Conceptual Framework*).

Information about a reporting entity's financial performance during a period may also indicate the extent to which events such as changes in market prices or interest rates have increased or decreased the entity's economic resources and claims, thereby affecting the entity's ability to generate net cash inflows (paragraph OB19 of the *Conceptual Framework*).

Qualitative characteristics

The qualitative characteristics of useful financial information [relevance, faithful representation, comparability, verifiability, timeliness and understandability] identify the types of information that are likely to be most useful to the existing and potential investors, lenders and other creditors for making decisions about the reporting entity on the basis of information in its financial report (financial information) (paragraph QC1 of the *Conceptual Framework*).

If financial information is to be useful, it must be relevant and faithfully represent what it purports to represent (paragraph QC4 of the *Conceptual Framework*). Relevant financial information is capable of making a difference in the decisions made by users (see paragraph QC6 of the *Conceptual Framework*).¹ To be a perfectly faithful representation, a depiction would have three characteristics. It would be complete, neutral and free from error (see paragraph QC 12 of the *Conceptual Framework*).

The usefulness of financial information is enhanced if it is comparable, verifiable, timely and understandable (paragraph QC4 of the *Conceptual Framework*).

Additionally, the materiality of information must be considered. Information is material if omitting it or misstating it could influence decisions that users make on the financial information presented by an entity—materiality is an entity-specific aspect of relevance (see paragraph QC11 of the *Conceptual Framework*).

Elements

Financial statements portray the financial effects of transactions and other events by grouping them into broad classes according to their economic characteristics. These broad classes are termed the elements of financial statements. The elements directly related to the measurement of financial position in the statement of financial position are assets, liabilities and equity. The elements directly related to the measurement of performance in the statement of comprehensive income are income and expenses (paragraph 4.2 of the *Conceptual Framework*, with ‘statement of financial position’ substituted by the authors for ‘balance sheet’ and ‘statement of comprehensive income’ substituted for ‘income statement’).

An *asset* is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity (paragraph 4.4(a) of the *Conceptual Framework*). The future economic benefit embodied in an asset is the potential to contribute, directly or indirectly, to the flow of cash and cash equivalents to the entity (paragraph 4.8 of the *Conceptual Framework*).

Income is increases in economic benefits during the accounting period in the form of inflows or enhancements of assets or decreases of liabilities that result in increases in equity, other than those relating to contributions from equity participants (paragraph 4.25(a) of the *Conceptual Framework*).

Expenses are decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrences of liabilities that result in decreases in equity, other than those relating to distributions to equity participants (paragraph 4.25(b) of the *Conceptual Framework*).

¹ Financial information is capable of making a difference in decisions if it has predictive value, confirmatory value or both (see paragraph QC7 of the *Conceptual Framework*).

Extracts from IAS 16 and the IFRS for SMEs

Definitions

IAS 16

Property, plant and equipment are tangible items that:

- (a) are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and
- (b) are expected to be used during more than one period.

(paragraph 6)

Section 17 of the IFRS for SMEs

Property, plant and equipment are tangible assets that:

- (a) are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes, and
- (b) are expected to be used during more than one period.

(paragraph 17.2)

Recognition

IAS 16

The cost of an item of property, plant and equipment shall be recognised as an asset if, and only if:

- (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. (paragraph 7)

Section 17 of the IFRS for SMEs

... the entity shall recognise the cost of an item of property, plant and equipment as an asset if, and only if:

- (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. (paragraph 17.4)

Measurement at recognition

IAS 16

An item of property, plant and equipment that qualifies for recognition as an asset shall be measured at its cost.

(paragraph 15)

Cost is the amount of cash or cash equivalents paid or the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction or, where applicable, the amount attributed to that asset when initially recognised in accordance with the specific requirements of other IFRSs, eg IFRS 2 *Share-based Payment*.

(paragraph 6)

Section 17 of the IFRS for SMEs

An entity shall measure an item of property, plant and equipment at initial recognition at its cost.

(paragraph 17.9)

The cost of an item of property, plant and equipment is the cash price equivalent at the recognition date.

If payment is deferred beyond normal credit terms, the cost is the present value of all future payments.

(paragraph 17.13)

Measurement after recognition

IAS 16

An entity shall choose either the cost model in paragraph 30 or the revaluation model in paragraph 31 as its accounting policy and shall apply that policy to an entire class of property, plant and equipment. (paragraph 29)

Cost model: After recognition as an asset, an item of property, plant and equipment shall be carried at its cost less any accumulated depreciation and any accumulated impairment losses. (paragraph 30)

Revaluation model: After recognition as an asset, an item of property, plant and equipment whose fair value can be measured reliably shall be carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluations shall be made with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period. (paragraph 31)

Depreciation

IAS 16

Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life. (paragraph 6)

The *depreciable amount* of an asset shall be allocated on a systematic basis over its *useful life*. (paragraph 50)

Depreciable amount is the cost of an asset, or other amount substituted for cost, less its *residual value*. (paragraph 6)

The residual value of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the

Section 17 of the IFRS for SMEs

An entity shall measure all items of property, plant and equipment after initial recognition at cost less any accumulated depreciation and any accumulated impairment² losses. An entity shall recognise the costs of day-to-day servicing of an item of property, plant and equipment in profit or loss in the period in which the costs are incurred.³ (paragraph 17.15)

Section 17 of the IFRS for SMEs

Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life. (Glossary)

An entity shall allocate the *depreciable amount* of an asset on a systematic basis over its useful life. (paragraph 17.18)

Depreciable amount is the cost of an asset, or other amount substituted for cost (in the financial statements), less its *residual value*. (Glossary)

Residual value (of an asset) is the estimated amount that an entity would currently obtain from disposal of an asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition

² Impairment is dealt with in further detail in the Stage 2 and Stage 3 teaching material and will be addressed fully in a separate set of teaching materials relating to impairment.

