Applying IFRS

Accounting for climate change

Updated December 2022

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Building a better working world

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What you need to know

- There is an increased focus on the measurement and disclosure of climate-related matters in an entity's financial statements.
- The determination of the effects of climate change on an entity's financial statements may require significant effort and judgement.
- Entities are required, at a minimum, to follow the specific disclosure requirements in each IFRS standard. Entities may need to provide additional disclosures in their financial statements in order to meet the standards' disclosure objectives. Hence, in determining the extent of disclosure, entities are required to carefully evaluate what information is required for users to be able to assess the effects of climate change on their financial position, financial performance and cash flows.
- This publication is intended to support entities in assessing and reporting on the effects of climate change by providing helpful observations and illustrations.

Overview

The efforts to reduce the society's impact on climate change have never been greater. At the same time, there is unprecedented pressure from stakeholders for entities to communicate clear commitments which is set to continue for the foreseeable future.

Although, there is no single explicit standard on climate-related matters under IFRS, climate risk and other climate-related matters may impact a number of areas of accounting. While the immediate impact to the financial statements may not necessarily be quantitatively significant, there are increasing expectations from stakeholders that entities explain how climate-related matters are considered in preparing their financial statements to the extent they are material[1] from a qualitative perspective. Stakeholders also expect robust disclosures on the most significant assumptions, estimates and judgements made related to climate change.

Investors have highlighted the importance of reducing entities' impact on the environment on their investment-making decisions and their assessment of management's stewardship. In November 2021, through the Glasgow Financial Alliance for Net Zero, over US $130 trillion of private capital is committed to accelerating the transition to a zero-emissions economy by 2050.

Climate change is expected to impact businesses in the decades to come. While it is imperative for entities to more explicitly address climate-related risks in their financial statements, considering developments in previous and recent years, accounting practice may evolve gradually over the next few years. As climate-related matters continue to evolve and entities make further commitments and take additional actions to tackle climate change, it is important for them to ensure that their financial statements reflect the most updated assessment of climate-related risks and their impact on the financial statements. Furthermore, entities should ensure consistency between information communicated in the financial statements and the information communicated to stakeholders outside the financial statements, such as in press releases, investor updates and disclosures in other parts of the annual report.

In the International Accounting Standards Board's Third Agenda Consultation, stakeholders expressed a view that there may be inconsistent application of IFRS accounting standards to climate-related risks and insufficient information disclosed about climate-related risks in the financial statements. In response to that feedback, the International Accounting Standards Board (IASB) decided to add to the maintenance project pipeline a project on Climate-related Risks in the Financial Statements.[2]

Regulators around the world have increased their focus on the need to report the impact of climate risk on financial statements and consistency between sustainability reporting and/or communication on one hand and the related

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[1] In accordance with paragraph 7 of IAS 1 *Presentation of Financial Statements*, information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements.

[2] https://www.ifrs.org/projects/pipeline-projects/

disclosures in the financial statements on the other. For example, in March 2022, the U.S. Securities and Exchange Commission issued proposed amendments[3] that would require registrants to provide certain climate-related information in their registration statements and annual reports. The proposals are intended to provide consistent, comparable and reliable information to investors about how a registrant has addressed climate-related risks. In October 2022, the UK's Financial Reporting Council published the FRC Lab report *Net Zero Disclosures*[4] to assist reporting teams as they prepare disclosures on net zero and other Greenhouse Gas (GHG) emission reduction commitments. In the European Common Enforcement Priorities for 2022 Annual Financial Reports, the European Securities and Markets Authority (ESMA) noted that 'consistent treatment of climate-related matters across the annual financial report is a key element to prevent the risk of greenwashing'.

Although in its 2022 Status Report[5], the Task Force on Climate-Related Financial Disclosures (TCFD) highlighted the 'encouraging signs of progress in companies disclosing climate-related information', it also noted that 'more urgent progress is needed to improve transparency, especially when considered within the broader global focus on climate change'.

This publication is intended to support entities in assessing and disclosing the extent to which climate change affects their financial statements prepared in accordance with IFRS. Significant judgement may be required to identify the accounting considerations that are relevant to the entity's specific facts and circumstances. Any information included in this publication is, therefore, solely intended to provide helpful observations and illustrations and should not be interpreted as an indication that these would apply or be sufficient in all circumstances. Although this publication highlights the need for consistency with climate-related disclosures in other parts of the annual report, it does not address the management commentary (or MD&A) nor other reports outside the IFRS financial statements (for example, any separate sustainability reporting).

Extracts from financial statements presented herein are reproduced for illustrative purposes. They have not been subject to any review as to their compliance with IFRS or any other requirements, such as local capital market rules. Thus, they document practices that entities have developed to date; they are not intended to represent 'best practice'. The extracts presented should be read in conjunction with the rest of the information provided in the financial statements in order to understand their intended purpose.

Although the extracts address entities' sometimes highly specific facts and circumstances, the judgements involved and the requirements in IFRS standards to disclose relevant information apply to all reporting entities. Therefore, we recommend that entities from all sectors consider these examples when reporting on the impact of climate change taking into account their own specific facts and circumstances.

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[3] Securities and Exchange Commission, 21 March 2022, The Enhancement and Standardization of Climate-Related Disclosures for Investors, https://www.sec.gov/

[4] Financial Reporting Council, October 2022, FRC Lab Report: Net zero disclosures, https://www.frc.org.uk

[5] Task Force on Climate-related Financial Disclosures, October 2022, 2022 Status Report, https://www.fsb-tcfd.org

Please see ey.com/IFRS for our most recent IFRS publications. In particular, we refer to our 'Applying IFRS to the Energy Transition' series that seeks to explore the accounting implications of emerging business models and arrangements related to the energy transition. The series currently covers power purchase agreements, carbon capture and storage.

1. Disclosure requirements

1.1 What is the issue?

IAS 1 *Presentation of financial statements* states that the objective of financial statements is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions. In order to support decision-making by the users of financial statements, information should have, at least in part, forward-looking or predictive quality. Information pertaining to climate-related matters will be relevant if investors could reasonably expect that it will have a significant impact on the entity and, therefore, influence their investment decisions. Furthermore, IAS 1 requires an entity to consider whether any material information is missing from its financial statements.

As an overarching principle, IAS 1 requires entities to disclose information, for instance, climate-related matters, that is not specifically required by IFRS standards and not presented elsewhere, but which is relevant to an understanding of the financial statements.[6] The requirements in IAS 1 are relevant to the entire financial statements. For example, IAS 1 requires the disclosure of assumptions relied on, judgements, and uncertainties regarding going concern.

1.2 What is the impact?

Assumptions and estimates

Disclosure of assumptions in respect of climate-related matters may be required.

IAS 1 requires disclosure of information about the assumptions an entity makes about the future that have a significant risk of resulting in a material adjustment within the next financial year.[7] As such, assumptions in respect of climate-related matters may be required. In some cases, changes in key assumptions related to climate risk may not be expected to result in material adjustments in the short-term, but the chance of material adjustments in the longer term may be significant. In that context, it is important to acknowledge that entities must provide additional disclosures beyond the specific requirements in IFRS standards when those requirements are insufficient to enable users to understand the impact of particular transactions, other events and conditions on an entity's financial position and performance. Thus, disclosures about key assumptions may be required although the risk of material adjustments in the short-term may be considered as low. Furthermore, the fact that investors and other users are requesting more transparency on climate-related matters, may, in itself, suggest that such disclosures are material, although the quantitative impact on financial measures in isolation may be deemed of little significance, as in the case of for instance assets with relatively short useful lives.

Aviva Plc disclosed in its risk management disclosures how it has incorporated its commitment to a low carbon economy in its financial statements.

[6] Refer to IAS 1.112(c).
[7] Refer to IAS 1.125.

Illustration 1-1 — Aviva Plc - 2021 annual report

57 – Risk management

Risk Environment

Aviva remains committed to supporting a low carbon economy that will improve the resilience of our economy, society and the financial system in line with the 2015 Paris Agreement target on climate change. In March 2021, we set an ambition to become a Net Zero carbon company by 2040 and we are acting now to mitigate and manage the impact of climate change on our business. We calculate a Climate VaR against IPCC scenarios to assess the climate-related risks and opportunities under different emission projections and associated temperature pathways. A range of different financial indicators are used to assess the impact on our investments and insurance liabilities.

When entities consider climate-related assumptions, they may need to update their processes. Historically, many of the assumptions that underpin financial reporting have been made using historical experience. However, with the pace of change in climate-related matters, such experience may be less relevant. For instance, entities may need to monitor the plans and commitments announced and initiatives put in place, including but not limited to technological, legal and social developments, by private and public sectors.

BHP Group Limited (BHP) presented the impact of climate change and the transition to a low carbon economy in its 2022 annual financial statements. BHP disclosed two low carbon energy transition scenarios representing management's assumptions regarding the impact of the transition, as well as the items in the financial statements affected by those scenarios.

Illustration 1-2 — BHP Group Limited - 2022 annual report

Transition risks

Global transition signposts

[..]

The BHP Climate Transition Action Plan 2021 references the Group's divergent climate scenarios across a range of temperature outcomes. The Group currently uses two of those scenarios, being the Central Energy View and Lower Carbon View as inputs to the Group's operational planning cases. The use of these two scenarios reflects the Group's current estimates of the most likely range of future states for the global economy and associated sub-systems. These operational planning cases inform updates to the Group's supply, demand and price outlooks, capital allocation and portfolio decisions.

Given the complexity of climate modelling, these scenarios are reviewed periodically to reflect new information, with developments in the periods between scenario updates being reflected in updated internal long-term price outlooks.

Investment decisions and asset valuations also incorporate carbon price assumptions for major Group operational, competitor and customer countries. In determining the Group's forecast, factors such as a country's current and announced climate policies and targets and societal factors such

Illustration 1-2 — BHP Group Limited – 2022 annual report

as public acceptance and demographics are considered, with the Group forecasting the global range of regional carbon prices to reach between US$0-175/tCO2-e in FY2030 and US$10-250/tCO2-e in FY2050, and US$10-175/tCO2-e in FY2030 and US$100-250/tCO2-e in FY2050 in BHP's current major operational and market countries.

The operational planning cases, price outlooks and cost of carbon assumptions, impact certain significant judgements and key estimates, including the determination of the valuation of assets and potential impairment charges (notes 11 'Property, plant and equipment' and 13 'Impairment of non-current assets'), the estimation of the remaining useful economic life of assets for depreciation purposes (note 11 'Property, plant and equipment') and the timing of closure and rehabilitation activities (note 15 'Closure and rehabilitation provisions').

In addition to the operational planning cases, the Group utilises a range of scenarios, including its 1.5°C Paris-aligned scenario, when testing the resilience of its portfolio, forming strategy and making investment decisions. While a 1.5°C Paris-aligned scenario does not currently represent one of the inputs to the Group's operational planning cases, the Group has, during FY2022, systematically integrated the Group's 1.5°C Paris-aligned scenario into the Group's strategy and capital allocation process to test the extent to which its capital allocation is aligned with a rapidly decarbonising global economy. Specifically, the Group applies the Group's 1.5°C Paris-aligned scenario to assess whether future demand for the Group's products under that scenario supports ongoing capital investment. The internal allocation of capital under the Group's Capital Allocation Framework and all major investment decisions now require an assessment of investment viability under the Group's 1.5°C Paris aligned scenario.

Equinor ASA provided disclosures of commodity price sensitivity aligned with a Paris Agreement scenario in its 2021 annual financial statements.

Illustration 1-3 — Equinor ASA – 2021 annual report

3 Consequences of initiatives to limit climate changes

Effects on estimation uncertainty

The effects of the initiatives to limit climate changes and the potential impact of the energy transition are relevant to some of the economic assumptions in our estimations of future cash flows. The results of the development of such initiatives, and the degree to which Equinor's operations will be affected by them, are sources of uncertainty. Estimating global energy demand and commodity prices towards 2050 is a challenging task, as this comprises assessing the future development in supply and demand, technology change, taxation, tax on emissions, production limits and other important factors. The assumptions may change, which could materialise in different outcomes from the current projected scenarios. This could result in significant changes to accounting estimates, such as economic useful life (affects depreciation period and timing of asset retirement obligations) and value-in-use calculations (affects impairment assessments).

Illustration 1-3 — Equinor ASA - 2021 annual report

Equinor's commodity price assumptions applied in value-in-use impairment testing are set in accordance with accounting regulations and based on management's best estimate of the development of relevant current circumstances and the likely future development of such circumstances. This price-set is currently not equal to a price-set required to achieve the goals in the Paris Agreement as described in the WEO Sustainability Development Scenario, or the Net Zero Emissions by 2050 Scenario. A future change in the trajectory of how the world acts with regards to implementing actions in accordance with the goals in the Paris agreement could, depending on the detailed characteristics of such a trajectory, have a negative impact on the valuation of Equinor's property, plant and equipment in total.
A calculation of a possible effect of using the prices (including CO_2 prices) in a 1.5°C compatible Net Zero Emission by 2050 Scenario as estimated by the International Energy Agency (IEA) could result in an impairment of around USD 7 billion before tax. This illustrative impairment sensitivity is based on a simplified model and limitations further described in note 11 Property, plant & equipment.

It may be necessary to provide sensitivity analyses for a range of scenarios.

The assessment, and more specifically, the quantification, of climate-related risks generally require the application of judgements about highly uncertain future developments, such as future technology developments, political developments and government actions. A valuation may include multiple scenarios covering a wide range of possible outcomes. Therefore, it may be necessary to provide sensitivity analyses for a range of scenarios, as well as disclosures explaining how the entity has incorporated the uncertainties in the estimates relied on in the primary financial statements and in the sensitivities disclosed (as required by IAS 1). It may be that investor communities expect information about the potential future effects of specific future scenarios, such as those derived from the Paris Agreement. In that case, an entity may find it relevant to explain whether and how the entity's valuations align with those scenarios and, if they should differ, why the entity believes other scenarios are more realistic. BHP Group Limited made disclosures to this effect in its 2022 annual financial statements.

Illustration 1-4 — BHP Group Limited - 2022 annual report

Transition risks

Sensitivity to demand for the Group's commodities

The Group acknowledges that there are a range of possible energy transition scenarios, including those that are aligned with the aims of the Paris Agreement, that may indicate different outcomes for individual commodities. The resilience of the Group's portfolio to a 1.5°C Paris-aligned scenario (the Group's 1.5°C Paris-aligned scenario) continues to be considered, including the impact of Paris-aligned commodity price estimates under that scenario on the Group's latest asset plans.

