# Chapter 10

# Impairment of Assets

Reference: IAS 36

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## 1. Introduction

The standard on impairment of assets applies to all assets with the exception of the following:
- inventories (IAS 2)
- construction contract assets (IAS 11)
- deferred tax assets (IAS 12)
- employee benefit assets (IAS 19)
- financial assets (IAS 39)
- investment properties measured at fair value (IAS 40)
- certain biological assets (IAS 41)
- insurance contracts (IFRS 4)
- non-current assets classified as held for sale (IFRS 5).

In the case of the abovementioned assets, the treatment of possible impairments is covered by the standard specifically designed to cater for that type of asset.

The term 'asset' used in this chapter refers equally to 'cash-generating units' (a group of assets).

The recoverable amount is simply a calculation of its estimated future economic benefits. An asset is therefore impaired in the event that its recoverable amount is less than its carrying amount. This is in line with the Framework since an asset should never be measured at an amount that exceeds the value of its reliably measurable future economic benefits.

This standard requires that an entity perform an 'periodic test of impairment' (at the end of the reporting period) to assess whether an asset may be impaired. Only if this review suggests that an asset may be impaired should the recoverable amount be estimated.

The recoverable amount is the *higher* of the future economic benefits expected
- through the use of the asset or
- through the sale thereof.

The test of impairment and the need to formally estimate the recoverable amount (when the test of impairment suggests a possible impairment), are, although time-consuming, helpful to businesses in that it forces them to assess the most profitable future for the asset concerned (basically you can either continue to use your asset or dispose of it).

If the asset has a carrying amount greater than its recoverable amount, the asset is classified as impaired and must be written-down to its recoverable amount. It is possible, however, that the circumstances that led to a write-down may reverse in the future, in which case the impairment loss may be reversed with the result that the carrying amount is subsequently increased.

## 2. Definitions (per IAS 36.6)

**The recoverable amount** (of an asset or a cash-generating unit) is the higher of its fair value less costs to sell and value in use.

**Value in use** is the present value of the future cash flows expected to be derived from an asset or cash-generating unit.

**Fair value less costs to sell** is the amount obtainable from the sale of an asset or cash-generating unit in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal.

**Costs of disposal** are incremental costs directly attributable to the disposal of an asset or cash-generating unit, excluding finance costs and income tax expense.

An **impairment loss** is the amount by which the carrying amount of an asset or a cash-generating unit exceeds its recoverable amount.

**Carrying amount** is the amount at which an asset is recognised after deducting any accumulated depreciation (amortisation) and accumulated impairment losses thereon.

**Depreciation (Amortisation)** is the systematic allocation of the depreciable amount of an asset over its useful life. Note: In the case of an intangible asset, the term 'amortisation' is generally used instead of 'depreciation'. The two terms have the same meaning.

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

**Useful life** is either:
(a) the period of time over which an asset is expected to be used by the entity, or
(b) the number of production or similar units expected to be obtained from the asset by the entity.

A **cash-generating unit** is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

**Corporate assets** are assets other than goodwill that contribute to the future cash flows of both the cash-generating unit under review and other cash-generating units.

An **active market** is a market in which all the following conditions exist:
a) the items traded within the market are homogenous;
b) willing buyers and sellers can normally be found at any time; and
c) prices are available to the public.

## 3. Test of impairment (IAS 36.7–17)

### 3.1 Overview (IAS 36.7–17)

A 'test of impairment' must be performed at the end of the reporting period in order to assess whether an impairment *may* have occurred.

The test of impairment should take into consideration the following factors:
- external information;
- internal information;
- materiality; and
- reassessment of the variables of depreciation.

The recoverable amount needs only to be calculated if:
- the test of impairment suggests that the asset may be impaired;
- the asset is an intangible asset with an indefinite useful life;
- the asset is an intangible asset not yet available for use; or
- the asset is an intangible asset that is goodwill.

An asset is impaired if its carrying amount is greater than its recoverable amount.

### 3.2 External information (IAS 36.12–14)

There are countless examples of external information that could indicate that an asset may be impaired, including:
- a significant decrease in the market value of the asset relative to normal usage over time;
- a significant adverse change in the market within which the asset is used (e.g. where a new competitor may have entered the market and undercut the selling price of the goods that the machine produces); and
- the net asset value per share is greater than the market value per share.

### 3.3 Internal information (IAS 36.12–14)

As with external information, there are countless examples of internal information that could indicate that an asset may be impaired, including:
- evidence of physical damage or obsolescence;
- knowledge of significant changes adversely affecting the use of the asset, including planned changes. Examples include: a plan to dispose of the asset at a date earlier than previously expected, a plan that will result in the asset becoming idle, the intention to cease manufacturing a product line or close a factory that uses the asset concerned and the reassessment of the useful life of an asset from 'indefinite' to 'finite';
- knowledge of future unexpected maintenance costs that will reduce the value in use; and
- unusually low budgeted cash flows and profits/ losses relating to the use of the asset.

### 3.4 Materiality (IAS 36.15–16)

Where a test of impairment suggests that an impairment may have occurred, a formal assessment of the recoverable amount should be done but only if the impairment is expected to be material. The recoverable amount of certain *intangible* assets should, however, always be done irrespective of materiality, namely:
- an intangible asset with an indefinite useful life;
- an intangible asset not yet available for use; and
- goodwill.

### 3.5 Reassessment of the variables of depreciation (IAS 36.17)

In the event that any one of the indicators (internal or external) give evidence that the asset may be materially impaired, then the:
- estimated remaining useful life;
- residual value (used in calculating the depreciable amount); and
- depreciation (or amortisation) method

should be re-evaluated and adjusted (even if no impairment loss is ultimately recognised).

Any change in the above three variables must be adjusted in accordance with the statement governing that type of asset. For example, a change that affects property, plant and equipment will be made as a change in accounting estimate (IAS 8), since this is the method suggested by the standard governing property, plant and equipment (IAS 16).

**Example 1:** test of impairment

Lilguy Limited owns a plant, its largest non-current asset, that originally cost C700 000 on 1/1/20X1 and which has a carrying amount of C350 000 at 31/12/20X5. Plant is depreciated straight-line to a nil residual value over a 10 year estimated useful life.

Lilguy Limited performed a test of impairment (at 31/12/20X5) to assess whether this asset might be impaired. Initial information collected for the purpose of review includes:
- the management accountant budgeted that net cash inflows will be slightly reduced over the next year of usage, due to a drop in the market demand for the plant's output. His opinion is that there will be no market for the plant's output after 20X6.

- The present value of the future net cash inflows from the plant is C170 000.
- market price per share in Lilguy Limited: C2,20 (there are 100 000 issued shares).

A summary of the totals in the statement of financial position is as follows:
- Assets: 400 000
- Liabilities: 100 000
- Equity: 300 000

***Required:***
Discuss whether the recoverable amount must be calculated at 31 December 20X5 (year-end).

**Solution to example 1:** test of impairment

- The future cash flows will be reduced over the next year which suggests a possible impairment, but the fact that the reduction is expected to be slight suggests that the impairment would be immaterial and therefore this fact alone does not require a recoverable amount to be calculated.

- The present value of the future cash inflows from the use of the plant are C170 000. This appears to be significantly less than the carrying amount of the plant of C350 000. This difference seems to be material and therefore suggests that there may be a possible impairment.

- The net asset value of the company is presented in the statement of financial position as C300 000 (Assets: 400 000 – Liabilities: 100 000) and this works out to a net asset value of C3 per share (300 000 / 100 000 shares). The fact that the market perceives the value of the company to be only C2,20 per share or C220 000 in total suggests that the assets in the statement of financial position might be over-valued. This difference in value seems to be material and thus suggests that there may be a possible impairment.

- There seems to be overwhelming evidence that suggests that there may be a possible impairment and if, as in this case, the possible impairment seems likely to be material, the recoverable amount would need to be calculated. Before doing this though, one must first reassess the variables of depreciation, and adjust the carrying amount for any changes in estimate.

- Since the management accountant believes that there is only 1 year of future economic benefits left in the plant suggests that the 10 years over which the plant is being depreciated is too long. By revising the useful life to a shorter period, the carrying amount of the plant will drop and may possibly drop sufficiently such that there is no need to calculate the recoverable amount.

| | |
|---|---|
| Total useful life – original estimate | 10 years |
| Used up | 5 years |
| Remaining useful life – original estimate | 5 years |
| Remaining useful life according to latest budget | 1 years |
| Reduction in remaining useful life (from 5 years to 5 – 1 = 4 years) | 4 years |

This change in useful life must be accounted for as a change in accounting estimate (IAS 8). Assuming one uses the reallocation approach to calculate the effect of the change in estimate, the change to the carrying amount is as follows:

| | | **10 year useful life** | **6 year useful life** | **Drop in carrying amount** |
|---|---|---|---|---|
| Cost:1/1/20X1 | *Given* | 700,000 | | |
| Accum deprec: 31/12/20X4 | *700,000 / 10 x 4* | (280,000) | | |
| Carrying amount: 1/1/20X5 | | 420,000 | 420,000 | |
| *Remaining useful life* | *10 – 4; 1 + 1* | *6* | *2* | |
| Depreciation: 20X5 | *420,000 / 6; 420,000 / (1 + 1)* | (70 000) | (210,000) | (140,000) |
| Carrying amount: 31/12/20X5 | | 350,000 | 210,000 | (140,000) |

The new carrying amount will adjust the net asset value downwards and the revised net asset value must be compared again with the market value:

| | | |
|---|---|---|
| Assets per the statement of financial position before the change in useful life | *Given* | 400,000 |
| Less reduction in carrying amount of plant | | (140,000) |
| Assets per the statement of financial position after the change in useful life | | 260,000 |
| Less liabilities | *Given* | 100,000 |
| Net asset value | | 160,000 |

The revised net asset value is now less than the company's market value of 220,000 (2.2 x 100,000) and therefore the market value no longer suggests a possible impairment.

