KPMG

Climate change and impairment

How-to guide

IFRS® Accounting Standards

November 2025

kpmg.com/ifrs

Contents

Be clear on climate in impairment

Climate change is not just an environmental issue – it is also a strategic and financial one.

Your company's strategic response to climate-related risks and opportunities[1] – whether to act or not – may impact your cash flows in the short, medium or longer term and the value of your assets. That is why users need relevant information to make informed decisions – including whether and how climate-related risks and opportunities have been considered in impairment testing.

In performing impairment testing, significant judgement may be needed to determine the recoverable amount of an asset or cash-generating unit (CGU), including reflecting the impact of climate-related risks and opportunities in key inputs and assumptions (e.g. cash flows, discount rate and terminal value).

Clear and transparent disclosures are key to meet users' expectations of the financial statements. You also need to ensure that your financial, sustainability and other reporting tells a connected story.

This guide is divided into the following steps to help you consider the impact of climate change on impairment testing of non-current assets under IAS 36 *Impairment of Assets*.

Throughout, we provide practical insights together with examples to help you navigate this complex area, including when it is relevant to consider connectivity with information outside the financial statements.

1. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

Step 1: Identify indicators of impairment

A company needs to assess at each reporting date whether there is any indication that an asset or CGU may be impaired[2]. The assessment is based on a non-exhaustive list of internal, external and other indicators of impairment in IAS 36. *[IAS 36.9, 12–13]*

Although climate-related factors, such as those in the diagram below, are not mentioned explicitly, they could lead to one or more of the internal or external indicators of impairment listed in the accounting standard.

An indicator that an asset may be impaired could also indicate that a company needs to review and adjust the following, even if no impairment loss is recognised for the asset, its:

- remaining useful life;
- depreciation or amortisation method; and/or
- residual value. *[IAS 36.17]*

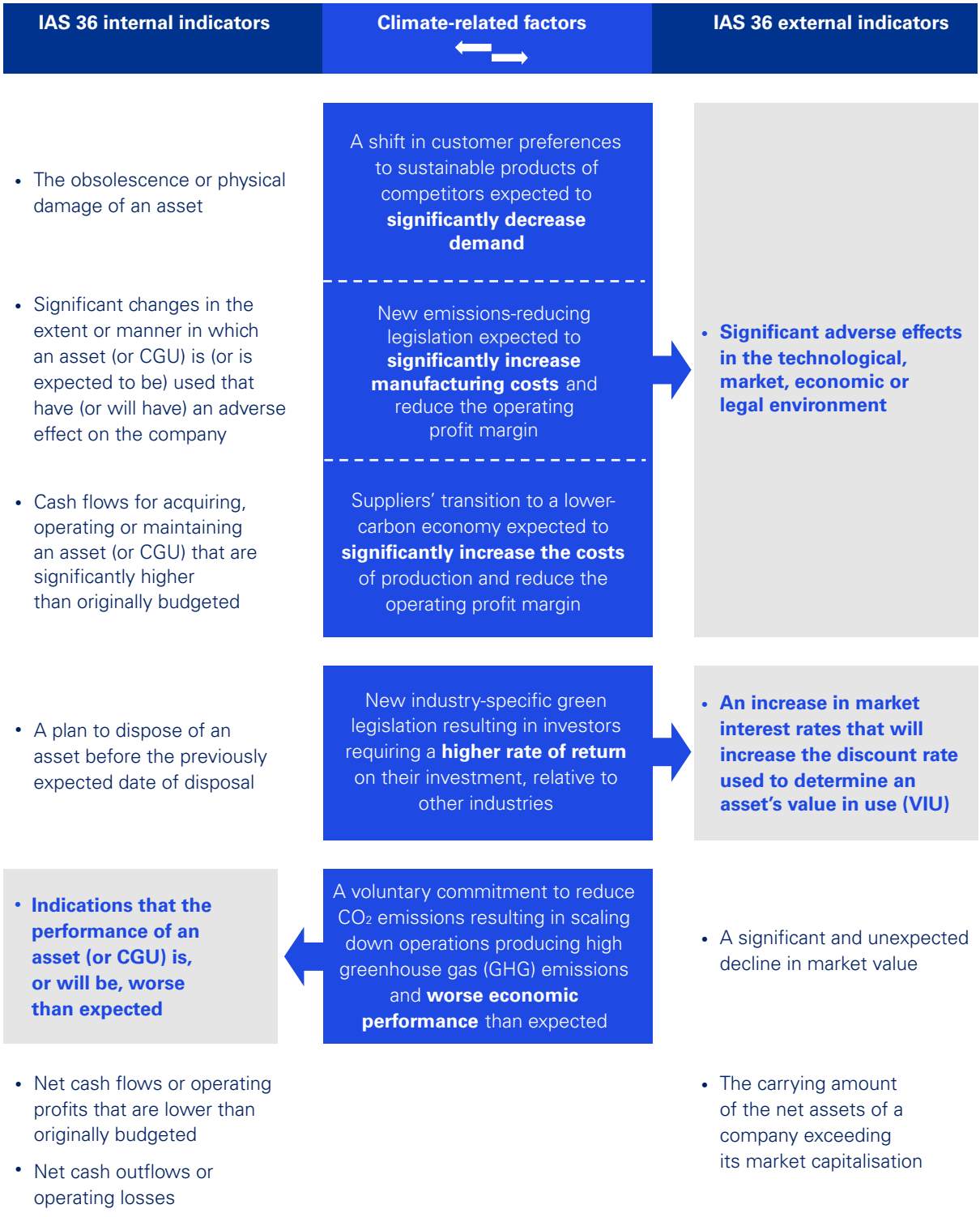
If there is an indicator of impairment, then a company needs to perform impairment testing. In some cases, the level of testing is clear. In others, further analysis may be required – e.g. whether to test carbon credits separately for impairment or within a CGU.

2. Irrespective of any indicator of impairment, IAS 36 requires goodwill, intangible assets with indefinite useful lives and intangible assets not yet available for use to be tested for impairment at least annually.

How to…
Identify indicators of impairment

At the end of each reporting period, a company is required to use the list in IAS 36 as a starting point to assess whether its assets may be impaired. The IAS 36 indicators may be triggered by climate-related and other factors.
[IAS 36.12(a)–(g), 14, Insights 3.10.120.20–30]

Below are examples of how climate-related factors may trigger some of the external or internal indicators of impairment listed in IAS 36.



Other indicators that an asset or CGU may be impaired also need to be considered.

Example 1A – Identifying external indicators of impairment that are climate-related

Company L, which produces wheat, has been affected more frequently and significantly in recent years by fires caused by extreme heat. These fires have negatively impacted the company's wheat crop yield. Investors may demand a higher rate of return to invest in the company because it has become more exposed to climate-related risks. If this is likely to increase the discount rate used in the discounted cash flow (DCF) and materially decrease the recoverable amount of a CGU, then it is an indicator of impairment. *[IAS 36.12(b)–(c)]*

Example 1B – Identifying internal indicators of impairment that are climate-related

Company X voluntarily commits to decarbonise its operations. As a result, it will need to significantly reduce certain activities and abandon property, plant and equipment (PP&E) earlier than planned.

The voluntary commitment is an indicator of impairment for both the PP&E that will be abandoned earlier and the affected CGU. *[IAS 36.12(f)–(g)]*

Insight…

Could climate-related factors impact the useful life and residual value of an asset or CGU?

Yes. The useful lives and residual values of assets may be impacted by the decisions that a company makes in its response to climate-related matters – e.g. a change to the company's strategy.

PP&E and intangible assets that have a finite useful life are depreciated over their useful lives to their residual values[3]. Therefore, any change in the useful life or residual value of an asset affects the depreciation expense.

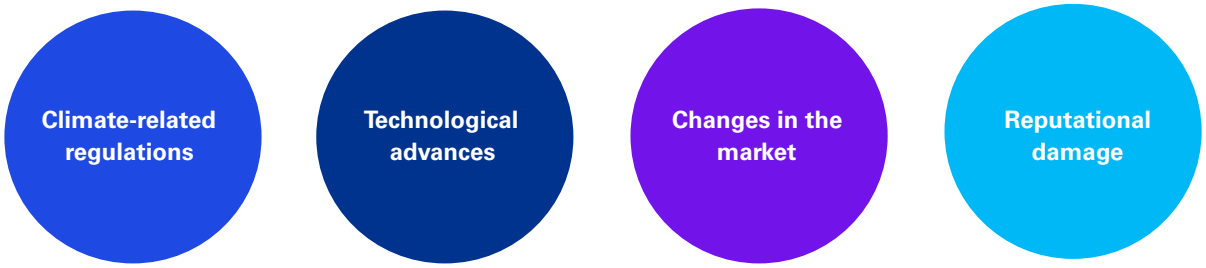
Management is required to review the useful life and residual value of an asset at each annual reporting date as a minimum. *[IAS 16.51, 57, 38.102, 104]*

IAS 16 *Property, Plant and Equipment* contains the following factors for a company to consider when determining or reviewing the useful life of a PP&E item:

- expected use of the asset – many companies have an asset management policy that may involve disposing of the asset before the end of its economic life;
- expected wear and tear;
- technical obsolescence arising from changes or improvements in production – expected future reductions in the selling prices of items produced using an asset could also be an indicator of that asset's technical obsolescence;
- commercial obsolescence arising from a change in market demand for the product or service output of the asset – expected future reductions in the selling prices of items produced using an asset could also be an indicator of that asset's commercial obsolescence; and
- legal or similar limits on the use of the asset. *[IAS 16.56–57]*

3. An asset's useful life is the period of time over which the company expects to use it, or the number of production (or similar) units that it expects to obtain from it. 'Residual value' is the amount that could currently be received from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition that it will be in at the end of its useful life. The residual value of an intangible asset with a finite useful life is generally assumed to be zero. *[IAS 16.6, 51, 57, 38.8, Insights 3.3.220]*

For example, the following may impact the useful life and residual value of an asset.



New legal restrictions on the use of certain assets – e.g. licences for exploration of minerals – or new taxes may impact the period of use

New environmentally friendly technologies may require companies to replace production-related assets early

Shifts in consumer preferences towards green products may accelerate the commercial obsolescence of assets producing non-green products

Use of polluting assets may cause damage to a company's brand

A company also needs to consider whether a decrease in the useful life of an asset indicates that estimates used to measure a related decommissioning provision need to be revisited. Climate-related matters could also affect management's assessment of indefinite useful life – i.e. the useful life of an intangible asset (e.g. a brand) could become finite. *[IAS 38.109, Insights 3.3.190]*

Example 2 – Change in useful life and residual value of PP&E in response to climate-related restrictions

Company T, a transport company with a fleet of diesel trucks, is performing its annual review of the trucks' useful lives. T considers how its future business may be impacted by climate-related risks and opportunities. There are newly introduced restrictions on the use of diesel vehicles in several large cities in the country where T operates. T expects more cities to introduce similar restrictions in the future. Such restrictions will create significant difficulties for T to transport goods using its diesel fleet.

Consequently, T decides to dispose of all of its diesel trucks after three years rather than the usual 10 years of service and revises the useful lives of its diesel trucks accordingly. T also reviews the residual values of its diesel trucks. The market price for similar used diesel trucks has decreased significantly following the new restrictions. However, because the trucks' mileage in three years' time is expected to be lower under the new policy, the residual values have only decreased by 10%. Together, the decrease in the trucks' estimated useful lives and residual values results in a significant increase in the depreciation expense.

Connectivity…

Consider connectivity with climate-related information provided outside the financial statements

Consider the connectivity of climate-related information with information disclosed outside the financial statements, by evaluating whether:

- there is a difference between the information about climate-related matters provided and the inputs and assumptions used to:
  - assess whether indicators of impairment exist; and
  - estimate useful lives and residual values of the company's non-current assets or CGUs; and
- the company's climate-related strategy (e.g. its plan to transition to a lower-carbon economy) and targets, or its climate-related commitments, are consistent with its useful lives and residual values of non-current assets.

Insight…

Could climate-related matters impact the fair value of PP&E and investment property?