There are inherent limitations with scenario analysis and it is difficult to predict which, if any, of the scenarios might eventuate and none of the scenarios considered constitutes a definitive outcome for the Group.

Illustration 1-4 — BHP Group Limited – 2022 annual report

However, the long-term commodity price estimates under the Group's 1.5°C Paris-aligned scenario reflect the world needing around twice as much steel, copper and potash and four times as much nickel in the next 30 years as in the last 30. In addition, the Group's portfolio is transitioning towards higher quality iron ore and metallurgical coal that enable steelmakers to be more efficient and operate with a lower emissions intensity.

As such, although all potential financial reporting consequences under the Group's 1.5°C Paris-aligned scenario are currently impracticable to fully assess, the long-term commodity price outlooks under this scenario for iron ore, copper, metallurgical coal, nickel and potash are either largely consistent with or favourable to the price outlooks in the Group's current operational planning cases.

Given the positive long-term price outlooks for these commodities, the Group currently considers that a material adverse change is not expected to the valuation, and remaining useful life, of assets and discounting of closure and rehabilitation provisions for assets relating to these commodities under its 1.5°C Paris-aligned scenario.

While energy coal long-term commodity price outlooks under the Group's 1.5°C Paris-aligned scenario are unfavourable when compared to the price outlooks in the Group's current operational planning cases, following impairments recognised in FY2021, the carrying value of assets at the Group's remaining energy coal operations at NSWEC is no longer material.

Further, the Group's closure provision for NSWEC reflects the announcement in FY2022 of the Group's plans to seek approvals to continue mining at NSWEC beyond its current mining consent that expires in 2026 and intention to proceed with a managed process to cease mining at NSWEC by the end of FY2030. While the closure provision remains subject to estimation and assumptions, the timing of closure is no longer considered materially susceptible to the long-term impacts of climate change.

In its 2021 annual financial statements, Mercedes-Benz Group AG noted that climate-related developments and risks associated with the transformation are considered in the entity's estimates and management judgements.

Illustration 1-5 — Mercedes-Benz Group AG – 2021 annual report

2. Accounting estimates and management judgements

Accounting estimates and management judgements due to sustainability aspects

The Mercedes-Benz Group is continuously working on the further development of its sustainable business strategy and has set the goal of climate neutrality by 2039 with Ambition 2039. With the strategic step from "electric first" to "electric only", Mercedes-Benz is accelerating its transformation into an emission-free and software-driven future. The Consolidated Financial Statements take into account the main climate-related developments and risks associated with the transformation, which also include the climate targets for 2050 agreed in Paris. In this context, estimates and management judgements relate in particular to assumptions regarding future legal regulations and developments in the market

Illustration 1-5 — Mercedes-Benz Group AG - 2021 annual report

environment, which are subject to high dynamics and uncertainties. Effects of changes in estimates and management judgements may relate in particular to testing for impairments, the estimated useful lives of assets and thus the amount of depreciation to be recognised annually, as well as the recognition of provisions, for example with regard to CO2 certificates or penalties.

As noted above, in many cases, it will be appropriate to further explain how such factors have impacted the estimations made by the entity, by including details about the assumptions relied on, for instance the expected closure date of a plant, as well as sensitivity disclosures reflecting what the impact of an earlier closure date would be.

Some consider that the impact of climate risk and potential future developments on the entity, including the sustainability of its current business model, is too uncertain to allow for meaningful representation, through measurement and quantified disclosures, in the financial statements. Generally, where there is a high level of uncertainty, entities should consider disclosing their sensitivity analyses. They can be particularly helpful in conveying relevant information in such cases, as illustrated by the examples discussed above.

Others may be in a position in which management has not yet fully explored the potential impact of climate risk on the entity's financial position and future performance and, as a consequence, climate risk is not incorporated in the relevant valuations and judgements. In such cases, entities should consider disclosing information clarifying their inability to reflect climate risk in the financial statements, along with an explanation of how they consider the financial statements to present fairly the financial position, financial performance and cash flows of the entity, if the potential impact of climate risk on the entity might be material.

Judgements

IFRS requires disclosure of the management's accounting policy judgements that is separate from estimates that have the most significant effect on the amounts recognised in the financial statements. Climate-related matters may impact the judgement made when deciding the appropriate accounting policies, and thus may, in some cases, trigger judgement disclosures. For instance, as discussed in Section 4, judgement may be applied when assessing whether cash flows expected to arise in an entity's attempt to achieve certain sustainability targets in the future are to be considered asset maintenance or enhancements when determining value in use in an impairment assessment. Similarly, significant judgement may be required when determining whether an entity has a constructive obligation to clean a site or remove waste, as discussed in Section 5.

Information regarding climate-related matters should be considered in conjunction with other uncertainties when assessing going concern.

Going Concern

IAS 1 explains "going concern" by stating that financial statements are prepared on a going concern basis "unless management either intends to liquidate the entity or to cease trading, or has no realistic alternative but

to do so".[8] In assessing whether the going concern basis of preparation is appropriate, information regarding climate-related matters should be considered in conjunction with other uncertainties.

Climate-related matters may affect an entity's going concern assessment, with assumptions regarding the nature of future business activities and restrictions on bank financing likely to be factored into the assessment. Additionally, entities will need to consider external factors such as issues regarding water, energy, land use and waste management that are crucial to the continued operation of the business.

In making their going concern assessments, many entities only consider the next 12 months and conclude that the going concern uncertainties are not significant. However, according to IAS 1, an entity needs to look at a period of at least 12 months from the end of the reporting period when assessing whether to prepare financial statements on a going concern basis. In other words, considering going concern for only 12 months, if known uncertainties impact the assessment over a longer term, is not consistent with the requirements in IAS 1.

Although an entity may conclude that the going concern basis is still appropriate, IAS 1 requires disclosure of material uncertainties, if any, that would cast significant doubt upon an entity's ability to continue as a going concern. Climate-related matters could create material uncertainties related to events or conditions that cast significant doubt upon an entity's ability to continue as a going concern. In such a case, although going concern may be assumed, additional disclosures explaining the uncertainties associated with the assumption would be required.

In its 2021 annual financial statements with a 31 December 2021 reporting date, Rolls Royce Holdings Plc stated that, based on a comprehensive going concern review over an eighteen-month period to August 2023, "Although it is unlikely that physical and transition risks will arise during the 18-month period being assessed for going concern, both physical and transition risks have been considered as part of the Group's risk assessment."

Illustration 1-6 — Rolls Royce Holdings Plc - 2021 annual report

1 Accounting policies

Climate change

In preparing the Consolidated Financial Statements the Directors have considered the potential impact of climate change, particularly in the context of the disclosures included in the Strategic Report this year and the stated decarbonisation commitments. Based on the Taskforce for Climate-related Financial Disclosures (TCFD) recommendations, the Group assesses the potential impact of climate-related risks which cover both transition risks and physical risks. The transition risks may include extensive policy, legal, technological, and market changes and physical risks could include direct damage to assets and supply chain disruption.

The Group has set decarbonisation commitments and identified longer-term considerations in response to the climate challenge and is engaging proactively with external stakeholders to advocate for the conditions that

[8] Paragraph 25 of IAS 1

Illustration 1-6 — Rolls Royce Holdings Plc - 2021 annual report

society needs to achieve its net zero target. The Group's main short- and longer-term priorities include the following:

- Achieving net zero greenhouse gas (GHG) emissions by 2030 from all energy purchased and consumed in the operation of the buildings, facilities and manufacturing processes (with the exception of product testing and development). This will be met through continued investment in onsite renewable energy installations; the procurement of renewable energy; and continued investment in energy efficiency improvements to reduce the Group's overall energy demands and operating costs. The investment required to meet these scope 1 and 2 emission improvements is included in the forecasts that support these Financial Statements. The Group expects the Bristol, UK, manufacturing site to be its first site to achieve net zero carbon operations during 2022.
- Pioneering breakthrough new technologies, including investment in hybrid-electric solutions in Power Systems, continued development of the more efficient UltraFan aero engine, testing of sustainable aviation fuels, small modular reactors (SMRs) and hybrid and fully electric propulsion. New products will be compatible with net zero operation by 2030 and all products will be compatible with net zero operation by 2050. In the year, R&D costs of £(68)m within New Markets included design development to ready the SMRs to enter the UK GDA process and investment in electrical propulsion technology. Future investment required to deliver these technologies is included in the forecasts that support the Financial Statements.

Climate change scenarios have been prepared to assess the viability of our business strategy, decarbonisation plans and approach to managing climate-related risk. There is inherent uncertainty over the assumptions used within these and how they will impact the Group's business operations, cash flows and profit projections. The Directors assess the assumptions on a regular basis to ensure that they are consistent with the risk management activities and the commitments made to investors and other stakeholders.

Assumptions used within the Financial Statements in relation to areas such as revenue recognition for long-term contracts, impairment reviews of non-current assets and the carrying amount of deferred tax assets consider the findings from the climate scenarios prepared. Key variables include carbon prices based on the IEA Net Zero scenario, which assumes an increase from $47 per tonne of carbon in 2022 to $250 per tonne in 2050, commodity price trends derived from the climate scenarios set out by the Intergovernmental Panel on Climate Change (IPCC RCP1.9), temperature rises from the (IPCC SSP1-19) scenario, and GDP information from the Oxford Economics Net Zero model.

Although in many cases, climate risk may not add significant going concern uncertainty in the shorter term, it cannot be disregarded for the purpose of assessing an entity's ability to continue as a going concern. If, based on an analysis of the sustainability of an entity's business over the longer term, there is significant going concern uncertainty regarding that entity's ability to continue over that longer term, disclosures addressing those uncertainties should be considered.

How we see it

Climate risk is becoming a major source of estimation uncertainty and could add complexity in the application of IFRS. Furthermore, entities should consider uncertainties associated with future climate-related developments when assessing an entity's ability to continue as a going concern.

Entities should, therefore, ensure that relevant disclosure of assumptions and estimates are made, and those disclosures should be entity-specific, taking care to avoid generic, boilerplate-type language. Entity-specific disclosures include quantifiable information about assumptions, if relevant, as well as explanations of deviations from known market expectations regarding the same assumptions. Furthermore, sensitivity disclosures, quantified if relevant, to illustrate the uncertainty embedded into the estimates relied on by entities, should also be made. It is also important that entities ensure consistency in both the disclosures about climate related matters outside the financial statements (e.g., in separate sustainability reports or management commentaries) and how they incorporate climate risk in the financial information (e.g., in measurements and disclosures in the financial statements).

When assessing the uncertainty associated with an entity's ability to continue as a going concern, climate risk impacts beyond those expected to materialise in the short term, should be considered.

2. Property, plant and equipment

2.1 What is the issue?

IAS 16 *Property, Plant and Equipment* requires an item of property, plant and equipment (PP&E) to be recognised if it is probable that future economic benefits associated with the item will flow to the entity and its cost can be measured reliably.

An item of PP&E should be depreciated over its useful economic life in a manner that reflects the pattern in which the asset's future economic benefits are expected to be consumed by the entity. IAS 16 requires the useful life and residual value of an asset to be estimated on a realistic basis and reviewed at least at the end of each financial year.

An entity may be required by legislation to incur certain expenditures, for example, safety or environmental protection equipment, that do not directly increase the future economic benefits expected to flow from the asset. IAS 16 explains that these expenditures may qualify for recognition as cost of an asset if they allow an entity to derive future economic benefits from related assets in excess of those that would flow if such expenditure had not been made.

We refer to Section 3 below for a discussion on impairment requirements in relation to PP&E.

2.2 What is the impact?

Climate-related matters may affect the value of an item of PP&E, its economic life and its residual value.

Climate change, the legislation enacted to address it, and growing societal pressure have the potential to significantly affect the value of an item of PP&E, its economic life and its residual value. For example, some technologies will be phased out by legislation, renewable technologies are becoming cost competitive as a result of strong learning curve effects and research and development investments, and some assets are prone to damage from extreme weather events.

In particular, entities should consider the following in assessing the impact of climate on its PP&E.

- *Useful life* – Climate change, including associated legislation, may affect how and for how long items of PP&E are used. IAS 16 requires entities to review the useful life of an asset at least at the end of each year-end. Entities will need to consider climate-related factors annually when determining the expected useful life of their assets and, therefore, the period over which such assets are depreciated. An entity would need to assess whether it expects, for example, the early closure of fossil-fuel producing assets (e.g., coal producing assets) or continued use of carbon-emitting assets (e.g., high emission ships). Similarly, an entity would need to consider if its PP&E assets could be indirectly affected if, for example, it is used to provide services to customers in high emission industries.

Illustration 2-1 — National Grid - 2021 annual report

Notes to the consolidated financial statements

13. Property, plant and equipment

(c) Gas asset lives

The role that gas networks play in the pathway to achieving the greenhouse gas emissions reductions targets set in the jurisdictions in which we operate is currently uncertain. However, we believe the gas assets which we own and operate today will continue to have a crucial role in maintaining security, reliability and affordability of energy beyond 2050, although the scale and purpose for which the networks will be used is dependent on technological developments and policy choices of governments and regulators.

With respect to our US gas distribution assets, asset lives are assessed as part of detailed depreciation studies completed as part of each separate rate proceeding. Depreciation studies consider the physical condition of assets and the expected operational life of an asset. We believe these assessments are our best estimate of the UEL of our gas network assets in the US.

The weighted average remaining UEL for our US gas distribution fixed asset base is circa 58 years, however a sizeable proportion of our assets are assumed to have UELs which extend beyond 2080. We continue to believe the lives identified by rate proceedings are the best estimate of the assets' UELs, although we continue to keep this assumption under review as we learn more about possible future pathways towards net zero. Whilst the targets, goals and ambitions have now been formalised in legislation in the states in which we operate, there is widespread recognition that work needs to be done to define the possible future decarbonisation pathways. We continue to actively engage and support our regulators to enable the clean energy transition in a safe, reliable and affordable way.

Asset depreciation lives feed directly into our US regulatory recovery mechanisms, such that any shortening of asset lives and regulatory recovery periods as agreed with regulators should be recoverable through future rates, subject to agreement, over future periods, as part of wider considerations around ensuring the continuing affordability of gas in our service territories.