³ The *IFRS for SMEs* does not permit the use of the revaluation model.

condition expected at the end of its *useful life*.
(paragraph 6)

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item shall be depreciated separately.
(paragraph 43)

Useful life is:

- (a) the period over which an asset is expected to be available for use by an entity; or
- (b) the number of production or similar units expected to be obtained from the asset by an entity.

(paragraph 6)

The depreciation method used shall reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity.
(paragraph 60)

A variety of depreciation methods can be used to allocate the depreciable amount of an asset on a systematic basis over its useful life. These methods include the straight-line method, the diminishing balance method and the units of production method. Straight-line depreciation results in a constant charge over the useful life if the asset's residual value does not change. The diminishing balance method results in a decreasing charge over the useful life. The units of production method results in a charge based on the expected use or output. The entity selects the method that most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. That method is applied consistently from period to period unless there is a change in the expected pattern of consumption of those future economic benefits.
(paragraph 62)

The depreciation charge for a period is usually recognised in profit or loss. However, sometimes, the future economic benefits embodied in an asset are absorbed in producing other assets. In this case, the

expected at the end of its *useful life*.
(Glossary)

If the major components of an item of property, plant and equipment have significantly different patterns of consumption of economic benefits, an entity shall allocate the initial cost of the asset to its major components and depreciate each such component separately over its useful life. Other assets shall be depreciated over their useful lives as a single asset. With some exceptions, such as quarries and sites used for landfill, land has an unlimited useful life and therefore is not depreciated. (paragraph 17.16)

Useful life is the period over which an asset is expected to be available for use by an entity or the number of production or similar units expected to be obtained from the asset by an entity. (Glossary)

An entity shall select a depreciation method that reflects the pattern in which it expects to consume the asset's future economic benefits. The possible depreciation methods include the straight-line method, the diminishing balance method and a method based on usage such as the units of production method.
(paragraph 17.22)

The depreciation charge for each period shall be recognised in profit or loss unless another section of this IFRS requires the cost to be recognised as part of the cost of an asset. For example, the depreciation of

depreciation charge constitutes part of the cost of the other asset and is included in its carrying amount. For example, the depreciation of manufacturing plant and equipment is included in the costs of conversion of inventories (see IAS 2). Similarly, depreciation of property, plant and equipment used for development activities may be included in the cost of an intangible asset recognised in accordance with IAS 38 *Intangible Assets*. (paragraph 49)

Impairment

IAS 16

To determine whether an item of property, plant and equipment is impaired, an entity applies IAS 36 *Impairment of Assets*. That Standard explains how an entity reviews the carrying amount of its assets, how it determines the recoverable amount of an asset, and when it recognises, or reverses the recognition of, an impairment loss. (paragraph 63)

Derecognition

IAS 16

The carrying amount of an item of property, plant and equipment shall be derecognised: (a) on disposal; or (b) when no future economic benefits are expected from its use or disposal. (paragraph 67)

The gain or loss arising from the derecognition of an item of property, plant and equipment shall be included in profit or loss when the item is derecognised.... Gains shall not be classified as revenue. (paragraph 68)

Other

In addition to the above, an entity shall not offset assets and liabilities or income and expenses, unless required or permitted by an IFRS or by another part of the *IFRS for SMEs* (see paragraph 32 of IAS 1 and paragraph 2.52 of the *IFRS for SMEs*).

manufacturing property, plant and equipment is included in the costs of inventories (see Section 13 *Inventories*). (paragraph 17.17)

Section 17 of the IFRS for SMEs

At each reporting date, an entity shall apply Section 27 *Impairment of Assets* to determine whether an item or group of items of property, plant and equipment is impaired and, if so, how to recognise and measure the impairment loss. That section explains when and how an entity reviews the carrying amount of its assets, how it determines the recoverable amount of an asset, and when it recognises or reverses an impairment loss. (paragraph 17.24)

Section 17 of the IFRS for SMEs

An entity shall derecognise an item of property, plant and equipment: (a) on disposal, or (b) when no future economic benefits are expected from its use or disposal. (paragraph 17.27)

An entity shall recognise the gain or loss on the derecognition of an item of property, plant and equipment in profit or loss when the item is derecognised.... The entity shall not classify such gains as revenue. (paragraph 17.28)

Stage 1: notes for students

For some entities (particularly manufacturers and retailers) PPE is often a significant asset in their statements of financial position.⁴ Similarly, depreciation expense (akin to the consumption of the service potential of the PPE) is often a significant item in those entities' statements of comprehensive income. Consequently, relevant (ie capable of making a difference to the decisions made by users) and faithfully represented information (ie information that is complete, neutral and free from error) about an entity's PPE is likely to be useful to existing and potential investors, lenders and other creditors when making decisions⁵ about the reporting entity. Providing relevant and faithfully represented information about an entity's PPE in accordance with IFRS and the *IFRS for SMEs* often requires judgement.

