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Chapter Fourteen

Property, Plant and Equipment

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ABOUT THIS PUBLICATION

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1 BACKGROUND

Property, plant and equipment is a prime example of one of the more significant challenges in financial reporting: how to measure an entity's financial performance when a primary component of that entity's incurred costs in the current period also affects subsequent reporting periods? In other words, the main goal of accounting for property, plant and equipment is to allocate the cost of items of property, plant and equipment over those periods in which revenues – i.e. benefits – from these items are expected to be recognised in an entity's financial statements.

The solution to this problem relies on one of the cornerstones of accounting theory as reflected in the *Conceptual Framework for Financial Reporting* - asset recognition principles. Under the *Framework*, an asset represents future economic benefits which are expected to flow to an entity as a result of past transactions and events. Furthermore, for an asset to be recognised in the statement of financial position ("balance sheet"), it must be reliably measurable. The acquisition cost of a company's property, plant and equipment, where the company expects to use the economic benefits associated with those items over more than one accounting period, will therefore be recognised as an asset in that company's financial statements.

Undoubtedly, the payment made in acquiring an item of property, plant and equipment represents its fair value at the acquisition date, as the payment reflects the amount determined between willing parties, and constitutes a reliable estimate. Moreover, under the expense recognition principles in financial reporting (the matching principle), items of property, plant and equipment are depreciated over those periods in which a company expects to consume the economic benefits embodied in those items and in the manner in which that company expects to do so.

Property, plant and equipment, like all other financial statement assets, is required to represent, at every subsequent reporting date, future economic benefits which are expected to flow to the entity. Therefore, if at any time in the future, the carrying amount of property, plant and equipment does not represent future economic benefits, it must be depreciated accordingly.

Applying the basic accounting principles for property, plant and equipment, as aforesaid, raises numerous practical questions, such as - what is the exact date on which an entity should recognise items of property, plant and equipment; what kinds of costs are to be included upon initial measurement of property, plant and equipment items; how are depreciation costs to be calculated; and how the revaluation method should be applied.

Traditionally, property, plant and equipment items were measured in financial statements at historical cost. However, IFRS - mainly on the grounds of improving the relevance of financial reporting, and in contrast to US accounting standards - allows reporting entities to adopt a revaluation model. The revaluation model has been present in IFRS from relatively early on, alongside the cost model. This model raises a number of accounting issues, such as how to account for revaluation surpluses; should an asset's carrying amount be depreciated?; How should entities measure fair value?; and the key question - what does the statement of financial position ("balance sheet") claim to present when discussing property, plant and equipment used in production? It should be noted that the IASB, in conjunction with local standard-setting bodies, is conducting a comprehensive study on the revaluation of property, plant and equipment, so as to promote convergence in accounting standards worldwide (and, in particular, with US accounting standards). One of the main goals of this study is to identify the preferred measurement basis for revaluation. The results of this study may lead to a proposed amendment of existing IFRS principles.

It should further be noted that the measurement bases for property, plant and equipment under current IFRS are manifold: from the cost model, to the revaluation model, and through to the fair value model. Adopting the relevant measurement basis is based on a functional distinction between three main classes of fixed assets: inventories; property, plant and equipment; and investment property. As aforesaid, this distinction is based on the manner in which the asset is used, rather than on its nature. Thus, for example, a real estate asset can be classified as either inventory, property, plant and equipment, or investment property, according to the manner in which it is used. Thus, the accounting challenge derives from the said functionality: investment property is held for generating rental income or for capital appreciation or both, and therefore fair value is considered to be the relevant measurement model for investment property. Under this model, investment property is measured at fair value, with fair value differences recognised in profit or loss pursuant to IAS 40 - *Investment Property*. Furthermore, as inventory is functionally held for sale in the ordinary course of business, the relevant measurement basis which also coincides with income recognition principles is cost.

On the other hand, the function of property, plant and equipment is essentially to be used in production or supply of goods or services, for rental to others, or for administrative purposes, and so accounting for property, plant and equipment focuses on allocating its cost over those periods where an entity expects to recognise in its financial statements revenues derived from the use of the asset. The desire to draw a similarity between depreciation charges and benefits obtained from the use of property, plant and equipment, leads to two possible measurement bases: cost and revaluation. The cost method is the traditional method used in accounting for property, plant and equipment. Under this method, items of property, plant and equipment are presented at cost less accumulated depreciation and any accumulated impairment losses. Under the revaluation model, items of property, plant and equipment whose fair value can be measured reliably are presented, subsequent to initial recognition, at a revalued amount. This revalued amount is the fair value at the revaluation date less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluation need not be carried out in every reporting period, with positive revaluation differences (ie - value increases) recognised directly in other comprehensive income.

The grounds for the revaluation model is, on the one hand, to improve the relevance of the statement of financial position ("balance sheet") information concerning the balance of property, plant and equipment, while – on the other hand - recognising depreciation charges that are compatible with current market prices. However, this model significantly increases disclosure burden, mainly in light of the increase in depreciation charges recognised in subsequent periods in case of an increase in the fair value of property, plant and equipment items.

IAS 16 - *Property, Plant and Equipment* (hereinafter – the Standard), is the main standard governing the accounting for property, plant and equipment. The Standard sets principles for initial recognition and measurement, subsequent measurement, and derecognition of property, plant and equipment items. The Standard allows entities to choose between two subsequent measurement methods for property, plant and equipment: the cost model or the revaluation model, and requires that the selected policy be applied uniformly to each class of property, plant and equipment. However, the Standard does not require entities to apply the same accounting method for all classes of property, plant and equipment.

It should be noted that two other accounting standards also relate to property, plant and equipment:

- a. IAS 36 - *Impairment of Assets*, which applies, *inter alia*, to the impairment of property, plant and equipment and so determines the requirements and rules for testing, measuring and recognising the impairment of property, plant and equipment.
- b. IFRS 5 - *Non-Current Assets Held for Sale and Discontinued Operations*, which provides accounting principles for held-for-sale items of property, plant and equipment.

In addition, reporting entities which in the ordinary course of their business sell items of property, plant and equipment held for rental purposes, are required to classify these items as inventory when they cease to be held for rental and become held for sale. Consequently, from that moment onwards, such items are accounted for under IAS 2 - *Inventories*. The car leasing industry is a common example for these cases, where companies buy vehicles and rent them under operating leases, while after the lease term they sell the cars.

2 DEFINITION AND SCOPE

Property, plant and equipment is defined as tangible items that meet the following two criteria:

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

Lease rights of property, plant and equipment do not meet the above definitions, and therefore must be accounted for in accordance with IAS 17 - *Leases*. Thus, payments made in advance by a lessee under a finance lease do not constitute property, plant and equipment, and are accounted for according to the principles prescribed for leases. It should be noted that lease rights of investment property may fall under the scope of IAS 40 (see Volume B, Chapter 15 - Investment Property, Section 3.2).

Under the Standard, major spare parts and servicing equipment qualify as property, plant and equipment when an entity expects to use them during more than one period. The Standard also states that if the spare parts and equipment can be used only in connection with an item of property, plant and equipment, they are accounted for as property, plant and equipment. These provisions would seem to lead to the following distinctions:

a. **Non-major spare parts and servicing equipment not used exclusively in connection with an item of property, plant and equipment**

Spare parts and servicing equipment which are not major and are not used exclusively in connection with an item of property, plant and equipment, are accounted for as inventory and recognised as an expense upon their consumption (unless they are immaterial items usually recognised as an immediate expense due to their nature - see Section B, Chapter 13 - Inventories). For example, a basic quantity of food and beverages in hotel operations must be accounted for as inventory.

b. **Non-major spare parts and servicing equipment used exclusively in connection with an item of property, plant and equipment**

Major spare parts and servicing equipment used exclusively in connection with an item of property, plant and equipment, are accounted for according to their functional usage as property, plant and equipment. For example, a basic inventory of cutlery in hotel operations will be accounted for as property, plant and equipment. However, in case of a non-substantial amount or materials with a useful life of less than one year, then for practical purposes these items are usually recognised as an immediate expense. For example, when a bus company buys a certain quantity of fuel in December which will also suffice for its operations in the subsequent month of January, the expense is usually recognised in the current year. Machine oil is a similar example.

c. **Major spare parts and servicing equipment**

The useful life of major spare parts and servicing equipment generally exceeds one year, and they are therefore accounted for as property, plant and equipment. For example, a bus company which holds spare bus engines or seats.

The Standard does not apply to:

- a. Property, plant and equipment classified as held for sale under IFRS 5 - *Non-Current Assets Held for Sale and Discontinued Operations*.
- b. Biological assets used in agricultural operations. These assets are accounted for under IAS 41 - *Agriculture*.
- c. Recognition and measurement of assets used in mineral resource exploration and evaluation. These matters are covered by IFRS 6 - *Exploration and Evaluation of Mineral Resources*.
- d. Mineral rights and mineral reserves such as oil, natural gas and similar non-regenerative resources.

For the avoidance of doubt, we must note a number of cases where the Standard applies as follows:

The Standard applies to property, plant and equipment used to develop or maintain those assets detailed in items (b) through (d) above.

The Standard applies when accounting for finance lease rights in property, plant and equipment. In this context, it is noted that IAS 17 - *Leases* refers such matters to the Standard.

3 INITIAL RECOGNITION AND MEASUREMENT

3.1 Recognition Principle

The cost of an item of property, plant and equipment is recognised as an asset if, and only if, the following two criteria are met:

- 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;

Under the Standard, an item of property, plant and equipment which qualifies for recognition as an asset, shall be initially measured at cost.

It is noted that in cases where property, plant and equipment is comprised of a collection of units (eg - tools, moulds and coins), the Standard does not specify the unit of measurement for recognition. In other words, what constitutes an item of property, plant and equipment - a single unit, or a collection of units? Thus, an entity must exercise judgment in this matter according to its specific circumstances. It may be appropriate to aggregate individually insignificant items, and apply the aforesaid criteria to the aggregate value.

Criteria (a) requires that it be probable that future economic benefits associated with the item will flow to the reporting entity. These benefits can be associated with the item of property, plant and equipment either directly or indirectly. There may be cases where items of property, plant and equipment are acquired for safety or environmental reasons, such as installing a filter to meet environmental protection requirements. The Standard clarifies that, although the acquisition of such property, plant and equipment does not directly increase the future economic benefits of any particular existing item of property, plant and equipment, it may be necessary for an entity to obtain the future economic benefits from other assets it owns. In other words, such items of property, plant and equipment qualify for recognition as assets because they enable an entity to derive future economic benefits from related assets in excess of what could be derived had those items not been acquired.

In the above example, the filter is recognised as an asset since the entity could not have operated its facility and manufactured products without it. As a side note, it is noted that such assets are subject to testing for impairment according to IAS 36, together with the cash-generating unit with which they are associated (see Volume B, Chapter 19 - Impairment of Assets).

This raises the question of what happens when an entity voluntarily invests in environmental and/or safety equipment although it is not legally required to do so. In this case, it seems that the entity will be required to recognise such cost as an expense at the time that it is incurred, unless it can demonstrate that the acquisition will increase the useful life of the related assets, or that it has a constructive obligation to invest in such equipment (e.g. - industry-specific practices or a requirement by environmental organizations or trade unions).

Application of the above recognition principles at the acquisition date of a property, plant and equipment is straightforward. However, one of the most significant applications of the above recognition principle, has to do with accounting for subsequent costs incurred in connection with property, plant and equipment following its initial recognition. For a more detailed discussion of this matter, see Section 3.3 below.

3.2 Determining the Cost of Property, Plant and Equipment

3.2.1 General

The cost of an item of property, plant and equipment for recognition purposes is comprised of the following three components:

- a. Its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts.

- b. Directly attributable costs: 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.
- c. Dismantling and removal costs: the initial estimate of the costs of dismantling and removing the item and restoring the site on which it was 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.

3.2.2 Property, plant and equipment - acquisition cost

Cost is defined as the cash or cash equivalents paid, or the fair value of the other consideration given, to acquire/construct an asset or, where applicable, the amount attributed to that asset when initially recognised in accordance with the specific requirements of other accounting standards.

The following is a discussion on the measurement of acquisition cost under particular circumstances:

a. Deferred-payment acquisition

The cost of an item of property, plant and equipment is the cash price equivalent at the initial recognition date, which the buyer is willing to pay. Therefore, if a given payment on the acquisition is deferred beyond normal credit terms, the entity must calculate the relevant present value, and the difference between the total payment and the cash price equivalent is recognised as interest expenses over the credit period (recognition as per the effective interest rate method). For more information, see a similar discussion of inventories in Volume B, Chapter 13 - Inventories, which may also be relevant for property, plant and equipment, subject to the necessary changes.

Example

On January 1, 2007 a company bought a machine used in production, which is tailored to its needs (no available price under normal credit terms). The company bought the machine for CU 10,000 thousand, payable in eighteen months following delivery. Let us assume that the company's (pre-tax) discount rate is 5%. In that case, the machine's present value upon delivery is CU 9,294,286 ($= 10,000,000 / 1.05^{1.5}$), and as of December 31, 2007 - CU 9,759,001 ($= 10,000,000 / 1.05^{0.5}$). The machine has a useful life of 10 years and no residual value.

The ledger entry for January 1, 2007 will be as follows (in CU):

Dr Property, plant and equipment (machine)	9,294,286
Cr Other payables	9,294,286

The ledger entry for December 31, 2007 will be:

Dr Interest costs	$9,759,001 - 9,294,286 = 464,715$
Cr Other payables	464,715

It is also necessary to recognise depreciation on property, plant and equipment.

Dr Depreciation charges	929,429
Cr Accumulated depreciation	929,429

b. The amount attributed to an asset under other accounting standards

It is possible for other accounting standards to attribute certain amounts to the cost of an item of property, plant and equipment. For example, when property, plant and equipment is acquired against a share-based payment, then the amount allocated to such property, plant and equipment is determined by IFRS 2 - *Share-Based Payment*. Similarly, IAS 23 - *Borrowing Costs* provides for certain situations where borrowing costs are included in the carrying amount of an item of property, plant and equipment.

c. Exchange of assets

When property, plant and equipment is acquired in exchange for another non-monetary asset (exchange of assets), the cost of such property, plant and equipment is measured at the fair value of the asset given up (or the fair value of the asset received if it constitutes clearer evidence), unless one of the following two conditions is met:

- a. the exchange transaction lacks commercial substance; or,
- b. the fair value of neither the asset given up nor the asset received is reliably measurable. When no comparable market transactions are available from which a fair value may be derived, the asset's fair value is considered reliably measurable if the variability in the range of reasonable fair value estimates is not significant for that asset, or if the probabilities of the various estimates can be reasonably assessed and used in estimating fair value (mean value).

If one of the above two conditions is met, the acquired asset will not be measured at fair value; rather, its cost will be measured based on the carrying amount of the asset given up. It is noted that the above rules also apply to

exchange transactions involving several items of property, plant and equipment that are given up or several non-monetary assets that are received, or a combination of monetary and non-monetary assets.