- The new reduced carrying amount is now also more in line with the present value of the future net cash inflows per the management accountant's budget

| | |
|---|---|
| Carrying amount - revised | 160,000 |
| Present value of budgeted future cash inflows | 170,000 |

Since the carrying amount is now less than the present value of the expected future cash inflows, the budgeted future cash flows no longer suggest an impairment.

Conclusion: although the review initially suggested that there were possible impairments and that these impairments were possibly material, no recoverable amount needed to be calculated since the revised depreciation resulted in the carrying amount being reduced.

| | Debit | Credit |
|---|---|---|
| Depreciation - plant | 140,000 | |
| Plant: accumulated depreciation | | 140,000 |
| *Extra depreciation processed due to a reduction in useful life* | | |

**Example 2:** test of impairment

Lilguy Limited owns a plant, its largest non-current asset, that originally cost C700,000 on 1/1/20X1 and which has a carrying amount of C350,000 at 31/12/20X5. Plant is depreciated straight-line to a nil residual value over a 10 year useful life.

Lilguy Limited performed a test of impairment (at 31/12/20X5) to assess whether this asset might be impaired. Initial information collected for the purpose of review includes:
- the management accountant budgeted that net cash inflows will be slightly reduced over the next 3 years of usage, due to a drop in the market demand for the plant's output. The management accountant's opinion is that there will be no market for the plant's output after 3 years.
- the estimated present value of the future net cash inflows from the plant is C250, 000.
- market price per share in Lilguy Limited: C3,50 (there are 100,000 issued shares).

A summary of the totals in the statement of financial position is as follows:
- Assets: 400,000
- Liabilities: 100,000
- Equity: 300,000

***Required:***
Discuss whether the recoverable amount must be calculated

**Solution to example 2:** test of impairment

- The fact that the management accountant believes that there is only 3 years of usage left in the plant suggests that the 10 years over which the plant is being depreciated is too long. By revising the useful life to a shorter period, the carrying amount of the plant will be reduced and may be reduced sufficiently such that there is no need to calculate the recoverable amount.

| | |
|---|---|
| Total useful life – original estimate | 10 years |
| Used up | 5 years |
| Remaining useful life – original estimate | 5 years |
| Remaining useful life according to latest budget | 3 years |
| Reduction in remaining useful life (from 5 years to 5 – 3 = 2 years) | 2 years |

This change in useful life must be accounted for as a change in accounting estimate (IAS 8). Assuming that one uses the reallocation approach to account for the change in estimate, the change to the carrying amount is as follows:

| | | **10 year useful life** | **8 year useful life** | **Drop in carrying amount** |
|---|---|---|---|---|
| Cost:1/1/20X1 | *Given* | 700,000 | | |
| Accum deprec: 31/12/20X4 | *700,000 / 10 x 4* | (280,000) | | |
| Carrying amount: 1/1/20X5 | | 420,000 | 420,000 | |
| *Remaining useful life* | *10 – 4; 1 + 3* | *6* | *4* | |
| Depreciation: 20X5 | *420,000 / 6; 420,000 / (1 + 1)* | (70,000) | (105,000) | (35,000) |
| Carrying amount: 31/12/20X5 | | 350,000 | 315,000 | (35,000) |

- The new carrying amount will adjust the net asset value downwards and the revised net asset value must be compared again with the market value:

| | |
|---|---|
| Assets per the statement of financial position before the change in useful life | 400,000 |
| Less reduction in carrying amount of plant | (35,000) |
| Assets per the statement of financial position after the change in useful life | 365,000 |
| Less liabilities | 100,000 |
| Net asset value | 265,000 |

The revised net asset value is now less than the company's market value of 350,000 (3.5 x 100,000) and therefore the market value no longer suggests a possible impairment.

- The new carrying amount will have brought the carrying amount downwards to be more in line with the present value of the future net cash inflows per the management accountant's budget

| | |
|---|---|
| Carrying amount - revised | 315,000 |
| Present value of budgeted future cash inflows | 250,000 |

Although the carrying amount is reduced, it is still materially greater than the present value of the expected future cash inflows, and therefore the budgeted future cash flows still suggest that the asset may be impaired.

- Conclusion: although extra depreciation is to be processed, there is still evidence of a possible material impairment and therefore the recoverable amount will need to be calculated and compared with the revised carrying amount and an impairment journal will probably need to be processed. The journals will be as follows:

| | **Debit** | **Credit** |
|---|---|---|
| Depreciation - plant | 35,000 | |
| Plant: accumulated depreciation | | 35,000 |
| *Extra depreciation processed due to a reduction in useful life* | | |
| Impairment loss - plant | xxx | |
| Plant: accumulated impairment losses | | xxx |
| *Impairment of plant* | | |

## 4. Recoverable amount (IAS 36.18–23)

### 4.1 Overview

The recoverable amount is the greater of the:
- fair value less costs to sell; or
- value in use.

**Example 3: recoverable amount and impairment loss – basic**

A company has an asset with the following details at 31 December 20X3:

| | |
|---|---|
| Fair value less costs to sell | C170 000 |
| Value in use | C152 164 |

***Required:***
A. Calculate the recoverable amount of the asset at 31 December 20X3.
B. Calculate whether or not the asset is impaired if its carrying amount is:
   i. C200 000
   ii. C150 000.

**Solution to example 3A: recoverable amount – basic**

| | C |
|---|---|
| Recoverable amount is the higher of the following: | 170 000 |
| Fair value less costs to sell | 170 000 |
| Value in use | 152 164 |

**Solution to example 3B: impairment loss – basic**

*i. If the carrying amount is C200 000, the asset is impaired:*

| | C |
|---|---|
| Carrying amount | 200 000 |
| Less recoverable amount | 170 000 |
| Impairment (carrying amount exceeded the recoverable amount) | 30 000 |

*ii. If the carrying amount is C150 000, the asset is not impaired:*

| | C |
|---|---|
| Carrying amount | 150 000 |
| Less recoverable amount | 170 000 |
| Impairment (carrying amount less than the recoverable amount) | N/A |

#### *4.1.1 Recoverable amounts: indefinite useful life intangible assets (IAS 36.24)*

The recoverable amount of an intangible asset with an indefinite useful life must be estimated annually (i.e. not only when a test of impairment suggests an impairment). If, however, there is a recent detailed estimate made in a preceding year this may be used instead if:
- this intangible asset is part of a cash-generating unit, where the change in the values of the assets and liabilities within the cash-generating unit are insignificant;
- the most recent detailed estimate of the recoverable amount was substantially greater than the carrying amount at the time; *and*
- events and circumstances subsequent to the calculation of the previous recoverable amount suggest that there is only a *remote* chance that the current recoverable amount would now be less than the carrying amount.

### *4.1.2 Recoverable amounts: all other assets (IAS 36.19–22)*

The recoverable amount should be determined for each individual asset, unless the asset produces cash inflows in tandem with a group of inter-dependent assets instead. In this case, the recoverable amount of this group of assets is calculated rather than as an individual asset. This group of assets is referred to as a cash-generating unit. This will be covered later in this chapter.

Although the recoverable amount is the higher of value in use and fair value less costs to sell, it is not always necessary (or possible) to determine *both* these amounts, for example:
- if it is impossible to determine the fair value less costs to sell, only the value in use is calculated;
- when one of these two amounts is calculated to be greater than the carrying amount, since this will automatically mean that an impairment is not required; and
- when there is no indication that the value in use materially exceeds the fair value less costs to sell, in which case, only the fair value less costs to sell (generally easier to calculate) need be calculated.

Since the value in use calculation is generally quite a difficult calculation, where one has a choice, one would choose to rather calculate the fair value less costs to sell instead.

| *Summary:* | |
|---|---|
| Normal approach | • calculate FV - CTS;<br>• if FV – CTS is less than CA then also: calculate VIU |
| But if you know that the: | |
| • Value in use > fair value less costs to sell | only calculate value in use |
| • Fair value less costs to sell > value in use | only calculate fair value less costs to sell |
| • Value in use = fair value less costs to sell | only calculate fair value less costs to sell (easier!) |
| • If calculation of FV - CTS impossible | calculate value in use |

VIU = value in use FV - CTS = fair value less costs to sell CA = carrying amount

## 4.2 Fair value less costs to sell (IAS 36.25–29)

The fair value less costs to sell is:
- the amount obtainable from the sale of the asset in an arm's length transaction between knowledgeable, willing parties
- *less* the disposal costs.

The fair value less costs to sell may be determined in a number of ways. Obviously, the most definite way would be to use the price quoted in a binding sale agreement, adjusted for the costs of disposal. Frequently, however, there is no binding sale agreement and the fair value less costs to sell has to be estimated. The method of estimation depends on whether or not there is an active market for the asset:
- if there *is* an active market for the asset, use the:
  market price less expected costs of disposal (where the market price is the current bid price or, if this is unavailable, the most recent transaction price assuming no significant change in economic circumstances has occurred since this transaction);
- if there is *no* active market for the asset, use the:
  best information available at the end of the reporting period as to the price that would *probably* be achieved between knowledgeable, willing parties in an arm's length transaction, (where this price is estimated with reference to the sale of similar assets within the same industry) less expected disposal costs.

The disposal costs are the costs *directly* associated with the disposal (other than those already recognised as liabilities) and may include, for example:
- legal costs;
- costs of removal of the asset;
- costs incurred in bringing the asset to a saleable condition;
- transaction taxes.

**Example 4: recoverable amount – fair value less costs to sell**

A company has an asset with the following details at 31 December 20X3:

| | C |
|---|---|
| Expected selling price | 200 000 |
| Costs of delivery to potential customer | 20 000 |
| Legal costs involved in sale agreement | 10 000 |

***Required:***
Calculate the fair value less costs to sell of the asset at 31 Dcember 20X3

**Solution to example 4: recoverable amount – fair value less costs to sell**

| | C |
|---|---|
| Expected selling price | 200 000 |
| Less the costs of disposal (C20 000 + C10 000) | 30 000 |
| Fair value less costs to sell | 170 000 |

### 4.3 Value in use (IAS 36.30 – .57)

Value in use includes the net cash flows relating to its:
- Use and
- Disposal after usage.