Yes. Estimating the fair value of PP&E is required when it is accounted for under the revaluation model or at cost and tested for impairment using fair value less costs of disposal (FVLCD). Similarly, estimating the fair value of property classified as investment property is required when it is measured at fair value, or at cost and tested for impairment on a FVLCD basis, as well as for disclosure purposes. Fair value is a market-based measurement. Therefore, the impact of potential climate-related matters is considered using assumptions that market participants would make in pricing the asset. *[IFRS 13.2, 22]*

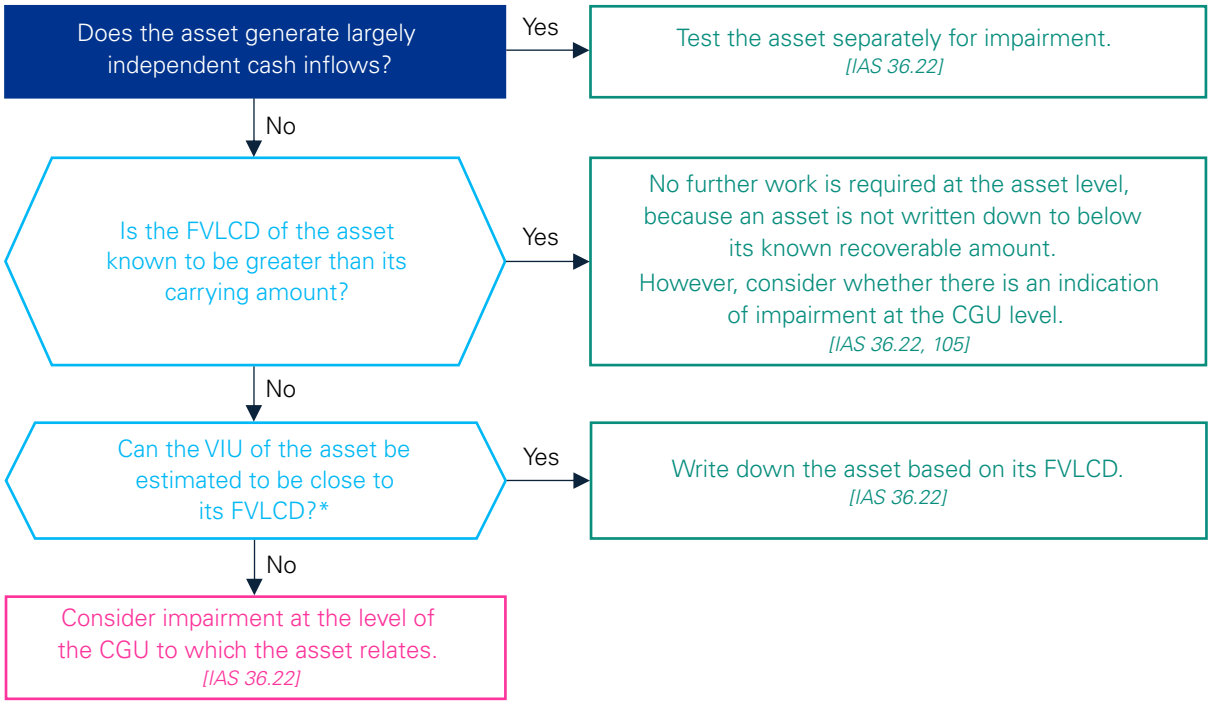
Climate-related matters may shorten the useful life of PP&E – for example, technical obsolescence arising from development of new green technologies, commercial obsolescence arising from changes in demand for the product or service output of the PP&E item, or because of legal or regulatory limits on the use of the PP&E. As a result, climate-related matters may affect the fair value measurement from the perspective of a market participant.

In some geographical areas, the increased frequency and severity of extreme weather events – e.g. flooding, wildfires and severe storms – has become an issue for the occupation and ownership of real estate. However, it is not only the impact of climate-related physical risks that may prompt real-estate investors to reflect such risks in valuations. Climate-related matters may affect valuations by decreasing net operating income from properties. This may occur, for example, as a result of rising insurance premiums following extreme weather events.

How to…

Determine the level at which to perform impairment testing

The nature of the impairment indicator and, in some cases, of the asset, determines the level at which impairment testing is carried out. In some cases, it is clear that a CGU rather than an individual asset needs to be tested for impairment. In other cases, the indicator of possible impairment is at the level of the single asset and a company needs to apply the following steps in IAS 36 to determine whether to test the asset or CGU for impairment. *[Insights 3.10.125.10, 60]*



*A company can estimate the VIU of an asset to be close to its FVLCD when future cash flows from continuing use of the asset can be estimated to be negligible, or when it is intended to be sold within a short period of time. *[IAS 36.67]*

Example 3 – Testing a single asset vs a CGU – Decline in the market value of carbon credits

Company P holds carbon credits to offset its expected carbon emissions under a mandatory emissions scheme in Jurisdiction X. P classifies these carbon credits as intangible assets and accounts for them under the cost model. An active market exists for the carbon credits.

Their spot price at 31 December 20X5 of 70 is lower than their carrying amount of 100, following a recent decline in price. This price decline is a possible indicator of impairment and P needs to determine the level at which to perform the impairment test. P operates one factory that comprises a single CGU.

Applying the steps in the flowchart, P determines that the CGU as a whole should be tested for impairment – i.e. the carbon credits should not be tested separately. This is because:

- the carbon credits do not generate largely independent cash inflows – they are not intended to be sold but used in combination with other assets as part of the CGU's operations; and
- their VIU cannot be estimated to be close to their FVLCD. *[IAS 36.67, 107, Insights 3.10.125.163–165]*

Step 2: Determine recoverable amount

2.1 Concepts and approaches

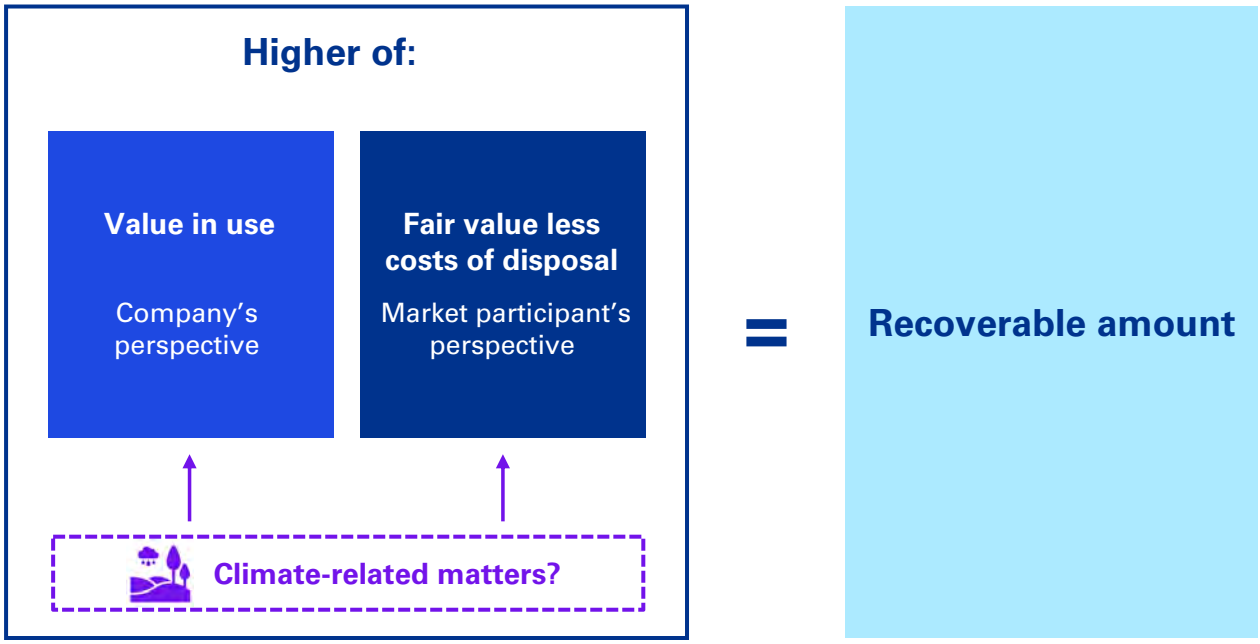
2.1.1 VIU vs FVLCD

Recoverable amount is the higher of VIU and FVLCD.

- VIU is management's best estimate of the future cash flows to be derived from continuing use of an asset or CGU.
- FVLCD is the price that would be received to sell an asset or CGU in an orderly transaction between market participants at the measurement date – i.e. fair value[4] – less the costs of disposal. *[IAS 36.6]*

Accordingly, the assumptions used to measure fair value are from the perspective of a market participant rather than the company.

Companies need to consider whether and how climate-related matters[5] can be reflected in VIU and FVLCD – and also assess whether they affect the 'higher of' conclusion. For example, a specific climate-related opportunity may be reflected in a CGU's FVLCD but not in its VIU.



4. This publication focuses on the impact of climate-related matters on a discounted cash flow (DCF) – i.e. the income approach.
5. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

How to…
Reflect climate-related matters in VIU and FVLCD

IAS 36 addresses the measurement of VIU, while IFRS 13 *Fair Value Measurement* provides guidance on how to measure fair value[6].

Understanding the key differences between VIU and FVLCD is important when climate-related matters may significantly impact the asset or CGU being tested for impairment. The differences may provide an initial indication of whether VIU or FVLCD is higher. See *Insight… Can climate-related matters affect the 'higher of' conclusion?*

The following table provides a summary of the key differences that are relevant to climate-related matters.

Key differences	VIU (IAS 36)	FVLCD (IFRS 13)
Assumptions	The starting point for cash flow projections is the company's budgets and forecasts – i.e. it is based on management's best estimate. *[IAS 36.33]*	The starting point for cash flow projections is the company's budgets and forecasts, but these are adjusted to reflect a market participant's assumptions. *[IFRS 13.89]*
Perspective	Reflects the continuing use of the asset/CGU in its current condition. *[IAS 36.6]*	Reflects a sale of the asset/CGU to a hypothetical buyer, who might decide to use the asset/CGU in a different way. *[IAS 36.6]*
Company-specific synergies	Included.	Excluded.
Capital expenditure	Only includes capital expenditure to improve or enhance an asset's performance once the expenditure is incurred, or if it is akin to maintenance expenditure. *[Insights 3.10.250]*	Included, if consistent with a market participant's perspective.
Restructuring	Excluded, unless specifically committed under IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*[7]. *[IAS 36.46–47, Insights 3.10.260]*	Included, if consistent with a market participant's perspective.
Forecast period	Maximum of five years, unless management can demonstrate its ability to forecast cash flows accurately beyond five years. *[IAS 36.35]*	Can be longer than five years, if consistent with a market participant's perspective.
Long-term growth rate (LTGR)	LTGR steady or declining, consistent with that of the product/industry/country, unless an increase is in line with objective information.	Reflects an LTGR that a market participant would use.

6. See our Fair value measurement handbook for further insights on measuring fair value.
7. For accounting purposes, a company is committed to a restructuring only when it meets the criteria to recognise a restructuring provision under IAS 37.

Example 4A – Climate-related opportunities – VIU vs FVLCD

Last year, Company T acquired a business that comprises a single CGU. The acquisition price reflected a climate-related opportunity which will enhance the asset's performance but also requires significant capital expenditure. This climate-related opportunity cannot be reflected in the CGU's VIU.

Conversely, the CGU's FVLCD is calculated from the perspective of a market participant. Therefore, the climate-related opportunity is reflected in the CGU's FVLCD if it is not exclusively available to T but also to a market participant (i.e. upon selling the CGU the opportunity is expected to transfer to the buyer) and the market participant would reflect it in pricing the CGU.

Example 4B – Planned restructurings to address climate-related matters – VIU vs FVLCD

Company S is a manufacturer of diesel and electric trucks. Electric trucks are in higher demand and S plans to close its diesel truck manufacturing operations. S has not committed to this restructuring.

Under VIU, cash flow projections exclude cash flows related to future restructurings to which the company is not yet committed. Therefore, S cannot reflect the restructuring effect on VIU until it has committed to this. Generally, management includes planned cash flows related to a restructuring in its internal budgets and forecasts. This means that, in calculating VIU, companies need to adjust their budgets and forecasts to exclude these amounts until the company is committed to the restructuring.

When calculating FVLCD, S would include the effect of the restructuring in cash flow projections (irrespective of whether it is considered committed or uncommitted) if this would be consistent with a market participant's perspective.

Insight…

Can climate-related matters affect the 'higher of' conclusion?

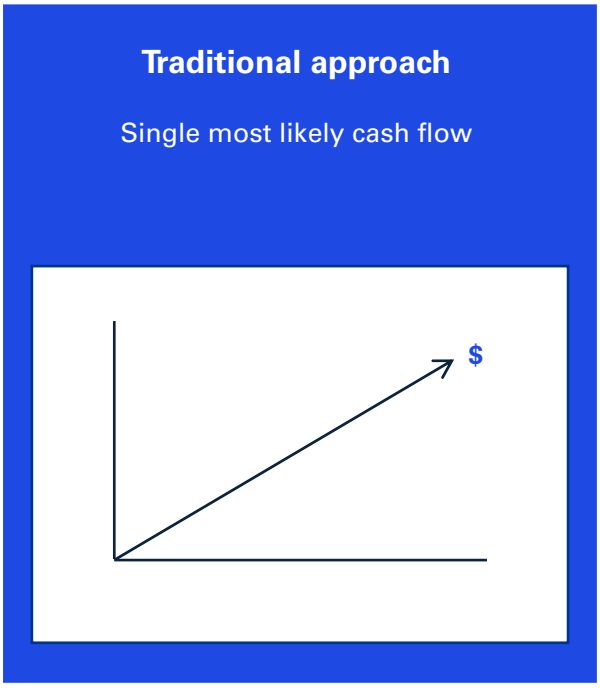
Yes. Climate-related matters may affect the 'higher of' conclusion if, for example, climate-related opportunities are reflected in FVLCD but not in VIU. For example, reflecting uncommitted restructurings and capital expenditure to enhance assets is restricted in VIU calculations but not in FVLCD calculations.

In some cases, it can be challenging to determine whether future asset improvements are more akin to maintenance expenditure or to capital improvement. In such cases, using FVLCD may allow those cash flows to be included if this aligns with a market participant's perspective. See *How to… Determine whether planned capital expenditure to address climate-related matters is more akin to maintenance expenditure or capital improvements*.