Identifying PPE

Property, plant and equipment are tangible items that:

- (a) are held for use in the production (for example, machinery used in a production line to manufacture cars) or supply of goods (for example, a retailer's point-of-sale equipment) or services (for example, an architect's tools), for rental to others (for example, a car hire's rental fleet), or for administrative purposes (for example, computer equipment used by an entity's administration staff); and
- (b) are expected to be used during more than one period (IAS 16, paragraph 6, examples added).

As can be seen from the definition above, PPE need not be directly involved in a process of manufacturing. PPE can, for example, be used in the administration or sales functions of the business.

In many cases it is not difficult to identify items of PPE. First, one should determine whether the item is an asset of the reporting entity and then determine whether that asset is an item of PPE.

Note: the examples that follow are relatively straight-forward, as students move to Stage 2, the examples become more complex and the exercise of judgement is necessary.

Example 1: manufacturing equipment

An entity purchased a kiln to convert clay into bricks through a baking process. The kiln is expected by the brick manufacturer to operate effectively for about 10 years before being scrapped.

The first question—is the kiln an asset?

⁴ For students with little or no exposure to machine-intensive manufacturing, a tour/virtual tour of a machine-intensive factory is recommended. Many virtual factory tours are freely available on the internet.

⁵ Those decisions involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit (*Conceptual Framework*, paragraph OB2).

An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity (paragraph 4.4(a) of the *Conceptual Framework*).

The kiln is an asset of the manufacturer—it is a physical resource (in this case a steel and concrete structure) purchased by the manufacturer (past event) and used at the manufacturer's discretion (control) to manufacture bricks, the sale of which is expected to result in the flow of cash (future economic benefits) from the manufacturer's customers to the manufacturer.

The second question—is the kiln asset an item of PPE?

The brick manufacturer's kiln clearly satisfies the definition of an item of PPE—it has physical form (it is tangible), it is used to convert moulded clay into bricks (held for use in production) and it is expected to be used for about 10 years (in more than one period).

Conclusion

The kiln asset is an item of the brick manufacturer's PPE.

Example 2: retail outlet

The brick manufacturer purchased a showroom in a location that is convenient for potential customers to view the entity's range of bricks and in which customers place orders for the entity's bricks. The manufacturer expects to market its bricks from the showroom for about 30 years.

The first question—is the showroom an asset?

The showroom is an asset of the manufacturer—it is a physical resource (a brick, mortar, wood and glass structure) purchased by the manufacturer (past event) and used at the manufacturer's discretion (control) as a showroom for the entity's bricks. The sale of those bricks marketed from the showroom is expected to result in the flow of cash (future economic benefits) from the manufacturer's customers to the manufacturer.

The second question—is the showroom asset an item of PPE?

The brick manufacturer's showroom clearly satisfies the definition of an item of PPE—it is made of bricks, mortar, wood and glass (it is tangible), is used to market the entity's bricks to potential customers (held for use in the supply of goods) and it is expected to be used for about 30 years (in more than one period).

Conclusion

The showroom asset is an item of the brick manufacturer's PPE.

Example 3: administration building

The brick manufacturer purchased a building from which to administer the entity's business (head office building). The head office building houses the entity's accounting, human resources and other administrative staff. The manufacturer expects to use its head office building for about 50 years.

The first question—is the head office building an asset?

The head office building is an asset of the manufacturer—it is a physical resource (a brick, mortar, wood and glass structure) purchased by the manufacturer (past event) and used at the manufacturer’s discretion (control) to house its accounting, human resources and other administrative staff, whose work is an essential part of operating the business and consequently the building is expected to contribute (albeit indirectly) to the flow of cash (future economic benefits) from the manufacturer’s customers to the manufacturer. In other words, the head office building houses those that administer the operations that contribute indirectly to processes that ultimately result in the receipt of cash from the manufacturer’s customers for the sale of bricks.

The second question—is the head office building asset an item of PPE?

The brick manufacturer’s head office building clearly satisfies the definition of an item of PPE—it is made of bricks, mortar, wood and glass (it is tangible), it is used to house those who administer the entity’s operations (held for administration purposes) and it is expected to be used for about 50 years (in more than one period).

Conclusion

The head office building asset is an item of the brick manufacturer’s PPE.

Example 4: motor vehicles of a motor vehicle retailer

An entity owns a number of motor vehicles. The majority of the vehicles are held to be sold to the public as part of the ordinary operating activities of the entity. The other vehicles are used for a period of five years by salesmen employed by the entity to identify potential customers and to facilitate sales.

The first question—are the motor vehicles to be sold assets?

The motor vehicles to be sold are assets of the entity—they are physical resources purchased by the entity (past event) to be sold at the entity’s discretion (control). Such sales are expected to result in the flow of cash (future economic benefits) from the entity’s customers to the entity.

The second question—are the motor vehicles to be sold items of PPE?

The motor vehicles to be sold do not satisfy the definition of an item of PPE—they are tangible assets, but they are held to be sold in the ordinary course of the entity’s vehicle retailing business (and are not held for use in the production or supply of goods or services, administration purposes or for rental to others). Furthermore, the sale is likely to occur within one period of purchase by the entity.

Conclusion

The motor vehicles to be sold are not items of the entity’s PPE. Note: the vehicles are the car retailer’s inventory.

The first question—are the motor vehicles that are used by the entity’s salesmen assets?

The motor vehicles held for use by the entity’s salesmen are assets of the entity—they are physical resources purchased by the entity (past event) to be used at the entity’s discretion (control) to assist in sourcing customers for the business, an activity which is

expected to result in the flow of cash (future economic benefits) from the entity's customers (from sales made) to the entity.