Example 1 - Cash-free exchange transaction

Company A exchanged machine A with machine B from Company B.

Machine A's carrying amount at the date of the exchange was CU 10,000 thousand, and its fair value was CU 15,000 thousand. The manner in which the exchange is accounted for depends on whether or not the transaction had commercial substance.

Therefore, the Company's ledger entry for the transaction will be as follows (in CU thousands):

Assumption A - Transaction with commercial substance

Dr	Property, plant and equipment (machine B)	15,000
	Cr Property, plant and equipment (machine A)	10,000
	Cr Gain on disposal of machine	5,000

Assumption B - Transaction without commercial substance

Dr	Property, plant and equipment (machine B)	10,000
	Cr Property, plant and equipment (machine A)	10,000

Example 2 - Exchange transaction involving cash

Company A exchanged asset A with asset B from Company B, and received CU 200,000 in cash from Company B. Let us assume that the transaction had commercial substance. Asset A's carrying amount at the transaction date was CU 10,000 thousand, and its fair value was CU 15,000 thousand. Company A's ledger entry for the exchange will be as follows (in CU thousands):

Dr	Property, plant and equipment (asset B)	15,000 – 200 = 14,800
Dr	Cash	200
	Cr Property, plant and equipment (asset A)	10,000
	Cr Gain on disposal of machine	5,000

Now let us assume that the cash proceeds are immaterial and therefore, despite its payment, the Company determined that the exchange lacks commercial substance. In this case, the measurement of asset B is based on the carrying amount of asset A. The Company's ledger entry for the transaction will be as follows:

Dr	Property, plant and equipment (asset B)	10,000 – 200 = 9,800
Dr	Cash	200
	Cr Property, plant and equipment (asset A)	10,000

3.2.3 Determining whether an exchange has commercial substance

An entity determines whether an exchange transaction has commercial substance by considering the extent to which its future cash flows are expected to change as a result of the transaction. Under the Standard, asset exchange transactions have commercial substance if they meet the following two conditions:

- The configuration of the cash flows of the asset received (risk, timing and amount) differs from the configuration of the cash flows of the asset transferred, or the entity-specific value of that portion of the entity's operations affected by the transaction (post-tax), changes as a result of the exchange.
- The aforesaid difference (whether resulting from the configuration of cash flows or from the entity-specific value) is significant relative to the fair value of the assets exchanged.

It is noted that existence or lack of commercial substance in a given exchange transaction may be self-evident, without requiring detailed calculation.

The commercial substance test is designed to prevent situations where strictly legal / technical exchanges lead to recognition of gains in an entity's financial statements. It is noted that, prior practice was not to recognise gains in exchanges of similar assets. The logic behind the current change is that, under the *Conceptual Framework*, income recognition principles do not prevent recognition of gains in asset exchange transactions, and the change is consistent with accounting for asset acquisitions at fair value. There is no doubt that the commercial substance test is far broader than the similar assets requirement, and is therefore expected to lead to an increase in the number of asset exchange transactions recorded at fair value. As a side note, it should be noted that the requirement for recognising revenue from inventory exchanges (similar nature and value) remains valid (see Volume B, Chapter 23 - Income).

3.2.4 Directly attributable costs

Measurement of an asset includes 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 (its intended use). There is no doubt that administrative costs and other indirect costs are not directly attributable and so will not be included in the cost of an item of property, plant and equipment.

The following examples demonstrate directly attributable costs:

- a. Transaction costs.
- b. Costs of employee benefits (salary and other benefits) incurred by the company for employees working directly in the construction or acquisition of an item of property, plant and equipment.
- c. Costs of site preparation.
- d. Initial delivery and handling costs.
- e. Installation and assembly costs.
- f. Asset-specific planning and design costs (excluding rejected alternate planning).
- g. Costs of testing whether the asset is functioning properly.
- h. Fees paid to professional consultants assisting in the asset's installation.

The following discussion examines various costs and their meeting with the aforesaid capitalisation requirement:

a. Costs that are neither external nor incremental

The Standard does not require costs that are directly attributable to bringing an asset to the necessary location and condition to be external or incremental. For example, a number of engineers who are regularly employed by a company were fully engaged over a two-month period in installing an innovative machine for the production of pharmaceuticals. Although their cost is neither external nor incremental (as the company would have incurred the cost of their salaries even without acquiring the machine), it seems that their employment costs during this period are directly attributable, and so will be capitalised as part of the machine's cost.

b. Costs not directly attributable to property, plant and equipment

- Feasibility/viability testing costs.

Sometimes, companies conduct feasibility/viability tests to examine whether or not to acquire a certain asset or to determine which class of asset to acquire. Although the Standard makes no specific reference to this matter, it seems that these costs are not included in measuring an item of property, plant and equipment, and will instead be recognised as they are incurred. SIC 32 - *Intangible Assets - Website Costs* makes a similar determination, which emphasises that costs incurred in the initial stages of examining internal development of a website are to be recognised as an expense as they are incurred and are not to be capitalised as part of the construction costs.

- Employee training costs; costs of introducing and promoting a new product or service

When acquiring a new item of property, plant and equipment companies sometimes incur costs from training employees in its use. Moreover, costs may be incurred in introducing and promoting a new product or service (including advertising and promotional activity costs). The Standard expressly clarifies that these costs are not included in the cost of an item of property, plant and equipment. The underlying logic is that these costs do not constitute costs incurred in bringing the asset itself to its intended use. It is also noted that under IAS 38 - *Intangible Assets*, such costs do not qualify for recognition as intangible assets, and are therefore recognised as an expense when they are incurred.

- Costs of conducting business in a new location (or with a new class of customers)

Costs may be incurred in conducting business in a new location or with a new class of customers. The Standard states that such costs are not included in the cost of property, plant and equipment. It is noted that under IAS 38, such costs do not qualify for recognition as intangible assets, and are therefore recognised as an expense as they arise.

For example, a retail company may re-brand an existing (operational) location, and so temporarily closes the branch to customers (but continues incurring rental costs during this period). It seems that construction costs incurred from leasing the store and preparing it over the course of a month for use as a new branch will be included as property, plant and equipment costs, as they are necessary to making the branch usable (except for branding-related expenses incurred after the store is ready to operate as a branch).

c. Non-essential costs

- Inefficiency in preparing an asset for its intended use

Although the Standard deals with abnormal amounts of wasted material, labor, or other resources incurred in self-constructing an asset, it seems that the guiding principle should also be applied when an asset is acquired but undergoes preparation necessary for bringing it to its intended use. Therefore, if in these preparations an entity incurs costs for abnormal amounts of waste, these costs will be recognised as an expense in profit or loss as they arise.

- Associated or incidental operations

Sometimes, income and expenses arise during construction or development of an item of property, plant and equipment, through associated or incidental operations. In these cases, it is important to determine whether or not such associated/incidental operations are necessary to bring that asset to the location and condition necessary for its intended use.

For example, net proceeds on the sale of drug samples, manufactured during test runs while preparing a pharmaceutical-production machine for use, should be offset against the cost of the machine. In other words, the cost of these test runs less the associated income, are part of the cost of that machine. On the other hand, if, for example, a company acquired land in a key location with the intention of building its offices on that land, and until the company starts construction and obtains the necessary permits, the site is used as a car park or a football field, these associated or incidental operations are not necessary to bring the asset to the location and condition necessary for its intended use. Therefore, the related income and expenses of these incidental operations will be recognised in profit or loss.

d. Costs arising after an asset has reached its intended use

Costs incurred after an item of property, plant and equipment is in the location and condition necessary for it to be capable of operating in the manner intended by management, are not included in the cost of that item. Below are several examples of costs which will be recognised in profit or loss as they arise:

- Costs incurred when an item of property, plant and equipment is ready for its intended use but has yet to be brought into use, as the company is waiting until demand for the relevant products is more favorable.
- Costs of relocating or reorganising existing property, plant and equipment. For example, if a company decides to relocate a production line from facility A to facility B, relocation costs will not be included in the costs of the machines.
- Initial running costs - commonly referred to as initial operating losses, incurred in the initial stages of operations while demand builds up, or due to operation below full capacity. For example, a new hotel, which in the initial stages of its operation incurs significant operating losses due to partial occupancy. In another example, assume that in its first month of operation, a pharmaceutical-production machine is intentionally operated below full capacity in order to train employees in its proper operation. During that time, the company incurred operating losses. The Standard states that these initial operating losses are not included in the cost of property, plant and equipment. It is noted that under IAS 38, such costs do not qualify for recognition as intangible assets, and are therefore recognised as an expense as they arise.

e. Costs incurred through self-constructing an asset

The cost of a self-constructed asset is determined using the same principles as for an acquired asset. There is a similarity between the rules for measuring a self-constructed asset's cost and those set forth for measuring self-produced inventory under IAS 2 - *Inventories*.

The Standard provides for abnormal amounts incurred in self-constructing an asset through wasted material, labor, or other resources. Similar to the accounting principles for inventories, the Standard states that these costs are not included in measuring the cost of an asset, and are therefore recognised as an expense as they arise.

It seems that in order to determine whether amounts are abnormal, it is necessary to refer, inter alia, to original project estimates from the planning stage, to a project's complexity, and the required process for such projects. For example, if a company incurred significant costs due to a planning or implementation failure, these costs are not included in the project cost, but rather recognised in profit or loss as they arise. However, if a company incurs additional costs from improving a project beyond its original plans, these costs are included in that project's cost.

Costs, such as construction-site security fees, can arise following planned or unplanned interruption of construction activities. Although the Standard does not refer to this matter specifically, accounting principles can be inferred from a similar case concerning interruptions in preparing an asset for its intended use while borrowing costs are being capitalised. In this case, such costs are only included if interruptions are short, planned, and necessary in order to bring the asset to the location and condition necessary for its intended use. Thus, it seems that costs incurred following interruptions caused by planning flaws will not be included in the cost of property, plant and equipment (assuming that they constitute abnormal amounts of waste, as aforesaid). However, it seems that costs incurred following a temporary delay in obtaining permits for an asset's operation do qualify for inclusion in cost.

Another example of necessary costs can be a company constructing a road in an urban location, which compensates local residents, or is sued by them, for noise and for the devaluation of their property.

Demolition costs are yet another example of necessary costs. It seems that the cost of demolishing an existing structure for the purpose of constructing a new structure is included in the cost of the new structure. However, it is also necessary to derecognise the carrying amount of the old structure against a loss. In this context, it is noted that it is possible for companies to acquire developed land with an intention of constructing a new building on the site. This raises the question in these cases, should the company recognise an expense for the cost of the structure following its demolition? It seems that, theoretically, in this case the company should measure the building component at fair value, which will naturally be lower, and recognise it as an expense at the date of its demolition. This fair value reflects the perspective of all market participants and not necessarily the reporting entity's intentions. In practice, however, another approach has developed, which attributes the entire

consideration to the land component, with a view that the fair value of the building that the company intends to demolish is effectively zero.

3.2.5 Dismantling and removal costs

The cost of an item of property, plant and equipment includes the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, to the extent that such costs are recognised as a provision in the financial statements.

The provision for dismantling and removal costs recognised upon acquiring or constructing an item of property, plant and equipment is measured in accordance with IAS 37 - *Provisions, Contingent Liabilities and Contingent Assets*, and IFRIC 1 - *Changes in Existing Decommissioning, Restoration and Similar Liabilities*. Thus, companies must calculate the present value of expected future cash flows.

Example

A company constructed a facility which produces toxic waste. Environmental legislation requires that, after 20 years, the company dismantle the facility and fix the damages it caused (environmental pollution). The company expects dismantling and restoration costs to amount to CU 20 million, which have a present value (using a 6% discount rate) of CU 6,236,065. In this case, the costs of dismantling the facility after 20 years should be included in the facility's cost (excluding costs incurred through damage which has not yet been caused - see below). Therefore, the company's ledger entry upon constructing the facility will be as follows:

Dr Property, plant and equipment (facility)	6,236,065	
		Cr Provision for dismantlement and removal
		6,236,065

It is emphasised that the initial estimate of dismantlement and removal costs recognised as part of the asset's cost includes only the obligation incurred by an entity through the asset's acquisition or construction. In other words, other obligations incurred by an entity after acquiring the asset, as a result of using the asset, are not included in the cost of that item of property, plant and equipment. For example, if in using an asset to produce inventories, a company causes pollution, the costs it incurs for repairing environmental damage are not included in the cost of property, plant and equipment. Therefore, dismantlement and removal costs should only be measured at the amount of the provision that is recognised at the time of constructing the facility in accordance with IAS 37.

As regards the provision created through using an item for producing inventories (eg - production-related pollution), it seems that companies must consider allocating these indirect costs to the resulting inventory units in accordance with IAS 2.

Another issue concerning provision for dismantlement and removal costs arises when no obligation existed upon acquisition or construction of an item of property, plant and equipment, but subsequent legislation triggered such an obligation. Although the Standard does not refer to these cases specifically, it seems that the above principle for accounting for changes in obligations should apply here as well. Meaning - such costs should be included, provided the entity then checks that the asset's carrying amount does not exceed its recoverable amount.

Regarding subsequent accounting for provisions for dismantlement and removal costs, see Section 4.4 below.

3.3 Subsequent costs

Subsequent to initial recognition of an item of property, plant and equipment, an entity may incur costs required to upgrade, add to, replace part of, or service that item. In its recognition principles, the Standard does not distinguish between initial recognition of property, plant and equipment, and recognition of subsequent costs. Therefore, when subsequent costs are incurred, and assuming that they are reliably measurable, entities should examine whether the recognition criterion is met, whereby it is probable that the future economic benefits associated with the asset will flow to the entity.

Application of the above recognition principle upon acquiring property, plant and equipment is straightforward. However, one of the most significant applications of the above recognition principle has to do with accounting for subsequent costs incurred in connection with property, plant and equipment after the date of initial recognition. Thus, it seems necessary to distinguish between the following two scenarios:

a. Acquisition of new items which did not exist previously

Recognition criteria require that it be probable that future economic benefits associated with the item will flow to the reporting entity. These benefits can be directly, or indirectly, associated with the item of property, plant and equipment. For example, a retail company which owns a supermarket renovates one of its main branches. As part of these renovations, the company constructs a cafeteria and a children's play area. The company expects these renovations to attract customers and increase the store's revenues. It seems that these renovation costs should be capitalised.