2.1.2 Traditional approach vs ECF approach

Two approaches can be used to project cash flows to calculate present value – the traditional approach and the expected cash flow (ECF) approach. These approaches are relevant to both VIU and FVLCD.

The traditional approach uses a single (most likely) cash flow projection and does not involve adjustments to the cash flows for their risk. In contrast, the ECF approach uses multiple, probability-weighted cash flow projections. A company needs to consider whether the approach it uses appropriately captures climate-related matters[8]. *[IAS 36.A2]*



Example 5 – Comparing the traditional and the ECF approach

Company K determines four different cash flow scenarios for an asset with an expected useful life of five years: upside, base case, downside and worst case. Cash flows are assigned to each of the scenarios over a five-year period, along with a probability of occurrence.

Probability	Scenario	Y1	Y2	Y3	Y4	Y5
10%	Upside	110	90	100	110	120
55%	Base case	105	80	90	100	110
20%	Downside	105	80	80	90	95
15%	Worst case	100	80	80	80	85

Under the traditional approach, only the base case – as the most likely scenario – is considered in the cash flow projection.

Under the ECF approach, K considers all four scenarios. The cash flow in each year is calculated as the sum of the cash flows under each scenario multiplied by the probability of occurrence of that scenario. For example, in Year 5, the expected cash flows are 104 based on the following calculation: (10% × 120) + (55% × 110) + (20% × 95) + (15% × 85).

Traditional approach	105	80	90	100	110
ECF approach	105	81	87	96	104

8. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

The traditional approach does not involve explicit adjustments to the cash flows to take account of the fact that a range of outcomes are possible. Given the single most likely cash flow projection is generally used, all adjustments for risk are reflected in the discount rate. *[IAS 36.A1–A2, A4]*

The approach used – whether traditional or ECF – also impacts how the discount rate is calculated. See *How to… Calculate the WACC used to discount cash flows under the traditional approach and the ECF approach*. Under the traditional approach, a company needs to consider whether an adjustment to the discount rate for risks not reflected in the cash flows is required (see Discount rate section). Adjustments to the discount rate are made only if they can be supported (see Where to reflect climate-related matters section).

How to…

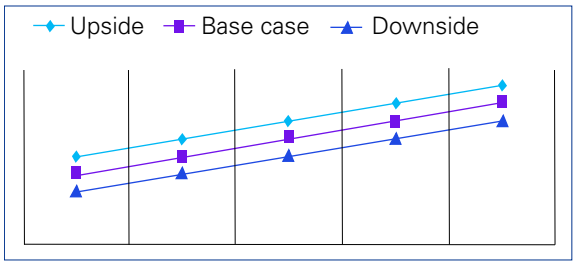
Determine whether the approach used is appropriate

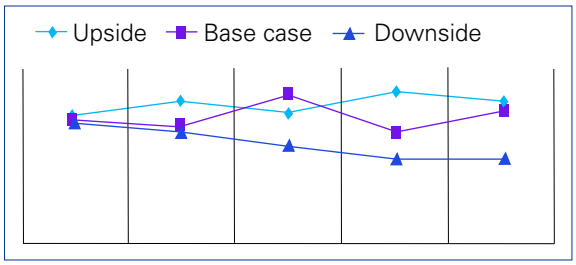
Although the traditional approach is more commonly used, it may sometimes be less suitable for reflecting climate-related matters, whereas the ECF approach identifies and models various potential outcomes and provides computational transparency of the expected cash flows.

However, one of the main challenges in using the ECF approach is estimating the probabilities assigned to each scenario.

In certain cases, climate-related matters may be more appropriately captured by using two or more cash flow scenarios – i.e. by applying the ECF approach. This may be the case for companies that are significantly affected by climate-related risks. If significant downside scenarios are more likely and/or more severe than the upside scenarios, then climate-related matters may be more appropriately captured under the ECF approach (see right-hand diagram below). *[IAS 36.A2, A7]*

In some cases, the single cash flow estimate used in the traditional approach may be very similar to the expected cash flows used in the ECF approach – for example, when the most likely cash flows are in the middle of the range of possible outcomes, and the upside and downside scenarios have approximately equal probabilities and are a similar distance from the median. In such cases, it may be more appropriate to use the traditional approach (see left-hand diagram below).





Example 6 – Determining whether to use the traditional or ECF approach

Company X's production process requires extensive consumption of water and electricity. To mitigate significant climate-related risks, such as increased costs and limited availability of water and electricity, X decides to construct a water recycling facility and a solar farm. These projects are approved by the Board of Directors and construction is expected to commence within the next two years.

X considers the three scenarios presented to the Board of Directors in calculating FVLCD. Management's assumptions are consistent with those of a market participant.

Scenario	Probability	Construction costs	Water recycling costs (KWh/kilogallon)	Construction period	Enterprise Value (EV)
Upside	10%	90m	1.4	3 years	215m
Base case	60%	100m	1.5	4 years	200m
Downside	30%	130m	2	5 years	150m

The base case, to which a 60% probability is assigned, is based on X's budget. The differences between the scenarios arise from the projected construction costs, the construction period and the expected costs of water recycling.

X determines that it would be appropriate to use the ECF approach, because the downside scenario is much more severe than the upside scenario, and the probability assigned to it is much higher. Therefore, the use of a single most likely cash flow under the traditional approach would not provide a similar result to the weighted-average of three cash flow scenarios applying the ECF approach.

Connectivity…

Does the climate-related scenario analysis presented outside the financial statements need to be consistent with the cash flow projections used for impairment testing?

Not necessarily. Although climate-related scenario analysis and cash flow projections for impairment testing purposes are both forward-looking assessments of a company's cash flows, they serve different purposes.

Some sustainability disclosure standards require companies to use scenario analysis to assess their climate resilience. If a company performs a 'what-if' analysis of the potential impacts from sustainability-related risks or opportunities to assess uncertain outcomes in a range of hypothetical situations, then this differs from cash flow projections for impairment testing purposes, which are a forecast of what is expected to happen.

The scenarios used to perform climate-related scenario analysis may differ from scenarios used under the expected cash flow approach. Scenario analysis does not rely on probability and does not aim to forecast or predict (by assessing likelihood). However, key assumptions need to be consistent where appropriate.

2.2 Where to reflect climate-related matters

Companies typically use the DCF technique to calculate the recoverable amounts of assets (or CGUs). Companies need to determine whether to reflect the impact of climate-related matters[9] – such as the risk of penalties being imposed as a result of new environmental legislation expected to be enacted in a few years – in the cash flows or the discount rate.

In valuation practice, the impact of climate-related matters is generally reflected in the cash flows rather than in the discount rate, whenever possible. However, this may not be possible when cash flow projections relate to circumstances or events that are outside the company's control and there is no data or evidence to support the cash flow projection.

9. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

How to…

Determine whether climate-related matters should be reflected in the cash flows or in the discount rate

A company reflects the impact of climate-related matters in the cash flows whenever possible. This may not be possible when cash flow projections are affected by circumstances or events that are outside the company's control and there is no data or evidence to support the cash flow projection.

If sufficient data is not available, or it is not possible to reliably quantify the impact of a climate-related matter on the cash flows, then adjustments to the discount rate may need to be considered to reflect climate-related matters.

Adjustments to the discount rate may be made if they can be supported and do not result in double counting (see Discount rate section). Methods that may be used to support such adjustments include calculating:

- an adjustment factor based on market multiples for comparable listed companies – comparable transactions may also provide some support; and
- the implied adjustments to cash flows that would be consistent with the proposed adjustment to the discount rate.

In some cases, it may be appropriate to reflect climate-related matters in both the cash flows and the discount rate. For example, this may be the case if climate-related measures are expected to change the cash flows (by reducing revenues or by increasing costs or capital expenditure) and increase their risk or range of outcomes.

Example 7A – Reflecting climate-related matters in the cash flows or the discount rate

Company K operates in Jurisdiction X, which is committed to achieving net-zero emissions by 2050, as pledged under the Paris Agreement[10]. To reach this target, the enactment of a carbon tax law is necessary, mirroring actions taken by other jurisdictions with similar targets.

The government in Jurisdiction X is considering the introduction of climate-related legislation, but has neither announced specific legislative actions or plans nor provided any details associated with the legislation (e.g. the penalty mechanism).

K needs to assess whether it can reflect the impact of these climate-related matters on FVLCD or VIU in the cash flows. If the impact cannot be reflected in the cash flows, then K needs to consider reflecting it through the discount rate if a market participant would seek compensation for bearing the higher uncertainty, but the adjustment to the discount rate needs to be supported.

Example 7B – Supporting an adjustment to the discount rate to reflect climate-related matters

Continuing Example 7A, Company K estimates VIU considering the impact of a future carbon tax law. The tax may be enacted within the next three years and, based on similar taxes in other jurisdictions, the tax per tonne of carbon emitted could range between EUR 60 and EUR 80.

In estimating VIU, K reflects the impact of the potential future carbon tax law by adjusting the discount rate (the weighted-average cost of capital (WACC)) from 8% to 9%. Management does not reflect the impact of a future carbon tax law in its cash flow forecasts because there is no information to estimate the probabilities to assign to the different scenarios – i.e. the probability that the carbon tax would be EUR 60, EUR 70 or EUR 80 per tonne.

The WACC of 8% is calculated using comparable companies' five-year betas which do not reflect the risk of enacting a carbon tax law in the future. Discounting cash flows using a WACC of 9%, with no other adjustments to the cash flows, results in a VIU of EUR 345.

In assessing whether the adjustment to the discount rate can be supported, K calculates the implied adjustments to the cash flows necessary to reflect the potential impact of the carbon tax that would be consistent with the proposed adjustment to the discount rate.

10. The Paris Agreement seeks to limit the rise in global temperatures to well below 2°C above pre-industrial levels and to pursue efforts to keep the rise to 1.5°C.

To do this, K:

- uses the minimum (EUR 60) and maximum (EUR 80) levels of carbon taxes (CO_2/tonne);
- assumes the carbon tax law will become effective in either one or three years; and
- uses the unadjusted WACC of 8% to calculate the following range of VIUs.

VIU (WACC = 8%)	Effective in one year	Effective in three years
CO_2/tonne = EUR 60	**370**	380
CO_2/tonne = EUR 80	320	**330**

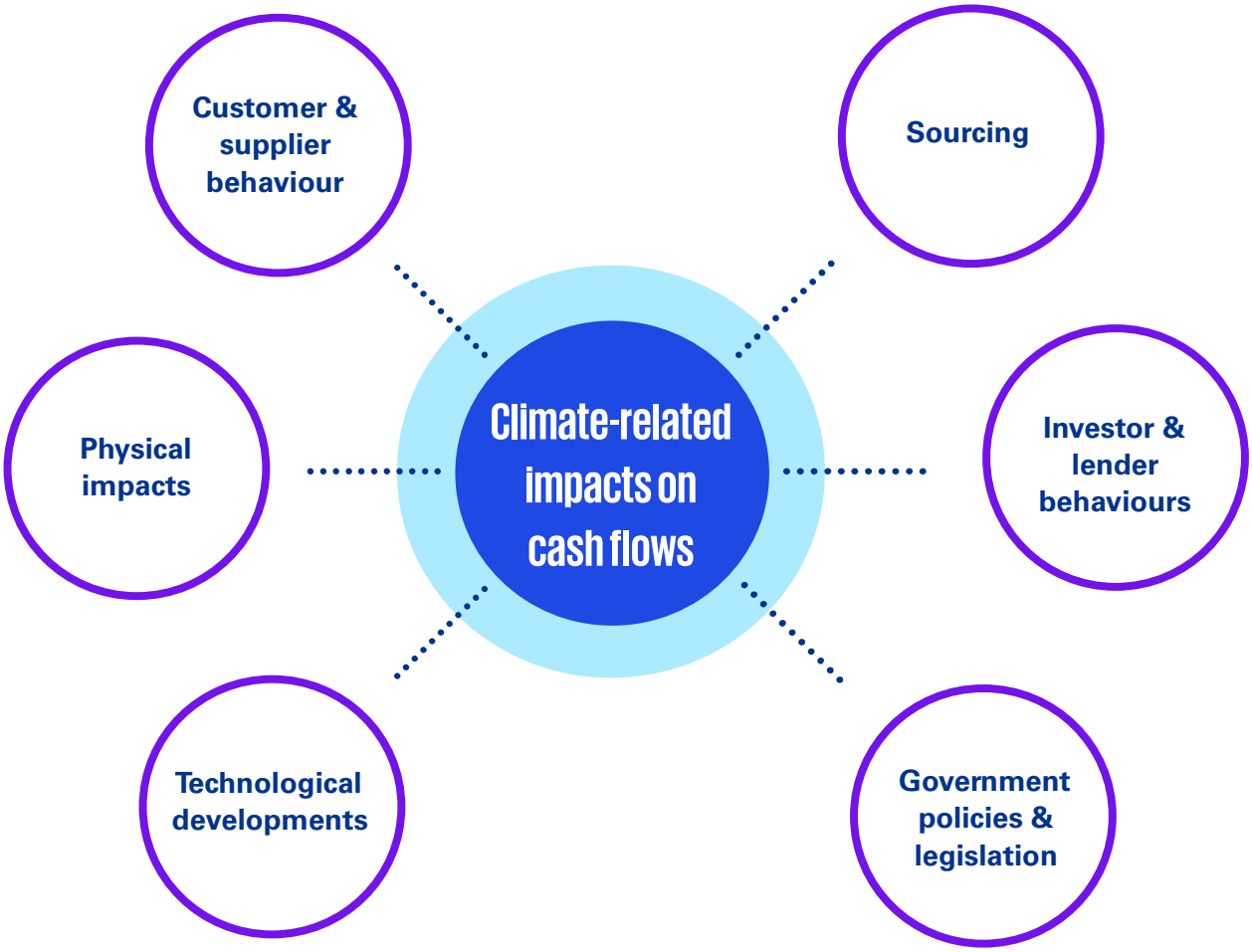
Expectations are that a higher tax (e.g. EUR 80) would be imposed if it takes longer for the tax to be enacted and become effective, and vice versa. Therefore, VIU is more likely to be between EUR 330 and EUR 370. K concludes that its analysis supports the adjustment to the WACC from 8% to 9% because its estimated VIU of EUR 345 falls within this range and the range is sufficiently narrow.

