Deloitte.

Accounting for Sustainability: Stranded Assets

The fifth article in the Accounting for Sustainability series

April 2026

Introduction

The emergence of climate-related stranded assets highlights the growing intersection between environmental challenges and financial accounting.

Impaired assets are a well-established accounting concept, referring to assets whose economic value falls below their recorded value on a company's balance sheet. Stranded assets are a specific type of impaired assets which lose economic value before the end of their expected lifetime, driven by external factors such as climate change and changes in their cost structure (e.g. CO2 emission fees), physical damage (e.g. flooding) or regulatory changes (e.g. transition to a net-zero economy).

A company's exposure to stranded assets depends on the sector and the regions in which it operates. Regional analysis shows that more stringent environmental policy regimes, such as in the EU, put greater pressure on companies to transition but regions with lower policy stringency and high technological lock-in, such as Australia, may face more disruptive asset value adjustments later. Chemical companies, oil refineries, carbon-intensive steel and power technologies face the highest stranded-asset risks in a low carbon economy, while sectors with mature low-carbon alternatives are less exposed and enjoy better transition options.

In addition, industrial stranding poses a significant economic risk in specific regions. Germany, Japan, and parts of Canada's economy depend heavily on clusters of pollution-intensive industries. If these industries are forced to transition or close, the local job market could be significantly affected.[1]

This article addresses the critical challenge of stranded assets in the transition to a low-carbon world. It explores how resilient decarbonisation pathways can mitigate the physical and transition risks and proposes best practices for reporting on stranded assets transparently.

Industrial decarbonisation and stranded assets

Stranded assets are a major concern for companies navigating the transition to a low carbon economy and for those with high vulnerability to physical climate risks. Climate risk disclosure frameworks, including the Task Force on Climate-related Financial Disclosures (TCFD), require companies to disclose assets or business activities vulnerable to transition and physical risks so that stakeholders can assess potential asset impairments, effects on valuations, and changes in product or service demand[2].

Climate risks affect financial stability through the following primary channels:

Physical risks: Direct impacts from weather-related events such as floods and storms, including property damage and indirect consequences like supply chain disruptions and resource scarcity.

[1] Stranded futures? Quantifying the asset risks of industrial decarbonisation in developed economies
[2] Mouez Fodha & Djamel Kirat & Chahir Zaki, 2021. *On Stranded Assets and Climate Risk: Are Financial Markets the Last Resort?* Retrieved 6. March 2026.

Transition risks:

- Financial risks from the shift to a lower-carbon economy, including for example repricing of carbon-intensive assets.
- Liability risks from legal compensation claims by parties harmed by climate change who hold a company responsible. Insurance firms may face significant costs when such legal claims are covered under liability insurance policies. Moreover, it may not be possible for companies to obtain insurance for assets at risk of climate change impacts, depending on the insurer's risk policies.

Understanding climate-driven stranded assets and building resilience

Multiple environmental, economic and technological events might trigger asset stranding. New regulations on carbon pricing and pollution controls impose increased compliance costs, while the lower costs of solar and wind energy make carbon-intensive assets less competitive.

Evolving social norms, reflected in divestment campaigns, reduce investors' appetite for high emission assets. Additionally, companies face growing litigation risks as courts increasingly hold companies accountable for climate-related financial risks[3], exposing them to legal obligations for inadequate climate risk management and disclosure.

Climate risks manifest across sectors in tangible ways. As governments worldwide commit to net zero by 2050, carbon-intensive assets such as fossil fuel reserves and coal-fired power plants face the risk of becoming obsolete or uneconomical. Agriculture and forestry face yield reduction and land degradation from shifting weather patterns; this leaves unproductive land stranded and provokes rural displacement. Tourism infrastructure can be made obsolete by climate-driven change – for example, Alpine ski resorts closing due to insufficient snow cover, and coral reefs bleached by elevated sea temperatures.

Asset stranding is accelerating as environmental degradation, technological disruption, and regulatory tightening render carbon-intensive assets economically unviable. Companies that fail to anticipate and disclose these risks face material financial exposure, reputational damage, and stakeholder loss of confidence. Transparent climate risk disclosure and proactive transition planning are therefore essential to remain resilient.

To effectively mitigate these risks companies must therefore integrate climate considerations into their strategic and operational planning. This involves assessing the vulnerability of assets to regulatory, market, and technological changes, and diversifying investments away from high-carbon assets toward sustainable alternatives, investing in clean technologies, and enhancing energy efficiency. Robust scenario analysis and stress testing help to identify vulnerabilities under different climate policy conditions. Furthermore, transparent reporting and stakeholder engagement on climate risks and transition plans build trust and support long-term resilience. By aligning business models with evolving regulatory frameworks and societal expectations, companies can reduce the likelihood of stranded assets and position themselves competitively in a low-carbon economy.

[3] The Climate Litigation Database - The Climate Litigation Database Retrieved 2. April 2026.