The measurement of this amount involves the calculation of a present value as follows:
- estimating all future cash flows relating to the asset; and
- multiplying the cash flows by the appropriate discount rate.

There are five elements involved in this process *(covers A1 in IAS 36 Appendix A):*
a) future cash flows;
b) time value of money;
c) uncertainties regarding the amount and timing of the cash flows;
d) the cost of bearing the uncertainties; and
e) other factors that may affect the pricing of the cash flows (e.g. illiquidity).

The last three elements may be built into *either* the cash flows or taken together with the time value of money to calculate the discount rate – not both.

We will now discuss the calculating of the value in use under the following headings:
- cash flows in general;
- cash flows from the use of the asset;
- cash flows from the disposal of the asset; and
- present valuing the cash flows.

#### *4.3.1 Cash flows in general (IAS 36.33–53)*

General factors to bear in mind when estimating the future cash flows include the:
- assumptions made;
- period of the prediction;
- growth rate used;
- cash flows to be included and excluded; and
- foreign currency future cash flows.

*4.3.1.1 Assumptions: (IAS 36.33(a), 34 and 38)*

The assumptions used when making the projections should be:
- reasonable;
- justifiable (e.g. although a company historically produced 5 000 units per year, it believes that 20 000 units per year is a reasonable projection for the future since it has recently built a large factory that has increased capacity from 5 000 units to 25 000 units);
- management's best estimate (i.e. not the most optimistic or most pessimistic) of the future economic conditions that will exist over the useful life of the asset;
- considerate of past cash flows and past accuracy (or lack thereof) in projecting cash flows; and
- based on external evidence more than internal evidence (since this is more objective) wherever possible.

*4.3.1.2 Period of the prediction: (IAS 36.33(b) and 35)*

The projected cash flows should:
- be based on the most recent budgets and forecasts that have been approved by management (therefore budgets produced and approved after year-end would be favoured over budgets produced and approved before year-end); and should
- not cover a period of more than five years unless this can be justified (because budgets covering longer periods become more inaccurate).

Projected cash flows should ideally not extend beyond five years since the projections usually become increasingly unreliable. Projections may, however, extend beyond five years if:
- management is confident that these projections are reliable; and
- it can demonstrate its ability, based on past experience, to forecast cash flows accurately over that longer period.

*4.3.1.3 Growth rate: (IAS 36.33(c); 36 and 37)*

If the projected cash flows cover a period that exceeds the period covered by the most recent, approved budgets and forecasts (or indeed beyond the normal five year limit), then the projected cash flows should be estimated by:

- extrapolating the approved budgets and forecasts;
- using either a steady or a declining growth rate (i.e. this would be more prudent than using an increasing growth rate), unless an increasing growth rate is justifiable based, for example, on objective information regarding the future of the product or industry; and
- where this growth rate should not exceed the long-term average growth rate of the products, industries, market or countries in which the entity operates, unless this can be justified (prudence once again). For example, one should not use a future growth rate of 15% in the projections based on a current year's growth rate of 15%, if during the last ten years the entity experienced an average growth rate of only 10%. It is also difficult to justify a growth rate that exceeds the long-term average growth rate since this would indicate extremely favourable conditions and of course, as soon as there are favourable conditions, competition may increase which will possibly decrease the growth rate in future. The effects of future unknown competitor/s are obviously impossible to estimate.

*4.3.1.4 General inflation: (IAS 36.40)*

If the discount rate used reflects the effect of general inflation, then the projected cash flows should be the 'nominal' cash flows (i.e. expressed at current values that are not increased for the effects of inflation).

If the discount rate used does not reflect the effects of general inflation, then the projected cash flows should be the 'real' cash flows (including future specific price increases or decreases).

*4.3.1.5 Relevant cash flows (IAS 36.39)*

The cash flows that should be included are both inflows and outflows (where the outflows are those necessary to create the inflows) relating to:
- the use of the asset; and
- the eventual disposal of the asset.

### *4.3.2 Cash flows from the use of the asset (IAS 36. 39–51)*

*4.3.2.1 Cash flows to be included: (IAS 36.39(a) and (b); 41 and 42)*

*Cash inflows* include:
- the inflows from the continuing use of the asset; and
- represent the economic benefits resulting from that asset alone: it is often very difficult to estimate the expected cash inflows from one particular asset in which case it may become necessary to evaluate the cash inflows and outflows of a group of assets (cash-generating unit) rather than the individual asset.

*Cash outflows* include all costs that:
- are necessarily incurred for the continuing use of the asset (or preparation for use); and
- can be directly attributed, or allocated on a reasonable and consistent basis, to the use of the asset.

Cash outflows therefore include only future capital expenditure that is necessary to *maintain* the asset at the standard of performance assessed immediately before the expenditure is made.

*4.3.2.2 Cash flows to be excluded: (IAS 36.43-48, 50 and 51)*

Future cash flows are estimated based on the asset's current condition. Care must therefore be taken not to include the expected:
- cash inflows that relate to other assets, (since these will be taken into account when assessing the value in use of these other assets);
- cash outflows that have already been recognised as liabilities (for example, a payment of an accounts payable) since these outflows will have already been recognised (either as part of the asset or as an expense);
- cash inflows and outflows that relate to future capital expenditure that will 'enhance the asset in excess of its standard of performance assessed immediately before the expenditure was made';
- cash inflows and outflows that relate to a future restructuring to which the entity is not yet committed;
- cash inflows and outflows from financing activities (because the cash flows are later discounted to present values using a discount rate that takes into account the time-value of money); and
- cash flows in respect of tax receipts and tax payments (because the discount rate used to discount the cash flows is a pre-tax discount rate).

### *4.3.3 Cash flows from the disposal of the asset (IAS 36.52 and 53)*

The cash flows resulting from the eventual disposal of the asset are estimated using the same principles applied when estimating the cash flows resulting from the use of the asset. The calculation of the net cash flows from the future disposal of an asset is as follows:
- the amount the entity expects to receive from the disposal of the asset at the end of the asset's useful life in an arm's length transaction between knowledgeable, willing parties;
- less the estimated costs of the disposal.

The estimated net cash flows from the future disposal of the asset should be based on the current prices achieved from the disposal of similar assets that are already at the end of their useful lives and that have been used under similar conditions. These prices are then adjusted up or down for general inflation (if general inflation was taken into account when estimating the cash flows from use and the discount factor) and for specific future price adjustments.

**Example 5: recoverable amount - value in use – cash flows**

A machine has the following future cash flows, based on management's most recently approved budgets:

| | 20X4 | 20X5 | 20X6 |
|---|---|---|---|
| **Outflows:** | **C'000** | **C'000** | **C'000** |
| Maintenance costs | 100 | 120 | 80 |
| Operational costs (electricity, water, labour etc) | 200 | 220 | 240 |
| Interest on finance lease | 60 | 50 | 40 |
| Tax payments on profits | 16 | 20 | 28 |
| Cost of increasing the machine's capacity | 0 | 220 | 0 |
| Depreciation | 80 | 80 | 80 |
| Expenses to be paid in respect of 20X3 accruals | 30 | 0 | 0 |
| **Inflows:** | | | |
| Basic inflows: see note 1 | 1 000 | 1 200 | 1 400 |
| Extra profits resulting from the upgrade | 0 | 20 | 50 |

| Note 1: | Machine | Plant |
|---|---|---|
| Cash inflows stem from | 40% | 60% |

The useful life of the machine is expected to last for 5 years. The growth rate in the business in 20X3 was an unusual 15% whereas the average growth rate over the last 7 years is:

| | |
|---|---|
| in the industry | 10% |
| in the business | 8% |

***Required:***
Calculate the future net cash flows to be used in the calculation of the value in use of the machine at 31 December 20X3 assuming that a 5-year projection is considered to be appropriate.

**Solution to example 5: recoverable amount - value in use – cash flows**

| **Future cash flows - Machine** | **20X4** | **20X5** | **20X6** | **20X7** | **20X8** |
|---|---|---|---|---|---|
| *Outflows:* | **C'000** | **C'000** | **C'000** | **C'000** | **C'000** |
| Maintenance costs (direct cost) | (100) | (120) | (80) | | |
| Operational costs (allocated indirect costs) | (200) | (220) | (240) | | |
| Interest on finance lease (financing always excluded) | - | - | - | | |
| Tax payments (tax always excluded) | - | - | - | | |
| Cost of upgrading machine (upgrades always excluded) | - | - | - | | |
| Depreciation (not a cash flow – a 'sunk' cost) | - | - | - | | |
| Expenses to be paid iro 20X3 accruals (not a future expense – already recognised in 20X3 financial statements) | - | - | - | | |
| *Inflows:* | | | | | |
| Basic inflows: (only 40% relates to machine) | 400 | 480 | 560 | | |
| Extra profits from the upgrade (always exclude) | - | - | - | | |
| Net cash inflows (20X7: 240 x 1.08) (20X8: 259 x 1.08) | 100 | 140 | 240 | 259* | 280* |

* Rounded

- *The net cash inflows per year would still need to be present valued and the total of the present values per year would then be totalled to give the 'net present value' or 'value in use'.*
- *It was assumed in this question that the machine would not be able to be sold at the end of its useful life and the disposal thereof would not result in any disposal costs.*
- *The current year growth rate of 15% seems unusual given the company's average growth rate was only 8%. The industry average of 10% is also greater than the business average of 8%. Prudence dictates that we should therefore use 8%.*

### *4.3.4 Present valuing the cash flows (IAS 36.55–57)*

The cash inflows and cash outflows relating to the use and eventual disposal of the asset must be present valued. This means multiplying the cash flows by an appropriate discount factor (or using a financial calculator), calculated using an appropriate pre-tax discount rate.