A wide range of recoverable amount estimations may be an indication that further analysis is needed.

2.3 Cash flows

After identifying the potential financial impacts of relevant climate-related risks and opportunities[11], a company needs to reflect them in the forecast cash flows where possible (see Where to reflect climate-related matters section) – e.g. in its expectations of revenues, opex (including research and development) and capex.

A company also needs to consider how to reflect its climate-related commitments and future changes in climate-related legislation in its cash flows.



11. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

Insight…

How might climate-related matters affect cash flow projections?

Climate-related risks and opportunities may significantly affect a company's strategy, as well as its expectations of revenues, opex (including research and development) and capex, in different ways. The following table highlights some examples.

Impact	Potential effects on cash flow projections
Customer and supplier behaviour	Revenue and growth may change as customer preferences shift towards more sustainable products. The cost base may also change because of the impact of climate-related matters on suppliers – e.g. suppliers may pass increased costs through the supply chain, affecting their customers' production costs. Whether suppliers would pass on these increased costs to their customers may depend on the nature of the product or service and the level of competition in the market.
Sourcing	Costs may increase due to a company's selection of suppliers with lower carbon footprints under new sustainability strategies. Such suppliers may incur higher costs of production. Additionally, the purchase price of raw materials may increase as a result of suppliers facing higher costs of production, transport and/or financing.
Investor and lender behaviour	Companies with higher exposure to climate-related risks may incur higher financing costs or become financially constrained if investors or lenders factor climate-related risks into their investing or lending decisions.
Government policies and legislation	The introduction of new climate-related policies or legislation – e.g. a new carbon tax – may affect revenues or operating costs.
Technological developments	Emerging green technology may affect a company's competitiveness in the market and result in higher capex to develop or acquire equivalent technology.
Physical impacts	Changes, such as rising temperatures or an increase in the frequency and severity of extreme weather events, may give rise to higher insurance or maintenance expenditure. They may even limit the suitability of current operating locations.

Some companies have climate-related opportunities as well as risks. For example, proactive companies that develop green products or implement decarbonisation plans may gain access to new markets, benefit from shifting consumer preferences or improve energy efficiency.

Connectivity…

Can there be differences between the strategy and assumptions described outside the financial statements and the estimates and assumptions used in the impairment test?

Yes. Although there needs to be consistency, where appropriate, there can be apparent differences between the assumptions used to calculate the recoverable amount and the narrative descriptions or quantitative information disclosed outside the financial statements – e.g. for sustainability reporting – even though the facts and circumstances are the same. This is because the recognition and measurement requirements of IFRS® Accounting Standards apply when calculating the recoverable amount.

Whether the company is calculating the recoverable amount on the basis of VIU or FVLCD may impact the differences in estimates and assumptions used in the sustainability report and impairment test.

VIU	Under VIU, it may not be appropriate to reflect a company's transition plan to a lower-carbon economy or its climate-related commitments, given the constraints of IAS 36 on reflecting certain asset enhancements or improvements and uncommitted restructurings. See *How to… Reflect climate-related matters in VIU and FVLCD*. Additionally, differences may exist because of the length of the forecast period. Under IAS 36, cash flow projections cover a maximum period of five years when estimating the VIU of an asset (or CGU), unless a longer period can be justified. See *Insight… Could climate-related matters potentially affect the length of the forecast period?* This may differ from assumptions used outside the financial statements where a similar five-year limit does not exist.
FVLCD	Differences in estimates and assumptions may exist when the recoverable amount is calculated under FVLCD. This is because a company may provide information outside the financial statements (e.g. in the front part of the annual report) from its own perspective, but the estimates and assumptions used in a FVLCD calculation are from the perspective of a market participant.

Connectivity…

What needs to be considered when evaluating the connectivity of cash flow assumptions with climate-related information provided outside the financial statements?

A company needs to consider whether its growth rates, profit margins and other cash flow assumptions included in the forecast period are consistent, where appropriate, with the information disclosed outside the financial statements, including its:

- climate-related strategy – e.g. its plan to transition to a low-carbon economy – and targets; or
- climate-related commitments.

How to…

Determine whether planned capital expenditure to address climate-related matters is more akin to maintenance expenditure or capital improvements

When calculating VIU, in some cases management needs to apply judgement to assess whether planned capital expenditure that will be incurred in response to climate-related matters (e.g. making an asset compliant with climate-related laws or regulations) is more akin to maintenance expenditure or capital improvements. *[Insights 3.10.250.80]*

Capital expenditure

VIU	FVLCD
Maintenance expenditure is included in cash flow projections. Capital improvements are included in cash flow projections for VIU only once the expenditure is incurred. In our view, capital expenditure should be considered incurred once the project has substantively commenced, rather than it being necessary for the project to have been completed. *[Insights 3.10.250.20]*	Maintenance and future capital expenditure to improve or enhance an asset's performance (and any related benefits) is included in cash flow projections if this is consistent with a market participant's perspective.

Maintenance expenditure will often include an element of improvement simply because of the natural process of technological advancement, which requires a company to replace old equipment with newer, more technologically advanced equipment that performs essentially the same function.

Despite there being a technological upgrade, a replacement may still be considered 'maintenance'. Therefore, in some cases a company needs to use significant judgement to determine whether planned capex on assets with shorter useful lives (i.e. compared with that of the essential asset with the longest useful life) is more akin to maintenance expenditure or capital improvements. See *Insight… What should a company consider when identifying the essential asset with the longest useful life?*

In our view, factors that a company may use in determining whether planned capital expenditure is more akin to maintenance expenditure or capital improvements include:

- the level of enhancement to the CGU's capacity; and
- the extent of the change to the CGU's production process and consequently to the nature of the CGU's products.

For example, capex is more akin to maintenance expenditure if the CGU's capacity (e.g. the number of items that can be produced or services provided) would not increase significantly as a result of the capex. *[Insights 3.10.250.80]*

Example 8A – Maintenance expenditure vs capital improvements (1)

Company M operates a fleet of old diesel trucks for transporting timber from its forests to the factory. M plans to replace these diesel trucks in three years, at the end of their useful lives, with electric trucks.

M comprises a single CGU containing goodwill and is therefore tested annually for impairment. The impairment test is performed under VIU at the CGU level, not at the level of the diesel trucks.

M does not expect the planned expenditure on electric trucks to increase the CGU's capacity, alter the CGU's production process or change the nature of its products. Therefore, M reflects this expenditure in its cash flow forecasts because it is more akin to maintenance expenditure. *[Insights 3.10.250.120–130]*

Example 8B – Maintenance expenditure vs capital improvements (2)

Company N is a manufacturer emitting GHGs. As part of its transition to a lower-carbon production process, next year N plans to acquire a newly developed electrochemical device capturing CO_2 to significantly reduce its GHG emissions. The device will be added to N's existing production line. N's budget reflects this future acquisition.

N comprises a single CGU containing goodwill and is therefore tested annually for impairment. The recoverable amount is calculated on the basis of VIU.

Even though the device is not replacing an existing similar item, N does not expect it to enhance the CGU's capacity, alter its production process or change the nature of its products. Therefore, N reflects the acquisition of the device in its cash flow forecasts because it is more akin to maintenance expenditure. *[Insights 3.10.250.140–150]*

Example 8C – Maintenance expenditure vs capital improvements (3)

Company G produces solar roof tiles. A new regulation in Country S (where G operates) offers incentives to users of solar energy and G believes that demand for solar roof tiles will increase significantly. Therefore, G decides to construct a new manufacturing facility that will produce photovoltaic cells for solar roof tiles. G will also move the production of specific components, which will be used for both regular and solar roof tiles, from its existing production line to this new facility. These components comprise less than 15% of a tile. Production of these components using the existing production line will cease once the new facility becomes operational. G's management approves the project and plans to start the construction next year. G comprises a single CGU which is tested for impairment. The CGU contains essential assets with useful lives longer than the useful life of the existing production line.

G considers whether the cash flows from production of solar roof tiles belong to the current CGU or to a new future CGU ('solar roof tiles'). G determines that the cash flows belong to a new CGU and therefore excludes them from its cash flow projections for the current CGU.

G notes that the capital expenditure related to the new production line for the shared components, which will be more technologically advanced and efficient compared with the existing one, would not result in a significant increase in the CGU's capacity or a change in the nature of the product. Therefore, G concludes that this capital expenditure is more akin to maintenance expenditure and allocates part of this expenditure to the current CGU. *[Insights 3.10.250.160–170]*

Insight…

What should a company consider when identifying the essential asset with the longest useful life?

If a CGU consists of several assets that are essential to the ongoing business of the company, then the impairment test is performed based on the essential asset with the longest useful life. The replacement of assets with shorter lives is considered part of the day-to-day servicing of that CGU, provided it maintains the CGU's level of economic benefits – i.e. the CGU's capacity remains the same. *[IAS 36.49, Insights 3.10.230.60]*

In some cases, a CGU may contain an intangible asset with an indefinite useful life or goodwill. In our view, a company cannot conclude automatically that the intangible asset with an indefinite useful life or goodwill is the essential asset. All facts and circumstances are considered in determining which asset is essential to the operations of the CGU. *[Insights 3.10.230.70]*

In our view, an essential asset need not be an asset recognised in the statement of financial position. For example, depending on the facts and circumstances of the CGU, it might be appropriate to conclude that the essential asset is an unrecognised brand. *[Insights 3.10.230.90]*

Insight…

Do climate-related commitments need to be reflected in forecast cash flows?

It depends. An increasing number of companies are making climate-related commitments[12]. To meet their commitments, companies' plans may include the following actions.

Replacing existing PP&E with a green alternative

Moving towards more expensive green inputs in the production process

Improving energy or operational efficiency

Moving towards renewable energy

Purchasing carbon credits to offset emissions above a specific level or after a specific date

Changing suppliers for key inputs into the production process

Depending on the company's strategy, meeting its commitment may involve, for example, significant expenditure on research and development to develop green products or services, capital expenditure to acquire or construct greener assets (and sell existing assets), restructurings or purchases of carbon credits to offset carbon emissions. Therefore, a company's climate-related commitments may need to be reflected in the forecast cash flows used to calculate the recoverable amount.

If a company makes a climate-related commitment, then the assumptions used in calculating the recoverable amount need to be consistent to the extent possible, considering the requirements of IAS 36 for VIU and IFRS 13 for FVLCD (see VIU vs FVLCD section for further guidance).

If a company is committed to purchasing carbon credits, for example, to meet its commitment to offset its CO_2 emissions, then its financial budgets or forecasts would reflect this commitment and future costs of purchasing carbon credits would be included in estimating VIU.

12. The reference to climate-related or environmental commitments assumes that, for example, an actual pledge, commitment or formal plan exists and that it is reflected in financial budgets or forecasts approved by management. Read our article Net-zero commitments for guidance on defining a net-zero commitment and whether to recognise a liability.

Insight…

Should the recoverable amount reflect the impact of future changes in climate-related legislation?

It depends. The following table highlights how a company might determine whether the recoverable amount should reflect the impact of future changes in climate-related legislation – e.g. through either the cash flows or the discount rate – when calculating VIU or FVLCD.

VIU	In our view, a company should consider the impact of future changes in non-income tax laws (e.g. a carbon tax law that is expected to be enacted). In practice, depending on the local legislative process, it may be challenging to determine the impact of the future changes. If sufficient information about future changes in laws is available and management's best estimate is that the changes may have a significant impact on VIU, then we believe that the company should reflect the impact when determining VIU. *[Insights 3.10.285]*
FVLCD	In our view, a company should consider the impact of future changes in non-income tax laws from a market participant's perspective. This analysis should take into account whether such changes would be applicable or relevant to a market participant. In practice, depending on the local legislative process, it may be challenging to determine the impact of the future changes. If sufficient information about future changes in such laws is available and this information would allow a market participant to reflect the impact of these changes in FVLCD, then we believe that the company should reflect the impact when determining FVLCD. *[Insights 3.10.205]*

Information on future changes to laws is external to the company – the same information would be available to management and market participants. Accordingly, there may be no difference in the impact of future changes to laws on an asset or CGU's VIU and FVLCD.