Given the uncertainty described relating to the UELs of our gas assets, below we provide a sensitivity on the depreciation charge for our New York and New England segments were a shorter UEL presumed:

	Increase in depreciation expense for the year ended 31 March 2022		Increase in depreciation expense for the year ended 31 March 2021[1]	
	New York £m	New England £m	New York £m	New England £m
UELs limited to 2050	140	40	125	35
UELs limited to 2060	67	15	57	13
UELs limited to 2070	31	1	26	2

1. Comparative amounts have been re-presented to reflect the new operating segments and the classification of the UK Gas Transmission business as a discontinued operation. See notes 1, 2 and 10 for further information.

Note that this sensitivity calculation excludes any assumptions regarding the residual value for our asset base and the effect that shortening asset depreciation lives would be expected to have on our regulatory recovery mechanisms. In the event that any of the US gas distribution assets are stranded, the Group would expect to recover the associated costs. While recovery is not guaranteed and is determined by regulators in the US, there are precedents for stranded asset cost recovery for US utility companies.

- *Business models* – Climate-related ambitions will result in the development of new business models and projects with the aim of reducing carbon emissions. For example, carbon capture and storage may use a depleted oil or natural gas reservoir and utilise existing infrastructure that is partially or fully depreciated (e.g., pipelines or offshore facilities linked to producing or decommissioned oil and gas fields). In such a scenario, as the degree of certainty surrounding the future use of such assets increases, an entity should assess whether it needs to change the method and/or period over which existing facilities are depreciated. That is, the useful life of existing infrastructure could be extended by a clean energy project.
- *Decommissioning* – If the useful life of an item of PP&E is shorter than previously expected, this would result in earlier decommissioning and would increase both the decommissioning provision and the decommissioning component of the asset as a result of the discounting effect. In addition, it should be noted that IFRIC 1 *Changes in Existing Decommissioning, Restoration and Similar Liabilities* creates profit and loss volatility in the case of end-of-life assets, which have a carrying amount that is small compared to the potential movements in the decommissioning liability.
- *Residual value* – The residual value of an item of PP&E should also be reviewed at least at each year-end. While residual values of PP&E assets are generally fairly predictable, this is not necessarily the case if there are relatively few buyers of second-hand PP&E assets that use technologies that are being phased out before a legal deadline. In the illustration below, easyJet Plc described in its 2021 annual financial statements how the residual values of its fleet are affected by climate change.

Illustration 2-2 — easyJet Plc - 2021 annual report

1A. Significant accounting policies

Property, plant and equipment

Residual values are reviewed annually against prevailing market rates at the end of the reporting period for equivalently aged assets and depreciation rates are adjusted accordingly on a prospective basis. The carrying value is reviewed for impairment at least annually or where there is any indication of impairment within the cash generating unit of which the asset is part. For aircraft, easyJet is dependent on Airbus as its sole supplier. This gives rise to an increased valuation risk which crystallises when aircraft exit the fleet, where easyJet is reliant on the future demand for second-hand aircraft. Future developments, such as the impact of climate change on the technological, market, economic or legal environment, are considered when assessing residual values, useful economic lives and impairment. In the year, the expected useful economic life estimate for CEO aircraft was revised from 23 years to 18 years in line with expected usage. This was applied prospectively from 1 July 2021 and had an immaterial impact.

- *Development costs* –An entity may incur expenditure on the development of infrastructure relating to new technologies (i.e., hydrogen processing or carbon capture and storage (CCS) facilities). Such development costs are recognised as an item of PP&E if (and only if) it is probable that future economic benefits associated with the item will flow to the entity and the cost of the item can be measured reliably. The entity will need to consider at which point there is sufficient and reliable information to meet the PP&E recognition criteria. This is key as there will be more uncertainty about the

total project costs of assets relating to new technologies compared to existing technologies. Therefore, there is greater potential for significant time and cost overruns.

- *Overhauls or redesigns* – In certain instances, major overhauls or redesigns may be required to convert or repurpose an existing asset (e.g., specialty ships used in the offshore oilfield services industry might be repurposed to service offshore wind farms). To the extent that such activities result in the replacement of asset parts, entities will need to apply the 'major inspection and overhaul' principles of IAS 16 in determining the appropriate treatment of additional expenditure as well as the carrying value of pre-existing PP&E. As a result, entities may need to reconsider the useful lives of certain parts that are expected to be replaced earlier than previously expected.

Entities will need to ensure that sufficient and appropriate disclosure allows users to understand how PP&E is affected by the risks from, and exposures to, climate change.

- *Disclosures* – As noted above, climate-related matters have the potential to create significant uncertainty around the carrying value and accounting for items of PP&E. Entities will need to ensure that sufficient and appropriate disclosure allows users to understand those risks and exposures. Meaningful disclosures would address the uncertainties regarding useful life, residual value and decommissioning of PP&E, as well as any changes in those assumptions during the reporting period. In addition, entities may wish to consider whether or not the classes of PP&E presented in the financial statements are still appropriate. For example, an entity may conclude that it is no longer useful to combine the carrying amount of power stations regardless of underlying technology and carbon intensity. We refer to Section 1 for a discussion on disclosure requirements. In the illustration below, Electricité de France SA provided details in in its 2021 annual financial statements about its sustainable investment programme and how its initiatives will help achieve its commitments on energy transition.

Illustration 2-3 — Electricité de France SA - 2021 annual report

20.4 CARBON-FREE INVESTMENTS

In 2021 the Group continued its programme of gross operating investments, which amounted to €18.3 billion and included €17.6 billion of gross investments in intangible assets and property, plant and equipment (see notes 4 and 10.7) and €0.7 billion of gross financial investments.

In 2021, nearly 94% of the Group's investments were in line with its net-zero trajectory (94% in 2020), with 50% of investments concerning the nuclear sector (51% in 2020). 40% of the Group's investments are aligned with the European sustainable taxonomy (43% in 2020 applying the method based on the March 2020 TEG (technical expert group) report. This notably covered investments in networks, renewable energy production (hydropower, solar power, wind power) and certain energy services (presented in the Group's report on its non-financial performance,, in section 3.8.3 "Details on the taxonomy" of the 2021 Universal Registration Document).

Also, through its investments in new activities, EDF is an actor in the energy transition. The Innovation and Pulse Programmes Division (DIPP) was set up in 2021 to bring out and develop new growth levers for the EDF group. It pursues that objective by investing in start ups and venture capital funds dedicated to innovation (the EDF Pulse Ventures programme), and by developing intrapreneurial projects (the EDF Pulse Incubation programme). These programmes already existed in different forms and in the last ten years several subsidiaries have been opened by the Group, such as Hynamics in

Illustration 2-3 — Electricité de France SA - 2021 annual report

2019, a company that produces and sells low-carbon hydrogen produced by water electrolysis to meet the needs of the heavy-duty transport industry.

The Group's raison d'être is also expressed in the management policy for its portfolio of dedicated assets held to finance long-term nuclear expenses in France (€37.5 billion at 31 December 2021), and the introduction of a responsible investor's charter with three focal points (compliance with the United Nations' Principles for Responsible Investment; respect of the

major international agreements on human rights; and annual reporting on responsible investments). This charter is applicable both to assets managed directly and assets managed by specialist companies under delegated management arrangements.

How we see it

Climate-related matters have the potential to significantly impact the useful life, residual value and decommissioning of PP&E. Climate change, and the associated legislation to promote sustainability, increase the risk that items of PP&E become 'stranded assets' whose carrying value can no longer be recovered within the entity's existing business model.

Given the uncertainties around the impact of climate change, disclosures should be included to allow the users of the financial statements to understand and evaluate the judgements applied by management in recognising and measuring items of PP&E.

3. Impairment of assets

3.1 What is the issue?

IAS 36 *Impairment of Assets* requires an entity to assess at the end of each reporting period (either year-end or interim reporting date), whether there are any impairment indicators for an entity's assets. If there are, the standard requires an entity to perform an impairment assessment. For goodwill, intangible assets with indefinite useful lives and intangible assets not yet available for use, IAS 36 requires an annual impairment test and also when indicators of impairment exist. Impairment indicators include significant changes in the technological, market, economic or legal environment that have an adverse effect on the entity, evidence of an asset's obsolescence and observable indications that the asset's value has declined. Increased awareness of the consequences of environmental change is triggering regulatory action, which is affecting stakeholder perspectives. In turn, this is impacting market prices for commodities and is driving entities to change the way they operate. An entity would need to consider whether such events and circumstances indicate impairment.

If one or more impairment indicators have been identified, the recoverable amount of an asset or cash-generating unit (CGU) has to be determined and compared with its carrying amount. In determining the recoverable amount an entity would need to consider both the direct and indirect impacts of environmental change.

Finally, IAS 36 requires an entity to disclose sufficient information for a user to understand how an asset or CGU was tested for impairment, such as key estimates and judgements, and the events and circumstances that led to the recognition of any impairment loss.

3.2 What is the impact?

Indication of impairment

Government actions to manage environmental change, such as committing to reach net-zero emissions by 2050 in line with the Paris Agreement, could indicate:

- There is a decline in the value of an entity's asset significantly exceeding what would be expected from the passage of time or normal use due to penalties for the use of assets exceeding certain emission targets. Additionally, it could indicate the asset would be abandoned earlier than previously anticipated.
- There is a significant adverse change to the market, economic or legal environment in which the entity operates. For example, a legal requirement to surrender carbon credits based on CO_2 emissions could mean certain activities become less profitable or even loss making in their current form. Alternatively, the introduction of a regulation to restrict certain production methods could mean an investment is required or production needs to be abandoned.
- There is significant adverse change to the technology employed by the entity, requiring significant investments in technology to adapt to the changes in the market.

Furthermore, stakeholders, such as investors, insurers, suppliers, lenders and customers are becoming more environmentally aware when making investment or purchasing decisions. They also factor in the exposure to certain industries. These developments could result in the presence of the following impairment indicators:

- The economic performance of an asset or CGU is likely to be worse than previously expected due to changes in customer preferences (e.g., competitors introducing more sustainable goods or services)
- Increase in general costs, for example when suppliers pass on higher costs, suppliers stop producing parts for certain assets, as well as increased maintenance costs due to physical impact of extreme weather events that may negatively impact the asset's or CGU's expected economic performance
- There is an increase in market interest rates or other market rates of return which are likely to affect the discount rate used in calculating an asset's or CGU's value in use. This, in turn, could decrease the asset's or CGU's recoverable amount materially. For example, an entity operating in an industry with high carbon emissions or high risk of flooding may face higher interest rates, or investors would require a higher rate of return to compensate for the increased risk they are exposed to from investing in such an entity. Whereas an entity operating in a 'green' industry may face lower interest rates, positively impacting their discount rate. A higher discount rate which reflects a higher risk specific to the asset or CGU would reduce the present value of the future cash flows and result in a lower value in use and vice versa.
- The carrying amount of the entity's net assets exceeds its market capitalisation. When investors are moving away from industries with high emissions, an entity's share price is likely to be negatively impacted, which could result in its market capitalisation dropping below the carrying amount of its net assets.
- There is an increase in insurance costs as insurers manage their risk exposure to environmental change by, for example, factoring in the increased probabilities associated with the physical impact of extreme weather events.

Finally, an entity's commitment to reduce its carbon footprint or more generally its impact on the environment, could indicate:

- Evidence of obsolescence of an asset. For example, an entity could look to abandon assets not compatible with their decarbonisation strategy.
- Significant changes in the extent, or manner, in which an asset is used or is expected to be used, have taken place in the period or soon after, that will have an adverse effect on it. For example, an entity could look at reducing certain activities to reduce its carbon footprint, its use of fossil fuels, or it could phase out assets with high energy consumption.
- The asset's or CGU's operating costs can be negatively affected by the required offsetting of its CO_2 emissions or investments to reduce energy and or water consumption.

ArcelorMittal SA described in its 2021 financial statements how it had considered the impact of climate change as part of its impairment assessment.

Illustration 3-1 — ArcelorMittal SA - 2021 annual report

5.3 Impairment of intangible assets, including goodwill, and tangible assets

The Company considered its exposure to certain climate-related risks which could affect its estimates of future cash flow projections applied for the determination of the recoverable amount of its GCGUs and CGUs. With the switch to electric vehicles and the move to wind and solar power generation, the Company sees additional opportunities as customers deepen their understanding of embedded and lifecycle emissions of the materials where steel compares favorably. ArcelorMittal's most substantial climate-related policy risk is the EU Emissions Trading scheme ("'ETS"), which applies to all its European plants. The risk concerns the Company's primary steelmaking plants which are exposed to this regulation and yet unprotected against competition from imported steel. The Company is committed to the objectives of the Paris agreement and announced its ambition to reduce carbon emissions by 35% in Europe and 25% group-wide by 2030 and achieve group-wide carbon neutrality by 2050. These announced goals will require significant long-term investments which require global level playing field, access to abundant and affordable clean energy, facilitating necessary energy infrastructure, access to sustainable finance for low-emissions steelmaking and accelerated transition to a circular economy. In addition, the Company considered the legal obligation of carbon neutrality by 2050 effective within the EU and in Canada following adoption of the Climate Law and the Net Zero Emission Accountability Act, respectively. Accordingly, with respect to its flat steel operations in the EU and in Canada, ArcelorMittal concluded that future decarbonization capital expenditures, which correspond essentially to the construction of DRI-EAF facilities, are necessary to maintain the level of economic benefits expected to arise from the assets in their current condition and should therefore be included in the Company's assumptions for future cash flows of the recoverable amount of the respective GCGUs and CGUs. At the same time, the Company is engaged in developing in the near to medium term a range of innovative low-emission technologies for the transition to decarbonized steel including the Smart Carbon route and the Hydrogen-DRI route and required investments are considered either in the Company's future cash flow projections or in the context of joint ventures, as an element of the Company's best estimate of capital expenditures which are committed and / or being implemented. The Company acknowledged that GCGUs and CGUs applying the blast furnace basic oxygen furnace "BFBOF" route in other jurisdictions than the EU and Canada will apply decarbonization at a different pace. They may also not yet be subject to a legal obligation of carbon neutrality, which would not allow to include future decarbonization capital expenditures in their value in use calculations. Accordingly, the Company increased risk premiums included in their discount rates until they are able to accelerate their decarbonization strategy to meet the 2050 carbon neutrality objective and a legal obligation arises in the relevant jurisdiction. Additionally, the Company's assumptions for future cash flows include an estimate for costs that the Company expects to incur to acquire emission allowances, which primarily impacts the flat steel operations in the EU and in Canada. The assumption for carbon emission cost is based on historical experience, implementation of decarbonization strategies to mitigate or otherwise offset such future costs and information available of future changes. Due to economic developments, uncertainties over the pace of transition to low-emission technologies, political and

Illustration 3-1 — ArcelorMittal SA - 2021 annual report

environmental actions that will be taken to meet the carbon reduction goals, regulatory changes and emissions activity arising from climate-related matters, the Company's assumptions used in the recoverable amount calculations, such as capital expenditure, carbon emission costs and other assumptions are inherently uncertain and may ultimately differ from actual amounts.