The discount rate is estimated using the:
- rate implicit in current market transactions for similar assets; and
- the risks specific to the asset (for which the future cash flows have not yet been adjusted).

When an asset-specific rate is not available, a surrogate rate is used. Guidance for estimating a surrogate rate is as follows (IAS 36 Appendix A, A16 - 18):

- Estimate what the market assessment would be of:
  - the time value of money for the asset over its remaining useful life;
  - the uncertainties regarding the timing and amount of the cash flows (where the cash flow has not been adjusted);
  - the cost of bearing the uncertainties relating to the asset (where the cash flow has not been adjusted);
  - other factors that the market might apply when pricing future cash flows (e.g. the entity's liquidity) (where the cash flow has not been adjusted).

- The weighted average cost of capital of the entity (using the Capital Asset Pricing Model), the entity's incremental borrowing rate and other market borrowing rates could be considered although these rates would need to be adjusted for the following risks (unless the cash flows have been appropriately adjusted):
  - country risk;
  - currency risk; and
  - price risk.

**Example 6: value in use – discounted (present) value**

An asset has the following future cash flows, estimated at 31 December 20X3:

| | |
|---|---|
| Expected cash inflows per year (until disposal) | 110 000 |
| Expected cash outflows per year (until disposal) | 50 000 |
| Expected sale proceeds at end of year 3 | 7 000 |
| Expected disposal costs at end of year 3 | 3 000 |
| Number of years of expected usage | 3 years |
| Present value factors based on a discount rate of | 10% |
| Present value factor for year 1 | 0.909 |
| Present value factor for year 2 | 0.826 |
| Present value factor for year 3 | 0.751 |

***Required:***
Calculate the expected value in use at 31 December 20X3.

**Solution to example 6: value in use – discounted (present) value**

| | **20X4** | **20X5** | **20X6** |
|---|---|---|---|
| Cash inflow for the year | 110 000 | 110 000 | 110 000 |
| Cash outflow for the year | (50 000) | (50 000) | (50 000) |
| Sale proceeds | | | 7 000 |
| Disposal costs | | | (3 000) |
| Net cash flows (NCF) | 60 000 | 60 000 | 64 000 |
| Present value factor (PVF) (discount factor) | 0.909 | 0.826 | 0.751 |
| PV of net cash flows (NCF x PVF) | 54 540 | 49 560 | 48 064 |

| | |
|---|---|
| Net present value (NPV) (value in use): (54 540 + 49 560 + 48 064) | C152 164 |

### *4.3.5 Foreign currency future cash flows (IAS 36.54)*

Future cash flows which are generated in a foreign currency must first be estimated in that currency and then discounted to a present value using a discount rate appropriate for that currency. This present value is then translated into the local currency using the spot rate at the date of the value in use calculation.

**Example 7: foreign currency future cash flows**

An asset belonging to a South African company (where the rand (R) is the functional currency) has the following dollar denominated future cash flows, estimated at 31 December 20X6:

| | $ |
|---|---|
| Expected cash inflows per year (until disposal) | 100 000 |
| Expected cash outflows per year (until disposal) | 50 000 |
| Expected sale proceeds at end of year 3 | 7 000 |
| Expected disposal costs at end of year 3 | 3 000 |
| Number of years of expected usage | 10% |
| Present value factors based on a discount rate of (appropriate discount rate for the US dollar) | 3 years |
| PV factor for year 1 | 0.909 |
| PV factor for year 2 | 0.826 |
| PV factor for year 3 | 0.751 |
| The Rand : Dollar exchange rate on the 31 December 20X6 | R6: $1 |

***Required:***
Calculate the expected value in use at 31 December 20X6.

**Solution to example 7: foreign currency future cash flows**

| | 20X7 $ | 20X8 $ | 20X9 $ |
|---|---|---|---|
| Cash inflows for the year | 100 000 | 100 000 | 100 000 |
| Cash outflows for the year | (50 000) | (50 000) | (50 000) |
| Sale proceeds | | | 7 000 |
| Disposal costs | | | (3 000) |
| Net cash flows | 50 000 | 50 000 | 54 000 |
| Present value factor | 0.909 | 0.826 | 0.751 |
| PV of net cash flows | 45 450 | 41 300 | 40 554 |

| | | |
|---|---|---|
| Net present value in dollars (value in use) | *(45 450 + 41 300 + 40 554)* | $127 304 |
| Net present value in rands (value in use) | *($127 304 x R6)* | R763 824 |

### 4.4 Recoverable amounts for assets whose costs include dismantling costs

Where the cost of an asset includes the expected cost of future dismantling (also referred to as decommissioning), the calculation of the impairment loss depends on whether:
- the seller will pay the decommissioning costs; or
- the buyer will pay the decommissioning costs (i.e. the asset and liability are to be sold as one cash-generating unit).

If the *seller* is expected to pay the decommissioning costs, then the impairment loss is calculated as follows:
- the carrying amount of the asset
- less the recoverable amount of the asset, being the higher of:
  - the fair value less costs to sell where the expected decommissioning costs are ignored;
  - the value in use where the expected decommissioning costs are ignored.

Under this scenario, the decommissioning costs are completely ignored because they relate to the entity's decommissioning liability (which it expects to keep or settle separately) and not to the asset (whose recoverable amount is being calculated).

If, on the other hand, the *buyer* is expected to pay the decommissioning costs, then the impairment loss is calculated as follows:

- the carrying amount of the asset *and the liability*
- less the recoverable amount of the asset and liability, being the higher of:
  - the fair value less costs to sell (i.e. where the expected decommissioning costs are deducted);
  - the value in use (i.e. where the expected decommissioning costs are deducted).

In this scenario, the decommissioning costs are included in the calculation of both the carrying amount and the recoverable amount since the asset and liability are being sold as a unit (i.e. the entity expects to sell both the asset and the liability).

**Example 8: recoverable amount and future decommissioning costs**

An asset is purchased by A Limited for C1 000 on 31 December 20X1. The present value of future expected decommissioning costs of C100 are recognised on the same date.
On the same date, the value in use is calculated as C600 and the expected selling price of the asset is C900, on condition that the seller pays the decommissioning costs.

***Required:***

A. Journalise the acquisition of the asset.
B. Show the calculation of the impairment loss assuming that the seller (A Limited) will pay the decommissioning costs.
C. Show the calculation of the impairment loss assuming that the future buyer will pay the decommissioning costs.

**Solution to example 8A: journal - acquisition of asset with future decommissioning costs**

| *Journal in 20X1* | **Debit** | **Credit** |
|---|---|---|
| Asset (including the cost of its decommissioning) | 1 100 | |
| Bank | | 1 000 |
| Decommissioning liability | | 100 |
| *Acquisition of asset: (1 000 + 100)* | | |

**Solution to example 8B: impairment loss – seller to pay decommissioning costs**

| | **C** |
|---|---|
| Expected proceeds on sale of asset | 900 |
| Costs to sell asset (ignore decommissioning costs: these have already been recognised) | 0 |
| Fair value less costs to sell of asset | 900 |
| Value in use (given) | 600 |
| Recoverable amount (greater of 'fair value less costs to sell' and 'value in use') | 900 |
| | |
| Recoverable amount (fair value less costs to sell) | 900 |
| Carrying amount of asset (C1 000 + 100 – 0: accumulated depreciation) | 1 100 |
| Impairment loss | 200 |

*Note: if we are going to pay the decommissioning costs, it means that we are keeping the liability and only looking at what we can get from the sale or use of the asset.*

**Solution to example 8C: impairment loss – buyer to pay decommissioning costs**

| | C |
|---|---|
| Expected proceeds on sale of asset and liability (C900 – C100) | 800 |
| Costs to sell asset and liability (ignore decommissioning costs: same reason as above) | 0 |
| Fair value less costs to sell of asset and liability | 800 |
| Value in use (asset: 600 – liability: 100 = 500) | 500 |
| Recoverable amount (greater of 'fair value less costs to sell' and 'value in use') | 800 |
| | |
| Recoverable amount (fair value less costs to sell) | 800 |
| Carrying amount of asset and liability (Asset: C1 100 – Liability: C100) | 1 000 |
| Impairment loss | 200 |

*Note: if the buyer is going to pay the decommissioning costs, it means that we are plan to pay the liability ourselves after using the asset or planning to sell the asset with the liability. Therefore, all calculations are based on the asset less the decommissioning liability.*

*Notice that the expected selling price is now C800: if the selling price of the asset was C900, the selling price would have to be dropped if one wanted the buyer to pick up the liability costs as well.*

## 5. Recognising the impairment loss (IAS 36.58–64)

When the recoverable amount of an asset (other than cash-generating units and goodwill) is found to be less than its carrying amount, the carrying amount needs to be reduced to the recoverable amount. The asset is credited and an impairment loss expense account is debited.