As regards the economic benefit requirement, it is noted that when dealing with subsequent costs that are necessary for an asset's operation, following a previously non-existent requirement, these costs are considered an integral part of the asset, and entities should examine economic benefits as a whole, similar to the principle guiding initial recognition of property, plant and equipment. For example, if a new statutory requirement demands that an existing facility install a filter, that filter will be recognised as an asset. Such recognition is based on the fact that without the filter, the reporting entity could not have operated its facility and manufactured products. As a side note, it is noted that such assets are subject to impairment testing according to IAS 36, together with the

cash-generating unit with which they are associated (see Volume B, Chapter 19 - Impairment of Assets). For a discussion about voluntary investments in environmental and/or safety equipment, see Section 3.1 above.

b. Replacement of existing items (including regular inspections) of property, plant and equipment

As regards the application of the recognition principle for replacement of items associated with property, plant and equipment, there seems to be a strong connection between these recognition principles and the application of the components method, as detailed in Section 4.2.6 below. As a result, when a component of an item of property, plant and equipment is significant, and therefore separated under the components method (such as an aircraft engine), there is no doubt that entities should on the one hand derecognise the existing item, while on the other hand recognise the cost of the new item. For example, if a company demolishes an old structure and builds a new one in its stead, as the old structure constitutes a separate component, it should be derecognised while concurrently recognising the cost of the new structure. Derecognition is made as per the relevant component's carrying amount, provided that its cost was identified in the transaction wherein the relevant item was acquired or constructed. In another example, an electrical appliance chain renovates its stores every 3-4 years in order to maintain a high level of customer service (replacement of wall-to-wall carpeting, store furniture, etc.). In this case, the company should recognise the replacement costs as an asset and depreciate that asset over the items' useful life (3-4 years). For more information on this matter, see Section 4.2.6 below.

It seems that even when dealing with a component which was not separated under the components method, entities can still estimate the replaced item's carrying amount, derecognise it, and thus add the new item's cost to the carrying amount of property, plant and equipment.

If it is not possible to determine the carrying amount of the replaced part, an entity may use the estimated cost of replacement with a similar part as an indication of what the cost of the replaced part was at the time it was acquired or constructed. Alternatively, entities may recognise the cost of the new part as a current expense. In practice, entities usually recognise regular servicing costs, comprised mainly of labor costs, materials, or even the cost of replacing small parts, in profit or loss. Similarly, basic renovation costs are accounted for as a current expense. For example, periodic painting costs for hotels, or the cost of replacing light bulbs and tiles.

c. Specific application - regular inspections

In some cases, continuous operation of an item of property, plant and equipment requires regular major inspections for faults. It is emphasised that such inspections are carried out regardless of whether or not parts of the item are replaced. For example, manufacturer or regulatory guidelines may require major inspections of aircraft every three years. It is noted that IAS 37 does not permit entities to accumulate and recognise a provision for such planned expenditures.

The position adopted by the Standard in this matter is to view inspection costs as a part of the item of property, plant and equipment's cost. Thus, when an entity performs a major inspection, its cost is recognised in the carrying amount of the item of property, plant and equipment as a replacement, provided that the recognition criteria are met. Any remaining carrying amount of the cost of the previous inspection is consequently derecognised.

In this regard, it is noted that, when estimating the inspection cost out of an asset's overall cost, entities must use the current market price of the inspection and not an expected future price. Therefore, although not stated specifically in the Standard, entities must also consider internal costs incurred as a result of the inspection. For example, a company buys an aircraft for CU 10 million, which requires that thorough inspections be carried out every three years. Upon acquisition, the cost of a thorough inspection for a three year old aircraft is CU 1.5 million (including a cost of CU 1 million which the company expects to incur for the future wages of its employees who will perform the inspection). Therefore, the company will depreciate the inspection component (CU 1.5 million) over a three year period, and the aircraft's remaining carrying amount (CU 8.5 million) over its useful life (while accounting for other components as relevant - see below). If the actual cost of the inspection later turns out to be CU 2 million, this amount will be included in the asset's cost and depreciated until the next inspection. Furthermore, at that time, the company should also derecognise the carrying amount of the inspection component recognised when the aircraft was acquired.

The Standard emphasises that derecognition is performed regardless of whether the cost of the previous inspection was identified in the transaction in which the item was acquired or constructed. If necessary, the estimated cost of a future similar inspection may be used as an indication of what the cost of the existing inspection component was when the item was acquired or constructed.

Thus, if the cost of the inspection was previously identified, it should also be depreciated from that date until the present inspection date. Any remaining carrying amount (eg - if an entity expected to perform an inspection after three years, but was required to perform the inspection after two years) should be derecognised (it seems that such derecognition is classified as a depreciation expense as it constitutes a change of estimate for the depreciation period).

However, if the above component was not identified, the recognition and derecognition principles still apply, but the Standard allows entities to use the existing estimate to calculate the cost of the inspection component which should be derecognised (net of previously-recognised depreciation recorded for this component).

4 MEASUREMENT AFTER RECOGNITION

4.1 General

After recognition, the Standard allows entities to choose between two subsequent measurement methods:

- a. The cost model - The traditional method used in accounting for property, plant and equipment. Under this method, items of property, plant and equipment are presented at cost less accumulated depreciation and any accumulated impairment losses.
- b. The revaluation model (see discussion below).

Entities must apply the selected method uniformly for each class of property, plant and equipment, but are not required to apply the same accounting method for all classes of property, plant and equipment.

A class of property, plant and equipment is a grouping of assets of a similar nature and use in an entity's operations. The Standard lists the following examples of separate classes: land; land and buildings; machinery; ships; aircraft; motor vehicles; furniture and fixtures; and office equipment. It seems that different geographic location does not in itself justify classification of items of property, plant and equipment into different classes. Thus, for example, when a company operates both in France and the US, and owns a headquarters building in each location, it should apply the same accounting method in measuring both of these buildings. It is noted (and discussed in greater detail below), that the revaluation dates of all items within a certain class of property, plant and equipment, must also be identical.

Furthermore, segmentation into sub-classes is permitted if it provides relevant and useful information to users of the financial statements. For example, distinguishing between land used by the reporting entity in agricultural operations and land used in other operations.

In practice, most companies opt to apply the cost model for all classes of property, plant and equipment. This is evidenced in the publication entitled EU Implementation of IFRS and the Fair Value Directive: A report for the European Commission: prepared by the ICAEW in 2007. This report found that, of 200 European companies, 191 companies (95.5%) opted to apply the cost model.

A change in an entity's accounting policy, whereby it switches from one model to the other, must be made in accordance with IAS 8 - *Accounting Policies, Changes in Accounting Estimates and Errors*. The change must result in reliable and more relevant information to users of the financial statements, so as to justify the inconsistency in accounting policy application. In this regard, it is noted that IAS 8 distinguishes between accounting policy changes from the cost model to the revaluation model and vice versa, as follows:

a. When policy is changed from the cost model to the revaluation model

In this case, IAS 8 states that entities should account for the change as a revaluation at the date of the change, rather than in accordance with the policy change provisions of IAS 8. In other words, the effect of such a change will be recognised as a revaluation under IAS 16, with no need for restatement of comparative data. It seems that revaluation is dealt with prospectively.

b. When policy is changed from the revaluation model to the cost model

First, it is noted, that such policy change is expected to be quite rare, as it usually leads to less relevant information. In any case, such scenarios are dealt with as regular policy changes. Accordingly, retrospective application is required for comparative data, so as to cancel all prior revaluations, including depreciation expenses, as prescribed by IAS 8.

4.2 Depreciation

4.2.1 General

According to the matching principle, depreciation charges for items of property, plant and equipment are measured for each period and recognised in profit or loss, unless they are included in the carrying amount of another asset. Thus, for example, depreciation for a production facility and production machinery is included in the cost of inventory under IAS 2 - *Inventories* (see Volume B, Chapter 13 - *Inventories*). In another example, depreciation charges on property, plant and equipment used for development activities may be included in the cost of an intangible asset under IAS 38.

It is emphasised that recognition of depreciation is not aimed at recognising an asset's impairment, but rather at matching expenses and revenues. Therefore, depreciation is recognised even if the fair value of the asset exceeds its carrying amount. Regular repair and maintenance of an asset, preserving its value (such as in a banquet hall), do not negate the need to depreciate it.

4.2.2 Determining depreciation charges

In determining depreciation charges, the depreciable amount of an asset should be allocated on a systematic basis over its useful life.

Depreciable amount is the cost of an asset, or other amount substituted for cost (if an asset is measured under the revaluation method), less its residual value. The residual value 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 condition expected at the end of its useful life. Thus, for example, the estimated residual amount does not need to be adjusted for predicted future inflation.

The residual value of an asset is often insignificant and therefore immaterial in calculating the depreciable amount. However, when the residual value of an asset equals or exceeds the asset's carrying amount, the asset's depreciation charge for that period is zero. Thus, the company will examine this condition in each period so as to check whether it is necessary to recognise depreciation charges.

The Standard states that an asset's residual amount and its useful life are to be reviewed at least at each financial year-end, and if expectations differ from previous estimates, the changes are to be accounted for in accordance with IAS 8. For more information in this matter, see Section 4.2.6 below.

This raises the question of whether depreciation charges should be recognised when there are a large number of immaterial items of property, plant and equipment, such as cutlery in a restaurant, towels in a hotel, etc., which are classified as aforesaid as property, plant and equipment (generally referred to as "basic inventory"). It seems that, as all IFRSs apply only to material items - only if each item separately and all items jointly are immaterial, they can be recognised as an expense at the time of their acquisition. In any case, application of the basic inventory method as was previously common (ie - recognition of initial cost as an asset, and recognition of restoration costs in profit or loss), is not permitted. However, it seems that such items can be grouped and depreciated as one asset over their useful life. It is emphasised that so long as assets are not in use, they are not to be depreciated. For example, towels in a hotel which have not yet been put into use.

4.2.3 Depreciation period

An asset's depreciation period is determined by its useful life. Useful life is the period over which an asset is expected to be available for use or the number of production (or similar) units expected to be obtained from that asset by an entity.

As discussed below, the estimation of an asset's useful life is a matter of judgment based, inter alia, on the entity's experience with similar assets. It should also be remembered that the Standard requires entities to review the useful life of an asset at the end of every fiscal year, and if necessary account for it as a change in an accounting estimate. As a side note, it is noted that prior practice was to use generally accepted and standard depreciation periods, rather than perform an in-depth review of an asset and an entity's expectations for that asset. There is no doubt that the Standard requires more detailed and specific review of both useful life and residual value.

Although the future economic benefits embodied in an asset are consumed by an entity principally through its use, other factors, such as technological (technical) obsolescence and wear often diminish the economic benefits that might have been obtained from the asset. Consequently, all the following factors are considered in determining the useful life of an asset:

- a. Expected usage of the asset. Usage is assessed by reference to the asset's expected capacity or output.
- b. Expected physical wear, which depends on operational factors such as the number of shifts for which the asset is to be used and the repair and maintenance program, and care and maintenance while the asset is idle.
- c. Technological (technical) or commercial obsolescence arising from changes or improvements in production, or from a change in the market demand for the product or service produced by the asset. For example, technological obsolescence of computers.
- d. Legal or similar limits on the use of the asset, such as the expiry dates of leases or operating licenses.

For example, a company operates a leased retail store. The company makes investments in the store, such as installing wall-to-wall carpeting and shelves ("leasehold improvements"). The leasehold improvements have an economic life of 10 years, but the lease term ends in 8 years and the company does not expect to renew its lease. It seems that the useful life of the leasehold improvements is 8 years. However, the company must assess their residual value at the end of this period, if any.

The useful life of an asset is defined in terms of its expected utility to the entity. Therefore, this period depends on the entity's asset disposal policy. Thus, the useful life of an asset may be shorter than its economic life. For example, a company which sells its vehicles every three years, will determine their useful life and residual value accordingly (prices for used, 3 year old vehicles can usually be determined by market prices).

In another example, a company acquires a production machine which costs CU 1 million. The machine has a useful life of 10 years, and its residual value is expected to be immaterial. In this case, the depreciable amount is CU 1 million, and assuming the asset is depreciated using the straight-line method, then each year the company will record depreciation charges of CU 100,000. Now assume that, upon acquiring the machine, the company intends to use it for only four years, after which it intends to sell it as a used machine. Furthermore, upon acquisition, the selling price for a similar used machine (after 4 years of use) is CU 550,000. In this case, the depreciable amount would be 450,000 (= 1,000,000 - 550,000), and will be allocated over the expected 4-year useful life. Thus, each year the company will record a depreciation charge of CU 112,500 (= 450,000 / 4).

Depreciation of an asset begins when it is available for use, ie - when it is in the location and condition necessary for it to be capable of operating in the manner intended by management. Therefore, it is possible for depreciation of an asset to begin even though production has yet to start, as the asset itself is available for use. For example,

if a company buys a machine which is available for immediate use, but due to various considerations only begins using the machine several months later.

It is also noted, that if an acquired or constructed asset is not put into use in the short term, an entity must consider whether such circumstances constitute an indication for impairment under IAS 36.

Depreciation of an asset ceases at the earlier of the date that the asset is classified as held for sale under IFRS 5 - *Non-Current Assets Held for Sale and Discontinued Operations*, and the date that the asset is derecognised. It is emphasised that so long as an asset has not been fully depreciated, depreciation does not cease when the asset becomes idle or is retired from active use (unless the entity applies usage methods of depreciation, in which case the depreciation charge can be zero while there is no production). It is also noted that an asset becoming idle may serve as an indication for impairment under IAS 36.

For example, a company which owns a hotel that is depreciated using the straight-line method, closes the hotel in the winter for economic reasons. In this case, it seems that the company must still recognise depreciation charges for the hotel during the winter. In another example, an industrial company shuts down a facility for a number of weeks each year for annual maintenance work (the facility is depreciated using the straight-line method). In this case, the company should continue depreciating the facility. However, if the facility were depreciated under the units of production (output) method, then the company would not have incurred depreciation charges during the shut-down period.

4.2.4 Land

Land has an unlimited useful life, and is therefore not depreciated. In the case of buildings, it is necessary to separate the land component from the structural component, as the structural component has a limited useful life, and is therefore depreciable. It is noted that an increase in the value of the land on which a building stands does not affect the determination of the depreciable amount of the building.

If the cost of land includes the costs of site dismantlement, removal and restoration (as aforesaid), then that portion of the cost of the land is depreciated over the period of benefits obtained by incurring those costs.

In exceptional cases, the land itself may have a limited useful life, such as in the case of quarries and sites used as landfills. In these cases, the land is depreciated in a manner that reflects the economic benefits to be derived from it.

4.2.5 Depreciation methods

The Standard states that the method used should reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity. Moreover, the applied depreciation method must be reviewed at least at the end of each financial year, 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 accounted for prospectively as a change in accounting estimates in accordance with IAS 8. For more information on this matter, see Section 4.2.7 below.

The Standard does not require that a specific depreciation method be applied, and so does not limit usage to an exhaustive list of depreciation methods. From the various depreciation methods, entities must select the method that most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset, and apply that method consistently from period to period (unless there is a change in the expected pattern of consumption of those future economic benefits). It is noted that the Standard emphasises the pattern in which economic benefits are consumed, and so it seems that various factors such as higher future maintenance costs or technological obsolescence must be taken into account in determining useful life, and not necessarily in the selection of the relevant depreciation method.

According to the aforesaid, failure to recognise a depreciation charge, on the grounds that an asset's condition remains unchanged and so maintenance costs are recognised in profit or loss, constitutes improper accounting under the Standard (this method was previously applied in infrastructure assets, such as electricity grids). Furthermore, it seems that application of depreciation methods which reflect the time value of money or inflation is not permitted (eg - by owners of machinery who rent out the machine, with rent linked to the CPI. The selected depreciation method in this case should not be influenced by the rent's linkage, but should rather be the one which most closely reflects the benefits obtained from the machine).