This is different from the measurement criteria of a liability under IAS 12 *Income Taxes* (or IAS 37) under which a company does not reflect future changes in laws if they are not substantively enacted (or virtually certain of being enacted). *[IAS 12.46–48, 37.22]*

Example 9 – Reflecting the impact of a future carbon tax law

Scenario 1: A new draft carbon tax law

Company Y operates in a jurisdiction where a future carbon tax law is expected to significantly decrease its operating profit margins. The law is at an advanced stage of the legislative process. Discussions are ongoing regarding:

- whether the law will become effective in one year or two years; and
- the amount of tax to be paid per tonne of carbon emitted.

Based on these discussions and the draft carbon tax law, the tax is expected to be between EUR 50 and EUR 100 per tonne. Y's management believes that it is highly likely that the law will be approved.

Scenario 2: A future carbon tax law

Company K operates in a jurisdiction committed to achieving net-zero emissions by 2050, as pledged under the Paris Agreement. To reach this target, the enactment of a carbon tax law is necessary, mirroring actions taken by other jurisdictions with similar targets.

In recent years, the government has undertaken necessary actions to meet its climate targets, demonstrating a political will to enact the required climate-related laws and regulations. It is anticipated that the government will continue with its agenda and future legislation is expected to be approved. However, the specifics of when such a law will be enacted and the mechanics of the carbon tax remain uncertain. Based on similar taxes in other jurisdictions, the tax per tonne of carbon emitted could range between EUR 60 and EUR 80. The enactment of this law may occur within the next three years and would significantly decrease K's operating profit margins.

In both scenarios:

- there is available information about a future law that may significantly impact the VIU calculation; and
- management can make reasonable and supportable assumptions to reflect the impact of the future law in VIU.

Given the information is external to both companies, it is also available to market participants to reflect the potential impact in FVLCD.

Insight…

Do the cash flow assumptions need to be aligned with the Paris Agreement objectives?

No. The Paris Agreement is an international treaty that does not specify how individual companies operate. The following table highlights relevant considerations when a company is calculating VIU or FVLCD.

VIU	Cash flow projections need to be consistent with management's best estimate of future cash flows. Management's expectations may not necessarily be 'Paris-aligned'. There is no requirement under IFRS Accounting Standards for such an alignment.
FVLCD	Cash flow projections need to be consistent with a market participant's assumptions which, again, may not necessarily be 'Paris-aligned'.

Insight…

Should a company's forecasts of future carbon prices used for impairment testing be consistent with its internal carbon prices?

An internal carbon price is the price for each metric tonne of GHG emissions that a company uses to assess the cost of its emissions. Internal carbon pricing is used by an increasing number of companies in their strategic and operational decision-making.

Companies commonly use two types of internal carbon price mechanisms.

Shadow price

A hypothetical price assigned by the company to the environmental or social cost of carbon emissions, for example, to inform new investment decisions.

Internal carbon fee

A carbon price a company directly charges its business units (or product lines) for every emitted tonne of GHG emissions (similar to intra-company transfer pricing).

Contrary to shadow pricing mechanisms, which do not determine actual monetary transfers, under internal carbon fee mechanisms a company charges its business units a carbon price for every emitted tonne of GHG emissions (similar to inter-company transfer pricing), affecting the profit or loss of the business units.

Different bases are used for establishing the internal carbon price – for example, price projections from existing (or emerging) carbon pricing regulations, external market prices, and an industry benchmark or a certain price level needed to accelerate decarbonisation or achieve a specific climate-related objective.

The following table highlights relevant considerations when a company is calculating VIU or FVLCD.

VIU	Assumptions of future carbon prices need to reflect management's best estimate of the carbon prices the CGU is expected to pay, as reflected in its most recent financial budgets or forecasts and giving greater weight to external evidence. *[IAS 36.33(a)]* If a company charges its business units a hypothetical carbon fee, then it is eliminated from VIU and replaced with the estimated amount of future carbon costs the company expects to pay. *[Insights 3.10.280]*
FVLCD	Assumptions of future carbon prices are consistent with those of a market participant.

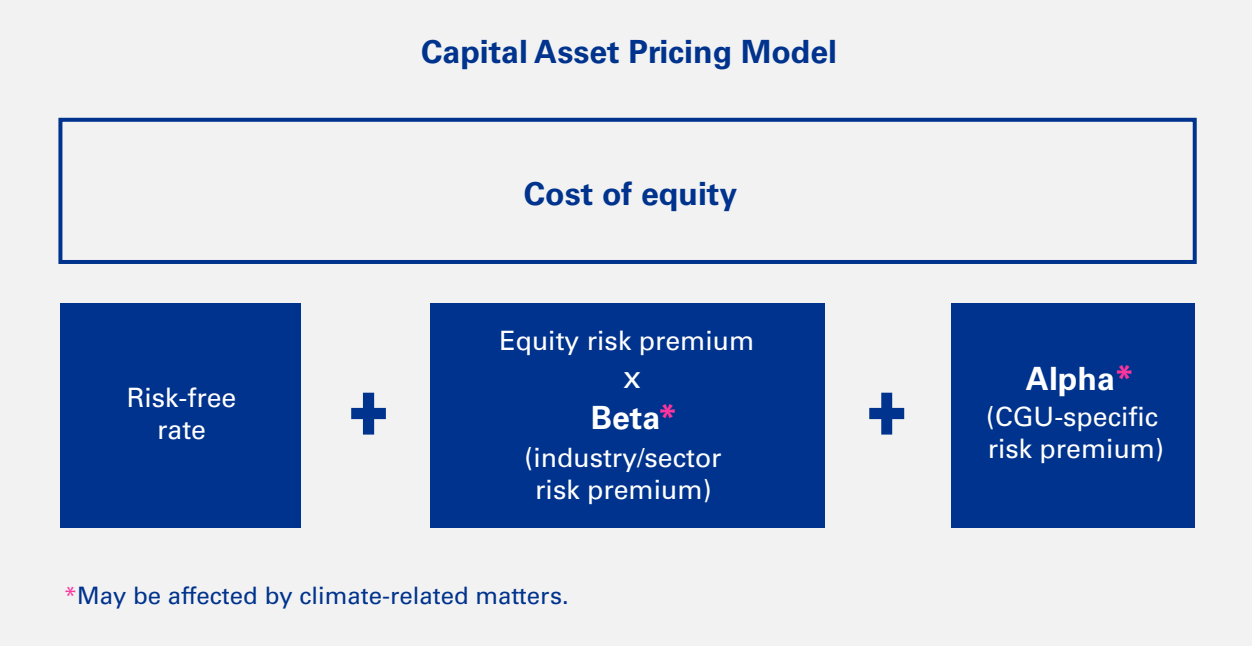
Forecasts of future carbon prices a company uses to calculate the recoverable amount may not be consistent with its shadow prices or fees if those are hypothetical (e.g. are set to incorporate the notional environmental costs of the company's operations and investments) rather than an estimate of the actual price the company expects to pay.

2.4 Discount rate

The rate applied to discount the cash flows is based on a market participant's view of the asset or CGU – for both VIU and FVLCD. *[IAS 36.56, Insights 3.10.300.15]*

In our experience, the most common approach to estimating an appropriate discount rate is to use the WACC formula. One component of the WACC is the cost of equity, which is typically calculated using the Capital Asset Pricing Model (CAPM). Climate-related matters may affect two inputs that are used to calculate the cost of equity using the CAPM – i.e. the alpha and beta factors. *[Insights 3.10.300.30]*

To avoid double counting, a company needs to consider whether a climate-related matter[13] has already been reflected elsewhere before adjusting the alpha or beta.



13. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

How to…

Consider climate-related matters when estimating the beta

The beta factor reflects the risk of the industry or sector in which the CGU operates, relative to the market risk as a whole (systematic risk). Systematic risk is macroeconomic in nature and reflects the general risk that all companies in the industry or sector are exposed to – e.g. the risk of commodity price or inflation rate shocks, regulatory changes or technological developments. Climate-related risks such as the future price of carbon or customers' sensitivity to climate-related factors may apply to the whole industry or sector and, in such cases, should be reflected in the industry beta if their effects are significant.

The beta factor is typically estimated based on the betas of comparable companies in the relevant sector or industry. If climate-related matters are significant, then they need to be considered when identifying comparable companies. *[Insights 3.10.300.140]*

Companies in the same industry can have significantly different exposures (or degrees of exposure) to climate-related matters. This is because of, for example, differences in their location, the applicable legislation and their strategies – some companies are proactive, others are not. A company needs to consider this when identifying comparable companies.

For example, in some jurisdictions, large public oil and gas companies are increasingly diversifying away from purely extractive activities and selling assets that emit high GHG levels; small private companies may be less likely to do so.

Beta is a medium-term measure – it is typically based on historical data over a two- to five-year period. A five-year beta factor may not (fully) reflect climate-related matters – e.g. in markets where companies have recently started providing climate-related information. Climate-related risks that are industry-wide and significant may be reflected in the beta factor; this depends on whether the risks are priced by the market and the time span over which the beta is measured.

Example 10 – Selecting comparable companies to estimate beta

Energy Producer T uses non-renewable sources and is located in Country P.

To calculate the beta, T identifies the following listed companies within the industry which are located in different countries as potential comparable companies. All the identified companies are similar to T, including in respect of their climate-related risks and strategies, except for Energy Producer N, which is located in Country R. Unlike its peers, N mainly uses coal to produce energy, is subject to much stricter environmental regulation and is losing significant market share as a result of a shift in consumers' demand for green energy.

Company	Description
Energy Producer E	Non-renewable
Energy Producer S	60% non-renewable
Energy Producer G	Non-renewable
Energy Producer N	Mostly non-renewable
Energy Producer Z	Non-renewable
Energy Producer V	Non-renewable
Energy Producer L	Non-renewable
Energy Producer X	Non-renewable

T does not consider S comparable because it generates 40% of its energy from renewable energy sources. Similarly, T excludes N from its comparable companies because its climate-related risks are much more significant compared with the other companies in the sector.

How to…

Assess whether the alpha factor could be affected

An alpha factor reflects a CGU-specific risk premium that may need to be added to the cost of equity when a CGU is determined to carry additional risk – i.e. risk that cannot be attributed to market risk (unsystematic risk) that would affect a market participant's required rate of return.

To assess whether the alpha factor could be affected, a company considers circumstances in which an alpha factor may need to be included for the WACC to reflect the rate of return required by a market participant. For example, the following circumstances may be considered.

Circumstance	Potential effect on the alpha factor
The CGU has a distinctive climate-related strategy which is significantly different from those of the comparable companies and not reflected in the calculated beta.	The impact of the company's strategy is reflected in the expected cash flows. Nevertheless, the WACC may also be affected. A market participant may require a higher return if the company's strategy is not expected to significantly reduce the impact of industry-wide climate-related physical or transition risks, unlike the strategies of industry peers. If this is not reflected in the beta, then an alpha factor may need to be added.
The industry beta does not sufficiently reflect the return required for bearing the industry-wide climate-related risks.	A market participant may require a higher return if the industry beta is calculated based on historical data from markets where companies have only recently started providing climate-related information.
The CGU is significantly exposed to physical risks (e.g. storms or flooding) which the comparable companies are not.	Although these risks are reflected in the cash flow projections, a market participant may require a higher return as compensation for bearing the higher uncertainty associated with the significantly increased likelihood and severity of possible negative outcomes.

In the examples above, an adjustment to the WACC through the alpha factor is appropriate if it can be supported. Such adjustments need to be carefully considered to avoid double counting of risks.

How to…

Avoid double counting for climate-related matters

To avoid double counting, a company needs to consider whether climate-related matters have been reflected elsewhere before adjusting the discount rate. A proposed adjustment to the discount rate for climate-related matters could already be reflected, directly or indirectly:

- in the cash flows; or
- in other components of the discount rate. *[IAS 36.A15, IFRS 13.B14(b)]*

Significant climate-related matters that are industry-wide may be reflected in the beta factor. For example, the automotive industry is significantly impacted by climate-related matters as a result of the influx of hybrid and electric vehicle competitors. Therefore, the industry beta factor may reflect this. If climate-related matters are reflected in the industry beta factor, then including or adjusting the alpha factor for the same climate-related matters would result in double counting.

Another example is when the alpha factor contains a premium for size risk. This premium considers smaller companies to be more risky than larger ones – e.g. because they are less likely to have the resources and expertise to mitigate climate-related risks or to take advantage of climate-related opportunities. As such, size premiums may implicitly account for some climate-related matters.

Example 11 – Using a beta of comparable companies

Continuing Example 10, Energy Producer T is exposed to physical risks (storms and flooding) which affect it more significantly than some other companies identified.

If most comparable companies are not exposed to similar physical risks, then after reflecting the impact of the physical risks in the cash flows, T needs to consider whether the WACC (which is based on the average beta of comparable companies) reflects the rate of return required by a market participant. If adjustments are needed, then T will adjust the alpha factor.

Alternatively, if most comparable companies are exposed to physical risks to the same degree and they are reflected in the beta, then T does not adjust the alpha factor as this would result in double counting.