**Example 9: impairment loss journal - basic**

A plant, measured under the cost model, has the following values at 31 December 20X1:

| | |
|---|---|
| Cost | 150 000 |
| Less accumulated depreciation to 31 December 20X2 | (50 000) |
| Carrying amount: 31 December 20X2 | 100 000 |
| Recoverable amount | 40 000 |

***Required:***
Journalise the impairment at the year ended 31 December 20X1.

**Solution to example 9: impairment loss journal - basic**

| *31 December 20X1* | Debit | Credit |
|---|---|---|
| Impairment loss (expense) | 60 000 | |
| Plant: accumulated impairment losses | | 60 000 |
| *Impairment of plant (100 000 – 40 000)* | | |

*If, however, the revaluation model has been adopted and there is a revaluation surplus as a result of a previous upward revaluation of the asset, the decrease must first be debited against the revaluation surplus (i.e. recognised in other comprehensive income), and if there is any excess after the revaluation surplus has been reversed completely (has a zero balance), then this excess is recognised as an impairment loss expense (i.e. recognised in profit or loss).*

**Example 10: impairment loss journal – with a revaluation surplus**

The following balances relate to plant, measured under the revaluation model at 31 December 20X1:

| | C |
|---|---|
| Carrying amount: 31 December 20X1 | 100 000 |
| Recoverable amount: 31 December 20X1 | 40 000 |
| Revaluation surplus: 31 December 20X1 | 10 000 |

***Required:***
Journalise the impairment at 31 December 20X1.

**Solution to example 10: impairment loss journal – with a revaluation surplus**

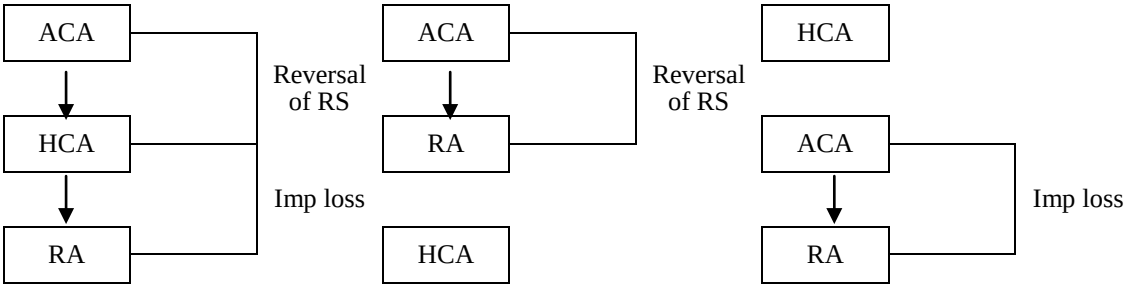
| **31 December 20X1** | **Debit** | **Credit** |
|---|---|---|
| Revaluation surplus (equity) | 10 000 | |
| Plant: cost | | 10 000 |
| Impairment loss (expense) | 50 000 | |
| Plant: accumulated impairment losses | | 50 000 |
| *Impairment of plant (100 000 – 40 000) first set-off against the revaluation surplus of 10 000, the balance of 50 000 being expensed* | | |

The chapter that covers property, plant and equipment's measurement models shows how to decrease an asset's carrying amount when:
- using the cost model: example 1; and
- using the revaluation model: example 8.

Subsequent depreciation will be calculated based on:
- the reduced carrying amount of the asset
- less its residual value
- the net of which is divided by the asset's remaining useful life.

*A decrease in carrying amount*: A summary of the various interactions of carrying amount and recoverable carrying amount when using the *cost model* is shown below.


*A decrease in carrying amount*: A summary of the various interactions of carrying amount and recoverable carrying amount when using the *revaluation model* is shown below.



## 6. Recognising a reversal of a previous impairment loss (IAS 36 para 109 – 121)

If, at a later stage, it is discovered that the recoverable amount is greater than the actual carrying amount, where this asset was previously impaired, the impairment loss previously recognised may be reversed. This happens when the circumstances that originally caused the impairment are reversed.

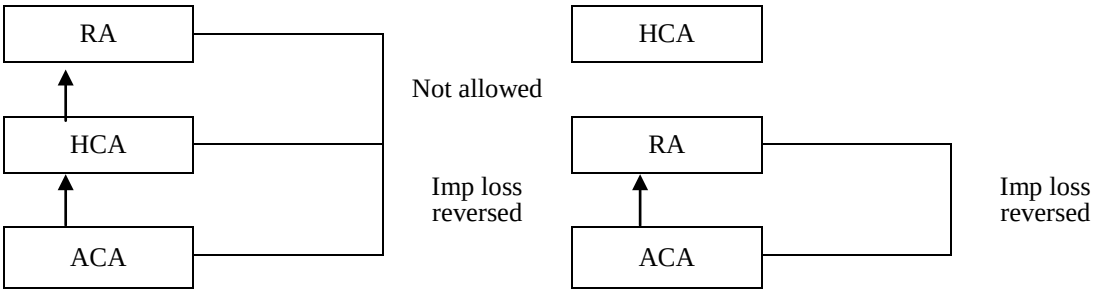
The chapter covering property, plant and equipment's measurement models shows how to *increase* an asset's carrying amount when:
- using the cost model: example 2; and
- using the revaluation model: example 7 and 9.

Subsequent depreciation will be calculated based on the:
- increased carrying amount of the asset less its residual value
- divided by the asset's remaining useful life.

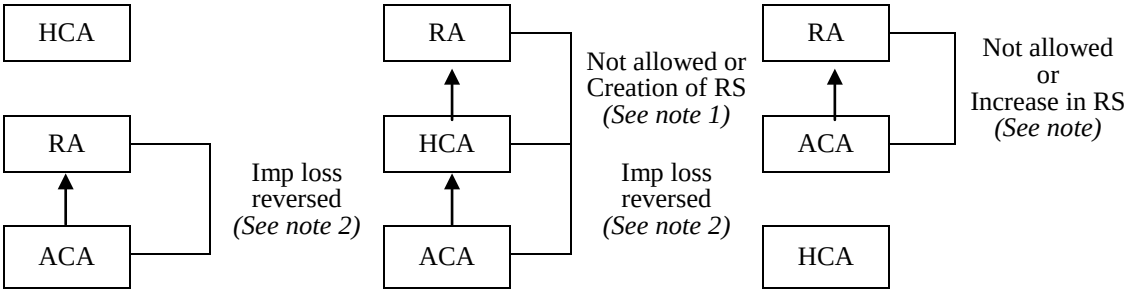
If the asset is carried under the *cost model*, the increase in value will be recognised as an impairment loss reversed (income), and is calculated as follows:

| | **C** |
|---|---|
| Recoverable amount (limited to historical carrying amount) | XXX |
| Less the actual carrying amount | (XXX) |
| Impairment loss reversed | XXX |

*An increase in carrying amount*: A summary of the various interactions of carrying amount and recoverable carrying amount when using the *cost model* are shown below.




*An increase in carrying amount*: A summary of the various interactions of carrying amount and recoverable carrying amount when using the revaluation model are shown below.




*Note 1:* If the asset is carried under the *revaluation model*, any excess above the historical carrying amount is generally ignored although, if the recoverable amount equals the asset's fair value and the entity would normally have performed a revaluation at this time, the excess could be treated as a 'revaluation surplus' (equity).

*Note 2:* If the asset's actual carrying amount is less than the historical carrying amount due to a prior devaluation to fair value, no impairment loss is reversed (since there is no prior impairment loss).

An impairment loss relating to goodwill is never reversed. The reason is that an apparent increase in the recoverable amount of goodwill probably relates to internally generated goodwill (rather than the purchased goodwill), which is not allowed to be recognised as an asset according to IAS 38 (see the chapter governing 'intangible assets').

## 7. Impairment of cash-generating units (IAS 36.65 – .108 and IAS 36.122 - .125)

### 7.1 Overview

When testing assets for impairment, the recoverable amount should ideally be estimated for that individual asset. There are, however, instances where it is not possible to estimate the recoverable amount of the *individual* asset. These instances are when:

- its value in use cannot be determined and it is not estimated to be close to the fair value less costs to sell; and
- it does not generate cash inflows from continuing use that are largely independent of those from other assets.

Where this is the case we must determine to which cash-generating unit the asset belongs.

A cash-generating unit is simply the 'smallest identifiable group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or groups of assets'.

The recoverable amount of the cash-generating unit will be calculated as a whole and is compared to the net carrying amounts of the assets and liabilities that make up the unit.

When calculating the carrying amount and the recoverable amount (greater of fair value less costs to sell and value in use) of a cash-generating unit:

- include the carrying amount of only those assets that can be attributed directly, or allocated on a reasonable and consistent basis, to the cash-generating unit and will generate the future cash flows used in determining the cash-generating units value in use;

- exclude all liabilities relating to the group of assets unless the recoverable amount of the cash-generating unit cannot be determined without consideration of this liability: for example, where the disposal of a group of assets would require the buyer to assume (accept responsibility for) the liability, (e.g. a nuclear power station where there is a legal requirement to dismantle it at some stage in the future);

- any asset within the cash-generating unit that an entity intends to scrap: the asset to be scrapped is tested for impairment separately from the remaining assets of the cash-generating unit. It is necessary to point out that, if one knows that the asset is to be scrapped, then obviously both the value in use and fair value less costs to sell will be the same: the expected net proceeds from scrapping.

**Example 11: scrapping of an asset within a cash-generating unit**

One of the machines (carrying amount of C40 000) in an assembly line suffered damage due to a power surge and was immediately removed from the assembly line. The assembly line is still operating although at 80% capacity. The assembly line's recoverable amount is C300 000 and its carrying amount is C240 000.

***Required:***
Calculate and journalise the impairment of the machine assuming that:
A. the intention is to repair the machine and return it to the assembly line; and
B. the intention is to scrap the machine for C1 000.

**Solution to example 11 A: scrapping of an asset within a cash-generating unit**

Since the machine is part of a cash-generating unit, it is not tested for impairment separately from the cash-generating unit.

Since the cash-generating unit's recoverable amount exceeds its carrying amount, the cash-generating unit is not impaired and therefore the machine is not impaired.

**Solution to example 11 B: scrapping of an asset within a cash-generating unit**

Since the machine is to be scrapped, it is removed from the cash-generating unit and tested for impairment on its own.

Given that the machine has already been taken out of use, its value in use will be zero.

Given that the machine is to be scrapped for C1 000, its fair value less costs to sell is C1 000 (assuming no costs to sell).