The Standard mentions three depreciation methods: the straight-line method; the diminishing balance method; and the units of production method. It is noted that in most cases, the straight-line method provides an adequate basis for application, and is the depreciation method of choice in the vast majority of actual cases. Additional methods not mentioned in the Standard, but which may be suitable for application, are the sum-of-years' digits method, and other similar methods.

The aforesaid depreciation methods are discussed below:

a. Straight-line method

The straight-line method results in a constant charge over the useful life of an asset (if the asset's residual value does not change). Under this method, an asset's depreciable amount is allocated equally over its useful life.

Example

The following data describe an item of property, plant and equipment:

Cost	CU 800,000
Useful life	5 years
Residual value	CU 100,000

Under the straight-line method, depreciation charges in each of the five years will be CU 140,000 = (800,000-100,000)/5.

b. Diminishing balance method

Under this method, depreciation charges are measured as a percentage of an asset's current carrying amount (less accumulated depreciation), ie - its opening balance in the books. The constant depreciation rate is calculated as follows:

$$1 - (\text{residual value}/\text{cost})^{(1/\text{useful life})}$$

If an asset has no residual value, the relevant depreciation rate is determined by placing 1 as the residual value.

Using the data from the previous example: The annual depreciation rate based on the asset's carrying amount is $1 - (100 / 800)^{(1/5)} = 34.02\%$.

Therefore, depreciation charges in each year will be as follows (in CU thousands):

Year 1	34.02% * 800 = 272
Year 2	34.02% * 528 = 180
Year 3	34.02% * 348 = 118
Year 4	34.02% * 230 = 78
Year 5	34.02% * 152 = <u>52</u>
Total	700

This method results in a decreasing charge over the useful life and so is considered suitable for application when a machine provides greater economic benefits in its first years of use. For example, when technology or other factors cause a machine to produce lower-quality products in later years.

c. Units of production method

In this method, depreciation charges are based on the expected use or output. Although this method seems more accurate in its representation of the pattern of an entity's consumption of economic benefits, it is difficult to apply due to the difficulty of estimating an asset's expected output over its useful life. This method may be relevant for machinery, and is usually applied by industrial companies.

Using the data from the original example, assume that the item of property, plant and equipment is expected to produce 10,000 units over its useful life, as follows:

Year 1	3,000
Year 2	2,500
Year 3	2,200
Year 4	1,300
Year 5	1,000

Therefore, depreciation charges in each year will be as follows (in CU thousands):

Year 1	(3,000/10,000) * (800 - 100) = 210
Year 2	(2,500/10,000) * (800 - 100) = 175
Year 3	(2,200/10,000) * (800 - 100) = 154
Year 4	(1,300/10,000) * (800 - 100) = 91
Year 5	(1,000/10,000) * (800 - 100) = <u>70</u>
Total	700

In applying this method, entities must review at least at the end of each year their estimate for expected number of units to be produced. If this estimate changes, it is accounted for prospectively as a change in an accounting estimate under IAS 8 (without necessitating restatement of depreciation charges recorded in previous periods).

d. (Decreasing) sum-of-years' digits method

This method is based on an asset's useful life, and, like the diminishing balance method, results in greater depreciation charges during the first years. Under this method, depreciation charges in a given year are determined by the ratio between the chronological number of that year (in decreasing order) and the sum of all year-digits.

This can be calculated as follows: $(n * (n+1) / 2)$.

Using the data from the original example, the sum of the year-digits is $(5 * 6 / 2 =) 15$. Therefore, depreciation charges in each year will be as follows (in CU thousands):

Year 1	$(5/15) * (800 - 100) = 233$
Year 2	$(4/15) * (800 - 100) = 187$
Year 3	$(3/15) * (800 - 100) = 140$
Year 4	$(2/15) * (800 - 100) = 93$
Year 5	$(1/15) * (800 - 100) = \underline{47}$
Total	700

4.2.6 Components method

The Standard states that 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 (the components method). Furthermore, in determining depreciation charges, entities may group significant parts of the same item of property, plant and equipment having the same useful life and depreciation method.

Therefore, when an item of property, plant and equipment is comprised of parts which are depreciated using different depreciation methods or different depreciation rates, each part is depreciated separately. For example, in an aircraft, an entity may be required to depreciate separately the airframe and engines, which have different useful lives. In another example, a company constructs a football stadium and should depreciate separately the seats and the developed area, as the seats have a shorter useful life.

It is noted that, in the case of regular inspection costs, the Standard views this component as a significant part of an item of property, plant and equipment, which is depreciated separately even though it is not a physical component (see discussion in Section 3.3 above).

Furthermore, when one or more parts of an item are depreciated separately, the remainder of the item is also depreciated separately. The remainder consists of the parts of the item that are individually insignificant. In this regard, it is noted that:

- a. If an entity has varying expectations for these parts, approximation techniques may be necessary to depreciate the remainder in a manner that faithfully represents the consumption pattern and/or useful life of these parts.
- b. The Standard allows entities to choose to depreciate separately the parts of an item that do not have a cost that is significant in relation to the total cost of the item.

This raises the question - how should entities allocate the overall cost of an item of property, plant and equipment, to the separately depreciable parts? The Standard does not refer to this matter specifically. However, it seems that, when dealing with a constructed asset, it may reasonably be assumed that the costs incurred for that significant component can be estimated. When dealing with an acquired asset, whose purchase price was determined as a single amount, it will be necessary to separate items according to their assessed market prices. It is emphasised that, in this case, the allocation is made according to the full fair value of that part, and not based on relative fair value as generally accepted where two or more securities are issued for a single amount.

It is further emphasised that, despite application of the components method in depreciating items of property, plant and equipment, they still constitute one single asset for the purpose of presentation and disclosure in the financial statements. This is particularly relevant for disclosure requirements for each class of property, plant and equipment. Therefore, continuing on the previous example where an aircraft's airframe and engines are depreciated separately, disclosure requirements apply to the 'aircraft' class, and not separate 'airframe' and 'engine' classes.

It seems that accounting for a part replacement must be consistent with its depreciation method. The cost of replacing a part of an item of property, plant and equipment is recognised as part of the carrying amount of that item, when the cost was incurred and subject to the recognition criteria. See Section 3.3 above. For example, if a company demolishes an old structure and builds a new one in its stead, as the old structure constitutes a separate component, it should be derecognised while concurrently recognising the cost of the new structure. Derecognition is made as per the relevant component's carrying amount provided that its cost was identified in the transaction wherein the relevant item was acquired or constructed. If it is not possible to determine the

component's value at the time of acquisition or construction, an entity may use the estimated cost of replacement with a similar part as an indication of what the cost of the replaced part was at the time it was acquired or constructed.

On the other hand, when replacing non-significant components, it seems that the new cost can be recognised as a current expense.

Example 1 - Determining depreciation charges by components

A company sells service software. On January 1, 2008, the company acquired a structure for CU 100 million. The following table details the manner in which the consideration for the acquisition is attributed to the structure's components:

Component	Fair value	Estimated remaining useful life	Estimated residual value
Structure	50,000	45	5,000
Land	25,000	-	-
Furniture	15,000	30	1,000
Elevators	10,000	20	1,000
Total	100,000		7,000

The building's components are depreciated using the straight-line method. The company adopts the cost model. Furniture is "attached" to the building and cannot be sold separately, and so comprises a part of the property, plant and equipment.

Depreciation charges for the asset in 2008 will be as follows (CU thousands):

Structure	$(50,000 - 5,000) * 1/45 = 1,000$
Land	-
Furniture	$(15,000 - 1,000) * 1/30 = 467$
Elevators	$(10,000 - 1,000) * 1/20 = 450$
Total depreciation	1,917

Consequently, the asset is presented in the financial statements as of December 31, 2008 as follows (CU thousands):

Cost	100,000
Accumulated depreciation	<u>(1,917)</u>
Depreciated cost	98,083

Example 2 - Accounting for a part replacement

On January 1, 2005, a company acquired a facility which includes an air conditioning system at a cost of CU 100 million. The facility has an estimated useful life of 10 years (straight-line depreciation, zero residual value). On January 1, 2008, in light of recurring malfunctions in the air conditioning system, the company decided to replace it with another air conditioning system at a cost of NIS 20 million. The new system has a useful life of 7 years.

Assumption A - The fair value of the old air conditioning system at the time of acquiring the facility was NIS 10 million, and its useful life is 5 years. The air conditioning system was accounted for as a separate component.

Assumption B - It was not possible to assess the separate fair value of the old air conditioning system at time of the building's acquisition.

Assumption A - Separating the original air conditioning system

Calculating depreciated cost as of December 31, 2007 (in CU thousands):

For the air conditioning system component	$2/5 * 10,000 = 4,000$
For the remainder of the facility	$7/10 * (100,000 - 10,000) = 63,000$
	67,000

The January 1, 2008 ledger entry recognising the new system and derecognising the old system will be as follows (in CU thousands):

Dr Cost (new system)	20,000
Cr Depreciated cost (old system)	4,000
Cr Cash	20,000
Dr Loss from derecognition of old system	4,000

The composition of depreciated cost as of January 1, 2008, following the system's replacement will be as follows (in CU thousands):

For the air conditioning system component	20,000
For the remainder of the facility	$7/10 * (100,000 - 10,000) = \underline{63,000}$
	83,000

Depreciation charges for 2008 will be as follows:

For the air conditioning system component	$1/7 * 20,000 = 2,857$
For the remainder of the facility	$1/7 * 63,000 = \underline{9,000}$
	11,857

Assumption B - Original air conditioning system not separated

Calculating depreciated cost as of December 31, 2007 (in CU thousands):

Cost	100,000
Accumulated depreciation (*)	$3 / 10 * 100,000 = \underline{(30,000)}$
	70,000

(*) The assumption is that the entire facility was depreciated over 10 years as the cost of the air conditioning system was not identified.

On January 1, 2008, the company should recognise the new system and derecognise the old system. As the old system was not previously separated, its value must be assessed according to the new system's cost (and considering that 3 years have passed out of the new system's 7-year useful life). Thus, the company should derecognise a total of CU 11,429,000 from the cost of property, plant and equipment = $4/7 * 20,000,000$.

The January 1, 2008 ledger entry recognising the new system and derecognising the old system will be as follows (in CU thousands):

Dr Cost (new system)	20,000
Cr Depreciated cost (old system)	11,429
Cr Cash	20,000

Dr Loss from derecognition of old system 11,429

The composition of depreciated cost as of January 1, 2008, following the system's replacement will be as follows (in CU thousands):

For the air conditioning system component	20,000
For the remainder of the facility	$70,000 - 11,429 = \underline{58,571}$
	78,571

Depreciation charges for 2008 will be as follows:

For the air conditioning system component	$1/7 * 20,000 = 2,857$
For the remainder of the facility	$1/7 * 58,571 = \underline{8,367}$
	11,224

Example 3 - Regular inspection

On January 1, 2007, a profitable company acquired a wastewater treatment plant at a cost of CU 100 million. The plant has an estimated useful life of 20 years. The Ministry of Environmental Protection requires the company to conduct an inspection once every two years. On January 1, 2007, the company estimated the cost of its future inspection at CU 20 million. On January 1, 2009, the company performed its inspection of the facility. The cost of this inspection totaled NIS 22 million. The wastewater treatment plant is depreciated using the straight-line

method. The company is subject to a 30% tax rate. For tax purposes, the plant's cost is CU 100 million, with straight-line depreciation over 20 years, and the cost of the inspection is recognised as a current expense.

Calculating depreciated cost as of December 31, 2007 (in CU thousands):

Cost	100,000
Accumulated depreciation	$(100,000 - 20,000) * 1/20 + 20,000 / 2 = \underline{(14,000)}$
Depreciated cost	86,000

Calculating deferred taxes as of December 31, 2007 (in CU thousands):

Carrying amount	86,000
Tax base	$100,000 * 19/20 = \underline{(95,000)}$
Deductible temporary difference	(9,000)
Tax rate	<u>30%</u>
Deferred tax asset	2,700

Calculating depreciated cost as of December 31, 2008 (in CU thousands):

Cost	100,000
Accumulated depreciation	$(100,000 - 20,000) * 2/20 + 20,000 = \underline{(28,000)}$
Depreciated cost	72,000

Calculating deferred taxes as of December 31, 2008 (in CU thousands):

Carrying amount	72,000
Tax base	$100,000 * 18/20 = \underline{(90,000)}$
Deductible temporary difference	(18,000)
Tax rate	<u>30%</u>
Deferred tax asset	5,400

Ledger entry for 2008 (in CU thousands):

Dr Depreciation charges	$(100,000 - 20,000) * 1/20 + 20,000 / 2 = 14,000$
Cr Accumulated depreciation	14,000

Dr Deferred tax asset	$5,400 - 2,700 = 2,700$
Cr Tax charge	2,700

Calculating depreciated cost as of December 31, 2009 (in CU thousands):

Cost	102,000
Accumulated depreciation	$(100,000 - 20,000) * 3/20 + 22,000 / 2 = \underline{(23,000)}$
Depreciated cost	79,000

Calculating deferred taxes as of December 31, 2009 (in CU thousands):

Carrying amount	79,000
Tax base	$100,000 * 17/20 = \underline{(85,000)}$
Deductible temporary difference	(6,000)
Tax rate	<u>30%</u>
Deferred tax asset	1,800

Ledger entry for 2009 (in CU thousands):

Dr Accumulated depreciation - inspection	20,000
Cr Property, plant and equipment	20,000

Dr Property, plant and equipment - inspection	22,000
Cr Cash	22,000

Dr Depreciation charges	$(100,000 - 20,000) * 1/20 + 22,000 / 2 = 15,000$
Cr Accumulated depreciation	15,000

Dr Tax charge	$5,400 - 1,800 = 3,600$
Cr Deferred tax asset	3,600

4.2.7 Accounting for depreciation-related estimate changes

As aforesaid, the Standard requires entities to review an asset's residual value and useful life at least at the end of each financial year, and if expectations differ from previous estimates, the changes are accounted for as a change in an accounting estimate in accordance with IAS 8. The Standard likewise states that the applied depreciation method is also reviewed at least at the end of each financial year, 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 is changed to reflect the changed pattern. In this case, too, changes are accounted for as a change in an accounting estimate in accordance with IAS 8.

Under IAS 8, the effect of a change in an accounting estimate is recognised prospectively, by inclusion in profit or loss in the period of the change, as well as future periods if the change affects both. In other words, a change in an accounting estimate is accounted for starting from the date of the change (prospectively). Therefore, it is apparently important to identify the exact date of the change. For more on this matter, see Volume A, Chapter 9 - Accounting Changes.

The above notwithstanding, it is emphasised that there is great sensitivity in changing accounting estimates, particularly in light of the distinction between changes of estimates and correction of errors.