*The second question—**are the motor vehicles used by the entity's salesmen items of PPE?***

The motor vehicles held for use by the entity's salesmen clearly satisfy the definition of an item of PPE—motor vehicles are tangible items, used by the entity's salesmen to source potential customers for the entity (held for use in the supply of goods) and they are expected to be used for a period of five years (in more than one period).

Conclusion

The motor vehicles used by the entity's salesmen are the car retailer's PPE.

Useful information about PPE

To consider what information about an entity's PPE, and any changes in that PPE, would be useful to existing and potential investors and creditors, the following questions could be asked:

What is the economic rationale for acquiring PPE? In other words, why do manufacturers buy factories, why do retailers buy retail outlets and why do many in the service industry buy the building from which they operate? How do those entities generate net cash inflows from their PPE?

When existing and potential investors, lenders and other creditors make decisions about the reporting entity, with regards to buying, selling or holding equity and debt instruments and providing or settling loans and other forms of credit, what information about an entity's PPE do you think would be capable of making a difference? For example, if you were considering buying shares in an entity that held significant PPE, what information about that entity's PPE would you find most useful in assessing the entity's prospects for future net cash inflows?

Can that information be faithfully represented (ie the information is complete, neutral and free from error)?

Discussion questions

For each of the following four scenarios, answer these questions:

(a) *What information about that entity's PPE would you find useful?*

(b) *Why do you think that information would be useful?*

Scenario 1: you are deciding whether to buy shares in a machine-intensive manufacturing business.

Scenario 2: you are deciding whether to renew a loan to a business that develops computer programs. That business' only significant item of PPE is the building that it owns and from which it operates.

Scenario 3: you are deciding whether to supply envelopes (that you manufacture) on credit to a mailing house. The mailing house's only significant item of PPE is the building that it owns and from which it operates.

Scenario 4: you are deciding whether to sell shares that you have held for more than a decade in a cattle farming business. The business' only significant item of PPE is the farmland that it purchased over 40 years ago. That land was recently surrounded by the financial centre of a rapidly developing emerging economy.

Recognition of PPE

The recognition principle—an item of PPE is recognised as an asset (in other words, it is included in the statement of financial position) when:

- (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 reliably measured
- (paragraph 7 of IAS 16).

It is usually not difficult to determine when an item of PPE must be recognised.

The first recognition criterion is usually satisfied when the PPE first satisfied the definition of an asset of the entity (see above), because the ultimate purpose for which entities usually acquire PPE is to generate income directly (for example, by using a machine to manufacture goods for sale) or indirectly (for example, an entity's head office building houses the staff who administer the business that generates the cash inflows) from their use. In other words, the management of a business would usually not purchase PPE unless it is probable that, in using it, future economic benefits will flow to the business. In some cases determining whether the flow of future economic benefits is 'probable' may require significant judgement.

The second recognition criterion—that cost can be reliably measured—is also usually satisfied when the item of PPE first meets the definition of an asset of the entity. In some cases, the cost of an item of PPE can be measured precisely (for example, when an entity acquires a ready-to-use photocopier for use by its administration staff in exchange for CU1,200 cash settled at the time that the entity receives the photocopier).

In other cases, the cost must be estimated. For example, the cost of a retail outlet constructed by a brick manufacturer for use as a showroom to market its own bricks would include many estimates. The cost of the self-manufactured bricks that are used includes numerous estimates, for example, an allocation of fixed production overheads including depreciation of the kiln. Borrowing costs allocated in accordance with IAS 23 *Borrowing Costs* would also need to be estimated. However, it is important to remember that the use of reasonable estimates is an essential part of the preparation of financial statements and does not undermine their reliability (see paragraph 4.41 of the *Conceptual Framework*). Consequently, such estimates do not prevent the recognition of an item as an asset.

Measurement of PPE

An item of PPE is initially measured at its cost. It is usually not difficult to measure the cost of an item of PPE. If the brick manufacturer purchased a ready-to-use kiln from a portable kiln supplier in exchange for CU1,200 cash on delivery, then the cost of the kiln is the amount of cash paid.

The following journal entries record the kiln on delivery:

Debit Asset—PPE: kiln	CU1,200
Credit Asset—cash	CU1,200

To record the cost of the kiln purchased for cash when first recognised.

Had the kiln been purchased on ‘normal’ credit terms,⁶ the following journal entry would record the kiln on delivery.

Debit Asset—PPE: kiln	CU1,200
Credit Liability—trade payable	CU1,200

To record the cost of the kiln purchased on credit when first recognised.

However, if the brick manufacturer constructed a bespoke (sometimes called custom-made) kiln for use by the entity’s staff, then its cost would be more difficult to determine. In order for the amount to be a faithful representation of cost it is important to identify what represents the cost of the custom-made kiln; it includes all costs directly attributable to bringing the kiln to the location and condition necessary for it to operate as intended by management, for example, direct materials used in the construction, labour, site preparation, installation, assembly and testing of functionality. Significant estimates and other judgements may be necessary to determine some components of the cost of self-constructed items (as set out in the notes on recognition above).

As items of PPE can only be recognised if, inter alia, the cost of the item can be reliably measured, then cost for the initial measurement should be readily determinable (otherwise the asset would not meet the recognition criteria).