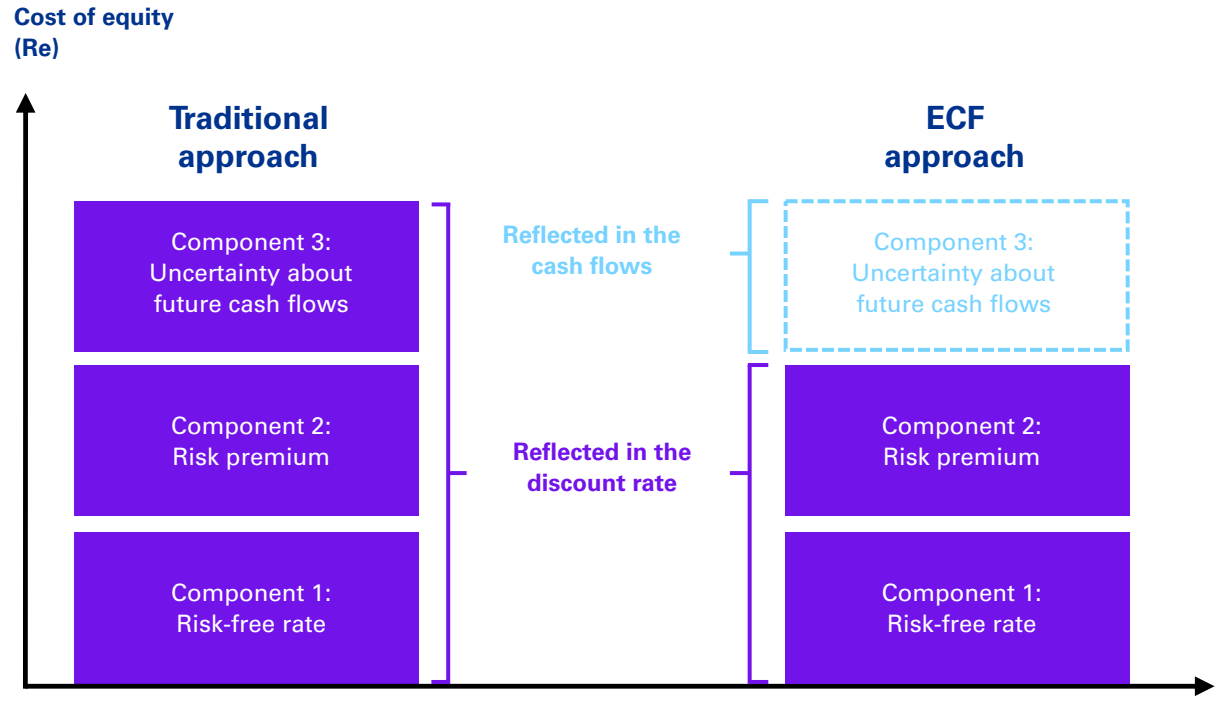
How to…

Calculate the WACC used to discount cash flows under the traditional approach and the ECF approach

Under the traditional approach (see Traditional approach vs ECF approach section), an adjustment is made for any cash flow uncertainty not captured in the single cash flow projection. This adjustment is made to the WACC through the alpha factor in the cost of equity.

In contrast, under the ECF approach, uncertainty about the future cash flows is considered in estimating the cash flows and the probabilities attached to them. If this is the case, then the cost of equity would not include a risk premium for this uncertainty.

Therefore, the WACC used under the ECF approach is usually lower than under the traditional approach. The diagram below highlights the differences between the traditional and ECF approach. *[Insights 3.10.220.40–90]*



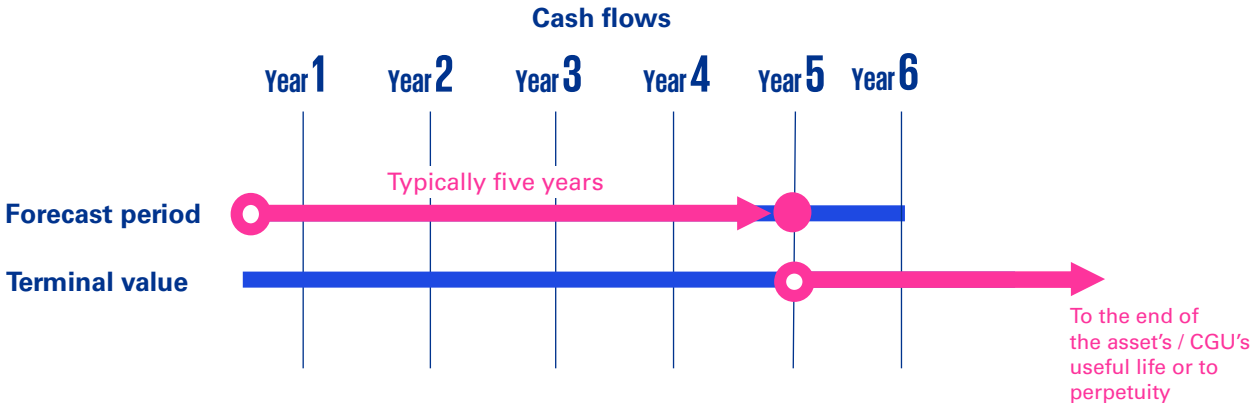
If the uncertainty of future cash flows is very low, then the single cash flow estimate used in the traditional approach may be very similar to the expected cash flows under the ECF approach and the WACC under both approaches would also be very similar.

2.5 Terminal value

Companies commonly use a five-year forecast period when calculating the recoverable amount. If a company has an asset (or CGU) with a useful life that extends beyond the forecast period, then it needs to calculate a terminal value for the asset (or CGU). *[IAS 36.33, 35, Insights 3.10.230]*

The terminal value reflects the present value of the cash flows to be generated by an asset (or CGU) from the end of the forecast period until the end of the asset's (or CGU's) life, or to perpetuity if it does not have a limited useful life.

For many companies, the major impacts of climate-related matters[14] are expected in the long term – far beyond the five-year forecast period typically used in practice for valuations of businesses. In such cases, the terminal value is expected to be most affected by climate-related matters. If climate-related matters are expected to have a significant impact on the business, then the forecast period may need to be extended to reach a steady state.



14. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

How to…

Reflect climate-related matters in the terminal value

Several terminal value models can be used to incorporate the impact of climate-related matters on a CGU's long-term growth rate – e.g. to reflect a future decrease in demand for the CGU's products – when calculating its terminal value. The assumption underlying these models is that the business is expected to continue as a going concern to perpetuity. Models that can be used to calculate the terminal value include the following.

Gordon growth model

This one-stage model is used when the business is expected to have a constant long-term growth rate in the terminal period.

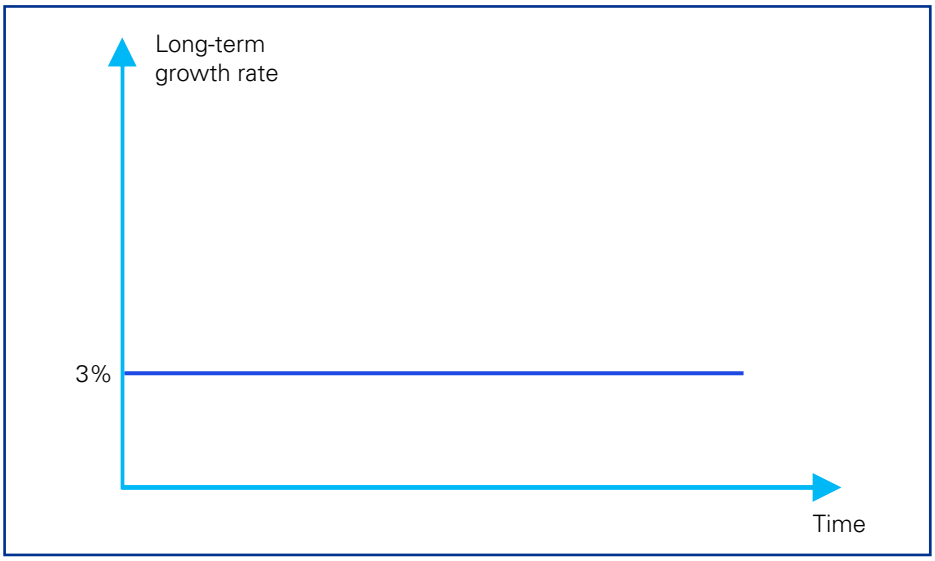
This model may not be suitable if climate-related matters are expected to have a significant impact on the business in the long term, beyond the forecast period.

$$\text{Terminal Value } (TV_n) = \frac{CF_n \times (1 + g)}{r - g} \text{ or } \frac{CF_{n+1}}{r - g}$$

CF_n = Adjusted maintainable cash flows in the final implicit forecast year (year n)

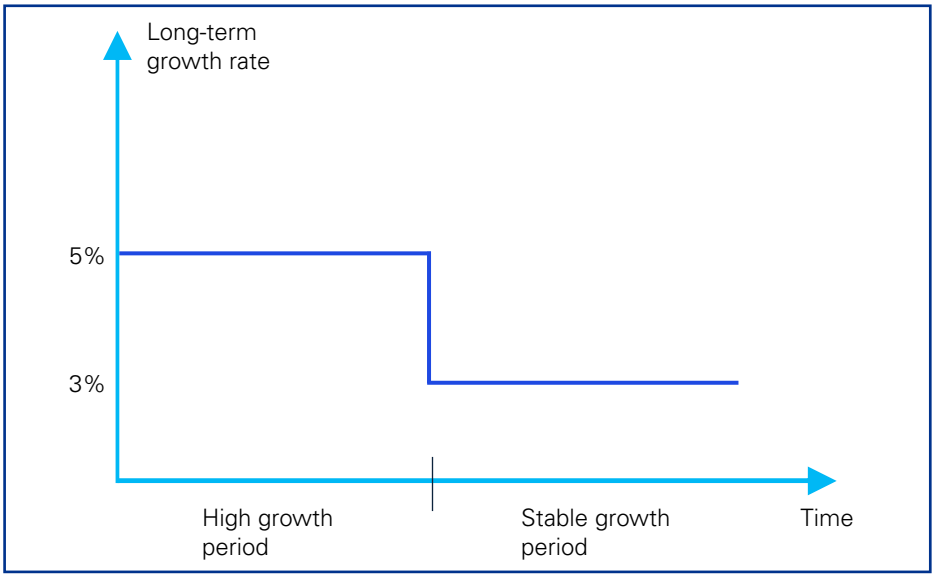
g = Long-term/perpetuity growth rate

r = Appropriate discount rate



Two-stage model

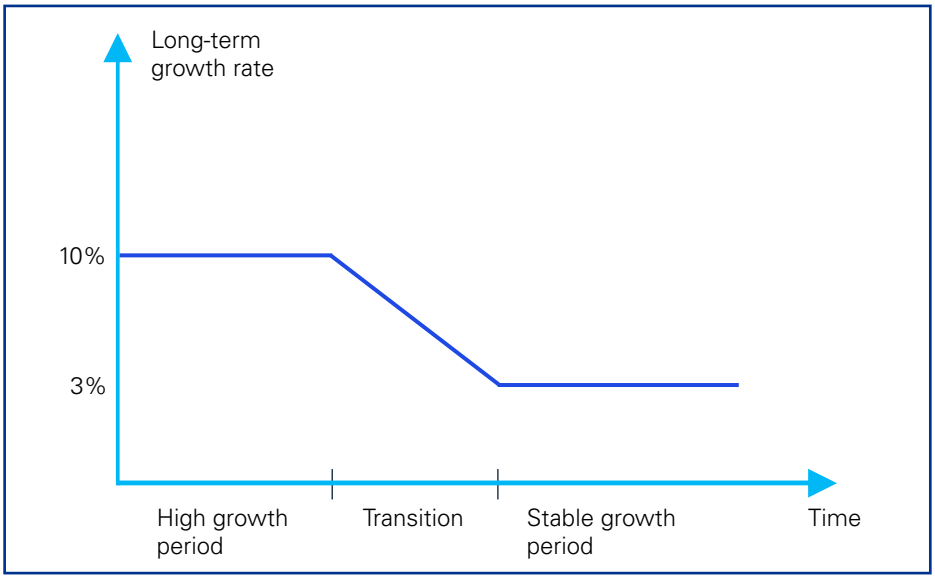
This model is used when the business is expected to have an initial phase of higher growth in the terminal period followed by a phase of stable long-term growth.



H model

This model is similar to the two-stage model, except that the initial phase of higher growth is not constant but declines linearly over time to reach the subsequent phase of stable long-term growth.

This model can be used to reflect the impact of significant future asset enhancements that are expected to increase the capacity of the business and change its short- and long-term growth rates. If certain conditions are met, then asset enhancements can be included in VIU.



In the most extreme cases, threats from climate-related risks to the business model may mean that including a terminal value to perpetuity is inappropriate. A company cannot use these models when valuing a limited-life asset (or CGU). Rather, the cash flow projection would extend until the end of the useful life of the asset (or CGU) and the terminal value would reflect the expected salvage value from selling the asset (or CGU), less costs of disposal.

Insight…

What are the potential impacts of climate-related matters on the assumptions used to calculate the terminal value?

The following table highlights some examples of how climate-related matters may impact the assumptions used in terminal value calculations.

Assumption	Potential impacts of climate-related matters
Forecast period	The forecast period may need to be prolonged if it would take longer to reach a steady state in the development of the business. See *Insight… Could climate-related matters potentially affect the length of the forecast period?*
Cash flows	The level of cash flows in the final-year forecast (CFn in the Gordon growth model formula) may need to be adjusted to reflect the cash flows in the steady state.
LTGR	The LTGRs may need to be adjusted to reflect the impact of climate-related matters in the steady state. See *How to… Reflect climate-related matters in the terminal value*.
Useful life	The useful life of the CGU may become limited.