Example

On January 1, 2007, a successful and profitable public company acquired a pharmaceutical-production machine for CU 100 million in cash. At the acquisition date, the machine had a useful life of 10 years. The machine is depreciated using the straight-line method, and has zero residual value. The company is subject to a 30% tax rate. For tax purposes, the machine has a 10-year life, is depreciated using the straight-line method, and has zero residual value.

Assumption A - Starting from the end of June 2008, the company believes that the machine's useful life from the date of its acquisition is 6 years, with a residual value of CU 10 million.

Assumption B - Following a significant change on January 1, 2008, the company believes that decreasing sum-of-years' digits depreciation will more adequately reflect the consumption pattern of the machine's future economic benefits.

Assumption A - Change in useful life and residual value

The machine's carrying amount as of December 31, 2007 (in CU thousands):

Cost	100,000
Accumulated depreciation	$100,000 * 1/10 = 10,000$
Depreciated cost	90,000

There is no difference between the asset's carrying amount and its tax base, and so no deferred taxes are recognised at the end of 2007.

Ledger entry for 2007 (in CU thousands):

Dr Depreciation costs	10,000
Cr Accumulated depreciation - machine	10,000

The machine's carrying amount as of December 31, 2008 (in CU thousands):

Cost	100,000
Accumulated depreciation	$100,000 * 1.5/10 + (85,000 - 10,000) * 0.5/4.5 = 23,333$
Depreciated cost	76,667

Calculating deferred taxes as of December 31, 2008 (in CU thousands):

Carrying amount	76,667
Tax base	$100,000 * 8/10 = \underline{(80,000)}$
Deductible temporary difference	(3,333)
Tax rate	<u>30%</u>
Deferred tax asset	1,000

Ledger entry for 2008 (in CU thousands):

Dr Depreciation charges	$90,000 - 76,667 = 13,333$	
Cr Accumulated depreciation - machine		13,333
Dr Deferred tax asset		1,000
Cr Deferred tax income		1,000

The machine's carrying amount as of December 31, 2009 (in CU thousands):

Cost	100,000
Accumulated depreciation	$100,000 * 1.5/10 + (85,000 - 10,000) * 1.5/4.5 = \underline{40,000}$
Depreciated cost	60,000

Calculating deferred taxes as of December 31, 2009 (in CU thousands):

Carrying amount	60,000
Tax base	$100,000 * 7/10 = \underline{(70,000)}$
Deductible temporary difference	(10,000)
Tax rate	<u>30%</u>
Deferred tax asset	3,000

Ledger entry for 2009 (in CU thousands):

Dr Depreciation charges	$76,667 - 60,000 = 16,667$	
Cr Accumulated depreciation - machine		16,667
Dr Deferred tax asset	$3,000 - 1,000 = 2,000$	
Cr Deferred tax income		2,000

Assumption B - Change in depreciation method

The machine's carrying amount as of December 31, 2008 (in CU thousands):

Cost	100,000
Accumulated depreciation	$90,000 * 9 / ((9 * 10) / 2) + 10,000 = \underline{28,000}$
Depreciated cost	72,000

Calculating deferred taxes as of December 31, 2008 (in CU thousands):

Carrying amount	72,000
Tax base	$100,000 * 8/10 = \underline{(80,000)}$
Deductible temporary difference	(8,000)
Tax rate	<u>30%</u>
Deferred tax asset	2,400

Ledger entry for 2008 (in CU thousands):

Dr Depreciation charges	90,000 – 72,000 = 18,000
Cr Accumulated depreciation - machine	18,000

Dr Deferred tax asset	2,400
Cr Deferred tax income	2,400

The machine's carrying amount as of December 31, 2009 (in CU thousands):

Cost	100,000
Accumulated depreciation	$90,000 * 8 / ((9 * 10) / 2) + 28,000 = \underline{44,000}$
Depreciated cost	56,000

Calculating deferred taxes as of December 31, 2009 (in CU thousands):

Carrying amount	56,000
Tax base	$100,000 * 7/10 = \underline{(70,000)}$
Deductible temporary difference	(14,000)
Tax rate	<u>30%</u>
Deferred tax asset	4,200

Ledger entry for 2009 (in CU thousands):

Dr Depreciation charges	72,000 – 56,000 = 16,000
Cr Accumulated depreciation - machine	16,000

Dr Deferred tax asset	4,200 – 2,400 = 1,800
Cr Deferred tax income	1,800

4.3 The Revaluation Model

4.3.1 Principles

Under the revaluation model, subsequent to initial recognition, items of property, plant and equipment whose fair value can be measured reliably are measured at a revalued amount. This revalued amount is the fair value at the date of revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses.

If an item of property, plant and equipment is revalued, the entire class of property, plant and equipment to which that asset belongs is revalued. This principle aims to avoid selective revaluation of assets, and presentation of amounts in the financial statements which comprise a mixture of differently-dated costs and values. However, a class of assets may be revalued on a rolling basis provided revaluation of the class of assets is completed within a short period and provided that the revaluations are kept up to date. It seems that entities will find it difficult to comply with this principle, unless they are measuring the fair value of assets which remains essentially unchanged over short periods of time.

According to the Standard, revaluations are 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. In other words, when the fair value of an asset differs materially from its carrying amount, that asset must be revalued. The frequency of revaluations depends upon the frequency of the changes in fair value of the relevant class of property, plant and equipment. Therefore, certain items of property, plant and equipment, which experience significant and volatile changes in fair value, require annual revaluation. Conversely, items of property, plant and equipment with only insignificant changes in fair value do not require such frequent revaluation. Instead, these items may be revalued with relatively low frequency (only every three or five years).

Revaluations are accounted for as follows:

- If an asset's carrying amount is increased as a result of a revaluation, the increase is recognised directly in other comprehensive income under the heading of revaluation surplus. However, the increase is recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss.
- If an asset's carrying amount is decreased as a result of a revaluation, the decrease is recognised in profit or loss. However, the decrease is recognised directly in other comprehensive income under the heading of revaluation surplus, to the extent of any credit balance existing in the revaluation surplus for that asset.

It is noted that an increase resulting from a revaluation of one asset and a decrease resulting from a revaluation of another asset cannot be offset one against the other, even if the assets are grouped under the same class of property, plant and equipment (see emphasis above).

A revaluation surplus recognised as aforesaid may not be transferred to profit or loss under any circumstances. The Standard permits transfers from revaluation surplus directly to retained earnings (not through profit or loss), when the asset is derecognised (retired or disposed of), or as the asset is used by an entity. In the latter case, the amount of the surplus transferred to retained earnings in each period will be the difference between depreciation recognised in the financial statements (based on the asset's revalued carrying amount) and depreciation based on the asset's original cost (a transfer at the rate of depreciation).

It seems that reporting entities will usually prefer to choose one or both options of transferring amounts to retained earnings. Otherwise, amounts will remain forever under a revaluation surplus, even after an asset is completely depreciated or disposed of. This situation is not reasonable and may affect dividend payments and compliance with financial covenants. However, not transferring amounts to retained earnings has an advantage from a reporting perspective, in that the accumulated revaluation surplus may provide a future "hedge" against impairment. This is due to the fact that impairment is first recognised against an existing credit balance in revaluation surplus.

The approach adopted by the above revaluation model is that the revalued amount replaces an asset's previous carrying amount. This is similar to the manner in which financial statements are adjusted for inflation. Thus, revaluation surplus is never reversed to profit or loss (even upon an asset's derecognition). This model is fundamentally different from the model used, for example, in accounting for available-for-sale securities under IAS 39 - *Financial Instruments - Recognition and Measurement*, or accounting for investments in foreign operations under IAS 21 - *The Effects of Changes in Foreign Exchange Rates*, where surpluses serve as an "interim step" and are later recognised in profit or loss upon disposal of the security or the foreign operation.

Furthermore, under the revaluation model, when a revaluation ultimately represents impairment (ie - the decrease resulting from revaluation is greater than the existing credit balance for an asset), then such impairment is recognised in profit or loss.

It is difficult to ignore the reporting challenges posed by the revaluation model. These challenges are due to the fact that revaluation gains are recognised in a revaluation surplus in equity, and not in profit or loss. Moreover, a revaluation surplus is not subsequently recognised in profit or loss, not even at an asset's rate of depreciation. As a result, assuming a future increase in value, depreciation charges included in profit or loss will increase accordingly and reduce that entity's reported profit. Consequently, the vast majority of companies in Europe do not adopt this model (and if they do adopt it, they adopt it for land assets only).

Section 4.3.2 below provides basic practical examples for the revaluation model. For an example of multi-period application, including negative revaluations, see Section 8 in the appendix to this chapter.

4.3.2 Basic application examples

Example 1 - Revaluation

On January 1, 2007, a company acquired property, plant and equipment at a cost of CU 10 million. The property, plant and equipment has a useful life of 10 years and is depreciated using the straight-line method (zero residual value). Following a revaluation performed on December 31, 2011, the asset's fair value was determined to be CU 7.5 million. The revaluation did not find any change in the useful life of the asset or its residual value. The effect of income taxes is disregarded.

The asset's carrying amount as of December 30, 2011 (before revaluation) is as follows: $(5/10) * 10 = \text{CU } 5$ million

The difference between fair value and carrying amount is: $7.5 - 5 = \text{CU } 2.5$ million

The ledger entry recognising depreciation charges for 2012 (in CU millions) will be as follows:

Dr Depreciation charges	(7.5 / 5 =) 1.5
Cr Accumulated depreciation	1.5

Assuming the company opts to transfer amounts to retained earnings, the simultaneous ledger entry will be as follows (in CU millions):

Dr Revaluation surplus	(2.5 / 5 =) 0.5
Cr Retained earnings	0.5

It is noted that transfers from revaluation surplus to retained earnings are not made through other comprehensive income, but through changes in equity. This is due to the fact that such transfers do not increase net assets, and so is not included under comprehensive income. The "release" of amounts previously recognised in other comprehensive income is only made for amounts restated in profit or loss (and not directly to retained earnings). For further discussion, see Volume A, Chapter 15 - Financial Statement Presentation, Section 6.3.

What is the company's ledger entry for the revaluation on December 31, 2011, or in other words - how should the company account for accumulated depreciation, recognised prior to the revaluation?

Here, the Standard offers a choice between one of the following two options:

Option A: To proportionately revalue both the original cost and the balance of accumulated depreciation.

Option B: To eliminate the accumulated depreciation balance against the original cost.

The asset's carrying amount as of December 30, 2011 (before revaluation) is comprised as follows (in CU millions):

Cost	10
Accumulated depreciation	<u>(5)</u>
	5

Option A: Proportionate revaluation of both original cost and accumulated depreciation (in CU millions):

Dr Cost	$(7.5/5 - 1) * 10 = 5$	
Cr Accumulated depreciation	$(7.5/5 - 1) * 5 = 2.5$	
Cr Revaluation surplus		2.5

Therefore, the asset's carrying amount as of December 31, 2011 (after revaluation) is comprised as follows (in CU millions):

Cost	CU 15 million
Accumulated depreciation	CU <u>(7.5)</u> million
	7.5

Option B: Eliminating the accumulated depreciation balance

Dr Accumulated depreciation	5
Cr Cost	5

Dr Cost	2.5
Cr Revaluation surplus	2.5

Therefore, the asset's carrying amount as of December 31, 2011 (after revaluation) is comprised as follows (in CU millions):

Cost	7.5
Accumulated depreciation	7.5

The Standard notes that option A is often used when an asset is revalued by means of its depreciated replacement cost, while option B is often used for buildings. In any case, it seems that entities should adopt one of these two options as an accounting policy, and apply it consistently in each revaluation. It is further noted, that in practice, most entities opt to apply option B.

Example 2 - Depreciating an item measured under the revaluation model

On January 1, 2006, a company acquired a machine. The machine cost CU 300,000, has a useful life of 10 years, and zero residual value. The company accounts for the machine using the revaluation model. In light of frequent changes in the fair value of the machine, the company decided to perform a revaluation at the end of each year. The machine's fair value as of December 31, 2006, 2007, and 2008 was estimated at CU 360,000, 335,000, and 200,000, respectively. The effect of income taxes is disregarded. Assume that the company chooses to transfer revaluation surplus to retained earnings at the depreciation rate.

In 2006, the company records depreciation charges of CU 30,000 ($= 1/10 * 300$). Therefore (in CU thousands):

The machine's fair value as of December 31, 2006	360
The machine's carrying amount as of December 31, 2006 (before revaluation)	$300 - 30 = \underline{(270)}$
Revaluation surplus	90

In 2007, the company records depreciation charges of CU 40,000 ($= 1/9 * 360$). Therefore:

The machine's fair value as of December 31, 2007	335
The machine's carrying amount as of December 31, 2007 (before revaluation)	$360 - 40 = \underline{(320)}$
Increase in revaluation surplus (in CU thousands)	15

Revaluation surplus balance as of December 31, 2007 (in CU thousands):

Balance as of December 31, 2006	90
Transfer to retained earnings at the depreciation rate	$90 / 9 = (10)$
Increase during the year	<u>15</u>
	95

In 2008, the company records depreciation charges of CU 42,000 ($= 1/8 * 335$). Therefore:

The machine's fair value as of December 31, 2008	200
The machine's carrying amount as of December 31, 2008 (before revaluation)	$335 - 42 = (293)$
Decrease in revaluation surplus (in CU thousands)	(93)
Revaluation surplus balance (after transfer to retained earnings in 2008)	$95 - 1/8 * 95 = 83$
Impairment loss recognised in profit or loss (in CU thousands)	(10)

Example 3 - Effect of income taxes

Using the data for 2006 and 2007 from the previous example, assume that the company is subject to a 30% tax rate. As for tax purposes depreciation expenses are deductible at the asset's cost (assume an identical depreciation rate for tax purposes), the revaluation method creates taxable temporary differences which give rise to deferred taxes in accordance with IAS 12 - *Income Taxes*. Furthermore, according to IAS 12, deferred taxes arising from the revaluation surplus are recognised directly in other comprehensive income.

Taxable temporary difference as of December 31, 2006 (in CU thousands):

Carrying amount	360
Tax base	<u>(270)</u>
Taxable temporary difference	90
Tax rate	<u>30%</u>
Deferred tax liability	(27)

Ledger entry for deferred taxes made on December 31, 2006 (in CU thousands):

Dr Revaluation surplus	27	
		Cr Deferred tax liability 27

Therefore, the revaluation surplus balance as of December 31, 2006 is CU 63,000 ($= 90 - 27$).

Taxable temporary difference as of December 31, 2007 (in CU thousands):

Carrying amount	335
Tax base	$8/10 * 300 = (240)$
Taxable temporary difference	95
Tax rate	<u>30%</u>
Deferred tax liability	(28.5)

Movement in deferred tax liability balance (in CU thousands) :

Balance as of December 31, 2006	(27)
Current write-down to profit or loss	$1/9 * 27 = 3$
Update against revaluation surplus (also a balancing figure)	$30% * 15 = (4.5)$
Balance as of December 31, 2007	(28.5)

Ledger entry for deferred taxes made on December 31, 2007 (in CU thousands):

Dr Deferred tax liability	3	
		Cr Tax charge 3

Dr Revaluation surplus	4.5
Cr Deferred tax liability	4.5

Revaluation surplus balance as of December 31, 2007 (in CU thousands):

Balance as of December 31, 2006	63
Transfer to retained earnings at the depreciation rate	$63 / 9 = (7)$
Net increase during the year	$15 - 4.5 = \underline{10.5}$
	66.5

4.3.3 The revaluation model - accounting issues

a. Reversal of an asset's impairment following revaluation

As aforesaid, if an asset's carrying amount increases as a result of a revaluation, the increase is recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss.