An item of PPE (except most land) has either a limited period over which it is expected to be economically usable or a limited number of production units that can be expected to be obtained from it. Consequently, the cost of an item of PPE is recognised as an expense (or as part of the cost of another asset, for example, inventory in the form of work in progress or finished goods) as the item is consumed by the entity. For example, if an entity pays CU1,000 for a machine that is expected to make 100 units of product before being scrapped,⁷ CU10 depreciation (ie one hundredth of CU1,000) is allocated to the cost of each unit of inventory produced (a separate asset). In other words, using the machine to produce its first unit of output decreases the machine’s future service potential from 100 units to 99 units. Consequently, one hundredth of the CU1,000 cost of the machine ‘consumed’ in producing that unit of output (ie CU10) is deducted from the carrying amount of the machine and included in the cost of the unit of output produced (ie the inventory asset). The CU10 depreciation represents the reduction in the machine’s service potential from 100 units to 99 units.

⁶ Had the kiln been acquired on credit with the amount payable at a future date (which is beyond normal credit terms), the cost of the kiln is the cash price equivalent that would be paid on acquisition date.

⁷ Note: the estimation of total output from the machine is a judgement made by management.

The following journal entries record the cost of the machine ‘consumed’ as part of the process of the manufacture of the inventory.

Debit Asset—Inventory	CU10
Credit Asset—Accumulated depreciation: machine	CU10
<i>To record the consumption of the service potential of the machine in the manufacture of inventory.</i>	

Alternatively, if the entity expects to recover part of the carrying amount of the machine through the sale of the machine (rather than through the sale of the goods produced by that machine), for example, by selling the machine after it has produced 80 units (rather than using it to produce 100 units and then scrapping it), then the amount of the machine that is to be recovered by selling the machine is excluded from depreciation because it is not consumed in making goods. Consequently, the amount of the machine to be allocated to depreciation as the asset is used is reduced. Put another way, assume an entity expects to sell an item of PPE in the future at the time when the entity no longer expects to use it. In this case, a portion of the cost of this machine is expected to be recovered by selling the machine. The difference between the initial cost and the residual value will be consumed as the asset is used and should be recognised as depreciation as the benefits are consumed (as set out above). The part of the cost of the machine that is expected to be recovered by selling the machine is known as its residual value,⁸ and the cost of an asset less its residual value is known as the depreciable amount (as that is the amount of the cost that is expected to be consumed through use and should therefore be depreciated as it is used) of the asset. In this example, CU120 of the cost of the machine is expected to be recovered through the sale of the machine. Consequently, depreciation of CU11 (ie one eightieth of CU880 (the depreciable amount—CU1,000 cost less CU120 residual value)) is allocated to each unit of inventory produced (itself a separate asset) and the remaining carrying amount is derecognised when the machine is sold. The useful life of the machine is 80 units—the number of production units expected to be obtained from the asset by the entity (or, in other cases, the period over which an asset is expected to be available for use by the entity).

Revaluation model

So far these notes have described the cost model of measuring PPE after initial recognition.

However, PPE with a reliably measurable fair value can be measured after initial recognition using the revaluation model (this is an accounting policy choice—see paragraph 31 of IAS 16). Fair value is a current measure—the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (paragraph 6 of IAS 16). When using the revaluation model, the carrying amount is the asset’s fair value at the date of the revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluations have to be made with sufficient regularity to ensure that this carrying amount of the revalued item does not differ materially from its fair value at the end of the accounting period. Using the revaluation model provides existing and potential investors and lenders with information about changes in

⁸ Note: estimating the residual value of an item of PPE is explored below under the heading estimates and judgements. It is covered more comprehensively in Stage 2 of this material.

the market price of an asset. Paragraphs OB18 and OB19 of the *Conceptual Framework* states that such information “may be useful in determining the entity’s future ability to generate net cash inflows”.

Derecognition of PPE

As discussed earlier in these notes an item must satisfy both the definition of an asset and the recognition criteria for PPE in order to be recognised (included in the entity’s statement of financial position). Derecognition of an asset is when that asset is removed from the entity’s statement of financial position. Generally, derecognition occurs when the asset is sold.

If the machine is sold for CU130 when its carrying amount is CU120, the entity derecognises the CU120 carrying amount of the machine (asset) and recognises CU130 increase in cash (asset) and income of CU10 (described as a gain on the sale of PPE) in comprehensive income. Recognising income at the net amount (CU10, ie CU130 less CU120) rather than the gross amount (CU130) is an exception to the general principle in IFRS that does not permit offsetting (see paragraph 32 of IAS 1).⁹

Example 5: sale of delivery vehicle

On 31 December 20X1 an entity disposes of a delivery vehicle with a carrying amount of CU40,000 in exchange for CU100,000 cash.

What is the journal entry to derecognise the delivery vehicle?

Debit Asset—cash	CU100,000
Credit Asset—PPE: motor vehicle	CU40,000
Credit Income—profit or loss: gain on sale of PPE	CU60,000
<i>To derecognise the delivery vehicle sold for cash.</i>	

Example 6: abandonment of a machine

On 31 December 20X1 an entity scrapped a machine with a carrying amount of CU40,000. No further cash flows are expected from the machine.

What is the journal entry to derecognise the machine?

⁹ Paragraph BC35 of the Basis for Conclusions to IAS 16 addresses this issue:
Although the Board concluded that an entity should apply the recognition principle for revenue from sales of goods to its recognition of gains on disposals of items of property, plant and equipment, the Board concluded that the respective approaches to income statement display should differ. The Board concluded that users of financial statements would consider these gains and the proceeds from an entity's sale of goods in the course of its ordinary activities differently in their evaluation of an entity's past results and their projections of future cash flows. This is because revenue from the sale of goods is typically more likely to recur in comparable amounts than are gains from sales of items of property, plant and equipment. Accordingly, the Board concluded that an entity should not classify as revenue gains on disposals of items of property, plant and equipment.