Example 12 – Adjusting the terminal value for a commitment to purchase carbon credits

Company G comprises a single CGU. According to G's transition plan, approved by management, it will start purchasing carbon credits to offset any residual Scope 1 and 2 emissions[15] in eight years' time.

In estimating VIU, G's cash flow forecasts cover a period of five years. The final year (i.e. Year 5) represents a steady state in the development of the business and is used to extrapolate the cash flows into perpetuity. G reflects the purchase of carbon credits in the terminal value from the beginning of Year 6. G then removes the purchase of carbon credits in Years 6 and 7 by adjusting the terminal value.

For example, if the costs of carbon credits in Years 6 and 7 are expected to be 30 and 31, respectively, an adjustment of 30 / (1 + WACC)^6 + 31 / (1 + WACC)^7 is applied to the present value of the terminal value.

Insight…

Could climate-related matters potentially affect the length of the forecast period?

Yes. The final year of the forecast period should be used to extrapolate cash flows into the future only if it represents a steady state in the development of the business.

If climate-related matters are expected to have a significant impact on the business, then the forecast period may need to be extended to reach a steady state – e.g. because of the company's strategy to mitigate climate-related risks. *[Insights 3.10.230.50]*

The following table highlights when a company may extend the forecast period in calculating VIU or FVLCD.

VIU	The forecast period may only be extended beyond five years if certain conditions are met. A forecast period longer than five years can be used only if management is confident that the projections are reliable and can demonstrate its ability, based on past experience, to forecast cash flows accurately over that longer period. *[IAS 36.35]* This restriction may create practical difficulties in calculating VIU – e.g. if the stable growth period is only expected to commence after a forecast period longer than five years. In some cases, this issue can be resolved using a two-stage or other terminal value model. See *How to… Reflect climate-related matters in the terminal value*. If a company uses a forecast period longer than five years when measuring VIU, then it needs to disclose why that longer period is justified. *[IAS 36.134(d)(iii)]*
FVLCD	The forecast period can be extended if this is consistent with the perspective of a market participant.

Connectivity…

What needs to be considered when evaluating the connectivity of terminal value assumptions with climate-related information provided outside the financial statements?

A company needs to consider whether its assumptions relating to the terminal value formula – e.g. level of cash flows in the final forecast year and the long-term growth rate – are consistent, where appropriate, with the information disclosed outside the financial statements, including its:

- climate-related strategy – e.g. its plan to transition to a low-carbon economy – and targets; or
- climate-related commitments.

15. Scope 1 and 2 emissions as described in the GHG Protocol Corporate Accounting and Reporting Standard.

Step 3: Disclose relevant information

Clear, transparent and connected disclosures about the impact of climate-related matters[16] on impairment testing are key to meet users' expectations of the financial statements. Users need relevant information to make informed decisions. For impairment, users need to understand whether and how climate-related matters are reflected in the calculation of the recoverable amount.

IFRS Accounting Standards do not explicitly refer to climate-related matters, but they implicitly require relevant disclosures in the financial statements when climate-related matters that have been considered in preparing the financial statements are material. Therefore, companies need to consider materiality carefully when determining what information to provide.

Materiality – Key facts

Filtering relevant information to report

Information is essential for making decisions, but not all pieces of information may be equally relevant for a specific decision.

Materiality is a 'filter' a company applies to determine which information is relevant to users of its general purpose financial reports.

Influencing users' decisions

A company's existing and potential investors, lenders and other creditors use its reports to make their investment and financing decisions.

If specific information can influence those decisions, then it is material.

Applying judgement

There is no predetermined threshold for material information.

A company needs to exercise judgement, considering quantitative and qualitative factors reflecting its specific circumstances and users' information needs.

16. Read our article to find out more about how climate-related risks and opportunities may impact a company's strategy, financial reporting and sustainability reporting.

How to…

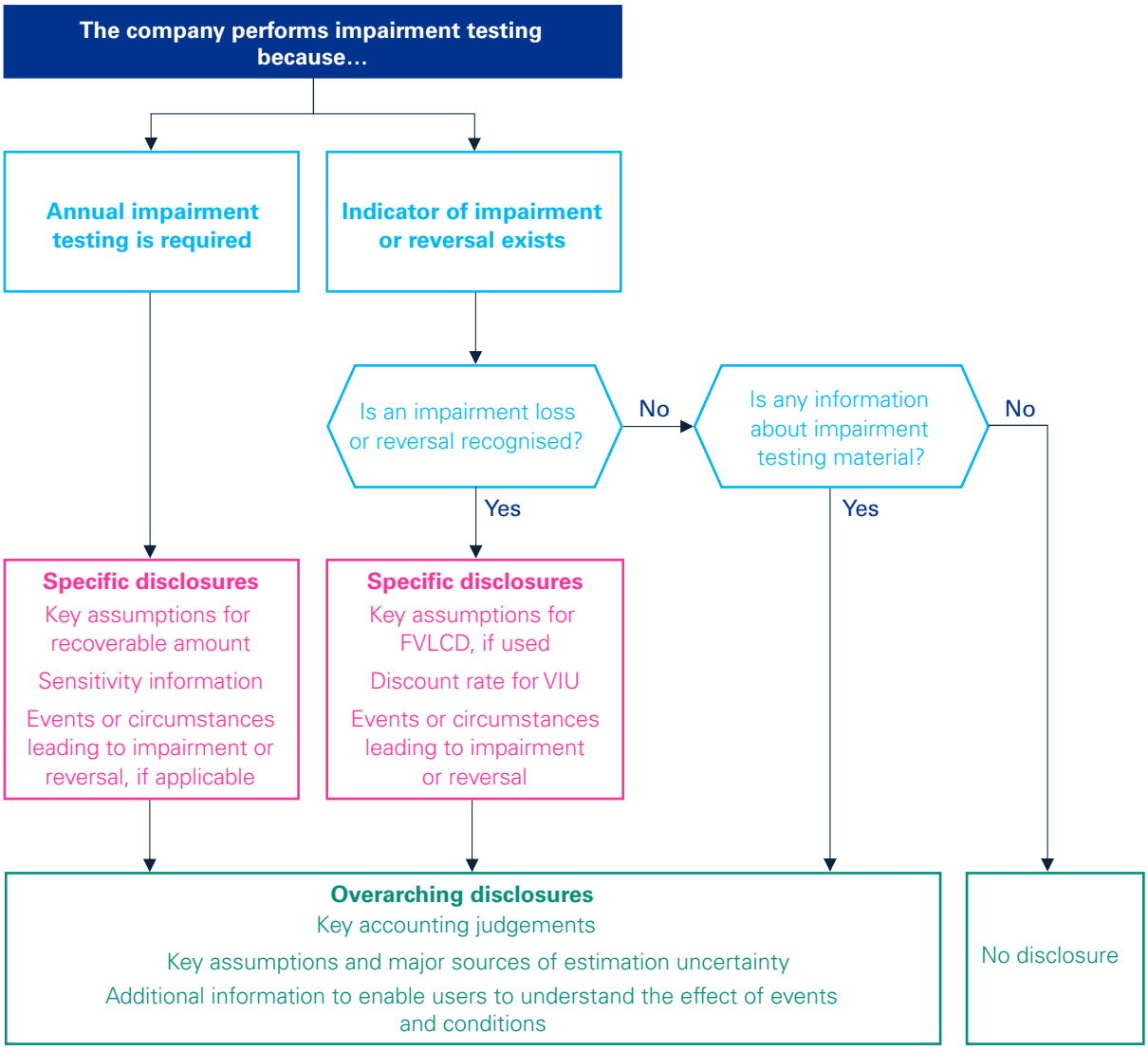
Determine which information to disclose about the impact of climate-related matters on impairment testing

A company needs to consider the effect of climate-related matters on impairment testing. If climate-related matters were reflected in its impairment testing, then it needs to disclose material information about the impact of these matters on impairment testing.

Specific impairment testing disclosures are required by IAS 36. Additional disclosures may be needed to help a user understand the key judgements, estimates, events and conditions that affect the financial statements.

In some cases, even if climate-related matters did not affect impairment testing, this information may be material and require disclosure.

Some of the disclosures that may be required are set out below.



Key

IAS 36 disclosures

IAS 1 *Presentation of Financial Statements* disclosures

How to…
Provide specific impairment disclosures

The specific disclosures required by IAS 36 depend on the reason for performing impairment testing – e.g. annual impairment testing is required because the CGU contains goodwill or indefinite-lived intangible assets, or there is an indicator that impairment or reversal exists.

Some of the specific IAS 36 disclosures that may be relevant for climate-related matters include the following.

Disclosure	Annual impairment testing required	Indicator of impairment or reversal exists
Events or circumstances that led to the recognition or reversal of impairment For example, a company discloses that the introduction of climate-related legislation is expected to significantly increase its manufacturing costs, which is one of the main reasons for recognising an impairment loss. *[IAS 36.130(a), 131(b)]*	✓	✓
Key assumptions used to calculate recoverable amount Key assumptions are those to which the recoverable amount is most sensitive. For example, if the future prices of GHG emissions are a key assumption, then the company discloses these assumptions. *[IAS 36.130(f)(iii), (g), 132, 134(d)(i), (v), (e)(i), 135(c), (e)(ii)]*	✓	✓ If an impairment loss or reversal is recognised, then a company discloses: • the discount rate used in VIU; and • key assumptions used in FVLCD (Level 2 or 3 of the hierarchy[17]). Disclosure is otherwise encouraged by IAS 36 but not required. See also Note 1.
Approach used to determine key assumptions The approach is disclosed along with whether each assumption reflects past experience or is consistent with external sources of information and, if not, how and why it differs from past experience or external sources. *[IAS 36.134(d)(ii), (e)(ii), 135(d)]*	✓	See Note 1.
Sensitivity information Required when a reasonably possible change in a key assumption would cause an impairment loss. For example, a company may disclose the amount by which the cost of GHG emissions needs to change, after considering consequential impacts on the recoverable amount, in order for there to be an impairment loss. *[IAS 36.134(f), 135(e)(i), (ii)]*	✓	See Note 1.

✓ Disclosure required by IAS 36.

Note 1: In addition to the specific disclosures required by IAS 36, a company needs to assess whether other disclosures are needed for a user to understand the impact of climate-related matters on the company's financial position or performance. These additional disclosures may be required by IAS 1. See *How to… Provide additional disclosures about the impact of climate-related matters*.

17. As defined in IFRS 13.

How to…

Provide additional disclosures about the impact of climate-related matters

IAS 1 contains overarching disclosure requirements that apply to the financial statements. This means that additional disclosures about the impact of climate-related matters on impairment testing may be needed even though they are not specifically required by IAS 36 or another specific accounting standard.

A company assesses whether additional information is needed based on whether it is material to the users of the financial statements. See *How to… Determine if climate-related information is material*.

Some of the information a company may need to disclose includes the following.

Disclosure	Example scenario
Key accounting judgements A company is required to disclose key judgements (apart from those involving estimation) it has made in applying accounting policies that can significantly affect the amounts that it recognises in the financial statements. *[IAS 1.122–123]*	Key judgements made in assessing whether significant capital expenditure to be incurred due to climate-related matters is more akin to maintenance expenditure or capital improvements when calculating VIU.
Key assumptions and major sources of estimation uncertainty A company is required to disclose the key assumptions used in estimating the recoverable amount that have a significant risk of resulting in a material adjustment to the carrying amount of assets (or CGUs) within the next financial year. *[IAS 1.125]* When there is a high level of estimation uncertainty, a company may also consider providing information related to reasonably possible changes to those assumptions (e.g. sensitivity disclosures). *[IAS 1.129]*	The impact on the cash flow projections of changes to climate-related legislation is uncertain and could result in a material change to the recoverable amount and carrying amount of the company's assets (or CGUs) within the next financial year.
Additional disclosures to enable users to understand the climate-related impacts A company may need to include additional disclosures to enable users to understand the impact of climate-related matters on its financial position and financial performance. *[IAS 1.17(c), 31, 112]*	A CGU is exposed to significant climate-related transition risks. No impairment is recognised. The lack of effect of climate-related risks on the carrying amount of the CGU is assessed by the company to be material information. See *Insight… Are disclosures needed if climate-related matters do not impact impairment?*

Example 13 – Disclosure of key assumptions

Company R operates in a capital-intensive industry and is exposed to climate-related transition risks. R does not have goodwill or intangible assets with indefinite useful lives, but it does have significant non-current assets.

At the reporting date, R identifies indicators that one of its CGUs might be impaired and therefore tests the CGU for impairment. R concludes that the CGU's recoverable amount is greater than its carrying amount. In determining the CGU's recoverable amount, R makes several assumptions relating to the climate-related transition risks, such as:

- legal and regulatory developments;
- consumer demand;
- commodity prices; and
- costs of acquiring GHG emissions allowances.