This raises the question, of whether the entire amount of the increase is recognised in profit or loss, or should entities account for depreciation charges which would have been recognised were it not for the past decrease (there is no doubt that depreciation charges would have been higher). Although not specifically stated in the Standard, it seems that entities should account for the "savings" recorded in depreciation charges. In this regard, one can refer to IAS 36, which specifically states that when previously recognised impairment is reversed, an asset's carrying amount after reversal will not be higher than its carrying amount had the past impairment not been recognised.

Example

On January 1, 2007, a company acquired property, plant and equipment in consideration for CU 1.2 million. The property, plant and equipment has a useful life of 12 years, and its residual value is immaterial. The company accounts for this item of property, plant and equipment as per the revaluation model. According to the asset's nature, it is revalued every 4 years.

As of December 31, 2010, the item's fair value was estimated at CU 600,000, and as of December 31, 2014 - CU 450,000.

Therefore, on December 31, 2010, the company will record a loss of CU 200,000 for revaluation, as follows (in CU thousands):

Estimated fair value	600
Carrying amount (before revaluation)	$(8/12) * 1,200 = \underline{(800)}$
	(200)

In addition, annual depreciation charges in 2011-2014 amount to CU 75,000 each year (= 600/8).

On December 31, 2014, the company performs a revaluation, whereby the asset's carrying amount is increased as follows (in CU thousands):

Estimated fair value	450
Carrying amount (before revaluation)	$(4/8) * 600 = \underline{(300)}$
	150

However, it seems that the increase in the carrying amount will not be entirely recognised in profit or loss, in light of the fact that the previous years' depreciation charges would have been higher were it not for the revaluation. Therefore, the limitation whereby the amount of the increase recorded in profit or loss equals the previously recognised loss less the difference in depreciation charges in subsequent years, is as follows:

Loss recognised as a result of revaluation on December 31, 2010	200
Net of the decrease in depreciation charges in 2011-2014	$4 * (75 - 100) = \underline{(100)}$
Limitation	100

Therefore, the increase in carrying amount resulting from the December 31, 2014 revaluation, amounting to CU 150,000, is recognised in part in profit or loss (100), and in part in revaluation surplus (50 = 150 - 100).

To illustrate the above solution, it is noted that, had it not been for the previous revaluation, the present revaluation would have resulted in an increase in the asset's carrying amount recognised against a CU 50,000 revaluation surplus, as follows:

Estimated fair value	450
Carrying amount (before revaluation), without the previous revaluation	$(4/12) * 1,200 = \underline{(400)}$
	50

Thus, the above solution leads to an identical overall recognition of depreciation charges and revaluation surplus.

b. Effect of the impairment of assets rules when adopting the revaluation model

The scope of IAS 36 does not exclude property, plant and equipment measured using the revaluation model. IAS 36 defines a recoverable amount as the higher of either the net selling price of an asset and its value in use. In principle, entities must first revalue an asset pursuant to IAS 16, before testing for impairment under IAS 36. Therefore, if a change in fair value under IAS 16 is determined in relation to the selling price and disposal costs are negligible, no impairment can be recognised under IAS 36, unless there are differences in estimating fair value under the two standards.

Regardless, it is mentioned that the revaluation model may result in cases where an entity applying this model recognises impairment as a result of an asset's fair value decreasing below its cost, while an entity applying the cost model would not recognise such impairment, as the asset's value in use is greater than its cost.

c. Effects of the revaluation surplus release policy on recognition of losses from negative revaluation

As aforesaid, the Standard allows reporting entities to adopt an accounting policy whereby a part of the revaluation surplus is periodically transferred directly to retained earnings, where the transferred amount is the difference between recognised depreciation charges and those which would have been recognised if the entity had adopted the cost model. It is reasonable to assume that the revaluation surplus balance of a reporting entity which adopted this policy is lower than that of an entity which does not adopt the above transfer policy (it can adopt a transfer policy only upon derecognition, or not at all).

This means, that in the event of a negative revaluation, an entity which chose not to adopt a transfer policy has a greater "hedge" against impairment losses recognised in profit or loss, as it has a greater revaluation surplus. The Standard does not resolve this accounting distortion. For an example, see Section 8 in the appendix below.

d. Separation of land and buildings in accounting for revaluations

It is possible that, upon revaluation of a building constituting property, plant and equipment, a positive revaluation will arise for one of the components (say, the land), while a negative revaluation arises for the other (say, the building). This raises the question of whether an entity should account for the two components as one single item of property, plant and equipment, effectively offsetting the negative revaluation against the positive revaluation and recognising the difference as usual, or whether it should account for each component separately. Accounting for each component separately is liable to result in the positive revaluation being recognised as a revaluation surplus, while the negative revaluation is recognised in profit or loss. In this case, it seems that two different approaches are possible.

e. Measuring deferred tax liabilities for the land component

Under IAS 12 - *Income Taxes*, deferred tax liabilities for a land component are measured based on the capital gains tax rate. As a result, in determining deferred taxes, entities should separate land and buildings into two separate components. Deferred taxes for the land component are determined according to the capital gains tax rate, while deferred taxes for the building component are determined according to the ordinary corporate income tax rate. It is noted that if a residual value exists, deferred taxes for that value are calculated using the capital gains tax rate.

4.3.4 Determining fair value

Fair value is defined as the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction. It is emphasised that removal or selling costs are not subtracted from fair value.

Right from the start, it is emphasised that the above definition for fair value differs from the definition for recoverable amount under IAS 36. The recoverable amount is defined as the higher of an asset's value in use and its net selling price. For example, a production line with a carrying amount of CU 10 million, has a value in use (representing the present value of the net cash flows from selling its products) of CU 15 million, and a selling price of CU 8 million. In this case, the recoverable amount is CU 15 million, while fair value is CU 8 million. Therefore, if the company chose to measure the production line using the revaluation method, it will recognise a loss of CU 2 million (assuming that there is no revaluation surplus balance for this production line). However, if it chose to measure the production line at cost, it would not incur any such loss.

The fair value of land and buildings is usually determined from market-based evidence by appraisal that is normally undertaken by professionally qualified valuers. It is noted that the Standard does not require that entities perform valuations through third-party valuers. Furthermore, the fair value of items of machinery and equipment is usually determined by their estimated market value.

Market value is the highest obtainable price for an item of property, plant and equipment regardless of its present use. For example, a company owns a hotel, which is situated in a prime location. The building has a higher value

as a residential building than a hotel. Therefore, the building's market price is determined according to its value as a residential building.

When an item of property, plant and equipment has a specialised nature and is rarely sold, there is no market-based evidence of fair value. The Standard clarifies that in these cases, an entity should estimate fair value using an income or depreciated replacement cost approach.

a. Income approach

The Standard does not define what it refers to as the income approach, and so there are several applicable techniques. According to IAS 40 - *Investment Property*, the estimate can be based on transactions for non-similar assets in an active market, after adjusting the transactions to reflect the changes. Alternatively, the estimate can be based on transactions in less-active market if these are adjusted while accounting for subsequent changes in economic conditions.

In principle, the income approach can include the use of discounted projected cash flows for an asset. When an asset does not generate cash flows independently but is part of a cash-generating unit, entities must exercise judgment in separating the fair value specific to that asset. It bears mention that, when using discounted cash flows, entities should estimate fair value and not value in use. In other words - entities should not include cash flows not pertaining strictly to the asset (eg - cash flows from synergy or goodwill).

Other methods, seen in real-world applications, include valuation methods based on various multipliers. Disclosure requirements demand that entities disclose the extent to which they used valuation techniques not based on market prices in estimating fair value.

b. Depreciated replacement cost

The depreciation replacement cost method assesses the cost of acquiring a new asset after depreciation and other adjustments. The underlying approach in this method, is that the asset is unique in that no market price can be found for it (eg - an asset providing services to the public, such as a museum or school, or another asset which is unique in its nature and location).

The necessary adjustments account for the asset's age in relation to its useful life and its residual value, as well as its physical condition, its obsolescence, or the fact that it has excess production capacity as compared to a new asset. Thus, for example, in case of obsolescence, the depreciated replacement cost must be adjusted so as not to exceed a new equivalent asset which provides equivalent performance standards.

It is noted, that in many cases, application of this method may lead to a higher valuation than one based on market prices. For this reason, it is paramount to make sure that an asset is truly so unique that no market-based evidence is available for it. Furthermore, it is important to examine an asset's profitability potential out of the total value determined using this method, and therefore consider the application of IAS 36.

An entity must also decide how to allocate fair value between land and building components under a revaluation. First, in case of a building (or other facility) which is located on land, revaluation will require two assessments: the fair value of the entire building (together with the land), and another assessment - the fair value of the land. Afterwards, entities can adopt one of two accounting methods. They can determine the value of the building as a balancing figure. Or, they can estimate the building's depreciated replacement cost.

4.4 Subsequent accounting for provisions for dismantlement and removal

As discussed in Section 3.2.3 above, upon initial recognition, an entity may have recognised a provision for dismantlement and removal, included in the cost of an item of property, plant and equipment. Provisions for dismantlement and removal costs are measured in accordance with IAS 37. Thus, entities must determine the present value of the future cash flows expected to flow from the entity.

In future periods, changes may occur in the provision, due to the following reasons:

- a. A change in the cash flow expected to settle the obligation for dismantling and removing the asset (amount and timing).
- b. A change in the discount rate (which includes both a risk-free market interest rate component, and a risk component).
- c. A normal increase in present value caused by the passage of time (ie - a decrease in the discount component).

According to IFRIC 1, which deals with accounting for such changes, an increase in liability caused by the passage of time is recognised as an finance cost in profit or loss in each subsequent period.

In accounting for changes in cash flows expected to settle the obligation, and in changes in the discount rate, IFRIC 1 differentiates between scenarios where an asset is accounted for using the cost method, and scenarios where it is accounted for using the revaluation method.

a. Cost method

In this case, the change in the liability will be added to or deducted from the cost of the asset in the current period. However, the amount deducted from the cost of the asset will not exceed its carrying amount, and in case of an addition, the entity should test whether this is an indication for impairment, and act accordingly as prescribed by IAS 36.

Furthermore, the depreciated amount of an asset, after adjustment, is depreciated prospectively over its useful life, similar to the way in which a change in an accounting estimate is accounted for under IAS 8.

Example

On January 1, 2006, a company acquired a facility which generates toxic waste, in consideration for CU 10 million. Environmental laws require that, after 10 years, the company dismantle the facility and restore the site on which it was located. The company expects to incur dismantling costs of CU 3,257,789. Its annual discount rate as of January 1, 2006, is 5%. In addition, as of December 31, 2007, the company believes that its total costs for dismantling the facility will amount to CU 3,398,147. Assume that the company's discount rate remains unchanged. The company is subject to a 30% tax rate. The company applies the cost model.

The ledger entry at the acquisition date (January 1, 2006) is as follows (in CU):

Dr Property, plant and equipment	10,000,000	
Cr Cash		10,000,000

Dr Property, plant and equipment	2,000,000	
Cr Liability for dismantlement and removal		$2,000,000 = 3,257,789 / 1.05^{10}$

Dr Deferred tax asset		$2,000,000 * 30\% = 600,000$
Cr Deferred tax liability		600,000

Ledger entry in 2006 for financing and depreciation charges (in CU):

Dr Depreciation costs	1,200,000	
Cr Accumulated depreciation		1,200,000

Dr Deferred tax liability		$(1,200,000 - 10,000,000 / 10) * 30\% = 60,000$
Cr Deferred tax income		60,000

Dr Finance charges		$2,000,000 * 5\% = 100,000$
Cr Liability for dismantlement and removal		100,000

Dr Deferred tax asset		$100,000 * 30\% = 30,000$
Cr Deferred tax income		30,000

The relevant balances as of December 31, 2006 (in CU):

Liability for dismantlement and removal	$2,000,000 * 1.05 = 2,100,000$
Property, plant and equipment, net	$12,000,000 - 1,200,000 = 10,800,000$
Deferred tax asset, net	$630,000 - 540,000 = 90,000$

Ledger entry in 2007 for financing and depreciation charges (in CU):

Dr Depreciation charges	1,200,000	
Cr Accumulated depreciation		1,200,000

Dr Deferred tax liability		$(1,200,000 - 10,000,000 / 10) * 30\% = 60,000$
Cr Deferred tax income		60,000

Dr Finance charges		$2,100,000 * 5\% = 105,000$
Cr Liability for dismantlement and removal		105,000

Dr Deferred tax asset		$105,000 * 30\% = 31,500$
Cr Deferred tax income		31,500

Movement in the liability's balance following ledger entries updating that balance:

Balance as of December 31, 2006	2,100,000
Update	$2,100,000 * 5\% = 105,000$
Change of estimate	<u>95,000</u> balancing figure
Balance as of December 31, 2007	$3,398,147 / 1.05^8 = 2,300,000$

Ledger entry updating the liability (in CU):

Dr Property, plant and equipment	95,000
Cr Liability for dismantlement and removal	95,000

Dr Deferred tax asset	$95,000 * 30\% = 28,500$
Cr Deferred tax liability	28,500

The relevant balances as of December 31, 2007 (in CU):

Liability for dismantlement and removal	$3,398,147 / 1.05^8 = 2,300,000$
Property, plant and equipment, net	$12,000,000 * 8/10 + 95,000 = 9,695,000$
Deferred tax asset, net	$690,000 - 508,500 = 181,500$

b. Revaluation method

In this case, the change in obligation changes the surplus (positive or negative) incurred through a revaluation. Thus, entities should apply the above principles for the cost method, with the necessary changes. Meaning:

- A decrease in obligation will be credited directly to revaluation surplus in other comprehensive income, except where a decrease in obligation is recognised in profit or loss to the extent that it reverses a revaluation decrease of that same asset previously recognised in profit or loss.

- An increase in obligation is recognised in profit or loss, except where an increase in obligation is recognised as revaluation surplus in other comprehensive income to the extent of any credit balance existing in respect of that asset.

In determining the fair value of an item of property, plant and equipment, for which an entity has an obligation for dismantlement and removal, it is noted that when an entity has an obligation for dismantlement and removal, it is added to the item's fair value under a revaluation. This is due to the fact that fair value includes expectations for payment under the obligation to dismantle and remove the item (presented as a gross amount). Furthermore, if at the time of revaluation, an entity was not aware of an obligation for dismantlement and removal, but an obligation was subsequently triggered by enactment of a particular law, the obligation is added to the fair value of that item of property, plant and equipment, due to the close association between the obligation and the asset.