Debit Expense—profit or loss: impairment loss	CU40,000
Credit Asset—PPE: machine	CU40,000 ¹⁰

To derecognise the abandoned machine.

Example 7: expropriation of land

On 31 December 20X1 the government of Country A expropriated, without compensation, a plot of land with a carrying amount of CU40,000 that the entity used as grazing land for its beef cattle.

What is the journal entry to derecognise the expropriated land?

Debit Expense—profit or loss: loss on expropriation of PPE	CU40,000
Credit Asset—PPE: land	CU40,000

To derecognise the expropriated land

Estimates and judgements

To a large extent, financial reports are based on estimates, judgements and models rather than exact depictions of reality (paragraph OB11 of the *Conceptual Framework*). Providing relevant information about an entity's PPE requires estimates and judgements. For example, measuring the cost of an item of PPE (particularly if it is self-constructed) requires many estimates. The subsequent allocation of depreciation involves further judgements and estimates, including:

- (a) allocating the cost of the asset to particular major components;
- (b) determining the most appropriate depreciation method;
- (c) estimating useful life; and
- (d) estimating residual value.

Only if the major components of an item of PPE have significantly different patterns of consumption of economic benefits or different useful lives, or both, does an entity allocate the initial cost of the asset to its major components and depreciate each such component separately over its useful life. For example, it would be appropriate to depreciate separately the airframe and engines of an aircraft when these two components have different useful lives (the airframe's estimated useful life is 20 years whereas the engines' estimated useful life is 5,000 flying hours)—because depreciating the aircraft as a whole using an approximation technique (such as a weighted average useful life for the item as a whole) would not result in depreciation that faithfully represents the consumption of the service potential for the separate parts. When the carrying amount of PPE is divided into separate components, for calculating depreciation only, each component is treated as though it were a separate asset as explained above. That implies that the carrying amount of that component is 'written off' (recognised as an expense) when that component is scrapped or sold, with the cost of any replacement being treated as a separate component of the item.

¹⁰ Note: as set out in the footnote to Example 4, if a separate ledger account is maintained for accumulated depreciation then this amount would be represented in two entries—a credit to Asset: PPE machine, cost and a debit to Asset: PPE machine, accumulated depreciation.

An entity must use a depreciation method that reflects the pattern in which it expects to consume the asset’s future economic benefits. Possible depreciation methods include the straight-line method, the diminishing balance method and a method based on use, such as the units of production method (the method illustrated above).

‘Useful life’ refers to the period that the asset is expected to be used by the entity. Consequently, that period can be shorter than (but no longer than) an asset’s total economic life—the period over which an asset is expected to be economically usable by one or more users. For example, if an entity expects to use a photocopier for two years (measured from the date of purchase) but the photocopier could be used by one or more users for five years, then the photocopier’s useful life is two years and its economic life is five years. Where the asset has a useful life that is shorter than its economic life, it is likely to have a substantial residual value because part of the carrying amount of the asset could (and usually would) be recovered through the sale of the asset to another entity (rather than through use by the entity itself).

The residual value of an item of PPE is calculated in the following way: if the item was at the end of its useful life today, and was in the condition expected at the end of its useful life, what would the entity receive today from selling that item (net of disposal costs)? If there is not an active market for such items of PPE, then judgement is used to estimate an item’s residual value.

Example 8: depreciation of PPE

On 1 January 20X1 an entity purchases a machine with a cost on initial recognition of CU1,100. At initial recognition, it is estimated that the machine has a useful life of 5 years and a residual value of CU100—these estimates have been confirmed at each subsequent reporting date (the entity’s reporting date is 31 December). The fair value of the machine, measured in accordance with IFRS 13 *Fair Value Measurement*, at 31 December 20X1, is CU1,300. Journal entries to record the depreciation of the machine for the year ended 31 December 20X2, assuming that the entity measures its PPE using:

(a) the cost model after initial recognition

	Debit Expense—profit or loss: depreciation PPE	CU200 ¹¹
	Credit Asset—accumulated depreciation—PPE	CU200
	<i>To recognise depreciation for 20X2.</i>	

(b) the revaluation model after initial recognition

¹¹ CU200 depreciation is calculated as (CU1,100 less CU100) ÷ 5 years × 1 year = CU200 where CU1,100 is the cost of the asset, CU100 is the estimated residual value of the asset, 5 years is the estimated useful life of the asset and 1 year is the service potential of the asset ‘used up’ during 20X2.

Debit	Expense—profit or loss: depreciation PPE	CU300 ¹²
Credit	Asset—accumulated depreciation—PPE	CU300

To recognise depreciation for 20X2.

In some jurisdictions that do not apply IFRS, mandatory depreciation rates are specified for particular items of PPE. Using the information above, and assuming the full cost of the item must, in accordance with local GAAP, be recognised as depreciation evenly over 24 months, depreciation would be recorded as follows:

Debit	Expense—profit or loss: depreciation PPE	CU550 ¹³
Credit	Asset—accumulated depreciation—PPE	CU550

To recognise depreciation for 20X2.

Question—does IFRS or the local GAAP better meet the objective of financial reporting as set out in the *Conceptual Framework*?

Discussion question: materiality

A large, listed, highly profitable, multinational entity, whose financial statements are presented in millions of CUs, follows an accounting policy of recognising individual items of PPE that cost less than CU100 as an expense on initial recognition.