As discussed in *How to… Provide specific impairment disclosures*, IAS 36 does not require – but only encourages – the disclosure of assumptions used in determining the recoverable amount of the CGU if the CGU does not include goodwill or intangible assets with indefinite lives or the company did not recognise any impairment losses in respect of that CGU, as is the case in this example. However, IAS 1 requires a company to disclose information on the assumptions it makes about the future, and other major sources of estimation uncertainty, that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year. *[IAS 1.125]*

R concludes that some of its assumptions in determining the recoverable amount of the CGU have a significant risk of resulting in a material adjustment to the carrying amount of the non-current assets within the next financial year because of the following factors.

- *The subjectivity or complexity of the judgements made in determining the assumptions:* The judgements involve a high level of subjectivity and complexity because they reflect management's expectations about highly uncertain future events – e.g. government actions to limit climate change that will take place over the medium and long term.
- *The risk that new information or developments in the next financial year might result in changes to the assumptions:* Frequent, new climate-related market, economic, regulatory and legal developments increase the risk that R might have to review its assumptions within the next financial year.
- *The sensitivity of the CGU's carrying amount to changes in the assumptions:* Relatively small changes in these assumptions could result in a reduction of the CGU's recoverable amount and a material impairment loss.
- *The size of the CGU's carrying amount:* The CGU makes up a large portion of R's total assets. Therefore, a relatively small adjustment to the CGU's carrying amount – e.g. as a result of a reduction in its recoverable amount – might result in a material impairment loss.

Therefore, in line with IAS 1, R discloses information about these assumptions and provides details of the nature and carrying amount of the CGU's non-current assets at the reporting date. *[IAS 1.125]*

In addition, following the requirements of IAS 1, R provides qualitative and quantitative information about the assumptions, including the sensitivity of the non-current assets' carrying amount to these assumptions, the reasons for the sensitivity and the range of reasonably possible outcomes within the next financial year in respect of the carrying amount of the non-current assets. *[IAS 1.129]*

How to…

Determine if climate-related information is material

The materiality assessment focuses on the relevance of the information for users of the financial statements in making their investing and financing decisions, and involves both quantitative and qualitative considerations.

Examples of qualitative considerations include the following.

Key consideration	How to apply it
The level of exposure to climate-related risks	In assessing the level of exposure, consider: • the industry in which the CGU operates; • the CGU's geographical location; • applicable laws and regulations; • the goods or services the CGU sells; and • the resilience of the CGU's supply chains.
Differences in key assumptions used in estimating the recoverable amount and those disclosed outside the financial statements	In some cases, assumptions used in estimating the recoverable amount may differ from those disclosed outside the financial statements (e.g. in the front part of the annual report or other general purpose financial reports). For examples, see *Connectivity… Can there be differences between the strategy and assumptions described outside the financial statements and the estimates and assumptions used in the impairment test?* In such cases, consider whether users need to understand the differences to reconcile the information in the financial statements and other general purpose financial reports.

Insight…

Does a company need to disclose changes in the useful life or residual value?

Yes. If a company re-estimates an asset's useful life and/or its residual value (see *Insight… Could climate-related factors impact the useful life and residual value of an asset or CGU?*) and the change in the estimate affects the current period or is expected to affect future periods, then the company discloses the nature and the amount of the change. *[IAS 8.39, 16.76, 38.121]*

Insight…

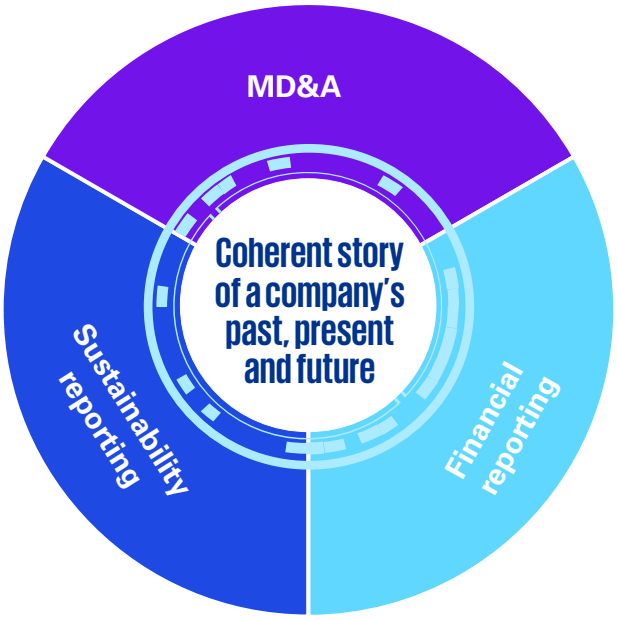
Are disclosures needed if climate-related matters do not impact impairment?

Climate-related matters may not impact impairment testing at the reporting date. However, information about the existence of climate-related risks that may affect the company, as well as its strategic response and the potential impact on its cash flows in the short, medium and longer term, may be relevant for users in making their investing and financing decisions – i.e. it may be material and need to be disclosed. *[IAS 1.17(c), 31, 112]*

Connectivity…

Tell a connected story

Users need to be able to connect the information in the financial statements – e.g. about the assumptions used in calculating the recoverable amount – with the information a company provides outside the financial statements (e.g. in the front part of the annual report or other general purpose financial reports).



To tell a connected story, companies need to provide a coherent, connected and integrated picture across their financial statements, management discussion and analysis (MD&A) and sustainability-related disclosures, regardless of the frameworks or standards used outside the financial statements.

Appendix 1: 'How to…'

Title	Section
Identify indicators of impairment	1
Determine the level at which to perform impairment testing	1
Reflect climate-related matters in VIU and FVLCD	2.1.1
Determine whether the approach used is appropriate	2.1.2
Determine whether climate-related matters should be reflected in the cash flows or in the discount rate	2.2
Determine whether planned capital expenditure to address climate-related matters is more akin to maintenance expenditure or capital improvements	2.3
Consider climate-related matters when estimating the beta	2.4
Assess whether the alpha factor could be affected	2.4
Avoid double counting for climate-related matters	2.4
Calculate the WACC used to discount cash flows under the traditional approach and the ECF approach	2.4
Reflect climate-related matters in the terminal value	2.5
Determine which information to disclose about the impact of climate-related matters on impairment testing	3
Provide specific impairment disclosures	3
Provide additional disclosures about the impact of climate-related matters	3
Determine if climate-related information is material	3

Appendix 2: Examples

Example	Title	Section
Example 1A	Identifying external indicators of impairment that are climate-related	1
Example 1B	Identifying internal indicators of impairment that are climate-related	1
Example 2	Change in useful life and residual value of PP&E in response to climate-related restrictions	1
Example 3	Testing a single asset vs a CGU – Decline in the market value of carbon credits	1
Example 4A	Climate-related opportunities – VIU vs FVLCD	2.1.1
Example 4B	Planned restructurings to address climate-related matters – VIU vs FVLCD	2.1.1
Example 5	Comparing the traditional and the ECF approach	2.1.2
Example 6	Determining whether to use the traditional or ECF approach	2.1.2
Example 7A	Reflecting climate-related matters in the cash flows or the discount rate	2.2
Example 7B	Supporting an adjustment to the discount rate to reflect climate-relate matters	2.2
Example 8A	Maintenance expenditure vs capital improvements (1)	2.3
Example 8B	Maintenance expenditure vs capital improvements (2)	2.3
Example 8C	Maintenance expenditure vs capital improvements (3)	2.3
Example 9	Reflecting the impact of a future carbon tax law	2.3
Example 10	Selecting comparable companies to estimate beta	2.4
Example 11	Using a beta of comparable companies	2.4
Example 12	Adjusting the terminal value for a commitment to purchase carbon credits	2.5
Example 13	Disclosure of key assumptions	3

Appendix 3: Insights

Title	Section
Could climate-related factors impact the useful life and residual value of an asset or CGU?	1
Could climate-related matters impact the fair value of PP&E and investment property?	1
Can climate-related matters affect the 'higher of' conclusion?	2.1.1
How might climate-related matters affect cash flow projections?	2.3
What should a company consider when identifying the essential asset with the longest useful life?	2.3
Do climate-related commitments need to be reflected in forecast cash flows?	2.3
Should the recoverable amount reflect the impact of future changes in climate-related legislation?	2.3
Do the cash flow assumptions need to be aligned with the Paris Agreement objectives?	2.3
Should a company's forecasts of future carbon prices used for impairment testing be consistent with its internal carbon prices?	2.3
What are the potential impacts of climate-related matters on the assumptions used to calculate the terminal value?	2.5
Could climate-related matters potentially affect the length of the forecast period?	2.5
Does a company need to disclose changes in the useful life or residual value?	3
Are disclosures needed if climate-related matters do not impact impairment?	3

Appendix 4: Connectivity considerations

Title	Section
Consider connectivity with climate-related information provided outside the financial statements	1
Does the climate-related scenario analysis presented outside the financial statements need to be consistent with the cash flow projections used for impairment testing?	2.1.2
Can there be differences between the strategy and assumptions described outside the financial statements and the estimates and assumptions used in the impairment test?	2.3
What needs to be considered when evaluating connectivity of cash flow assumptions with climate-related information provided outside the financial statements?	2.3
What needs to be considered when evaluating connectivity of terminal value assumptions with climate-related information provided outside the financial statements?	2.5
Tell a connected story	3

Glossary

Abbreviations and acronyms

Abbreviation	Meaning
capex	Capital expenditure
CAPM	Capital Asset Pricing Model
CGU	Cash-generating unit
DCF	Discounted cash flow
ECF	Expected cash flow
EV	Enterprise value
FVLCD	Fair value less costs of disposal
GHG	Greenhouse gas
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
LTGR	Long-term growth rate
MD&A	Management discussion and analysis
opex	Operating expenditure
PP&E	Property, plant and equipment
VIU	Value in use
WACC	Weighted-average cost of capital

Keeping in touch

Follow 'KPMG IFRS' on LinkedIn or visit kpmg.com/ifrs

The KPMG Global Corporate Reporting Institute provides digestible summaries of recent developments, detailed guidance on complex requirements, and practical tools such as illustrative disclosures and checklists.

Corporate reporting

IFRS Accounting
Our latest insights and guidance on IFRS Accounting Standards

IFRS Sustainability
Our latest insights and guidance on IFRS Sustainability Disclosure Standards

EU Sustainability
Insights and guidance on European Sustainability Reporting Standards

Connected Reporting
Aligning your strategic, sustainability and financial information

The KPMG view
Exploring topical issues in financial, ESG and connected reporting

News
Search all KPMG articles on the standards

Emerging issues

Clear on climate reporting hub
The financial reporting impacts

Emissions and green schemes
Your questions answered

Implementing the ISSB Standards hub
IFRS Sustainability Disclosure Standards

Uncertain times hub
The financial reporting impacts

Sustainability reporting

IFRS Sustainability toolkit
Insights and guidance

ESRS
European Sustainability Reporting Standards

Financial reporting

Insights into IFRS®
Our practical guide to IFRS Accounting Standards

Guides to financial statements
Including past guides and sector supplements

IFRS toolkit
KPMG insights on applying IFRS Accounting Standards

IFRS compared to US GAAP
Your guide to the significant differences

Presentation and disclosure
IFRS 18

Insurance
IFRS 17

Leases
IFRS 16

Revenue
IFRS 15

Fair value measurement
IFRS 13

Business combinations and consolidation
IFRS 10, 11, 12

Financial instruments
IFRS 9

Share-based payments
IFRS 2

Earnings per share
IAS 33

Income taxes
IAS 12, including the global minimum top-up tax

Sectors

Banks

Investment funds

For access to an extensive range of accounting, auditing and financial reporting guidance and literature, visit KPMG Accounting Research Online. This web-based subscription service is a valuable tool for anyone who wants to stay informed in today's dynamic environment. For a free 30-day trial, go to aro.kpmg.com and register today.

About this guide

This publication has been produced by the KPMG International Standards Group (part of KPMG IFRG Limited).

It reflects IFRS Accounting Standards in issue at 27 November 2025, which are effective for annual periods beginning on or after 1 January 2026 unless noted otherwise.

Further analysis and interpretation will be needed for a company to consider the impact of climate change on impairment in light of its own facts, circumstances and individual transactions. The information contained in this publication is based on observations developed by the KPMG International Standards Group and these observations may change. Accordingly, neither this publication nor any of our other publications should be used as a substitute for referring to the standards themselves.

The examples included in this publication are for illustrative purposes only. The information contained in the examples is of a general nature and not intended to address the circumstances of any particular company.

Acknowledgements

We would like to acknowledge the efforts of the following members of the KPMG International Standards Group, who were the principal authors of this publication: Lilit Barkhudaryan, Irina Ipatova, Arlene Joseph, Hayley Pang, Agnieszka Sekita, Kavisha Singh and Avi Victor.

We would also like to thank members of the KPMG Valuations and Impairment topic team for their contribution:

Frederik Bort	US
James Calvert (Deputy Leader)	Ireland
Tal Davidson	Japan
Robert de Virion	Poland
Martin Friedhoff	Hong Kong (SAR), China
Gabriela Kegalj	Canada
Christian Klingbeil	Germany
David Littleford	UK
Mahesh Narayanasami	US
Thina Opperman	South Africa
Marcio Rost	Brazil
Didier Saintot	France
Mahendra Sharma	India
Volker Specht (Leader)	Germany
Avi Victor (Deputy Leader)	Romania

kpmg.com/ifrs

Publication name: *Climate change and impairment – How-to guide*

Publication number: 137904

Publication date: November 2025