Example

On January 1, 2006, a company acquired a facility which generates toxic waste, in consideration for CU 10 million. The Ministry of Environmental Protection requires that, after 10 years, the company dismantle the facility and restore the site on which it was located. Upon acquisition, the company expects to incur dismantling costs of CU 3,257,789. Its discount rate as of January 1, 2006, is 5%. The facility's fair value as of December 31, 2006, was estimated at CU 10.5 million, disregarding obligations for dismantlement and removal. Over the years, no change occurred in the discount rate or in the estimated useful life. The company applies the revaluation model and does not transfer surpluses to retained earnings. The company is subject to a 30% tax rate.

Assumption A - As of December 31, 2007, the company estimates its total costs for dismantling the facility at CU 3,398,147. The facility's fair value as of December 31, 2007, is estimated at CU 10 million, disregarding obligations for dismantlement and removal.

Assumption B - As of December 31, 2007, the company estimates its total costs for dismantling the facility at CU 2,954,911.

Assumption A

The ledger entry upon acquisition is as follows (in CU):

Dr Property, plant and equipment	10,000,000
Cr Cash	10,000,000

Dr Property, plant and equipment	2,000,000
Cr Liability for dismantlement and removal	$3,257,789 / 1.05^{10} = 2,000,000$

Dr Deferred tax asset	2,000,000 * 30% = 600,000
Cr Deferred tax liability	600,000

Ledger entry for depreciation charges in 2006 (in CU):

Dr Depreciation charges	1,200,000
Cr Accumulated depreciation	1,200,000

Dr Deferred taxes	$(1,200,000 - 10,000,000/10) * 30\% = 60,000$
Cr Tax income	60,000

Ledger entry for finance charges in 2006 (in CU):

Dr Finance charges	100,000
Cr Liability for dismantlement and removal	$2,000,000 * 5\% = 100,000$

Dr Deferred taxes	$100,000 * 30\% = 30,000$
Cr Tax income	30,000

Depreciated cost balance prior to applying the revaluation model as of December 31, 2006, is CU 10,800,000.

Ledger entry for applying the revaluation model at the end of 2006 (in CU):

Dr Property, plant and equipment	$(10,500,000 + 2,100,000) - 10,800,000 = 1,800,000$
Cr Revaluation surplus	1,260,000
Cr Deferred taxes	540,000

The relevant statement of financial position balances as of December 31, 2006 (in CU):

Liability for dismantlement and removal	$2,000,000 * 1.05 = 2,100,000$
Revaluation surplus	1,260,000
Property, plant and equipment, net	$10,800,000 + 1,800,000 = 12,600,000$
Deferred tax liability, net	$540,000 - 60,000 - 30,000 = 450,000$

Ledger entry for depreciation and finance charges in 2007 (in CU):

Dr Depreciation charges	$12,600,000 * 1/9 = 1,400,000$
Cr Accumulated depreciation	1,400,000

Dr Deferred taxes	$(1,400,000 - 10,000,000/10) * 30\% = 120,000$
Cr Deferred tax income	120,000

Dr Finance charges	$2,100,000 * 5\% = 105,000$
Cr Liability for dismantlement and removal	105,000

Dr Deferred tax asset	$105,000 * 30\% = 31,500$
Cr Deferred tax income	31,500

Ledger entry for updating liability for dismantlement and removal (in CU):

Dr Revaluation surplus	66,500
Dr Deferred tax asset	$95,000 * 30\% = 28,500$
Cr liability for dismantlement and removal	95,000 see below

Movement in liability for dismantlement and removal in 2007 (in CU):

Opening balance	2,100,000
Update	$2,100,000 * 5\% = 105,000$
Change of estimate	<u>95,000</u> balancing figure
Balance as of December 31, 2007	$3,398,147 / 1.05^8 = 2,300,000$

Depreciated cost balance before application of the revaluation model (in CU):

As of December 31, 2007	$12,600,000 * 8/9 = 11,200,000$
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Ledger entry for applying the revaluation model at the end of 2007 (in CU):

Dr Property, plant and equipment	$(10,000,000 + 2,300,000) - 11,200,000 = 1,100,000$
Cr Revaluation surplus	$1,100,000 * (1 - 30\%) = 770,000$
Cr Deferred tax liability	330,000

The relevant statement of financial position balances as of December 31, 2007 (in CU):

Dismantlement and removal liabilities	$3,398,147 / 1.05^8 = 2,300,000$
Revaluation surplus	$1,260,000 - 66,500 + 770,000 = 1,963,500$
Property, plant and equipment, net	$11,200,000 + 1,100,000 = 12,300,000$
Deferred tax liability, net	$450,000 - 120,000 - 31,500 - 28,500 + 330,000 = 600,000$

Assumption B

Relevant statement of financial position balances as of December 31, 2006 (see Assumption A) (in CU):

Liability for dismantlement and removal	2,100,000
Revaluation surplus	1,260,000
Property, plant and equipment, net	12,600,000
Deferred tax liability, net	450,000

Ledger entry for updating removal liabilities (in CU):

Dr Asset removal liabilities	205,000	See below
Cr Revaluation surplus	$205,000 * (1 - 30\%) = 143,500$	
Cr Deferred tax liability	61,500	

Movement in liabilities in 2007 (in CU):

Opening balance	2,100,000
Update	$2,100,000 * 5\% = 105,000$
Change of estimate	<u>(205,000)</u> balancing figure
Liabilities as of December 31, 2007	$2,954,911 / 1.05^8 = 2,000,000$

The relevant statement of financial position balances as of December 31, 2007 (in CU):

Dismantlement and removal liabilities	$2,954,911 / 1.05^8 = 2,000,000$
Revaluation surplus	$1,260,000 + 143,500 = 1,403,500$
Property, plant and equipment, net	$12,600,000 * 8/9 = 11,200,000$
Deferred tax liability, net	$450,000 - 120,000 - 31,500 + 61,500 = 360,000$

5 IMPAIRMENT AND COMPENSATION FOR IMPAIRMENT

Accounting for impairment of property, plant and equipment is governed by IAS 36. However, the Standard refers to scenarios where a reporting entity is compensated by third parties for items of property, plant and equipment that were impaired, lost or given up. For example, receipt of insurance coverage for property, plant or equipment damaged in a fire. Similarly, a company whose facility is located on a planned rail line - the railway company and the company reach an agreement, whereby the facility will be demolished, and the railway company will compensate the company by an amount that will allow it to construct an alternate facility elsewhere.

According to the Standard, compensation from third parties for items of property, plant and equipment that were impaired, lost or given up, is included in profit or loss when the compensation becomes receivable. In this regard, it is noted that, under IAS 37, entities may not recognise a contingent asset unless it is virtually certain. Although the Standard does not state this specifically, it seems the recognition date of compensation as aforesaid, should be consistent with this principle.

The recognition date of losses resulting from impairment of property, plant and equipment; loss of property, plant and equipment; or giving up property, plant and equipment, is as follows:

- a. Impairment (as a result of fire, for example) is recognised in accordance with IAS 36.
- b. If an item is lost or given up, the relevant date is determined according to the provisions set forth in the standard for derecognition of property, plant and equipment.

Thus, differences may arise between the period in which a loss is recognised in profit or loss, and the period in which compensation is recognised in profit or loss. For example, assume that an item of property, plant and equipment is damaged in a fire, and as of the financial statement date, there is no certainty that these damages will be covered by the entity's insurance, as the source of the fire is uncertain. While impairment losses on that item will be recognised, it seems that the entity cannot recognise the insurance compensation as of the financial statement date, even though the insurance company has launched its investigation.

Furthermore, if the reporting entity uses the compensation to restore the damaged item, or to acquire or construct property, plant and equipment as replacements, these activities are accounted for in accordance with the Standard, regardless of the fact that they were carried out using funds received as compensation. To demonstrate this point, assume that, in the above railway example, the company received CU 100 million in compensation, comprised of CU 80 million in compensation for demolishing the building (an amount that is estimated as sufficient for the new facility's construction), and CU 20 million in compensation for lost income during construction of the new facility. Assume that the actual cost of the new facility totaled CU 95 million. There is no doubt that the company will recognise gains on the CU 100 million received as compensation, and that the new facility will be recognised at cost (CU 95 million) regardless of the composition of the above compensation. It is noted, that the result would be the same even if construction was not carried out using funds from compensation.

Example

A company has property, plant and equipment which includes land and a building whose carrying amount as of January 1, 2007, is CU 10 million. In June 2007, the building was damaged in a fire. The building's carrying amount as of that date is CU 3 million. The company filed an insurance claim, and as of the financial statement date (December 31, 2007), the company and the insurance company did not reach an agreement regarding the compensation. In April 2008, the insurance company agreed to pay CU 5 million in compensation. Immediately upon receiving these funds, the company began rebuilding the structure at a cost of CU 4 million. The company applies the cost model.

In this case, the company will account for these operations as follows:

- a. In 2007, it will recognise an impairment loss of CU 3 million (the land was not damaged). In light of the disagreement with the insurance company concerning eligibility for compensation, the company will not recognise income for compensation from the insurance company in 2007.
- b. In 2008, the company will recognise the CU 5 million received in compensation as other income (under the same line previously used to recognise the impairment). Furthermore, the CU 4 million in construction costs are recognised as an asset (property, plant and equipment).

6 CESSATION OF SUBSEQUENT MEASUREMENT AND DERECOGNITION

6.1 Cessation of application of subsequent measurement principles

The Standard provides for derecognition of property, plant and equipment - see Section 6.2 below. It is emphasised, that two additional scenarios are possible where an entity should cease applying the subsequent measurement principles set forth in the Standard prior to the derecognition date prescribed by the Standard. These two scenarios are as follows:

a. Classification as held for sale

Items of property, plant and equipment classified as held for sale under IFRS 5 - *Non-Current Assets Held for Sale and Discontinued Operations*. IFRS 5 prescribes various measurement principles. Thus, for example, entities should not recognise depreciation charges for property, plant and equipment when it becomes classified as held for sale. See Volume A, Chapter 7 - Non-Current Assets Held for Sale and Discontinued Operations, Section 2.2.

b. Classification as held for sale of assets held for rental

An entity that, in the ordinary course of its business, routinely sells items of property, plant and equipment, held for rental to others, is required to classify these items as inventories when they cease to be rented and become held for sale. Consequently, from the date that such assets become held for sale, they are transferred from property, plant and equipment, to inventories. Furthermore, from that moment onwards, such items are accounted for under IAS 2 - *Inventories*. The car leasing industry is a common example for these cases, where companies buy vehicles and rent them under an operating lease, while subsequently they hold those vehicles for sale in the ordinary course of their business.

In addition, in accordance with IAS 16 and IAS 7 - *Statement of Cash Flows*, proceeds from the sale of such assets are recognised as revenue in profit or loss, and classified under operating activities in the statement of cash flows. Furthermore, cash payments to manufacture or acquire such assets are also classified as operating activities. For further discussion, see Volume A, Chapter 6 - Statement of Cash Flows, Section 7.9.

6.2 Derecognition of property, plant and equipment

According to the Standard, the carrying amount of an item of property, plant and equipment is derecognised and a gain or loss recognised based on the difference between the net disposal proceeds, if any, and the carrying amount of the item, under one of the following two circumstances:

- a. On disposal; or
- b. When no future economic benefits are expected from its use or disposal.

The disposal of an item of property, plant and equipment may occur in a variety of ways. For example, it may be effected by a sale (or entering into a finance lease), by donation, or by an entity giving up the asset. In determining the date of disposal of an item, an entity applies the relevant accounting criteria:

- a. When disposal is effected by a sale - then an entity applies IAS 18 - *Revenue*. It is noted that, although IAS 18 deals with the sale of goods, the Standard states that its provisions shall govern the sale of property, plant and equipment as well.
- b. When disposal is effected by a finance lease - then an entity applies IAS 17. The only exception to the principle for recognising gains on disposal, is in certain cases of sale and leaseback, where gains are recognised differently in accordance with IAS 17. Furthermore, when exchanging an asset, an entity applies the principles set forth in the Standard (see above).

Below are a number of key points in determining gains (and losses):

a. Disposal costs

In determining the net proceeds from disposal, entities include all direct and incremental costs incurred through the disposal. For example: legal costs, brokerage costs, and removal costs.

b. Provisions arising from disposal

In some cases, an entity may incur provisions as a result of a sale agreement upon derecognising an asset. For example, provisions for repairs or claims against the asset in connection with the period in which it was under the seller's ownership. In this case, it seems that an entity should offset these expenses against the net proceeds from disposal.

c. Sale on credit

In determining net proceeds from disposal, an entity recognises the consideration received at fair value. If payment for the item is deferred, the consideration received is recognised at the cash price equivalent, and the difference between the nominal amount of the consideration and the cash price equivalent is recognised as interest revenue in accordance with IAS 18. It seems that, in general, no significant differences should arise between this method of measurement and that set forth in IAS 39 upon initial recognition in the accounts receivable heading (which require measurement at present value using the market interest rate). However, if a difference is found, it seems that entities should apply IAS 16, as it is more specific.

d. Property, plant and equipment measured using the revaluation method

In any case, a revaluation surplus is not transferred to profit or loss, but can be transferred directly to retained earnings (see above). This raises the question, of whether entities should revalue items of property, plant and equipment at the disposal date. In other words, as the amount received for an asset represents its fair value, should entities recognise the difference between this amount and the asset's carrying amount as a gain or loss, or recognise it in revaluation surplus. It seems that to the extent that a company's revaluations were performed with sufficient frequency, no revaluation is necessary upon disposal, and therefore the difference is recognised as a gain or loss. Furthermore, material gains or losses upon disposal may indicate that an entity needs to revalue its

other assets in that class of property, plant and equipment, so as to assure that their carrying amount is not materially different from their fair value.

An item of property, plant and equipment may be part of a larger cash-generating unit under IAS 36, such as in the case of a machine operating in a single production line comprising additional machines. If a certain machine is retired, its carrying amount is derecognised regardless of the impairment provisions of IAS 36 (in this case, it is certainly possible that the value of the cash-generating unit as a whole was not impaired).

When part of an asset is disposed of or retired, an entity derecognises the carrying amount of that part, even if it was not depreciated separately under the components principle (see above). The Standard notes that if it is not practical to determine the carrying amount of the replaced part, an entity may use the cost of the replacement as an indication of what the cost of the replaced part was at the time it was acquired or constructed. For example, when a company replaces a certain part in a machine, which was not depreciated separately. In this case, it derecognises the old part and includes the cost of the new part as subsequent cost.

For example, a company acquires a machine at a cost of CU 500,000. The machine includes two identical pumps whose useful life is the same as that of the machine - 10 years (assume straight-line depreciation, with no residual value). After five years, one of the pumps breaks down, and is replaced with a new pump, acquired at a cost of CU 150,000. Assume the company has no indication of the cost of the original pump, as it was not required to identify it and depreciate it separately. In this case, the Standard permits the company to use the cost of the new pump as an indicator, and so the company derecognises part of the carrying amount of the machine (and recognises a loss) equal to the assessed depreciated value of the new pump, which is CU 75,000 (= 5/10 * 150). The company will also include the cost of the new pump in the cost of the asset.