Does this policy contravene IFRS?

¹² CU300 depreciation is calculated as $(\text{CU}1,300 \text{ less } \text{CU}100) \div 4 \text{ years} \times 1 \text{ year} = \text{CU}300$ when CU1,300 is the revalued amount of the asset, CU100 is the estimated residual value of the asset, 4 years is the estimated useful life of the asset remaining after the asset's revaluation and 1 year is the service potential of the asset 'used up' during 20X2.

¹³ CU550 depreciation is calculated as $\text{CU}1,100 \div 24 \text{ months} \times 12 \text{ months} = \text{CU}550$.

Stage 1: Tutorial

An entity owns and operates a ferry that transports passengers, their motor vehicles and goods between the mainland and an island. The ferry service is the main business of the entity.

On 1 January 20X1 the entity purchases a new ferry for CU1,000,000 cash. The ferry comprises two main components—the main structure (allocated cost CU800,000) and the engine (allocated cost CU200,000).

The entity's management expect that after operating the ferry for 20 years the ferry will be scrapped. However, management expect to replace the ferry's engine after operating it for ten years. No proceeds are expected from the scrapping of both the old engine (after 10 years) and the ferry and its replacement engine (after 20 years). The ferry's passenger carrying capacity is constant over its 20-year economic life.

On 31 December 20X4 a storm severely damages the engine. Consequently, the entity scraps the engine. On 1 January 20X5 the entity replaces the engine at a cost of CU300,000. The new engine is expected to propel the ferry for the remaining estimated useful life of the ferry, after which the ferry and the engine will be scrapped.

On 31 December 20X5, in response to an unsolicited offer, the entity disposes of the ferry for CU910,000.

Part A:

What information about that entity's ferry would a potential investor find useful? Why do you think that information would be useful?

Part B:

Is the ferry an asset of the entity?

Part C:

Describe how the ferry satisfies the definition of property, plant and equipment.

Part D:

Prepare accounting entries relating to the ferry using the cost model in the accounting records of the entity from 1 January 20X1 to 31 December 20X5.

Part E:

List some of the estimates and judgements that the management of the entity would have made in accounting for the ferry.

Stage 1: suggested answer to tutorial questions on accounting for property, plant and equipment

Part A:

What information about that entity's ferry would a potential investor find useful? Why do you think that information would be useful?

A potential investor must decide whether to buy shares in the entity that owns and operates the ferry. To inform that decision, the potential investor assesses the potential returns from investing in the entity that owns and operates the ferry. Those potential returns depend on the entity's prospects for future net cash inflows. Consequently, the potential investor assesses the amount, timing and uncertainty of (or the prospects for) future net cash inflows to the entity.

To make that assessment a potential investor needs information about the resources of the entity (in this case the ferry and the entity's other assets), claims against the entity and how efficiently and effectively the entity's management and governing board have discharged their responsibilities to use the entity's resources (paragraph OB4 of the *Conceptual Framework*).

Relevant information (ie information capable of making a difference in the investment decision) about the ferry asset that can be faithfully represented (ie information that is complete, neutral and free from error) would be useful to a potential investor when deciding whether to invest in (buy shares in) the entity that owns and operates the ferry.

The entity generates income (ultimately cash inflows) by using its ferry (an asset) to transport passengers, their vehicles and goods between the mainland and an island. Consequently, the ferry is likely to be the entity's most significant asset and the depreciation expense (akin to the consumption of the carrying amount of the ferry) is likely to be material. The gross income (revenue) from operating the ferry and the costs of operating the ferry (for example, fuel) are also likely to be useful.

At the time of purchase, the cost of the ferry would likely provide relevant information about the cash-generating potential of the ferry. As time passes, particularly for long-lived assets such as the ferry, whose current value is likely to differ significantly from its cost over time, potential investors are likely to be increasingly interested in a current measure of the value of the ferry (rather than its historical cost), for example, its fair value (the amount for which the asset could be exchanged between knowledgeable, willing parties in an arm's length transaction) (see paragraph 6 of IAS 16).

Because the ferry has a limited life (20 years for the main structure and 10 years for the original engine) over which the entity expects to obtain benefit from the asset, an expense is recognised over time reflecting the pattern in which the services potential of the ferry is consumed in ferrying passengers, their vehicles and goods. Consequently, a potential investor would want information about the extent to which the service potential of the ferry was consumed in the reporting period and the extent to which the service potential is to be consumed in the future.

Providing relevant and faithfully represented information about an entity's ferry in accordance with IFRS and the *IFRS for SMEs* often requires judgement (see the answer to Part D below).

Note: general purpose financial reports provide information to help existing and potential investors, lenders and other creditors to estimate the value of the reporting entity (see paragraph OB7 of the *Conceptual Framework*). However, general purpose financial reports do not and cannot provide all the information that existing and potential investors, lenders and other creditors need or want. Those users need to consider pertinent information from other sources, for example, general economic conditions and expectations, political events and political climate, and industry and company outlooks (paragraph OB6 of the *Conceptual Framework*). Therefore, in assessing the entity's potential to generate future net cash inflows, the potential investor would probably also be interested in non-financial information that is typically not provided in financial statements. For example, in this tutorial the potential investor would find the following of interest: changes in the population on the island and the mainland, changes in their travel habits (for example, a shift from air to sea transport or vice versa) and other developments (for example, possible development of a bridge or tunnel between the mainland and the island).

Part B:

Is the ferry an asset of the entity?