Active markets and identifying CGUs

IAS 36 stresses the significance of an active market for the output of an asset or group of assets in identifying an CGU. An active market is a market in which transactions take place with sufficient frequency and volume to provide pricing information on an ongoing basis. If there is an active market for the output produced by an asset or group of assets, the assets concerned are identified as a cash–generating unit, even if some or all of the output is used internally.

In the context of an entity's transition to a low carbon economy, an entity makes significant investments in energy generating assets (for example, solar panels or a windfarm) for internal use only, and the investment decision may be focused on internal cost savings (i.e. substituting the electricity bought from the market). However, where an active market exists for electricity, the entity needs to assess its ability to access the active market to sell its electricity in determining whether the (group of) assets (for example the solar panels or windfarm) should be identified as a separate CGU (i.e., not included in the operational CGU that intends to consume most of the energy produced).

Determining the recoverable amount

IAS 36 defines the recoverable amount as the higher of fair value less costs of disposal and value in use. When the recoverable amount is based on value in use and therefore requires an estimation of future cash flows, IAS 36 requires that the entity's cash flow projections are based on reasonable and supportable assumptions that represent management's best estimate of the range of economic conditions that will exist over the remaining useful life of the asset. When doing so, an entity would need to take into account various elements and aspects of risk, which may be dealt with either as adjustments to the discount rate or to the cash flows. These elements include expectations about possible variations in the amount or timing, and other factors market participants would reflect in pricing the future cash flows the entity expects to derive from the asset, as well as the price for bearing the uncertainty inherent in the asset/CGU. With the general uncertainty about the impact of climate change and limited availability of historical information to assess assumptions against, significant challenges are expected when preparing the forecast or budgets for future cash flows.

Variations in amount or timing of cash flows

Factoring in environmental change, means the need to address significant uncertainties about the future impact, which is beyond an entity's control, and requires incorporating data which may not have been incorporated in the past. Therefore, entities cannot ignore external evidence and should consider the

Entities should consider the statement in IAS 36 that greater weight is given to external evidence when factoring in environmental change.

statement in IAS 36[9] that greater weight is given to external evidence. The best information available to the entity should be used, and the entities' own data should be adjusted if "reasonably available information indicates that other market participants would use different data or there is something particular to the entity that is not available to other market participants such as an entity-specific synergy". For example, entities could use projected energy prices, commodity prices or carbon prices (we refer to the example in Illustration 3-2 below). Incorporating projected prices is complex and requires significant judgement of, among others, the relevant timeframe and the climate change scenario used. Forecasts for commodity prices could, for instance, be obtained from commodity brokers or some banks. Whereas the spot carbon price of the relevant markets could be a starting point for carbon pricing. Alternatively, entities can start with the downscaled scenarios for carbon pricing provided by the Network for Greening the Financial System (NGFS), International Energy Agency (IEA), and the World Economic Outlook (WEO). Judgement will be required to determine the appropriate source for the jurisdictions in which the entity operates.

When the inputs for the cash flow forecast have been determined, the next consideration is the extent to which an entity is able to pass these costs on to customers, which depends on the specific contract and the price elasticity in the market.

Beach Energy Limited disclose in its 2022 financial statements below how it considered the impact of climate change and factored carbon pricing into their impairment assessment.

Illustration 3-2 — Beach Energy Limited - 2022 annual report

Impairment and impairment reversal indicator modelling

In determining whether there is an indicator of impairment, in the absence of quoted market prices, estimates are made regarding the present value of future cash flows for each CGU. These estimates require significant management judgement and are subject to risk and uncertainty, and hence changes in economic conditions can also affect the assumptions used and the rates used to discount future cash flow estimates. Current climate change legislation is also factored into the calculation and future uncertainty around climate change risks continue to be monitored. These risks may include a proportion of a CGU's reserves becoming incapable of extraction in an economically viable fashion; demand for the Group's products decreasing, due to policy, regulatory (including carbon pricing mechanisms), legal, technological, market or societal responses to climate change and physical impacts related to acute risks resulting from increased severity of extreme weather events, and those related to chronic risks resulting from longer-term changes in climate patterns. In most cases, the present value of future cash flows is most sensitive to the assumptions outlined below. An evaluation of climate risk is reflected in Beach's assumptions on carbon cost pricing, including carbon pricing slope of \$34/tCO2e increasing to A\$61/tCO2e by 2030 then increasing to A\$70/tCO2e by 2040 (real) and incorporating the benefits of CCS and the delivery of other committed projects which is

[9] See IAS 36. 33(a) regarding the measurement of value in use. Also, see section 5 of this publication for the determination of fair value in relation to the measurement of fair value less costs of disposal.

Illustration 3-2 — Beach Energy Limited - 2022 annual report

applicable to Australian emissions that exceed facility-specific baselines in accordance with Australian regulations. Beach continues to monitor the uncertainty around climate change risks and will revise carbon pricing assumptions accordingly. The present value of future cash flows for each CGU were estimated using the assumptions below with reference to external market forecasts at least bi-annually. The assumptions applied have regard to contracted prices and observable market data including forward values and external market analyst's forecasts.

Inclusion of future investments

It is key to understand whether the investment is required to continue operating the assets and, therefore, would be akin to maintenance.

Another aspect to consider is how investments in fixed assets need to be considered in a cash flow forecast used to determine the recoverable amount of an asset or CGU. When assessing fair value less costs of disposal, these investments should be reflected, if a market participant would make such investments. However, when assessing the CGU's value in use, the guidance in IAS 36 is more prescriptive. Future cash flows are estimated for the asset in its current condition and do not include estimated future cash inflows or outflows that are expected to arise from future restructuring to which an entity is not yet committed or that improve the asset's performance. This raises the question to what extent such cash flows should be included where an entity is trying either to achieve certain sustainability targets or to cut their CO_2 emissions, which would require capital investments. It is key to understand whether the investment is required to continue operating the assets and therefore would be akin to maintenance. In contrast, if such capital investments, in effect, would represent improvements or enhancements to the asset, they should only be included when the entity is committed to and has substantively commenced the investment.

Unilever Plc disclosed in its 2021 financial statements below that the impact of climate change on the growth rates and projected cash flows was considered as part of its goodwill impairment testing.

Illustration 3-3 — Unilever Plc - 2021 annual report

Notes to the Consolidated Financial Statements Unilever Group

9. Goodwill and intangible assets

Key assumptions

Projected cash flows include specific estimates for a period of five years. The growth rates and operating margins used to estimate cash flows for the first five years are based on past performance and on the Group's three-year strategic plan, which includes the impact on our business of climate change and activities we are undertaking to reduce carbon emissions, extended to years four and five.

Where significant uncertainty and judgement exists, an expected cash flow approach, based on probability-weighted scenarios, may be more appropriate.

Use of multiple scenarios

Significant uncertainty and judgement also arise when considering how different scenarios of environmental change may materialise, for instance, the speed of decarbonisation and the extent to which the average global temperature is increasing. Where significant uncertainty and judgement exists, an expected cash flow approach, based on probability-weighted scenarios, may be more appropriate than a single best estimate for determining value in use (see the example in Illustration 3-4 below). In practice, this could mean probability weighting scenarios (i.e., worst case, base case and best case), as well as factoring in different pricing curves. Even where a probability-weighted scenario approach is used, an entity would still need to consider adjusting the discount rate for the general uncertainties and risks not reflected in the cash flows. Scenario analyses will be particularly relevant for highly impacted industries, such as extractives and manufacturing industries. Industries impacted to a lesser extent, could instead consider incorporating the exposure from environmental change through the discount rate and perform sensitivity analysis. For a discussion of fair value, see section 5 of this publication.

Tesco Plc described how it probability weighted its cash flow forecasts and considered climate change scenarios in its 2022 annual financial statements:

Illustration 3-4 — Tesco Plc - 2022 annual report

Note 15 Impairment of non-current assets

Impairment methodology - Value in use - Retail

The Group applies an expected cash flow approach by probability-weighting different cash flow scenarios. The greatest probability weighting is applied to the cash flows derived from the three-year internal forecasts. Additional scenarios take account of the risks presented by macroeconomic downturns, global supply pressures and climate change, consistent with the viability statement scenarios (see the Longer term viability statement in the Strategic report) as well as an upside scenario.

Key assumptions and sensitivity - Sensitivity

The probability applied to each cash flow scenario differs by country, depending on the expected likelihood of each scenario occurring in each country. The base case represents the cash flows derived from the three-year internal forecasts and is assigned a weighted average probability of 64%. The impairment is not highly sensitive to the upside and climate change scenarios, both assigned 5% weighted average probabilities. The table below sets out the weighted average probability assigned to each of the remaining scenarios, to which the impairment is most sensitive, and shows the impact on impairment of a reasonably possible change in probability for each scenario, where the corresponding opposite change in probability is applied to the base case. The scenarios modelled differ to last year, consistent with the scenarios modelled for the viability statement.

In contrast to Tesco Plc, Eni SpA did not apply multiple climate risk-related scenarios to determine its future expected cash flows, but rather described how the discount rate of future expected cash flows included a market risk premium estimated by management to reflect the risks of the energy transition in its 2021 annual financial statements.

Illustration 3-5 — Eni SpA - 2021 annual report

15 IMPAIRMENT REVIEW OF TANGIBLE AND INTANGIBLE ASSETS AND RIGHT-OF-USE ASSETS

The post-tax, discount rate of future expected cash flows associated with the use of Oil & Gas CGUs was estimated based on the weighted average cost of equity (Ke) and of financial debt, in line with the methodology recommended by the capital asset pricing model. The cost of equity considers a market risk premium measured on the basis of the long term returns of the S&P 500 and an additional premium which was estimated by management to discount the operational risks of the countries of activity and the risks of the energy transition. As a result of these assumptions, our cost of equity is estimated at about 10%, counterbalancing a decline in yields of risk-free assets, which are incorporated both in the cost of equity and in cost of the financial debt. Overall, our risk-adjusted weighted average cost of capital (adjusted WACC) was about 7% in 2021.

Period of reliable cash flow projections

Due to climate change, some entities may experience significant difficulties in preparing future cash flow projections beyond the next few years.

As a result of the significant uncertainty outside an entity's control, the period for which reliable cash flow projections are available and the impact of climate change on the growth rate applied to the last year of cash flow forecast needs careful consideration. While IAS 36 states that cash flow projections for value in use must cover a maximum period of five years, it allows for a longer period if it can be justified. Due to climate change, some entities may experience significant difficulties in preparing future cash flow projections beyond the next few years. Basing the extrapolation of longer-term cash flows on the short-term cash flow forecasts may also raise challenging questions. Other entities could be required to forecast longer before calculating a terminal value, and some may even find that the cash flow projections should be made for the full remaining estimated useful life of the asset or CGU.

Terminal value

Entities significantly exposed to climate change risk will have to assess the impact on the growth rate applied and might even need to consider negative growth rates.

Value in use for many long-term assets will mainly be driven by the terminal value and, therefore, by the level of cash flows in the final year of cash flow projections and the growth rate applied to it. As such, it is important to ensure that the final year of the cash flow forecast represents a sustainable level, also reflecting climate-related aspects. If it does not, adjustments to reflect future expenditure to address the impact of climate change may be required (see the above discussion on the inclusion of future investments). It is important to ensure that the growth rate applied is appropriate and that it considers the impact of climate-related matters. IAS 36 requires the application of a steady or declining growth rate, unless an increasing rate can be justified. Entities significantly exposed to climate change risk will have to assess the impact on the growth rate applied and might even need to consider negative growth rates.

Furthermore, the terminal value may become particularly challenging when different growth rates need to be considered depending on the time passed.

In the illustration below, Enel SpA disclosed in its 2021 annual financial statements how it took account for the impacts of climate change in the long term in the impairment test, and, in particular, the impact it has on the terminal value and the growth rate assumed.

Illustration 3-6 — Enel SpA – 2021 annual report

23. Goodwill – €13,821 million

Note also that the Group took account of the impacts of climate change in the long term. More specifically:

- we consider a long-term growth rate in the estimation of the terminal value that is in line with the change in electricity demand over the 2022-2050 period, based on the specific features of the businesses concerned, adopting certain assumptions concerning the increase in temperature due to climate change and trends connected with the energy transition;
- we assume that the Group will incur the costs provisioned for decommissioning of fossil fuel generation plants in line with the goal of zero direct (Scope 1) and indirect emissions from retail activities (Scope 3);
- we perform a sensitivity analysis of the estimation of the long-term growth rate, as detailed below.

In 2021, Enel SpA updated its decarbonisation roadmap to capture the acceleration in the spread of renewables and the reduction in thermal generation capacity envisaged in the new 2022-2024 Strategic Plan and in the 2030 ambitions presented at the 2021 Capital Markets Day, setting the following objectives in line with the Paris Agreement. In its 2021 annual financial statements, it explained that the same assumptions were used in the goodwill impairment test.

Illustration 3-7 — Enel SpA – 2021 annual report

Time horizon		Greenhouse gas (GHG) reduction target
Short term	2024	• Direct emissions of Scope 1 greenhouse gases to 140 gCO_{2eq}/kWh (-36% compared with 2021)
Medium term	2030	• Direct emissions of Scope 1 greenhouse gases to 82 gCO_{2eq}/kWh (-80% compared with 2017, consistent with the 1.5 °C path as certified by the SBTi) • 55% reduction in indirect Scope 3 emissions associated with gas consumption by end users compared with 2017
Long term	2040	• Full decarbonization of energy mix

…

BP Plc disclosed in its 2021 annual financial statements how it had revised its pricing assumptions, and how these pricing assumptions compare to external pricing forecasts.

Illustration 3-8 — BP Plc - 2021 annual report

Judgements and estimates made in assessing the impact of climate change and the transition to a lower carbon economy

Climate change and the transition to a lower carbon economy were considered in preparing the financial statements. These may have significant impacts on the currently reported amounts of the company's assets and liabilities discussed below.