The machine is therefore impaired as follows:

| | C |
|---|---|
| Carrying amount: | 40 000 |
| Recoverable amount: | 1 000 |
| Impairment loss: | 39 000 |

| | Debit | Credit |
|---|---|---|
| Impairment loss | 39 000 | |
| Machine: accumulated impairment loss | | 39 000 |
| *Impairment of machine* | | |

### 7.2 Allocation of an impairment loss to a cash-generating unit (covers para 104 and 105)

Although a group of assets is being tested for impairment, any impairment loss is then allocated to the individual assets within the group. The allocation of an impairment of a cash-generating unit to its individual assets is done on a *pro rata* basis based on the relative carrying amounts of the individual assets within the group.

When allocating an impairment loss, however, the carrying amount of each individual asset must not be reduced below the higher of:
- its fair value less costs to sell;
- its value in use; and
- zero.

**Example 12: allocation of impairment loss (no goodwill)**

A cash-generating unit, measured under the cost model, which has a recoverable amount of C10 000, has the following assets:

| | Carrying amount | Recoverable amount |
|---|---|---|
| | C | C |
| Equipment | 3 000 | unknown |
| Vehicles | 2 000 | unknown |
| Plant | 6 000 | unknown |
| Factory building | 4 000 | unknown |
| | 15 000 | |

***Required:***
Calculate and allocate the impairment loss to this cash-generating unit and then journalise it.

**Solution to example 12: allocation of impairment loss (no goodwill)**

| **Impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 15 000 |
| Recoverable amount | 10 000 |
| Impairment loss | 5 000 |

| **Allocation of impairment loss to the individual assets** | | **CA before** | **Impairment allocated** | **CA after** |
|---|---|---|---|---|
| | ***Calculation*** | **C** | **C** | **C** |
| Equipment | *3 000/ 15 000 x C5 000 impairment* | 3 000 | 1 000 | 2 000 |
| Vehicles | *2 000/ 15 000 x C5 000 impairment* | 2 000 | 667 | 1 333 |
| Plant | *6 000/ 15 000 x C5 000 impairment* | 6 000 | 2 000 | 4 000 |
| Factory building | *4 000/ 15 000 x C5 000 impairment* | 4 000 | 1 333 | 2 667 |
| | | 15 000 | 5 000 | 10 000 |

| **Journal in 20X1** | **Debit** | **Credit** |
|---|---|---|
| Impairment loss: equipment | 1 000 | |
| Equipment: accumulated impairment loss | | 1 000 |
| Impairment loss: vehicles | 667 | |
| Vehicles: accumulated impairment loss | | 667 |
| Impairment loss: plant | 2 000 | |
| Plant: accumulated impairment loss | | 2 000 |
| Impairment loss: building | 1 333 | |
| Building: accumulated impairment loss | | 1 333 |

*Impairment of assets within the cash-generating unit*

It may happen that a portion of the impairment loss remains unallocated, in which case a second round of allocation must be done whereby any excess impairment loss is allocated to the other assets of the cash-generating unit that have not yet been reduced below their minimum value (higher of their value in use, fair value less costs to sell and zero).

**Example 13: allocation of impairment loss (no goodwill) – multiple allocation**

A cash-generating unit, measured under the cost model, which has a recoverable amount of C12 000, has the following assets:

| | **Carrying amount** | **Recoverable amount** |
|---|---|---|
| Equipment | 3 000 | unknown |
| Vehicles | 2 000 | unknown |
| Plant | 6 000 | 5 000 |
| Factory building | 4 000 | 5 000 |
| | 15 000 | 12 000 |

***Required:***
Calculate and allocate the impairment loss to this cash-generating unit

**Solution to example 13: allocation of impairment loss (no goodwill) – multiple allocation**

| **Impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 15 000 |
| Recoverable amount | 12 000 |
| Impairment loss | 3 000 |

| **Allocation of impairment loss to the individual assets** | | **Carrying amount before** | **Impairment allocated** | **Carrying amount after** |
|---|---|---|---|---|
| *First round of allocation:* | ***Calculation*** | **C** | **C** | **C** |
| Equipment | *3 000/ 15 000 x C3 000 impairment* | 3 000 | 600 | 2 400 |
| Vehicles | *2 000/ 15 000 x C3 000 impairment* | 2 000 | 400 | 1 600 |
| Plant | *6 000/ 15 000 x C3 000 impairment: limited to C1000 (CA 6 000–RA 5 000)* | 6 000 | (1) 1 000 | (3) 5 000 |
| Factory building | *4 000/ 15 000 x C3 000 impairment: limited to nil (RA exceeds its CA)* | 4 000 | (2) 0 | (3) 4 000 |
| | | 15 000 | 2 000 | 13 000 |

*(1) The allocated impairment initially works out to C1 200, but this would drop the carrying amount of the plant to 4 800. Since we know that the recoverable amount of the plant is C5 000, we limit the impairment allocation to C1 000 (C6 000 – 1 000 = 5 000). Plant is now fully impaired.*

*(2) Factory buildings are not allocated any of the impairment since we know they are not impaired (their recoverable amount is greater than their carrying amount).*

*(3) These assets are fully impaired since their carrying amounts are now representative of their recoverable amounts (or less than their recoverable amounts).*

| | ***Calculation*** | **Carrying amount before** **C** | **Impairment allocated** **C** | **Carrying amount after** **C** |
|---|---|---|---|---|
| *Second round of allocations:* | | | | |
| Equipment | *2 400/ 4 000 x (3 000 – 2 000)* | 2 400 | 600 | 1 800 |
| Vehicles | *1 600/ 4 000 x (3 000 – 2 000)* | 1 600 | 400 | 1 200 |
| | | 4 000 | 1 000 | 3 000 |

Where a cash-generating unit includes goodwill, any impairment of this cash-generating unit must first be allocated to this goodwill. Any remaining impairment loss is then allocated to the remaining assets within the cash-generating unit.

**Example 14: allocation of impairment loss (with goodwill)**

A cash-generating unit, carried under the cost model, which has a recoverable amount of C8 000, has the following assets:

| | **Carrying amount** **C** | **Recoverable amount** **C** |
|---|---|---|
| Motor vehicle | 4 000 | 2 800 |
| Building | 5 000 | unknown |
| Goodwill | 2 000 | unknown |
| | 11 000 | |

***Required:***
Calculate and allocate the impairment loss to this cash-generating unit

**Solution to example 14: allocation of impairment loss (with goodwill)**

| **Impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 11 000 |
| Recoverable amount | 8 000 |
| Impairment loss | 3 000 |

The impairment of C3 000 is first allocated to the goodwill and any remaining impairment is then allocated to the other assets within the cash-generating unit based on their carrying amounts relative to the carrying amount of the group (reduced by the impaired goodwill):

| **Allocation of impairment loss** | | **Carrying amount before** | **Impairment allocated** | **Carrying amount after** |
|---|---|---|---|---|
| | ***Calculation*** | **C** | **C** | **C** |
| *First round of allocation:* | | | | |
| Goodwill | | 2 000 | 2 000 | 0 |
| *Second round of allocation:* | | | | |
| Motor vehicle | *4 000/ (4 000 + 5 000) x (3 000 – 2 000)* | 4 000 | 444 | 3 556 |
| Building | *5 000/ (4 000 + 5 000) x (3 000 – 2 000)* | 5 000 | 556 | 4 444 |
| | | 11 000 | 3 000 | 8 000 |

It should be noted that goodwill must be tested every year for possible impairments, even if there is no indication that it is impaired. Whereas most other assets must be tested *at* year-end, goodwill may be tested at *any stage* during the year so long as it is tested at the *same time every year* (where goodwill is allocated across various cash-generating units, these cash-generating units may be tested for impairment at different times).

The most recent detailed calculation made in a preceding period of the recoverable amount of a cash-generating unit to which goodwill has been allocated may be used in the impairment test of that unit in the current period provided all of the following criteria are met (IAS 36.99):

- the assets and liabilities making up the unit have not changed significantly since the most recent recoverable amount calculation;
- the most recent recoverable amount calculation resulted in an amount that exceeded the carrying amount of the unit by a substantial margin; and
- based on an analysis of the events that have occurred and the circumstances that have changed since the most recent recoverable amount calculation, the likelihood that a current recoverable would be less than the current carrying amount of the unit is remote.

### 7.3 Reversals of impairments

If an impairment loss relating to a cash-generating unit is to be reversed, it is first allocated to the assets of the unit, (except to goodwill), on a pro rata basis based on the carrying amounts of the individual assets relative to the carrying amount of the cash-generating unit in total. Any impairment once allocated to goodwill may never be reversed.

**Example 15: Impairment and reversal thereof (no goodwill)**

On the 31 December 20X4, as a result of a government ban on a product produced by Banme Limited, the affected cash-generating unit must be impaired to its recoverable amount of C2 000 000.

On this date, the details of the individual assets in the unit (each measured using the cost model) were as follows:

| | **Remaining useful life** | **Residual value** | **Carrying amount** | **Recoverable amount** |
|---|---|---|---|---|
| | | | **C** | **C** |
| Equipment | 5 years | Nil | 1 000 000 | unknown |
| Plant | 5 years | Nil | 3 000 000 | unknown |
| | | | 4 000 000 | 2 000 000 |

One year later, the ban was lifted and the cash-generating unit was brought back into operation. Its revised recoverable amount is C3 000 000. On this date, the individual carrying amounts and recoverable amounts were as follows:

| | Historical carrying amount C | Carrying amount C | Recoverable amount C |
|---|---|---|---|
| Equipment | 800 000 | 400 000 | unknown |
| Plant | 2 400 000 | 1 200 000 | unknown |
| | 3 200 000 | 1 600 000 | 3 000 000 |

***Required:***
Calculate and allocate the original impairment loss to this cash-generating unit and calculate and allocate the subsequent reversal thereof.