As regards presentation, the Standard clarifies that gains resulting from derecognition of property, plant and equipment are not classified as revenue in the income statement. This decision is consistent with current practice for presenting gains on disposal of property, plant and equipment. The exception to this rule is an entity which, in the ordinary course of its business, sells items of property, plant and equipment held for rental to others (see Section 6.1 above).

Although this does not constitute derecognition of property, plant and equipment, it is noted the similarity between accounting for property, plant and equipment according to the Standard, and accounting for property, plant and equipment according to IFRS 5. Thus, when the carrying amount of an item of property, plant and equipment is recovered by sale and not by use, the asset is classified as held for sale (assuming it meets the criteria set out in IFRS 5), and accounted for accordingly (mainly measured at the lower of its carrying amount and its fair value less costs to sell and cessation of depreciation charges).

7 DISCLOSURE REQUIREMENTS

7.1 7.1 General

The Standard provides clear and detailed disclosure requirements. Most of these requirements are mandatory, while others are optional. The reason underlying the Standard's disclosure requirements is that an entity's choice of depreciation method and its estimation of the useful life of assets are both matters of judgment. Therefore, in order for users of financial statements to be able to review the policies selected by management, and make comparisons with other entities, entities should disclose, inter alia, information concerning adopted methods, useful life estimates or depreciation rates, depreciation charges, and accumulated depreciation.

It is noted that if an entity changes an estimate of residual value, useful life, depreciation method, and/or estimated restoration and dismantling costs, it must disclose the nature and effect of such a change in an accounting estimate in accordance with IAS 8.

7.2 Disclosure by classes

The financial statements shall disclose, for each class of property, plant and equipment, the following:

- a. The measurement bases used for determining the gross carrying amount.
- b. The depreciation methods used.
- c. The useful lives or depreciation rates used.
- d. The gross carrying amount and the accumulated depreciation (aggregated with accumulated impairment losses) at the beginning and end of the period.
- e. A reconciliation of the carrying amount at the beginning and end of the period, showing the following details: additions; assets classified as held for sale or included in a disposal group classified as held for sale in accordance with IFRS 5 and other disposals; acquisitions through business combinations; increases or decreases resulting from revaluations; impairment losses recognised in accordance with IAS 36; impairment losses reversed in profit or loss in accordance with IAS 36; depreciation; net exchange differences arising on the translation of the financial statements of a foreign operation from the functional currency into a different presentation currency, including the translation of foreign operations into the presentation currency of the reporting entity; other changes.

7.3 Disclosure for property, plant and equipment stated at revalued amounts

If items of property, plant and equipment are stated at revalued amounts, the following shall be disclosed:

- 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 value.
- 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 recognised 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.

7.4 Other disclosures

The financial statements shall also disclose the following:

- a. The existence and amounts of restrictions on title, and property, plant and equipment pledged as security for liabilities.
- b. The amount of expenditures recognised in the carrying amount of an item of property, plant and equipment in the course of its construction.
- c. The amount of contractual commitments for the acquisition of property, plant and equipment.
- d. If it is not disclosed separately in the statement of comprehensive income, the amount of compensation from third parties for items of property, plant and equipment that were impaired, lost, or given up that is included in profit or loss.

7.5 Recommended voluntary disclosure

The Standard recommends, but does not require, that entities disclose the following information, in light of its relevance to users of financial statements:

- a. The carrying amount of temporarily idle property, plant and equipment.
- b. The gross carrying amount of any fully depreciated property, plant and equipment that is still in use.
- c. The carrying amount of property, plant and equipment retired from active use and not classified as held for sale in accordance with IFRS 5.
- d. When the cost model is used, the fair value of property, plant and equipment when this is materially different from the carrying amount.

8 APPENDIX - EXAMPLE FOR MULTI-PERIOD APPLICATION OF THE REVALUATION MODEL

8.1 Data

On January 1, 2006, a company acquired an item of property, plant and equipment at a cost of CU 10 million. The item has a useful life of 10 years and is depreciated using the straight-line method (zero residual value), including for tax purposes. It is assumed that the criteria for recognising deferred tax assets under IAS 12 are met. The asset's fair value at the revaluation dates is as follows:

31.12.2007	CU 10 million
31.12.2009	CU 4 million
31.12.2011	CU 5 million

At the revaluation dates, no change was found in the asset's useful life or residual value. The tax rate is 30%. The company adopts the revaluation model for the item, according to each of the following assumptions:

Assumption A - A proportionate amount of surplus is transferred to retained earnings.

Assumption B - No transfer of proportionate amount of surplus to retained earnings.

8.2 Assumption A - Transfer of proportionate amount from surplus to retained earnings

8.2.1 Accounting for 2006 (no revaluation)

Ledger entry for depreciation charges on December 31, 2006 (in CU thousands):

Dr Depreciation charges	$10,000 * 1/10 = 1,000$	
Cr Property, plant and equipment, net		1,000

8.2.2 Accounting for 2007 (revaluation)

Ledger entry for depreciation charges on December 31, 2007 (prior to revaluation) (in CU thousands):

Dr Depreciation charges	1,000	
Cr Property, plant and equipment, net		1,000

Accounting for revaluation on December 31, 2007 (in CU thousands):

Carrying amount

Before revaluation	$10,000 - 1,000 - 1,000 = 8,000$	
Revaluation (balancing figure)		<u>2,000</u>
After revaluation		10,000

Ledger entries for revaluation (in CU thousands):

Dr Property, plant and equipment, net	2,000	
Cr Revaluation surplus	2,000	
Dr Revaluation surplus	$2,000 * 30\% = 600$	
Cr Deferred tax liability	600	

Relevant statement of financial position balances as of December 31, 2007 (after revaluation) (in CU thousands):

Property, plant and equipment, net	10,000
Revaluation surplus	$2,000 - 600 = (1,400)$
Deferred tax liability	(600)

8.2.3 Accounting for 2008 (no revaluation)

Ledger entry for December 31, 2008 (in CU thousands):

Dr Depreciation charges	$10,000 * 1/8 = 1,250$	
Cr Property, plant and equipment, net		1,250
Dr Deferred tax liability	$30\% * 1/8 * 2,000 = 75$	
Cr Tax charge	75	
Dr Revaluation surplus	$1/8 * 1,400 = 175$	
Cr Retained earnings		175

The relevant statement of financial position balances as of December 31, 2008 (in CU):

Property, plant and equipment, net	$10,000 - 1,250 = 8,750$
Revaluation surplus	$7/8 * 2,000 - 7/8 * 600 = (1,225)$
Deferred tax liability	$600 - 75 = (525)$

8.2.4 Accounting for 2009 (revaluation)

Ledger entries for December 30, 2009 (prior to revaluation) (in CU thousands):

Dr Depreciation charges	1,250	
Cr Property, plant and equipment, net		1,250

Dr Deferred tax liability	$30\% * 1/8 * 2,000 = 75$	
Cr Tax charge	75	

Dr Revaluation surplus	$1/8 * 1,400 = 175$	
Cr Retained earnings		175

Relevant statement of financial position balances as of December 30, 2009 (before revaluation) (in CU thousands):

Property, plant and equipment, net	$8,750 - 1,250 = 7,500$
Revaluation surplus	$6/8 * 2,000 - 6/8 * 600 = (1,050)$
Deferred tax liability	$525 - 75 = (450)$

Accounting for revaluation on December 31, 2009 (in CU thousands):

Carrying amount

Before revaluation	7,500
Revaluation (balancing figure)	<u>(3,500)</u>
After revaluation	4,000

Ledger entries for revaluation on December 31, 2009 (in CU thousands):

Dr Revaluation surplus	$2,000 * 6/8 = 1,500$	
Dr Impairment loss	2,000	
Cr Property, plant and equipment		3,500

Dr Deferred tax asset	$30\% * (6/10 * 10,000 - 4,000) = 600$	
Dr Deferred tax liability	450	
Cr Revaluation surplus	$600 * 6/8 = 450$	
Cr Tax income	600	

Relevant statement of financial position balances as of December 31, 2009 (after revaluation) (in CU thousands):

Property, plant and equipment, net	4,000
Revaluation surplus	0
Deferred tax asset	600

8.2.5 Accounting for 2010 (no revaluation)

Ledger entry for December 31, 2010 (in CU thousands):

Dr Depreciation charges	$1/6 * 4,000 = 667$	
Cr Property, plant and equipment, net		667

Dr Tax charges	$1/6 * 600 = 100$	
Cr Deferred tax asset		100

The relevant statement of financial position balances as of December 31, 2010 (in CU):

Property, plant and equipment, net	$4,000 - 667 = 3,333$
Revaluation surplus	0
Deferred tax asset	$600 - 100 = 500$

8.2.6 Accounting for 2011 (revaluation)

Ledger entries for December 30, 2011 (prior to revaluation) (in CU thousands):

Dr Depreciation charges	$1/6 * 4,000 = 667$
Cr Property, plant and equipment, net	667

Dr Tax charges	$1/6 * 600 = 100$
Cr Deferred tax asset	100

Relevant statement of financial position balances as of December 30, 2011 (before revaluation) (in CU thousands):

Property, plant and equipment, net	$3,333 - 667 = 2,667$
Revaluation surplus	0
Deferred tax asset	$500 - 100 = 400$

Accounting for revaluation on December 31, 2011 (in CU thousands):

Carrying amount

Before revaluation	2,667
Revaluation (balancing figure)	<u>2,333</u>
After revaluation	5,000

Ledger entries for revaluation (in CU thousands):

Dr Property, plant and equipment	2,333
Cr Gains on reversal of impairment loss	$2,000 * 4/6 = 1,333$
Cr Revaluation surplus	1,000
Dr Tax charges	400
Dr Revaluation surplus	300
Cr Deferred tax asset	400
Cr Deferred tax liability	$30% * (5,000 - 4/10 * 10,000) = 300$

Relevant statement of financial position balances as of December 31, 2011 (after revaluation) (in CU thousands):

Property, plant and equipment, net	5,000
Revaluation surplus	$1,000 - 300 = (700)$
Deferred tax liability	(300)

8.3 Assumption B - No transfer of surplus to retained earnings

8.3.1 Accounting for 2007 (revaluation)

Accounting for revaluation on December 31, 2007 (in CU thousands):

Carrying amount

Before revaluation	8,000
Revaluation (balancing figure)	<u>2,000</u>
After revaluation	10,000

Ledger entries for revaluation (in CU thousands):

Dr Property, plant and equipment	2,000	
Cr Revaluation surplus		2,000
Dr Revaluation surplus	2,000 * 30% = 600	
Cr Deferred tax liability		600

The relevant statement of financial position balances as of December 31, 2007 (in CU):

Property, plant and equipment	10,000
Revaluation surplus	(1,400)
Deferred tax liability	(600)

8.3.2 Accounting for 2008 (no revaluation)

The ledger entry for December 31, 2008 is as follows::

Dr Depreciation charges	10,000 * 1/8 = 1,250	
Cr Property, plant and equipment, net		1,250
Dr Deferred tax liability	30% * 1/8 * 2,000 = 75	
Cr Tax charge		75

The relevant statement of financial position balances as of December 31, 2008 (in CU):

Property, plant and equipment, net	10,000 – 1,250 = 8,750
Revaluation surplus	(1,400)
Deferred tax liability	600 – 75 = (525)

8.3.3 Accounting for 2009 (revaluation)

Ledger entries for December 30, 2009 (prior to revaluation) (in CU thousands):

Dr Depreciation charges	1,250	
Cr Property, plant and equipment, net		1,250
Dr Deferred tax liability	30% * 1/8 * 2,000 = 75	
Cr Tax charge		75

Asset/liability balances as of December 30, 2009 (before revaluation) (in CU thousands):

Property, plant and equipment, net	8,750 – 1,250 = 7,500
Revaluation surplus	(1,400)
Deferred tax liability	525 – 75 = (450)

Accounting for revaluation on December 31, 2009 (in CU thousands):

Carrying amount	
Before revaluation	7,500
Revaluation (balancing figure)	<u>(3,500)</u>
After revaluation	4,000

Ledger entry for revaluation:

Dr Revaluation surplus	2,000	
Dr Impairment loss	1,500	
Cr Property, plant and equipment		3,500
Dr Deferred tax asset		$30\% * (6/10 * 10,000 - 4,000) = 600$
Dr Deferred tax liability	450	
Cr Revaluation surplus		600
Cr Tax income		450

The above demonstrates that the impairment loss incurred in this case amounts to CU 1.5 million, as compared to CU 2 million under Assumption A (see Section 8.2.4 above). The difference between the two amounts results from the fact that the revaluation surplus balance, against which the company can offset negative revaluation under Assumption B amounts to CU 2 million, and is naturally greater than the revaluation surplus balance under Assumption A, which was partially transferred to retained earnings and amounts only to CU 1.5 million.

Relevant statement of financial position balances as of December 31, 2009 (after revaluation) (in CU thousands):

Property, plant and equipment	4,000
Revaluation surplus	0
Deferred tax asset	600

8.3.4 Accounting for 2010 (no revaluation)

Ledger entry for December 31, 2010 (in CU thousands):

Dr Depreciation charges		$1/6 * 4,000 = 667$
Cr Property, plant and equipment, net		667
Dr Tax charges	$1/6 * 600 = 100$	
Cr Deferred tax asset		100

Relevant statement of financial position balances as of December 31, 2010:

Property, plant and equipment, net	$4,000 - 667 = 3,333$
Revaluation surplus	0
Deferred tax asset	$600 - 100 = 500$

8.3.5 Accounting for 2011 (revaluation)

Ledger entries for December 30, 2011 (prior to revaluation) (in CU thousands):

Dr Depreciation charges		$1/6 * 4,000 = 667$
Cr Property, plant and equipment, net		667
Dr Tax charges	$1/6 * 600 = 100$	
Cr Deferred tax asset		100

Relevant statement of financial position balances as of December 30, 2011 (before revaluation) (in CU thousands):

Property, plant and equipment, net	$3,333 - 667 = 2,667$
Revaluation surplus	0
Deferred tax asset	$500 - 100 = 400$

Accounting for revaluation on December 31, 2011 (in CU thousands):

Carrying amount

Before revaluation	2,667
Revaluation (balancing figure)	<u>2,333</u>
After revaluation	5,000

Ledger entries for revaluation (in CU thousands):

Dr Property, plant and equipment	2,333	
Cr Reversal of impairment loss	$4/6 * 1,500 = 1,000$	
Cr Revaluation surplus	1,333	
Dr Tax charges	300	
Dr Revaluation surplus	$30% * 1,333 = 400$	
Cr Deferred tax asset	400	
Cr Deferred tax liability	$(5,000 - 4/10 * 10,000) * 30% = 300$	

The relevant statement of financial position balances as of December 31, 2011 (after revaluation):

Property, plant and equipment	5,000
Revaluation surplus	$1,333 - 400 = 933$
Deferred tax liability	300

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