Impairment of investments

The energy transition is likely to impact the future prices of commodities such as oil and natural gas which in turn may affect the recoverable amount of property, plant and equipment, and goodwill in the oil and gas industry. This, in turn, may affect the recoverable amount of a parent's investments in subsidiaries. Management's best estimate oil and natural gas price assumptions for value-in-use impairment testing were revised during 2021. The assumption up to 2030 was increased to reflect near-term supply constraints whereas the long-term assumption was decreased as BP's management expects an acceleration of the pace of transition to a lower carbon economy. Henry Hub gas price assumptions remain unchanged from 2020 except that the assumption for 2022 has increased to reflect short term market conditions. The revised assumptions sit within the range of external scenarios considered by management and are in line with a range of transition paths consistent with the temperature goal of the Paris climate change agreement of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

Shell Plc, in its 2021 annual financial statements, refered to a number of external climate change scenarios and disclosed the sensitivity of carrying amounts to prices under the assumption that all other factors in the models used to calculate recoverability of carrying amounts remain unchanged.

Illustration 3-9 — Shell Plc - 2021 annual report

Property, plant and equipment and joint ventures and associates

Price sensitivities using climate pricelines

[..]

Priceline 1 – Average prices from four 1.5-2 degrees Celsius external climate change scenarios: in view of the broad range of price outlooks across the various scenarios, the average of four external price outlooks was taken:

- IHS Markit / ACCS 2021 – under this scenario oil prices (real terms 2021 (RT21)) gradually decrease towards $20 per barrel (/b) in 2039, recovering to $46/b in 2046 and decreasing again towards $40/b in 2050. Gas prices (RT21) gradually increase towards 2050 to some $3 per million British thermal units (/MMBtu) for Henry Hub and $6/MMBtu for Asia and Europe.
- Woodmac WM AET-2 degree – under this scenario oil prices (RT21) gradually decrease towards $10/b in 2050. Gas prices (RT21) gradually increase towards 2050 to some $4/MMBtu for Henry Hub. For Asia and

Illustration 3-9 — Shell Plc - 2021 annual report

Europe, gas prices (RT21) increase to some $8/MMBtu around 2040, gradually decreasing towards 2050 to $6/MMBtu for Asia and $5/MMBtu for Europe.

- IEA NZE50 – under this scenario oil prices (RT21) gradually decrease towards $25/b in 2050. Gas prices (RT21) are around $2/MMBtu for Henry Hub. For Asia and Europe gas prices (RT21) decrease to some $4/MMBtu around 2040, with further slight decreases towards 2050.
- IEA SDS – under this scenario oil prices (RT21) gradually increase towards $56/b in 2030, and gradually decrease to $50/b in 2050. Gas prices (RT21) are around $2/MMBtu for Henry Hub. For Asia gas prices (RT21) decrease to around $5/MMBtu in 2050. For Europe gas prices (RT21) are slightly above $4/MMBtu for the whole period.

This priceline provides an external view of the development of commodity prices under 1.5-2 degrees Celsius external climate change scenarios over the whole period under review. Applying this priceline to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are $13-16 billion and $14-17 billion lower, respectively, than the carrying amounts as at December 31, 2021.

Entities should disclose how climate change and climate-related goals have been translated into assumptions and how they are reflected in the impairment test.

Disclosures

Where entities use significant assumptions and judgements to reflect the climate risk in their impairment test, this should be reflected in the disclosures. It is important to disclose how climate change and climate-related goals have been translated into assumptions and are reflected in the impairment test, or alternatively, why these have not been considered. For example, entities committed to meet the Paris Agreement target of net zero emissions by 2050 may consider disclosing how this is translated into assumptions on pricing commodities, levies, forced decommissioning of assets, divestments of businesses, etc. This would help users understand the interaction between what the entity discloses in their financial statements and other sections of the annual report, such as the sustainability report or press releases. We refer to Section 1 for further discussion on disclosures.

The effects of published ambitions in terms of climate change on financial reporting were addressed by Coles Group Limited in its 2022 annual financial statements, where the entity stated that it did not identify any material financial reporting impact as a result of climate risks.

Illustration 3-10 — Coles Group Limited - 2022 annual report

4.1 Impairment of non-financial assets

Forecast future cash flows

Forecast future cash flows are based on the Group's latest Board approved internal five-year forecasts and reflect management's best estimate of income, expenses, capital expenditure and cash flows for each asset or CGU. Internal forecasts have considered the ongoing impacts of the COVID-19 pandemic on income and expenses. Changes in selling prices and direct costs are based on past experience and management's expectation of future changes in the markets in which the Group operates.

Illustration 3-10 — Coles Group Limited - 2022 annual report

In addition, consideration has been given to the potential financial impacts of climate change related risks on the carrying value of goodwill through a qualitative review of the Group's climate change risk assessment. This review did not identify any material financial reporting impacts.

When calculating the FVLCOD of an asset or CGU, future forecast cash flows also incorporate reasonably available market participant assumptions such as enhancement capital expenditure.

A sensitivity analysis can be useful to explain the impact a reasonable possible change in the inputs used has on the headroom, or the change in assumptions required to cause an impairment. We refer to Illustration 3-1.

How we see it

- The extent to which certain assets, processes or activities will be impacted by climate-related business requirements and how climate-related risks and opportunities will affect an entity's forward-looking information, such as cash flow projections in the prognosis period, may require significant judgement.
- Entities should consider what information users rely on in assessing the entity's exposure to climate-related risks.

4. Provisions

4.1 What is the issue?

IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* requires a provision to be recognised when an entity has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the obligation. At the same time, IAS 37 does not allow an entity to recognise a provision for future operating losses.

Except in the case of an onerous contract, the amount required to be recognised as a provision is the best estimate of the expenditure required to settle the present obligation at the end of the reporting period. In the case of an onerous contract, the amount required to be recognised as a provision is not based on an estimate of an expected outcome. Instead, the provision reflects the lower of the costs of fulfilling the contract and any compensation or penalties from a failure to fulfil it (regardless of what the entity expects to do).

If any of the conditions for recognition are not met, no provision is recognised and an entity may instead have a contingent liability. Contingent liabilities are not recognised, but explanatory disclosures are required, unless the possibility of an outflow in settlement is remote.

IAS 37 requires disclosures to enable users to understand the nature, timing and amount of provisions and contingent liabilities. For both provisions and contingent liabilities, this includes an indication of the uncertainties relating to the amount or timing of any outflow.

4.2 What is the impact?

Actions to address the consequences of climate change may result in the recognition of new liabilities or the disclosure of new contingent liabilities.

As entities take action to address the consequences of climate change, these actions may result in the recognition of new liabilities or, where the criteria for recognition are not met, new contingent liabilities may have to be disclosed.

In particular, entities should consider the following in assessing the impact of climate on provisions and contingent liabilities.

New laws or regulations

Legislation introduced in response to climate change may give rise to new obligations that did not exist previously. For example, new requirements could be introduced for the recycling or removal of products, such as the first EU Directive on 'Waste Electrical and Electronic Equipment in 2003.[10] Where a new law is proposed but not yet enacted, an obligation arises only when the legislation is virtually certain to be enacted as drafted[11]. In many jurisdictions, this will not be until the law is enacted.

[10] IFRIC 6 *Liabilities arising from Participating in a Specific Market – Waste Electrical and Electronic Equipment* was developed to provide guidance on identifying the obligating event for recognition of a provision in accordance with paragraph 14(a) of IAS 37. However, it was the existing guidance in IAS 37 that required recognition of a provision where there is a past obligating event, and a probable outflow of resources that could be reliably measured.

[11] Refer to IAS 37.50.

Legal requirements to incur expenditure in order to operate in a particular way in the future will not, in themselves, justify the recognition of a provision if there is no present obligation to incur the future expenditure, as illustrated in Example 1 below.

Example 1: Legal requirement to incur future expenditure

Under legislation passed in 2021, an entity is required to replace gas heating systems in all owned properties with hydrogen or other low-carbon alternatives by 30 June 2025. The company does not start to replace its heating systems until 2026.

At the end of the 2022, 2023 and 2024 reporting periods, no event has taken place to create an obligation. Only when the heating systems are replaced or the legislation takes effect, will there be a present obligation as a result of a past event.

Non-compliance with the legislation by the due date (that is, 30 June 2025) does not mean that there is an obligating event to justify provision for the cost of replacing heating systems required under the legislation. However, a provision would be recognised for the best estimate of any fines and penalties if it is determined to be more likely than not that such fines and penalties will be imposed.

In addition, new levies may be introduced by governments to encourage or discourage specified activities, for example, an environmental tax charged on the energy that businesses use. Applying the guidance in IFRIC 21 *Levies*, the activity that creates the obligation under the relevant legislation to pay the levy is the obligating event for the purposes of the recognition of a provision, in this case the consumption of energy.

Entities should assess whether public commitments created a constructive obligation.

Constructive obligations

An entity may make a public commitment to behave in a certain way or undertake certain activities in response to climate change. Such an entity must assess whether they have created a constructive obligation that requires recognition of a provision. Under IAS 37, only those obligations arising from past events that exist independently of an entity's future actions can be recognised as a provision. In this respect, entities should be careful to ensure that clear language is used in describing their aspirations, targets and intended actions in response to the climate change challenge. For example, a reader may have difficulty understanding the extent to which the entity can realistically withdraw from a course of action described in its transition plan.

Climate change, and the resulting associated legislation, may require past judgements to be reconsidered.

Decommissioning and asset retirement obligations

Provisions may not have previously been recognised for the decommissioning costs of assets such as coal, or oil and gas plants, because they were considered to have indefinite useful lives. Climate change, and the resulting associated legislation, may require this judgement to be reconsidered and new decommissioning provisions recognised, or new contingent liabilities disclosed, as Shell Plc disclosed in its 2021 annual financial statements.

Illustration 4-1 —Shell Plc - 2021 annual report

Note 26 – Legal proceedings and other contingencies

Decommissioning and restoration of manufacturing facilities

Industry practice had been not to recognise decommissioning and restoration provisions associated with manufacturing facilities in Oil Products and Chemicals. This was on the basis that these assets were considered to have indefinite lives and, therefore, that it was considered remote that an outflow of economic benefits would be required.

In 2020, the changed macroeconomic fundamentals were considered, together with Shell's plans to rationalise the Group's manufacturing portfolio. It was also reconsidered whether it remained appropriate not to recognise decommissioning and restoration provisions for manufacturing facilities.

It was concluded that the assumption of indefinite lives for manufacturing facilities is no longer appropriate, and the need for either recognition of decommissioning and restoration provisions or contingent liability disclosure was reviewed. In 2020, provisions had been recognised for certain shorter-lived manufacturing facilities (see Note 19).

As well as creating new decommissioning obligations for entities, climate change or related legislation could also result in earlier decommissioning. This would result in an increase to a previously recognised provision, as a result of the impact of discounting. The decommissioning component of the related PP&E asset would also increase as a result of the requirements of IFRIC 1. Changes in the estimated cost of decommissioning activities as a result of climate-related matters may also impact the measurement of existing decommissioning and asset retirement obligations as BP Plc and Rio Tinto Plc discussed in their 2021 annual financial statements.

Illustration 4-2 — BP Plc - 2021 annual report

1. Significant accounting policies, judgements, estimates and assumptions

Judgements and estimates made in assessing the impact of climate change and the transition to a lower carbon economy

Provisions: decommissioning

The energy transition may bring forward the decommissioning of oil and gas industry assets thereby increasing the present value of associated decommissioning provisions. The majority of bp's existing upstream oil and gas properties are expected to start decommissioning within the next two decades. The group's expectation to reduce its upstream hydrocarbon production by around 40% by 2030 from its 2019 baseline (see page 17) is expected to be achieved through future active management and high grading of the portfolio. Any resulting increase or decrease to the weighted average timing of decommissioning will be driven by the profile of assets held in the revised portfolio. Currently, the expected timing of decommissioning expenditures for the upstream oil and gas assets in the group's portfolio has not materially been brought forward. Management does not expect any reasonable change in the expected timing of decommissioning to have a material effect on the upstream decommissioning provisions, assuming cash flows remain unchanged.

Illustration 4-3 — Rio Tinto Plc - 2021 annual report

Note 25 Provisions (including post-retirement benefits)

Closure cost composition as at 31 December	2021 US$m	2020 US$m
Decommissioning, decontamination and demolition	3,343	3,131
Closure and rehabilitation earthworks [(a)]	4,125	4,223
Long-term water management costs [(b)]	967	966
Post closure monitoring and maintenance	1,676	1,318
Indirect costs, owners' costs and contingency [(c)]	4,431	3,697
Total	14,542	13,335

The underlying costs for closure have been estimated with varying degrees of accuracy based on a function of the age of the underlying asset and proximity to closure. For assets within ten years of closure, closure plans and cost estimates are supported by detailed studies which are refined as the closure date approaches. These closure studies consider climate change and plan for resilience to expected climate conditions with a particular focus on precipitation rates. For new developments, consideration of climate change and ultimate closure conditions are an important part of the approval process. For longer-lived assets, closure provisions are typically based on conceptual level studies that are refreshed at least every five years; these are evolving to incorporate greater consideration of forecast climate conditions at closure.

(a) A key component of earthworks rehabilitation involves re-landscaping the area disturbed by mining activities utilising the largely diesel powered heavy mobile equipment. In developing low-carbon solutions for our mobile fleet, this may include electrification of the vehicles during the mine life. The forecast cash flows for the heavy mobile equipment in the closure cost estimate are based on existing fuel sources. The cost incurred during closure could reduce if these activities are powered by renewable energy.

(b) Long-term water management relates to the post-closure treatment of water due to acid rock drainage and other environmental commitments and is an area of research and development focus for our Closure team. The cost of this water processing can continue for many years after the bulk earthworks and demolition activities have completed and are therefore exposed to long-term climate change. This could materially affect rates of precipitation and therefore change the volume of water requiring processing. It is not currently possible to forecast accurately the impact this could have on the closure provision as some of our locations could experience drier conditions whereas others could experience greater rainfall. A further consideration relates to the alternative commercial use for the processed water, which could support ultimate transfer of these costs to a third party.

(c) Indirect costs, owners' costs and contingency include adjustments to the underlying cash flows to align the closure provision with a central-case estimate. This excludes allowances for quantitative estimation uncertainties, which are allocated to the underlying cost driver and presented within the respective cost categories above.

Climate change and related legislative changes could mean that certain operations are no longer feasible.

Onerous contracts

Increased costs related to the use of new environmentally friendly materials or processes could mean that contracts previously expected to be profitable are now expected to be loss making. If determined to be onerous, a provision may be required for the least net cost of exiting from the contract, which is the lower of the cost of fulfilling it and any compensation or penalties arising from failure to fulfil it. However, if there are no fines or compensation payable on exiting the contract, no provision would be allowed, even if the entity chooses to honour the contract.