**Solution to example 15: Impairment and reversal thereof (no goodwill)**

| **31 December 20X4: Impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 4 000 000 |
| Recoverable amount | 2 000 000 |
| Impairment loss | 2 000 000 |

| **Allocation of impairment to individual assets** | | **Impairment** |
|---|---|---|
| | ***Calculation*** | **C** |
| Equipment | *1mil/ 4mil x C2mil impairment* | 500 000 |
| Plant | *3mil/ 4mil x C2mil impairment* | 1 500 000 |

| **31 December 20X5: Reversal of impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 1 600 000 |
| Recoverable amount *(not limited since the historical carrying amount is greater: 3 200 000)* | 3 000 000 |
| Impairment loss reversed | (1 400 000) |

| **Allocation of reversal of impairment to individual assets** | | **Reversal of impairment** |
|---|---|---|
| | ***Calculation*** | **C** |
| Equipment | *400 000/1 600 000 x 1 400 000 reversal of impairment* | 350 000 |
| Plant | *1 200 000/1 600 000 x 1 400 000 reversal of impairment* | 1 050 000 |
| Impairment loss reversed | | 1 400 000 |

**Example 16: Impairment and reversal thereof (with goodwill)**

On the 31 December 20X4, as a result of a government ban on a product produced by Banme Limited, the affected cash-generating unit must be impaired to its recoverable amount of C2 000 000.

On this date, the details of the individual assets in the unit (each measured using the cost model) were:

| | Remaining useful life | Residual value | Carrying amount C | Recoverable amount C |
|---|---|---|---|---|
| Goodwill | 5 years | Nil | 2 000 000 | unknown |
| Plant | 5 years | Nil | 3 000 000 | unknown |
| Building | 5 years | Nil | 5 000 000 | unknown |
| | | | 10 000 000 | 2 000 000 |

One year later, the ban was lifted and the cash-generating unit was brought back into operation. Its revised recoverable amount is C4 000 000. On this date, the individual carrying amounts and recoverable amounts were as follows:

| | Historical carrying amount C | Carrying amount C | Recoverable amount C |
|---|---|---|---|
| Goodwill | 2 000 000 | 0 | unknown |
| Plant | 2 400 000 | 600 000 | unknown |
| Building | 4 000 000 | 1 000 000 | unknown |
| | 8 400 000 | 1 600 000 | 4 000 000 |

***Required:***
Perform the allocation of the impairment and the reversal thereof.

**Solution to example 16: Impairment and reversal thereof (with goodwill)**

| **31 December 20X4: Impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 10 000 000 |
| Recoverable amount | 2 000 000 |
| Impairment loss | 8 000 000 |

| **Allocation of impairment** | | **Impairment** |
|---|---|---|
| | ***Calculation*** | **C** |
| Goodwill | *The entire goodwill is first removed, leaving an impairment of 6 mil (8 mil – 2 mil) still to be allocated* | 2 000 000 |
| Plant | *3mil/ (3mil + 5mil) x 6 mil impairment* | 2 250 000 |
| Building | *5mil/ (3mil + 5mil) x 6 mil impairment* | 3 750 000 |
| | | 8 000 000 |

| **31 December 20X4: Reversal of impairment loss of cash-generating unit** | **C** |
|---|---|
| Carrying amount | 1 600 000 |
| Recoverable amount | 4 000 000 |
| Impairment loss reversal (income) | 2 400 000 |

| **Allocation of reversal of impairment** | | **Reversal of impairment** |
|---|---|---|
| | ***Calculation*** | **C** |
| Goodwill | *Any previous impairment of goodwill may never be reversed* | 0 |
| Plant | *600 000 / 1 600 000 x 2 400 000* | 900 000 |
| Building | *1 000 000 / 1 600 000 x 2 400 000* | 1 500 000 |
| Impairment loss reversed | | 2 400 000 |

*The impairment loss reversed is limited on an individual asset basis to what its historical carrying amount is. For example, if the plant in the previous example has a historical carrying amount of 1 100 000 at 31 December 20X4, then only 500 000 could be allocated to plant as a impairment loss reversed (CA: 600 000 + ILR: 500 000 = HCA: 1 1000 000).*

## 7.4 Corporate assets (IAS 36.100 and 102)

When testing a cash-generating unit for impairment, one must include any corporate assets that are able to be allocated on a reasonable and consistent basis to that unit.

Corporate assets (such as a head office building) are those assets:
- that do not generate cash flows independently of the other assets or groups of assets; and
- whose carrying amounts cannot be attributable to the cash-generating unit under review.

Where the entity owns corporate assets that are not able to be allocated to its cash-generating units, further impairment test/s are performed from the bottom-up. Essentially this means:

- first testing the smallest cash-generating units for impairment;
- then testing a group of cash-generating units to which the corporate assets (or portion thereof) can be allocated on a reasonable and consistent basis for impairment;
- then testing a bigger group of cash-generating units for impairment; and so on until the corporate assets are completely included in a cash-generating unit/s (the final group of cash-generating units often being the business as a whole).

**Example 17: corporate assets**

The reporting entity has three cash-generating units (toothpaste, wire brushes and rubber tyre production lines) and three corporate assets (a building, phone system and a computer platform). The building and phone system support all cash-generating units whereas the computer platform supports the toothpaste and wire-brush units only.

| At the 31 December 20X5 the following values were determined: | **CA** | **RA** |
|---|---|---|
| *Cash-generating units excluding corporate assets* | **C** | **C** |
| Cash-generating unit: toothpaste | 1 000 000 | 600 000 |
| Cash-generating unit: wire-brushes | 2 000 000 | 1 500 000 |
| Cash-generating unit: rubber tyres | 4 000 000 | 3 200 000 |
| | 7 000 000 | 5 300 000 |
| *Corporate assets* | | |
| Corporate asset: building | 700 000 | |
| Corporate asset: phone system | 350 000 | |
| Corporate asset: computer platform | 1 050 000 | |
| | 2 100 000 | |
| | 9 100 000 | |

***Required:***

Determine the amount of the impairment to be allocated to the entity's assets, assuming that:

A. the corporate assets can be allocated to the relevant cash-generating units. The appropriate method of allocation is based on the carrying amount of the cash-generating unit's individual assets as a percentage of cash-generating unit's total assets excluding corporate assets to be allocated.
B. the corporate assets cannot be allocated to the relevant cash-generating units.

**Solution to example 17A: corporate assets are able to be allocated**

| | | **Cash-generating units** | | |
|---|---|---|---|---|
| | | **Toothpaste** | **Wire-brushes** | **Rubber tyres** |
| *Carrying amount:* | *Calculation* | **C** | **C** | **C** |
| Without corporate assets | | 1 000 000 | 2 000 000 | 4 000 000 |
| Building | *1 000K / 7 000K x 700 000* * | 100 000 | 200 000 | 400 000 |
| | *2 000K / 7 000K x 700 000* * | | | |
| | *4 000K / 7 000K x 700 000* * | | | |
| Phone system | *1 000K / 7 000K x 350 000* * | 50 000 | 100 000 | 200 000 |
| | *2 000K / 7 000K x 350 000* * | | | |
| | *4 000K / 7 000K x 350 000* * | | | |
| Computer platform | *1 000K / 3 000K x 1 050 000* * | 350 000 | 700 000 | 0 |
| | *2 000K / 3 000K x 1 050 000* * | | | |
| Total | | 1 500 000 | 3 000 000 | 4 600 000 |
| *Recoverable amount* | | 600 000 | 1 500 000 | 3 200 000 |
| *Impairment* | | 900 000 | 1 500 000 | 1 400 000 |

**: 1 000 000 + 2 000 000 + 4 000 000 = 7 000 000*

***: 1 000 000 + 2 000 000 = 3 000 000*

**Solution to example 17B: corporate assets not able to be allocated**

The impairment testing of this entity's assets, where its corporate assets were not able to be allocated to its three cash-generating units, involves three levels of testing, as follows:

| **First test:** without any corporate assets: | **Cash-generating units** | | |
|---|---|---|---|
| | **Toothpaste** | **Wire-brushes** | **Rubber tyres** |
| | **C** | **C** | **C** |
| Carrying amount before first impairment | 1 000 000 | 2 000 000 | 4 000 000 |
| Recoverable amount | 600 000 | 1 500 000 | 3 200 000 |
| First impairment | 400 000 | 500 000 | 800 000 |

| **Second test:** toothpaste and wire-brush cash generating units with computer platform: | | **C** |
|---|---|---|
| Cash-generating unit toothpaste | *1 000 000 – 400 000 first impairment* | 600 000 |
| Cash-generating unit wire-brushes | *2 000 000 – 500 000 first impairment* | 1 500 000 |
| Computer platform | | 1 050 000 |
| Carrying amount before level 2 impairment | | 3 150 000 |
| Recoverable amount | *600 000 + 1 500 000* | 2 100 000 |
| Second impairment | | 1 050 000 |

| **Third test:** all cash-generating units with all corporate assets: | | **C** |
|---|---|---|
| Toothpaste, wire-brushes and computer platform | *3 150K – 1050K second impairment* | 2 100 000 |
| Cash-generating unit: rubber tyres | | 3 200 000 |
| Building | | 700 000 |
| Phone system | | 350 000 |
| Carrying amount before level 3 impairment | | 6 350 000 |
| Recoverable amount | *600 000 + 1 500 000 + 3 200 000* | (5 300 000) |
| Third impairment | | 1 050 000 |

| **Total impairment:** | | **C** |
|---|---|---|
| First impairment | *400 000 + 500 000 + 800 000* | 1 700 000 |
| Second impairment | | 1 050 000 |
| Third impairment | | 1 050 000 |
| | | 3 800 000 |

| **Total revised carrying amount of all assets:** | **C** |
|---|---|
| Carrying amount before impairment | 9 100 000 |
| Impairment | 3 800 000 |
| Carrying amount after impairment | 5 300 000 |

## 8. Disclosure (IAS 36.126–137)

### 8.1 In general

The following information should be disclosed for each class of asset:

*The amount of any impairment loss debited:*
- to expenses (and an indication as to which line item includes the impairment loss, e.g. profit before tax); and
- against equity (i.e. the revaluation surplus account).
-

*The amount of any reversals of impairment losses credited:*
- to income (and an indication as to which line item includes the reversal of the impairment loss, e.g. profit before tax); and
- to equity (i.e. revaluation surplus).