An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity (paragraph 4.4(a) of the *Conceptual Framework*).

The ferry is an asset of the entity. It is a resource that is controlled by the entity (evidenced by unencumbered legal ownership and control by the entity's management over the way the ferry is used) as a result of past events (purchasing the ferry) and from which future economic benefits are expected to flow to the entity (cash collected from customers for ferrying them, their vehicles and their goods between the mainland and the island).

Part C:

Describe how the ferry satisfies the definition of property, plant and equipment

The entity's ferry asset (see the answer to Part B above) satisfies the definition of an item of property, plant and equipment (PPE) as follows:

- it is a tangible—it has physical substance made of steel and wood;
- it is held for the provision of services (ie transporting passengers, their vehicles and goods between the mainland and an island); and
- it is expected to be used by the entity during more than one period (20 years from 1 January 20X1).

Part D:

Prepare accounting entries to record the ferry in the entity's accounting records from 1 January 20X1 to 31 December 20X5.

1 January 20X1

Dr	Asset: property, plant and equipment (PPE)—cost	CU1,000,000	
	Cr	Asset: cash	CU1,000,000

To recognise the acquisition of the ferry.

20X1

Dr Expense: profit or loss—depreciation	CU60,000 ^(a)	
Cr Asset: PPE—accumulated depreciation/impairment		CU60,000

To recognise depreciation expense allocated for the year ended 31 December 20X1 on the ferry.

20X2

Repeat the journal entry above to recognise CU60,000 depreciation expense allocated for the year ended 31 December 20X2 on the ferry.

20X3

Repeat the journal entry above to recognise CU60,000 depreciation expense allocated for the year ended 31 December 20X3 on the ferry.

20X4

Repeat the journal entry above to recognise CU60,000 depreciation expense allocated for the year ended 31 December 20X4 on the ferry.

31 December 20X4

Dr Expense: profit or loss—impairment loss	CU120,000 ^(d)	
Dr Asset: PPE—accumulated depreciation/impairment	CU80,000 ^(e)	
Cr Asset: PPE—cost		CU200,000

To recognise the scrapping of the ferry engine and the associated impairment loss at 31 December 20X4.

1 January 20X5

Dr Asset: PPE—cost	CU300,000	
Cr Asset: cash		CU300,000

To recognise the acquisition of the new ferry engine.

20X5

Dr Expense: profit or loss—depreciation	CU58,750 ^(f)	
Cr Asset: PPE—accumulated depreciation/impairment		CU58,750

To recognise depreciation expense allocated for the year ended 31 December 20X5 on the ferry.

31 December 20X5

Dr Asset: cash	CU910,000	
Dr Asset: PPE—accumulated depreciation/impairment	CU218,750 ^(h)	
Cr Asset: PPE—cost		CU1,100,000 ⁽ⁱ⁾
Cr Income: profit or loss—gain on sale of PPE		CU28,750 ^(j)

To recognise sale of ferry at 31 December 20X5.

Calculations:

- (a) $\text{CU}40,000^{(b)}$ depreciation of main structure + $\text{CU}20,000^{(c)}$ depreciation of engine = $\text{CU}60,000$
- (b) $\text{CU}800,000$ cost of main structure \div 20-year useful life = $\text{CU}40,000$ depreciation per year.
- (c) $\text{CU}200,000$ cost of engine \div 10-year useful life = $\text{CU}20,000$ depreciation per year.
- (d) $\text{CU}200,000$ cost of engine less $\text{CU}80,000^{(e)}$ accumulated depreciation of engine at 31 December 20X4 before impairment = $\text{CU}120,000$ carrying amount on 31 December 20X4 before scrapping the engine.
- (e) $\text{CU}20,000^{(c)}$ depreciation per year \times 4 years (20X1–20X4) = $\text{CU}80,000$ accumulated depreciation at 31 December 20X4 (before impairment).
- (f) $\text{CU}40,000^{(b)}$ depreciation of main structure + $\text{CU}18,750^{(g)}$ depreciation of new engine = $\text{CU}58,750$
- (g) $\text{CU}300,000$ cost of new engine \div 16-year remaining useful life = $\text{CU}18,750$ depreciation per year.
- (h) $\text{CU}200,000$ accumulated depreciation of the main structure + $\text{CU}18,750$ accumulated depreciation of the new engine = $\text{CU}218,750$.
- (i) $\text{CU}800,000$ cost of main structure + $\text{CU}300,000$ cost of new engine = $\text{CU}1,100,000$.
- (j) $\text{CU}910,000$ proceeds of sale – $\text{CU}881,250$ carrying amount of main structure and engine = $\text{CU}28,750$.

Part E:

List some of the estimates and judgements that the management of the entity would have made in accounting for the ferry.

Management would have used judgement to:

1. Allocate the $\text{CU}1,000,000$ cost of the ferry between the engine and the main structure.
2. Determine the most appropriate depreciation method. Note: the straight-line method is likely to be the most appropriate depreciation method for the ferry because its passenger carrying capacity (reflecting its service potential) is equal in each period, but this is itself a judgement.
3. Estimate the useful life of each component—the original engine, the main structure and the new engine.

Because the entity intends to use the ferry for its entire useful life (in the absence of evidence to the contrary) at the end of which the ferry is expected to be worthless, its residual value is nil. Thus, there is likely to be no significant exercise of judgement in relation to residual value.

Had the entity used the revaluation model then management would periodically remeasure the fair value of the ferry. Measuring fair value without access to an active market requires judgement.