Business model
Climate change and related legislative changes could mean that certain areas of current operations of an entity are no longer feasible in their current form, for example, operations related to drilling for oil, or building diesel engines. This may mean that contracted projects, or capital commitments are abandoned resulting in possible onerous contracts, or in more extreme cases, restructuring or closure of individual divisions or businesses. Entities will need to assess whether, and when, business model changes require the recognition of related restructuring provisions.

Legal claims
In most situations, assessing the need to provide for legal claims is one of the most difficult tasks in the field of provisioning. This is due mainly to the inherent uncertainty in the judicial process itself, which may be very long and drawn out. Whether an entity should make provision for the costs of settling a case or to meet any award given by a court will depend on a reasoned assessment of the particular circumstances, based on appropriate legal advice. Entities may expect lawsuits linked to climate-related matters to become more common in the future and the outcome more uncertain, as is discussed in the below disclosure made by Shell Plc in its 2021 annual financial statements.

Illustration 4-4 –Shell Plc - 2021 annual report

Note 26 – Legal proceedings and other contingencies

Climate change litigation

In the USA, 21 lawsuits filed by several municipalities and/or states against oil and gas companies, including Shell plc, are pending as of December 31, 2021. The plaintiffs seek damages for a variety of claims including harm to their public and private infrastructure from rising sea levels and other alleged impacts of climate change caused by the defendants' fossil fuel products. A similar suit has been filed by a crab-fishing industry group claiming harm to their fisheries as a result of alleged ocean-related impacts of climate change. In the Netherlands, in a case against Shell brought by a group of environmental non-governmental organisations (eNGOs) and individual claimants, the Court found that while Shell is not currently acting unlawfully, Shell must reduce the aggregate annual volume of CO_2 emissions of Shell Group operations and energy-carrying products sold across Scopes 1, 2 and 3 by 45% (net) by the end of 2030 relative to its 2019 emissions levels. For Scopes 2 and 3, this is a significant best efforts obligation. Shell has appealed that ruling. Management believes the outcome of these matters should be resolved in a manner favourable to Shell, but there remains a high degree of uncertainty regarding the ultimate outcome of these lawsuits, as well as their potential effect on future operations, earnings, cash flows and Shell's financial condition.

Where relevant, companies should disclose how climate transition has been taken into account when accounting for provisions.

New legislation related to climate change may also mean that outflows for existing legal claims become probable rather than possible, resulting in the need to recognise a provision rather than disclose a contingent liability.

Disclosure
The timing and impact of the effects of climate change is uncertain. Entities will need to ensure that sufficient and appropriate disclosure allows users to understand those uncertainties and the assumptions and judgements made in recognising and measuring provisions. Where relevant, companies should

disclose how climate transition has been taken into account in the measurement of a provision or disclosure of a contingent liability, disclosure of the values assigned to key assumptions (such as the timing of decommissioning outflows), any material changes to key assumptions in the reporting period, the reason for the changes, and sensitivities of material decommissioning provisions to changes in cost or timing assumptions. Refer to Section 1 for further discussion on disclosures.

How we see it

Climate-related matters have the potential to have a significant impact on the recognition and measurement of provisions, and the need for disclosure of contingent liabilities. However, under IAS 37, only those obligations arising from past events that exist independently of an entity's future actions can be recognised as a provision.

Given the significant uncertainties involved in assessing the extent and impact of climate change, entities should ensure that sufficient disclosures are provided to allow users of financial statements to understand those uncertainties, how climate transition has been taken into account in the measurement of a provision or disclosure of a contingent liability, and the assumptions and judgements made by management in recognising and measuring provisions.

5. Fair value measurement

5.1 What is the issue?

IFRS 13 *Fair Value Measurement* defines fair value as an exit price and requires an entity to use the assumptions that market participants would use when pricing the asset or liability. Fair value is not the value specific to the reporting entity and it is not the specific value to one market participant whose risk assessment or specific synergies may differ from other market participants.

Since fair value focuses on what market participants in the principal (or most advantageous) market would consider when pricing the asset or liability, care is needed in determining whether, and to what extent, climate change might affect the assumptions used to measure fair value. This may include, for example, how market participants believe climate-related risks would affect the price of the asset or liability; the effect of restrictions imposed on assets in response to climate change (if it is a characteristic of the asset); and the highest and best use of a non-financial asset, which must be physically possible, legally permissible and financially feasible, and is presumed to be the entity's current use.

IFRS 13 requires an entity to prioritise the use of observable inputs over unobservable ones. This may be more challenging if risks are not yet priced in a market and would affect the categorisation of the fair value measurement (as a whole) within the fair value hierarchy. Among other disclosure requirements, IFRS 13 requires entities to provide a narrative description of the sensitivity of recurring Level 3 fair value measurements to changes in the unobservable inputs used, if changing those inputs would significantly affect the fair value measurement. For financial instruments, further quantitative information is required about the effects of reasonably possible alternative assumptions.

5.2 What is the impact?

Measurement

Entities should ensure that the fair value measurements appropriately consider relevant climate-related risk factors.

Entities should ensure that the relevant fair value measurements appropriately consider the relevant climate-related risk factors. Climate change can have a tangible effect on an entity's assets and liabilities now or in the future (e.g., rising water levels, changing weather patterns, increased pollution levels). A government or entity's response to climate change may be known (e.g., changes to legislation or regulation, commitments to agreed targets or spending to mitigate effects of pollution) or only anticipated (e.g., potential changes in business models, changing behaviours of consumers, competitors, suppliers, lenders and investors). All of these could potentially affect the fair value of an asset or liability, whether the risk or opportunity is real or perceived.

IFRS 13 requires fair value to be measured consistent with the unit of account for the asset or liability being measured. Therefore, entities need to understand to which assets and/or liabilities climate-related factors are attributable, and ensure they do not double count or omit relevant factors. For example, anticipated increases in costs due to climate-related developments may affect the value of an item of property, plant or equipment held by a mining company and also a related rehabilitation provision. However, when measuring the fair value an item of property, plant or equipment, the entity would need to consider

only those inputs that market participants would consider relevant when pricing the asset.

If market participants would consider adjustments for the inherent risk of the asset or liability or for the risk in the valuation technique used to measure fair value (e.g., the valuation technique did not explicitly consider climate-related matters), then such risk adjustments should be considered in the fair value assumptions. However, despite the increased focus on climate-related factors, incorporating such factors into a fair value measurement may be particularly challenging and inputs might not be observable at this stage. In some cases, there might be no standard framework to measure, validate and monitor related programmes. In others, changes may be agreed in principle, but the timing may be unknown or subject to change. Even if the risk can be quantified and timing estimated, the market(s) and market participants might not yet know how to adjust for it in the price of the asset or liability. As a result, entities need to consider whether, and how, they can factor relevant climate-related risks into a fair value measurement.

The ability of market participants to reliably price climate risk and incorporate climate change variables into valuations is expected to gradually improve. This may be similar to the gradual process that market participants took when switching to overnight index swap (OIS) discounting from London interbank offering rate (LIBOR) discounting for collateralised derivatives. There was a period of time during which only some market participants switched to using OIS discounting and others continued using LIBOR discounting. During the transition period, entities may be required to exercise significant judgement to determine the appropriate market participant assumptions.

When considering whether adjustments should be made in a fair value measurement, the following questions could be relevant:

- Are market participants likely to incorporate climate change variables into the fair value measurement?

  An entity may consider the effect of climate change variables in its use, and value, of an asset, but if other market participants do not incorporate these variables in transactions, then it would be inappropriate to include them as inputs in an IFRS 13 fair value measurement.

- When using a proxy as part of the market approach, are climate change variables considered in the choice of the appropriate proxy?

  It is important that the chosen proxy displays similar exposure to climate risk factors as the item being valued. For example, when valuing an investment in an oil company, the equity valuation of an oil company that has invested heavily in developing a renewable energy product offering is likely to be impacted differently by climate risk factors than the equity valuation of a similar oil company that does not have a transition plan to develop its product offering. If using a proxy with different climate risk factors, an adjustment may be necessary.

- When using a proxy in measuring the credit valuation adjustments (CVA) against less liquid uncollateralised derivative counterparties, are climate change variables considered when choosing the appropriate proxy?

If there is no observable counterparty-specific credit spread and a proxy is used, the CVA measurement might need to be adjusted when that counterparty is materially exposed to climate risks (provided the adjustment is consistent with those that market participants would make).

- Have any restrictions on the assets been considered?

If the restrictions are a characteristic of the asset being measured (as opposed to a characteristic of the entity itself), then the restrictions should be factored into the fair value measurement. For example, if a portion of a forest is restricted from harvest as part of a carbon capture scheme, this restriction would be considered since it does represent a characteristic of the asset being measured.

When using the income approach (e.g., a discounted cash flow technique), the following questions could be relevant:

- Does the technique incorporate the impact of climate risk factors and, if so, to what extent?

  Entities need to check whether the projected cash flows and/or the discount rate factor in the existence of climate risk factors and are internally consistent. For example, for the equity valuation of an automotive company producing internal combustion engines (ICEs), it may not be appropriate to assume indefinite sales growth from ICEs in their cash flow projections given the regulatory risks that threaten the longevity of ICEs.

- Have any climate change risk factors been double counted?

  Double counting the risk in both the cash flow projection and discount rate should be avoided. Conversely, to the extent the risks are not adequately captured in the cash flows, then an adjustment to the discount factor may be warranted (provided the adjustment is consistent with adjustments that market participants would make).

For non-financial assets, the following questions could be relevant:

- Have developments in response to climate risk changed the entity's current use of the asset?
- Are there any indications that market participants have changed the use of similar assets?
- Is the asset positively or negatively affected by current and/or anticipated changes in the climate (e.g., rising water levels, changing weather patterns)?
- If the current use differs from its highest and best use, why?

  For stranded assets, for example, an entity may believe the value from their perspective is low (perhaps because it is not part of their future plans given their selected climate change transition business plans), IFRS 13 would consider the highest and best use from a market participant's perspective, which may result in a fair value measurement that is higher than when assuming the entity's current use.

Disclosure

Regardless of whether an entity can adjust for relevant risks in measuring fair value, disclosure of those risks and their potential effect will be important. In particular, users of financial statements will need to understand whether, and

how, the relevant climate-related factors have been incorporated within the methodologies and inputs.

In instances where climate risk factors have a material impact on the fair value measurements, additional disclosures would be required, particularly for those categorised within Level 3 of the fair value hierarchy. This includes any changes in the valuation processes, and sensitivity to changes in unobservable inputs and the interrelationship of those inputs. Entities may need to consider whether additional information is needed to meet the disclosure objective in IFRS 13.

Should entities wish to convey more information (e.g., the entity's incorporation of climate-related factors for its own purposes, rather than financial reporting), entities need to consider whether disclosure within the financial statements is appropriate or it is better presented in the management's discussion and analysis (MD&A).

Illustration 5-1 below contains an example of disclosures that could be included in the financial statements. It represents an extract from the Mondi Plc 2021 annual financial statements, and shows, for a Level 3 fair value measurement, a description of the impacts of climate change on the relevant inputs into the fair value measurement. It highlights how climate-related factors (e.g., water scarcity, fire risks) affect the inputs that are considered by market participants and used in the fair value measurement.

Illustration 5-1 — Mondi Plc – 2021 annual report

14 Forestry assets

The fair value of forestry assets is a level 3 measure in terms of the fair value measurement hierarchy, consistent with prior years.

The following assumptions have a significant impact on the valuation of the Group's forestry assets:

- The net selling price, which is defined as the selling price less the costs of transport, harvesting, extraction and loading. The net selling price is based on third-party transactions and is influenced by the species, maturity profile and location of timber. In 2021, the net selling price used ranged from the South African rand equivalent of €14 per tonne to €44 per tonne (2020: €15 per tonne to €45 per tonne) with a weighted average of €24 per tonne (2020: €28 per tonne).
- The conversion factor, which is used to convert hectares of land under afforestation to tonnes of standing timber, is dependent on the species, the maturity profile of the timber, the geographic location and a variety of other environmental factors, such as the anticipated impact of climate change on water scarcity and fire risks. In 2021, the conversion factors ranged from 8.3 to 24.1 (2020: 8.2 to 23.6).
- The risk premium on immature timber of 12.9% (2020: 14.3%) is based on an assessment of the risks associated with forestry assets in South Africa and is applied for the years the immature timber has left to reach maturity. A risk premium on mature timber of 4.0% (2020: 4.0%) was applied. The risk premium applied to immature and mature timber include factors for the anticipated impact of climate change on water scarcity and fire risks. An increase in the severity and frequency of extreme weather events, such as higher temperatures, changes in rainfall

Illustration 5-1 — Mondi Plc - 2021 annual report

patterns and drought conditions, may result in higher timber losses in future years caused by stronger winds, erosion, fires, pests and diseases. The decrease in the risk premium on immature timber was triggered by an identified reduction in the historical incident risk factor.

Segro Plc described in its 2021 annual report how sustainability and environmental matters are considered in the valuation of real estate.

Illustration 5-2 — Segro Plc - 2021 annual report

27. PROPERTY VALUATION TECHNIQUES, SUSTAINABILITY AND CLIMATE CHANGE CONSIDERATIONS AND RELATED QUANTITATIVE INFORMATION

Sustainability valuation considerations

The Group's valuers, CBRE, note in their valuation report that wherever appropriate, sustainability and environmental matters are an integral part of the valuation approach. 'Sustainability' is taken to mean the consideration of such matters as environment and climate change, health and wellbeing and corporate responsibility that can or do impact on the valuation of an asset. In a valuation context, sustainability encompasses a wide range of physical, social, environmental, and economic factors that can affect value. The range of issues includes key environmental risks, such as flooding, energy efficiency and climate, as well as matters of design, configuration, accessibility, legislation, management, and fiscal considerations – and current and historic land use.

Climate risk legislation

The UK Government and the EU is currently producing legislation on the transition to net zero which is likely to include an update to the Minimum Energy Efficiency Standards and also the intention to introduce an operational rating. Whilst the nature of the legislation is not yet clear it could have a potential impact to future asset value.

The introduction of mandatory climate related disclosures in the UK and EU (including 'Task Force for Climate related Financial Disclosure' (TCFD) in the UK and 'Sustainable Finance Disclosure Regulations' (SFDR) and 'Corporate Sustainability Reporting Directive' (CSRD) in the EU), including the assessment of physical and transition climate risks, may potentially have an impact on how the market views such risks and incorporates them into the sale and letting of assets.