This disclosure may be included in a note supporting the calculation of profit or loss (e.g. 'profit before tax' note) or in the note supporting the asset (e.g. the 'property, plant and equipment' note in the reconciliation of carrying amount).

### 8.2 Impairment losses and reversals of previous impairment losses

For every impairment loss or reversal of a previous impairment loss that is considered to be material, the entity must disclose the following:

- the events and circumstances that led to the impairment loss or reversal thereof;
- the nature of the asset (or the description of a cash-generating unit);
- the amount of the impairment loss or impairment loss reversed;
- the reportable segment in which the individual asset or cash-generating unit belongs (if the entity reports segment information);
- whether the recoverable amount is the 'fair value less costs to sell' (in which case state whether it was determined with reference to an active market or by way of another method) or the 'value in use' (in which case, state the discount rate used in the estimates made).

If the above information relating to the recognition and reversal of impairment losses is not disclosed, indicate:

- the main class of assets affected as well as
- the main events and circumstances that led to the recognition or reversal of the impairment losses.

### 8.3 Impairment testing: cash-generating units versus individual assets

Additional disclosure is required when impairment testing is performed on 'cash-generating units' instead of 'individual assets':

- a description of the cash-generating unit (e.g. a product line or geographical area);
- the amount of the impairment loss recognised or reversed by class for assets and, if the entity reports segment information, by reportable segment;
- if the aggregation of assets for identifying the cash-generating unit has changed since the previous estimate of the cash-generating unit's recoverable amount, a description of the current and former way of aggregating assets and the reasons for changing the way the cash-generating unit is identified.

Where a cash-generating unit includes goodwill or an intangible asset with an indefinite useful life where the allocated portion of the carrying amount of the goodwill or intangible asset is *significant* in relation to the total carrying amount of goodwill or intangible assets with indefinite useful lives of the entity (as a whole), then you also need to disclose:

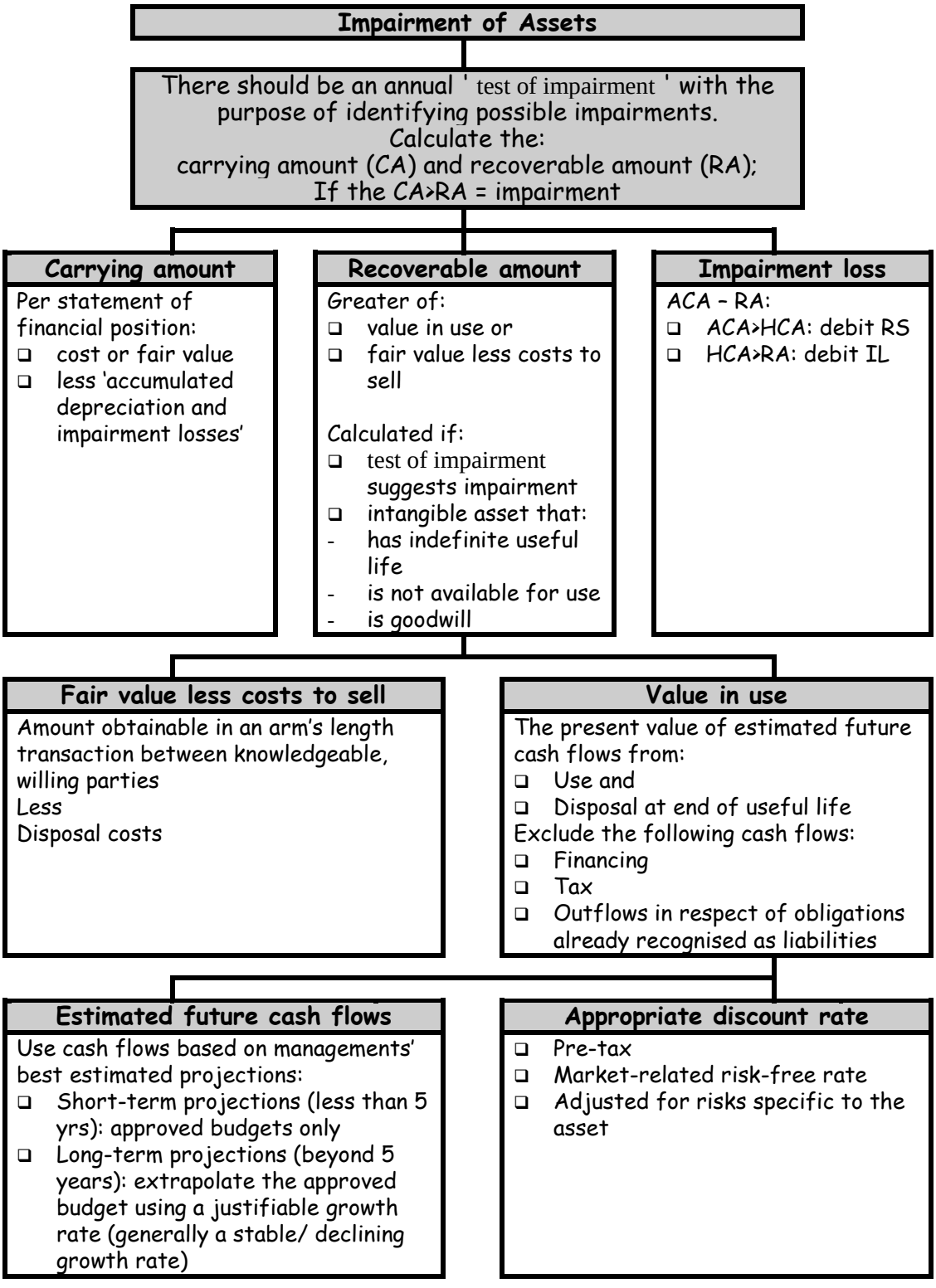
- the carrying amount of the allocated goodwill;
- the carrying amount of intangible assets with indefinite useful lives;
- the basis for calculating the recoverable amount of the cash-generating unit (either its fair value less costs to sell or value in use;
- where the recoverable amount is based on value in use:
  - a description of each key measurement assumption on which management has based its cash flow projections;
  - a description of how management determined the values assigned to each key assumption, whether those values reflect past experience or external sources of information or both, and if not, why and how they differ from past experience or external sources of information;

  - the period over which management has projected cash flows based on financial budgets approved by management and, when a period of more than five years is used for a cash-generating unit, an explanation of why that longer period is justified;
  - the growth rate used to extrapolate cash flow projections beyond the period covered by the financial budgets and the justification for using a growth rate that exceeds the long-term average growth rate; and
  - the discount rate applied to cash flow projections;
- where the recoverable amount is based on fair value less costs to sell, state that this value has been determined with reference to an observable market price, unless this isn't the basis, in which case disclose:
  - a description of each key measurement assumption on which management has estimated the fair value less costs to sell; and
  - a description of how management determined the values assigned to each key assumption, whether those values reflect past experience and external sources of information, and if not, why and how they differ from past experience or external sources of information;

Where a cash-generating unit includes goodwill or an intangible asset with an indefinite useful life where the allocated portion of the carrying amount of the goodwill or intangible assets is *insignificant* in relation to the total carrying amount of goodwill or intangible assets with indefinite useful lives of the entity (as a whole), then you must also disclose:
- the aggregated carrying amount of allocated goodwill;
- the aggregated carrying amount of allocated intangible assets with indefinite useful lives;
- the key assumptions
- a description of how management determined the values assigned to each key assumption, whether those values reflect past experience or external sources of information or both, and if not, why and how they differ from past experience or external sources of information.

Whether allocated goodwill or intangible assets with indefinite lives is significant or insignificant, where a key assumption that was used in the determination of the recoverable amount might reasonably be expected to change such that the recoverable amount drops below carrying amount then disclose:
- the amount by which the recoverable amount currently exceeds the carrying amount;
- the value assigned to the key assumption;
- the amount by which this value would have to change in order for the recoverable amount to equal the carrying amount.

## 9. Summary




ACA = actual carrying amount
HCA = historical carrying amount
RA = recoverable amount
RS = revaluation surplus
IL = impairment loss

## Test of impairment

### External information

- Significant decrease in market value
- Significant adverse current/ future changes in the market in which the asset is used
- Increase in market interest rates (decreases value in use)
- Carrying amount of business net assets > market capitalisation
- etc

### Internal information

- Obsolescence
- Physical damage
- Adverse current/ future changes in usage of the asset
- Actual profits and/ or cash flows worse than budgeted
- Net cash outflows or losses become apparent when looking at figures in aggregate (e.g. past + current; current + future; past + current + future)
- etc

## Recognition

.

### Impairment loss

**If cost model used:**
debit:
impairment loss (expense)
credit:
accumulated depreciation and impairment losses

or

**if revaluation model used:**
*where there is a revaluation surplus*
debit: revaluation surplus (to the extent of the balance therein) and
credit: cost

*if the drop in value exceeds the revaluation surplus balance:*
debit: impairment loss (expense) (with any excess) and
credit: accumulated depreciation & impairment losses

**depreciation thereafter:**
a new depreciable amount is calculated (after deducting the accumulated impairment loss)
which should be depreciated over the remaining useful life of the asset

### Reversal of impairment loss

**If cost model used:**
debit:
accumulated depreciation and impairment losses
credit:
reversal of impairment loss (income)

or

**if revaluation model used:**
*up to HCA:*
debit: accumulated depreciation & impairment losses and
credit: reversal of impairment loss (income)

*for any amounts above HCA:*
debit: cost and
credit: revaluation surplus

**depreciation thereafter:**
a new depreciable amount is calculated (after deducting the remaining accumulated impairment loss)
which should be depreciated over the remaining useful life of the asset