Sustainability and climate risk legislation has an impact on the value of an asset, even if not explicitly recognised. Valuers reflect markets, they do not lead them. Where the valuers recognise the value impacts of sustainability and legislation, they are reflecting their understanding of how market participants include sustainability and legislation requirements in their bids and the impact on market valuations.

How we see it

Entities should ensure that any climate change variables incorporated in a fair value measurement are those that market participants would consider when pricing the asset or liability to ensure it is an IFRS 13 fair value measurement.

Entities may need to use significant judgement when considering climate-related factors in their fair value measurements, which may lead to greater estimation uncertainty and a need for more transparent disclosure.

6. Financial instruments

6.1 What is the issue?

IFRS 9 *Financial instruments* requires entities to recognise expected credit losses on financial assets measured at amortised cost and on debt assets measured at fair value through other comprehensive income (FVOCI), as well as on certain financial guarantees and loan commitments. Climate change may affect an entity's assessment of expected credit losses on these instruments, potentially leading to higher allowances for expected credit losses. The longer the term of the exposures and the greater the extent to which the counterparty is likely to be affected by climate change, the greater this effect is likely to be.

IFRS 9 also requires entities to classify and measure financial assets based on the business model in which they are held and their contractual terms. Sustainability-linked loans are becoming increasingly prevalent. The contingent rate adjustments inherent in these loans may introduce additional variability to the cash flows of the loan that is inconsistent with a basic lending arrangement and fail the Solely Payment of Principal and Interest (SPPI) test. This would result in the asset being classified as at fair value through profit or loss (FVPL).

6.2 What is the impact?

Expected credit losses

A variety of adverse future climate risk economic scenarios could impact the probability of borrowers defaulting.

IFRS 9 requires use of forward-looking information to recognise expected credit losses. There is a variety of increasingly possible adverse future climate risk economic scenarios that could impact the probability of borrowers defaulting and the extent of losses that lenders may incur in the event of default. Climate-related risks are broadly categorised into physical and transition risks. Physical risks include the risk of loss due to specific weather events (such as storms or wildfires) and due to longer-term changes in weather trends (such as rising sea levels). Transition risks relate to the risk of financial loss due to the economic transition toward a more sustainable economy.

Physical risks can impact the creditworthiness of borrowers due to business interruption, impacts on economic strength, asset values and unemployment. Transition risks could also result in a rapid deterioration of credit quality in sectors and/or countries affected, particularly if policy changes are radical or quickly implemented, and these factors should be considered in a borrower's ability to repay and service debt.

From a credit risk perspective, physical and transition risks related to climate change could potentially impact:

- Probability of Default (PD). PD affects staging of exposures and the measurement of ECL allowances. Historical correlations that predict defaults may no longer be relevant. Methods for risk rating customers may, therefore, need to be updated as new financial and non-financial metrics capturing the impacts of climate change are made available. The impact of regulatory actions should also be considered.
- Loss Given Default (LGD). LGD affects the ultimate measurement of the ECL allowance. Physical and transition risks may affect collateral values, for example, on mortgage loans, and lead to entities employing different collection strategies for distressed debt.

- Model adjustments (MAs). Entities may make use of judgemental in-model or post-model adjustments to incorporate climate risk into their ECL allowances, particularly in the short term due to data and model limitations. Enhanced governance processes will be required to support these judgements.
- Forward-looking information (FLI). Entities may need to incorporate climate risk factors into their macroeconomic scenarios. The effect of climate risk on these scenarios is likely to be enhanced, the greater the duration of the underlying exposures and the greater an entity's exposure is to vulnerable sectors or populations.
- Concentration risk. Climate risk is likely to increase risk exposures in vulnerable sectors or geographies. Sectors like agriculture and insurance may be particularly vulnerable to physical risks. Mining and oil and gas may be particularly exposed to transition risk. Some geographies such as those at low altitude or water-scarce areas may be particularly exposed to physical risks. Changes in risk concentrations may affect the modelling of ECL allowances and the disclosure of credit risk concentrations.

Entities, particularly those with large credit risk exposures like banks, are in various stages of integrating climate risks into their risk frameworks, and there exist several challenges in this regard:

- Climate-related risks are uncertain, non-linear and pervasive.
- There are multiple projections and scenarios available to understand the size and impact of climate risk, but limited projections for economic and financial effects.
- Data and projections available are not always comparable, given divergence in taxonomies and standards globally.
- Entites need to collect new types of data on their customers and put in place new processes and governance.
- Identifying the right metrics to measure climate risk exposure can be challenging.
- Clarity or consensus on incorporating climate scenario analysis and into risk assessments is still emerging.

Illustration 6-1 shows how National Australia Bank Limited considered its exposure to climate risks as part of its credit risk assessment in its 2022 annual financial statements.

Illustration 6-1 — National Australia Bank Limited – 2022 annual report

NOTE 19 FINANCIAL RISK MANAGEMENT

Credit risk
ESG risks

The Group is exposed to ESG and other emerging risks. The following items are examples of how these risks may impact the Group:

- Increases in the frequency and severity of climatic events could impact customers' ability to service their loans or the value of the collateral held to secure the loans.

Illustration 6-1 — National Australia Bank Limited - 2022 annual report

- Action taken by governments, regulators and society more generally, to transition to a low-carbon economy, could impact the ability of some customers to generate long-term returns in a sustainable way or lead to certain assets being stranded in the future.
- Failure to comply with environmental and social legislation (emerging and current) may impact customers' ability to generate sustainable returns and service their loans.
- If in future customers don't hold appropriate levels of insurance for physical assets against certain risks, this may impact the value the Group can recover in the event of certain natural disasters.

The Group considers these risks as part of the credit risk assessment and due diligence process before a customer is granted credit and for new product development. The Group also manages its total credit portfolio within established risk appetite and limits, particularly for specific industries or regions that are more exposed to these types of risks. As at 30 September 2022, the Group holds FLAs in its credit impairment provisions reflecting the potential impact of emerging ESG risks. This includes $14 million (2021: $nil) for the potential impact of the Lismore floods.

How we see it

The effect of climate risk on an entity's ECL calculations is likely to be enhanced the greater the duration of the underlying exposures and the greater the entity's exposure to vulnerable sectors or populations. Given the judgemental nature of incorporating climate risks into ECL calculations, it is important that entities establish strong governance processes to support material judgements that they make in this regard.

Sustainability-linked loans

Careful analysis of the terms of sustainability-linked loans is required to assess whether they meet the SPPI test.

Sustainability-linked loans are structured such that their interest rates vary based on whether the borrower achieves pre-determined sustainability targets defined in the loan agreement. For example, the terms may include a reduction or increase in the interest rate if the borrower does, or does not, attain a certain rating on a type of green-building rating system for an agreed number of the borrower's manufacturing buildings. Sustainability targets can also include diversity-related targets such as gender representation targets at a defined level of management.

These contingent rate adjustments introduce variability to the cash flows of the loan which is linked to the underlying sustainability performance of the borrower. This may not be consistent with a basic lending arrangement. Careful analysis of the terms of these loans is required to assess whether the cash flows represent solely payments of principal and interest (SPPI).

Sustainability-linked loans are different from what are commonly called 'green loans'. Green loans may refer to loans granted to borrowers who operate in environmentally friendly sectors such as solar power or loans that are granted to finance activities that are 'green'. However, crucially, they do not include any

terms which can cause their contractual cash flows to change due to 'green' targets after the loan has been issued.

In a basic lending arrangement, consideration for the time value of money and credit risk are typically the most significant elements of interest. However, interest can also include consideration for other basic lending risks (e.g., liquidity risk) and costs (e.g., administrative costs) associated with holding the financial asset. However, contractual terms that introduce exposure to risks or volatility in the contractual cash flows that are unrelated to a basic lending arrangement, (e.g., exposure to changes in equity prices or commodity prices), do not give rise to contractual cash flows that are SPPI.

Illustration 6-2 gives an overview of the impact of climate risks on NatWest Group Plc's accounting judgements and estimates in its 2021 annual financial statements.

Illustration 6-2 — NatWest Group Plc - 2021 annual report

Critical accounting policies and key sources of estimation uncertainty

How Climate risk affects our accounting judgments and estimates

NatWest Group makes use of reasonable and supportable information to make accounting judgments and estimates. This includes information about the observable effects of the physical and transition risks of climate change on the current creditworthiness of borrowers, asset values and market indicators. It also includes the effect on NatWest Group's competitiveness and profitability. Many of the effects arising from climate change will be longer term in nature, with an inherent level of uncertainty, and have limited effect on accounting judgments and estimates for the current period. Some physical and transition risks can manifest in the shorter term. The following items represent the most significant effects:

- The classification of financial instruments linked to climate, or other sustainability indicators: consideration is given to whether the effect of climate related terms prevent the instrument cash flows being solely payments of principal and interest.
- The measurement of expected credit loss considers the ability of borrowers to make payments as they fall due. Future cash flows are discounted, so long dated cash flows are less likely to affect current expectations on credit loss. NatWest Group's assessment of sector specific risks, and whether additional adjustments are required, include expectations on the ability of those sectors to meet their financing needs in the market. Changes in credit stewardship and credit risk appetite that stem from climate considerations, such as oil and gas, will directly affect our positions.
- The assessment of asset impairment and deferred tax are based upon value in use. This represents the value of future cash flows and uses the Group's five-year forecast and the expectation of long-term economic growth beyond this period. The five-year forecast takes account of management's current expectations on competitiveness and profitability, including near term effects of climate transition risk. The long-term growth rate reflects external indicators which will include market expectations on climate risk. NatWest Group did not consider any additional adjustments to this indicator.
- The use of market indicators as inputs to fair value is assumed to include current information and knowledge regarding the effect of climate risk.

How we see it

There is no bright line to determine whether sustainability-linked features cause an instrument to fail the SPPI test. It is important to consider whether they provide commensurate compensation for basic lending risks, such as credit risk, or whether they introduce compensation for new risks that are inconsistent with basic lending arrangements. Some features may be de *minimis* or non-genuine. These three possibilities are discussed in more detail below. It is important to exercise sound judgement based on the facts and circumstances.

Compensation for credit risk

Instruments are more likely to meet the SPPI requirements if the attainment (or non-attainment) of the sustainability target is likely to result in the improvement (or the deterioration) of the borrower's credit risk during the life of the loan such that the change in interest rate is commensurate with the change in credit risk of the borrower. IFRS 9 acknowledges that clauses which allow changes to the timing and amount of contractual cash flows may not fail the SPPI test if there is a relationship between the changes and an increase in credit risk.

It is often difficult to demonstrate a commensurate link between the interest rate change due to the attainment of a sustainability target and the credit risk of the borrower. This may be easier to prove if the entity can demonstrate that it takes the sustainability metric into account when pricing and monitoring the credit risk on the loan. This could be the case if there is a link between the feature and the value of the collateral pledged against the loan (see example 2 below), or if there is a link between the feature and the probability of default on the loan (see example 3 below). If the link to credit risk is too indirect (see example 4 below), the feature will have to be further assessed (see sections on de-minimis and compensation for other basic lending risks below).

Some sustainability features may affect the borrower's credit risk over the long-term but not necessarily the loan's credit risk. For example, continuous failure to meet sustainability targets in the long term might lead to the borrower's business becoming unsustainable and, ultimately, to its demise, but this may have little effect on the borrower's ability to repay the loan in the short term over its expected remaining life.

If there is a link between the feature and the loan's credit risk, the lender should also establish whether the magnitude of the change in the contractual cash flows due to the feature is commensurate with the anticipated change in credit risk. If the feature gives rise to leveraged exposure to credit risk, the loan is likely to fail the SPPI test. The exception to this is where the feature gives rise to non–commensurate changes in interest rates, not to introduce leverage to the contract, but to introduce a punitive interest rate to act as a disincentive against the borrower allowing its credit risk to deteriorate. In such cases, the objective of the non–commensurate change in interest is to reduce the lender's risk, similar to other common features of basic lending arrangements such as default penalties, rather than increasing its risk by introducing leverage.

This exception regarding punitive rates is not specific to sustainability loans. In September 2013, the IASB staff noted that even if an interest rate could be described by some as 'punitive' in the sense that the terms of the instrument

require a significant increase in the interest rate upon a credit event and such feature is intended, in part, to discourage a specific behaviour (such as missing payments on a credit card), the increased rate could still be commensurate with the consideration for credit risk of the instrument if such behaviour occurs.[12]

The following examples demonstrate these considerations:

Example 2: Sustainability-linked loans

A bank grants a loan to fund the acquisition of a new fleet of vessels. The loan is collateralised by that fleet. In addition, the loan contains a sustainability feature that reduces or increases the interest rate based on the borrower's performance against a commonly used metric in the industry for carbon emissions. The metric is based on the carbon emissions of the entity's fleet after factoring in the distance travelled by the fleet and the ships' size.

In this scenario, there may be a link between the emissions targets and the value of the collateral (the fleet). The bank would need to consider:

- Whether the value of the fleet is linked to the attainment of the carbon emission targets:
  - This might be the case, as, all things being equal, a better maintained and therefore more efficient fleet should attract a higher resale value than a less efficient fleet.
  - However, better efficiency may not necessarily indicate that the fleet is in a better condition. Efficiency will depend on other factors such as the ships' payloads, the skill of the crew in operating them, time spent waiting to dock at busy ports and weather conditions.
  - Judgement would need to be exercised in determining the strength of the link based on the facts and circumstances.
- Whether the change in value of the fleet would affect the entity's assessment of the credit risk on the loan:
  - In this scenario, the fleet has been pledged as collateral on the loan. A more valuable fleet could, therefore, reduce the loss given default on the loan and decrease the entity's assessment of the loans' credit risk.
  - However, if the loan is not collateralised, or if the metric considers the performance of additional ships that have not been pledged as collateral against the loan, the link with credit risk may be harder to demonstrate.
- Whether the change in the interest rate in response to the attainment of the emissions target can be considered appropriate compensation for the associated change in credit risk.

[12] Agenda paper 6D for the September 2013 IASB meeting on Contractual Cash Flow Characteristics: The Meaning of 'Interest'.

Example 3: Sustainability-linked loans

A ten-year loan is granted to a power generating entity to finance an overhaul of a coal-fired power plant. Operating this power plant is the entity's sole business. New local legislation will prohibit the power plant from continuing to operate if a specified CO_2 emissions target is not met on, or after, a date in three years' time. Therefore, the bank has included a series of annual targets in the loan terms, building up to the final deadline. If the power plant does not meet these contractual emissions targets, the interest rate on the loan increases.

The lender is likely to be able to demonstrate a link between the sustainability feature and the loan's credit risk. If the final emissions target is not met, the plant will not be able to operate. As this is the borrower's sole business, it would be unlikely that it will be able to repay the loan if that were to happen. The contractual emissions targets are designed to incentivise the borrower to incrementally work towards meeting the overall legislative target. The closer the borrower gets to the legislative deadline and the further it is from achieving it, the higher its credit risk becomes. The contractual features increase the interest rate in response to this increase in credit risk. Therefore, there is a clear link between the contractual targets and the credit risk on the loan.

The lender would also need to establish whether the magnitude of the change in the interest rate is commensurate with the change in credit risk. If the change is not commensurate, it should consider whether the feature is designed as a punitive feature to disincentivise against the borrower allowing its credit risk to increase by making slow progress towards the important legislative deadline.

In practice, this link to credit risk may not be so clear. For example, the link may be blurred when the entity's credit risk is a function of multiple comingled businesses, but the loan and the sustainability-feature relate to a single business, or portion thereof, or when the cost of attaining the sustainability target is high and could outweigh the benefits.

Example 4: Sustainability-linked loans

A short-term loan is granted to a food group. The interest rate on the loan varies depending on the performance of the group against a sustainability scorecard. The scorecard includes three targets based on:

a) The reduction in the Group's CO_2 emissions

b) The percentage of new hires that are female

And

c) The number of training hours in sustainable food production provided to previously underprivileged people

The group's performance against each target is weighted and used to determine an overall score. The interest rate will be reduced if the Group achieves a score above a predetermined level.

In this Illustration, achievement of the sustainability target benefits the entity in a broader, intangible manner. For example, the Group could achieve the training target by providing training as a corporate social initiative to people who are not employed by the Group and have no contractual or financial

Example 4: Sustainability-linked loans
relationship with the Group. While this may improve its reputation, and possibly improve its business performance and credit risk in the long term, such a link is indirect and, most likely, weak. Additionally, the loan is a short-term loan and, as such, it will be difficult to demonstrate a link between the feature and the loan's credit risk.

De minimis or non-genuine sustainability features

Lenders or holders should also consider whether the sustainability feature is *de minimis* or non-genuine. An entity should be able to conclude, without a detailed quantitative analysis, whether a feature is *de minimis*. As an operational simplification, an entity may decide to introduce a quantitative threshold below which features would be considered '*de minimis*' without a detailed analysis. Judgement should be exercised in determining what the appropriate threshold is. This is especially relevant in a low-interest environment, wherein sustainability-linked discounts or penalties could easily become significant in relative terms.

Compensation for other basic lending risks

In some markets, the presence of sustainability features within certain types of lending arrangements is becoming increasingly common because of lenders being expected to support the transition towards greener business. In these cases, if the sustainability feature is not *de minimis* and introduces cash flows that are not commensurate with the change in the loan's credit risk, further analysis will be necessary to assess whether the feature causes the loan to fail the SPPI test.

In July 2021, the IASB staff considered the classification of loans with sustainability-linked features. They noted that the key question to ask in analysing these loans is what the entity (the holder) is being compensated for. The nature of the contingent event (i.e., the trigger) of sustainability-linked adjustments is the borrower's performance against specified sustainability targets, but this does not automatically mean that the adjustments represent compensation for the entity's exposure to an actual sustainability risk of the borrower and, therefore, cause the loan to fail the SPPI test. [13]

Key to this argument was the feedback from stakeholders that many sustainability-linked adjustments are a standardised fixed spread and represent a relatively small fraction of the total interest of the loans. They are standardised in the sense that they are not determined based on the assessment of the specific risks of the borrower's ability to meet the sustainability targets. Although the targets are bespoke to the individual borrower, the size and design of the resulting adjustments is often standardised, regardless of the size of the targets and the likelihood that they will be met. Where this is the case, it could indicate that the sustainability features do not introduce compensation for bearing a specific sustainability risk that is unrelated to a basic lending arrangement (like equity prices or

[13] Agenda paper 3B for the July 2021 IASB meeting on the Post implementation Review of IFRS 9 – Classification and Measurement.

commodity prices). Therefore, the feature would not cause the loan to fail the SPPI assessment.

In contrast, the IASB staff highlighted that they were not implying that sustainability-linked adjustments may be SPPI because their size is small or because they are standard or common. A small or common feature may well be inconsistent with a basic lending arrangement. However, while the size of the adjustment is not a determinative factor of the assessment, the IASB staff observed that the larger the adjustments are relative to the total interest of a loan, the greater the likelihood they are an indication that the adjustments represent compensation for a particular type of risk or exposure. In such cases, the borrower and the lender would have a stronger incentive to ensure that a large sustainability-linked adjustment reflects the compensation for the relevant sustainability risks assumed. If a financial asset compensates an entity for its exposure to sustainability risks of the borrower, in the IASB staff's preliminary view, such compensation is often unlikely to be consistent with contractual cash flows that are SPPI.

In addition to the size of the feature, as a further step in the analysis of sustainability features that are not *de minimis* and which introduce cash flows that are not commensurate with the change in the credit risk on the loan, we believe that the following considerations may clarify whether the sustainability feature introduces compensation for a new risk that is inconsistent with a basic lending arrangement:

- The record of contract negotiations between the borrower and the lender

  The negotiations between the counterparties may indicate whether the feature was included as: a necessary concomitant to a basic lending arrangement in response to one of the more traditional basic lending risks such as credit risk; or to introduce sustainability risk and compensation into the loan.

- The nature of the sustainability feature

  Paragraph 4.182 of the Basis for Conclusions to IFRS 9 expands on this concept of a basic lending arrangement and emphasises the importance of the pricing approach.

  If the sustainability feature is priced to compensate the lender for a specific lending risk, such as credit risk, rather than to incentivise common 'good corporate citizen' behaviour, it would be more appropriate to assess the feature against the credit risk guidance in the compensation for credit risk section above.

- The lender's pricing decisions

  The lower the level of precision used by the lender to measure and price the risks and volatility arising from the sustainability feature, the greater the indication that the lender has not attempted to introduce compensation for a sustainability risk and is simply trying to conclude a basic lending arrangement.

- The extent to which the counterparties monitor and manage the resulting sustainability risk

The less prominence that the counterparties give to measuring and managing the resulting sustainability volatility and risk on the loan, the greater the indication that they were trying to conclude a basic lending arrangement rather than introducing compensation for a separate risk.

- The level and frequency of data on the sustainability feature that the borrower is required to report to the lender

  Similar to the previous point, if the parties intended to introduce compensation for sustainability risk, the borrower would be expected to provide more granular, frequent updates to the lender in respect of the sustainability feature to enable the lender to monitor and manage its exposure.

In April 2022, the IASB discussed the classification of these instruments as part of the post-implementation review of IFRS 9. In the accompanying staff paper, the staff made the observation that ESG-linked features are often not intended to compensate the lender for taking on ESG risks. Rather, the ESG-adjustment serves as an 'incentive' for the borrower to meet the specified ESG targets. Consequently, if the contractual cash flows resulting from the ESG-linked feature do not introduce compensation for ESG risks, the staff believed that a financial asset with ESG-linked features could have contractual cash flows that are not inconsistent with a basic lending arrangement. [14]

How we see it

This approach to ESG-linked features is pragmatic and is consistent with our interpretation of existing requirements. We believe it is helpful to highlight that ESG features that are included to compensate the lender for ESG risks would likely fail the SPPI requirements, whereas those that are included not as compensation for bearing ESG risks, but as an incentive for the borrower to meet certain ESG targets, could pass the SPPI requirements.

The staff also suggested that IFRS 9 should be clarified by adding application guidance to support the consistent application of the SPPI condition. To ensure the maximum benefit to be gained for the lowest cost, they proposed the view that any clarifications should not be specific only to ESG-linked features, but principles-based and robust enough to be applied to other types of financial instruments that may emerge in the future.

Since then, the IASB has prioritised this project to clarify the SPPI requirements. In September 2022[15], the Board tentatively decided to amend IFRS 9 to clarify that:

- For contractual cash flows of a financial asset to be 'solely payments of principal and interest on the principal amount outstanding', a basic lending arrangement does not cause variability in cash flows arising from risks or factors that are unrelated to the borrower, even if such terms and conditions are common in the specific market in which the entity operates

  And

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[14] IASB staff paper 3B, April 2022, Contractual cash flow characteristics assessment – ESG-linked features - LINK

[15] IASB, September 2022, IASB and joint IASB-FASB Update September 2022, https://www.ifrs.org

- A financial asset that includes contractual terms that change the timing and amount of the contractual cash flows would be consistent with 'a basic lending arrangement', if:
  - the contractual cash flows that could arise from any contingent events are solely payments of principal and interest in all circumstances (that is, the probability of a contingent event occurring is not considered)
  - the contingent event is specific to the borrower
  - the timing and amount of any variability in contractual cash flows are determinable and specified in the contract

  And

  - the contractual cash flows arising from the contingent event do not represent an investment in the borrower or exposure to the performance of any underlying assets

The IASB also tentatively decided to add examples to illustrate the application of the contractual cash flow characteristics assessment to specific fact patterns.[16]

These decisions are tentative in nature and the final release of the amendment will depend on further standard-setting procedures subject to the IASB's due process. The current tentative decisions are, therefore, subject to change.

How we see it

The proposal to identify whether a contingent feature is specific to the borrower echoes the definition of a derivative which considers whether there is an underlying non-financial variable specific to a party to the contract. This approach is well-established to identify whether a financial liability has an embedded derivative and provides a good starting point to address the questions posed by ESG-linked features included in loans.

However, for the purpose of the SPPI assessment, the proposal is to require the condition to be specific to the borrower, rather than to either party to the contract. Also, the reference is to a contingent event, rather than a non-financial variable, as not all non-financial variables that are specific to the borrower would be consistent with a basic lending arrangement. For example, adjustments to the contractual interest rate that depend on an entity's revenue or profits in a specific period would be more akin to an investment in the borrower.

Disclosures

Entities should consider to what extent IFRS 7 requires disclosures in relation to climate risks.

IFRS 7 *Financial Instruments: Disclosures* requires entities to provide disclosures in their financial statements that enable users to evaluate the significance of financial instruments for the entity's financial position during the period and at the end of the reporting period.

Entities should consider to which extent they are exposed to climate risks as a result of their involvement in financial instruments. IFRS 7 requires qualitative and quantitative disclosures unless the information resulting from that disclosure is not material.

[16] IASB Update September 2022 - LINK

Appendix 1: Other climate-related accounting considerations

Below we have listed other potential climate-related accounting considerations that could have an impact on entities. As practice develops and as more information becomes available, we will update the publication and address some of these issues separately.

Standard	Potential accounting considerations
IAS 2 *Inventories*	Have inventories become less profitable (due to carbon offsetting charges, additional import duties, product conversion/redesign costs) or obsolete (due to changes in customer demand or regulatory restrictions)? Should levies on emissions during production be included in the cost of the produced inventories?
IAS 10 *Events after the Reporting Date*	Do specific regulatory or market developments that occur after the reporting date represent non-adjusting events?
IAS 12 *Income taxes*	How is the entity's ability to generate future taxable profits impacted by climate-related developments? Are there substantively enacted climate-related changes to tax legislation (e.g., penalties or cost deductibility restrictions on certain sectors, regions, activities) with a significant impact on the income taxes that the entity expects to pay?
IAS 19 *Employee Benefits*	Do any of the entity's employee benefits depend on the achievement of specific climate-related targets?
IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*	Have government incentives or assistance been introduced or revised in response to specific climate-related initiatives? Are conditions attached to any government grants linked to climate-related targets or initiatives? Have circumstances changed that would affect the entity's ability to meet those conditions or could require repayment of a grant?
IAS 41 *Agriculture*	Have there been any events related to climatic, disease and other natural risks that have given rise to a material item of income or expense for which the nature and amount needs to be disclosed in the financial statements? Have entities that hold, or are planting, trees as carbon sinks or to produce carbon offsets considered which standard applies to those assets?[17]
IFRS 2 *Share-based Payments*	Do any of the entity's share-based payment plans depend on the achievement of specific climate-related targets?
IFRS 8 *Segment Reporting*	Is the information presented in the segment reporting consistent with the information disclosed in other parts of annual report/other communication to investors (e.g., when information for commodity / non-commodity businesses are reviewed by CODM)? Does the entity adjust the IFRS information for internal management reporting purposes to fully reflect any climate-related impact of its activities?

[17] Refer to our publication *IFRS Developments- Accounting for trees held to generate carbon offsets for use or sale* for further details.

Standard	Potential accounting considerations
IFRS 10 *Consolidated Financial Statements*	Do new climate-related regulatory developments result in the loss of control over a particular business or activity (for example, due to the inability to continue to operate certain activities or influence the key decisions)?
IFRS 15 *Revenue from Contracts with Customers*	Is the entity facing increased uncertainties related to revenues recognised over time due to climate-related developments? Are climate-related developments affecting the extent to which variable consideration is expected to be entitled by the entity (including its assessment of the constraint on variable consideration)? Are customers charged an optional or required fee to offset emissions with their purchase? If so, has the entity assessed the impact on its accounting (e.g., whether there is a promised good or service, whether they are agent or principal)? Have any climate-related developments led to modifications of contracts with customers (e.g., switching to goods or services with a smaller carbon footprint)? Have any climate-related developments affected anticipated revenue contracts (e.g., renewals), such that recognised contract cost assets need to be assessed for impairment or the amortisation period revised?
IFRS 16 *Leases*	Have there been changes (e.g., changes in business models or restructuring plans) that require a reassessment of the lease term and lease liability? Are lease agreements modified due to climate-related changes in the market or legal environment (e.g., the inability to operate certain asset or activities)?
IFRS 17 *Insurance Contracts*	Do the entity's risk assumptions appropriately reflect climate-related developments (e.g., increased frequency or magnitude of insured events)? Does the entity provide the relevant disclosures on climate risk management for users to understand their effects?

Appendix 2: Summary of important changes to this publication

The key changes to this publication since the May 2022 edition include updates to the illustrations where possible and adding new illustrations. The other changes made to this November 2022 update are summarised below.

1. Disclosure requirements

Additional discussion in the sections on assumptions and estimates and judgements.

4. Provisions

A paragraph has been added in the section on constructive obligations in relation to public commitments made by entities.

6. Financial instruments

Updates were made to the section on compensation for other basic lending risks to reflect the standard-setting developments at the IASB.

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