Accounting for stranded assets

Disclosure of the amount or extent of a company's assets or activities vulnerable to climate-related risks is advisable and required by law in many jurisdictions. It allows intended users of the financial statement to better understand potential financial vulnerabilities from climate-related events such as asset impairments or stranding of assets, changes to the carrying amount of assets, and changes in liability and equity due to increases or decreases in assets and the costs of business interruptions.[4]

Stranded property, plant, and equipment (PP&E), and intangible assets

As described in our article Accounting for Sustainability: Climate Risk, IAS 16 sets out the accounting treatment for property, plant, and equipment (PP&E), while IAS 38 applies to intangible assets. Both tangible and intangible assets can be impacted by climate risks, causing depreciation of PP&E or amortisation of intangible assets through changes in their useful lives or residual values.

Assets may become stranded for a number of reasons related to decarbonisation:

- Expected usage: Decarbonisation policies (e.g., carbon taxes, emissions caps) can directly reduce the economically viable operating hours or capacity utilisation of high-carbon assets, leading to a premature reduction in their expected usage and thus their economic benefits. In addition, the introduction of other environmental regulations such as bans on the use of 'forever chemicals' could also cause a premature reduction in their expected usage of a production line, site and equipment. The next article in our series will elaborate on accounting considerations related to pollution.
- Expected physical wear and tear: If assets are used less frequently due to an emissions cap, the costs of maintaining them (even while idle) without corresponding revenue can make them economically unviable.
- Technical or commercial obsolescence: Decarbonisation drives technological advances and shifts in market demand towards greener alternatives. This can render existing, carbon-intensive assets technically or commercially outdated well before their physical end-of-life.
- Regulation: New environmental regulations can impose legal restrictions on assets' use, effectively stranding it by limiting or prohibiting its operation.

Change in estimate of useful life due to stranding

The estimated residual value and expected useful lives of assets may be affected by climate-related obsolescence, legal restrictions or inaccessibility. Companies are required to disclose the expected useful lives for each class of asset and the nature and amount of any change in estimated residual values or expected useful lives. IAS 16 and IAS 38 require companies to review the estimated residual values and expected useful lives of assets at least annually. Climate-related changes in the residual value or expected useful life of assets should be reflected in the recognised depreciation or amortization cost for both the current and subsequent periods.[5]

Testing for impairment due to stranding

[4] Recommendations of the Task Force on Climate-related Financial Disclosures, 2017
[5] Effects of climate-related matters on financial statements, IFRS (July 2023).

IAS 36 Impairment of Assets should be used to assess whether assets are impaired due to stranding. IAS 36 requires assessment of whether, for example, decarbonisation as a result of climate- change will impair an asset and cause adjustments to cash flow projections and useful lives. Assets that may significantly decline in value due to the transition to a low-carbon economy (such as coal-fired power plants and fossil fuel reserves) must be tested for impairment.

A key challenge in impairment testing for stranded assets is projecting future cash flows amid high uncertainty over climate policy, technological disruption, and market dynamics. Scenario analysis addresses this by exploring a range of possible future outcomes based on different assumptions about climate policies, technological developments, and the physical impacts of climate change.[6] By developing multiple scenarios with assigned probabilities, companies can better understand the range of plausible outcomes and arrive at more solid and substantiated impairment conclusions.

In addition, sensitivity disclosures are required for impairment testing of Cash-Generating Units (CGUs) or groups of CGUs that contain significant goodwill or intangible assets with indefinite useful lives. These disclosures are necessary where a reasonably possible change in key assumptions would cause the CGU's carrying amount to exceed its recoverable amount, thereby indicating impairment.[7]

As outlined above, specific impairment testing disclosures are required by IAS 36. However, additional disclosures may be needed for the intended user to understand key judgements, assumptions and estimates that affect the financial statement. For example, even if a CGU does not contain goodwill or intangible assets with indefinite useful lives, the sensitivity disclosures might be required by IAS 1 or IAS 8 for companies that apply IFRS 18. In some cases, even if climate-related matters do not result in impairment, this information may still be material to disclose.[8]

Stay tuned

Environmental regulations may lead to premature reduction in use of certain production lines and equipment due to for example emissions caps. This can undermine the economic viability of the asset because of ongoing maintenance costs without matching revenue recognition. The sixth article in the Accounting for Sustainability series will explore the accounting considerations that arise from pollution.

[6] Accounting for Sustainability: Climate Risks | Deloitte Switzerland
[7] IAS 36 – Impairment of Assets | DART – Deloitte Accounting Research Tool
[8] International Accounting Standard 1 — Presentation of Financial Statements | DART – Deloitte Accounting Research Tool, IAS 8 – Basis of Preparation of Financial Statements | DART – Deloitte Accounting Research Tool and IFRS 18 — Presentation and Disclosure in Financial | DART – Deloitte Accounting Research Tool

Authors

Abetare Zymeri
Director, Sustainability Services
azymeri@deloitte.ch

Oliver Köster
Director, Audit & Assurance
okoester@deloitte.ch

Additional contributors:
Nadine Kusche, Director, Audit & Assurance
Dr. Quinn Wenning, Senior Manager, Sustainability Services
Caterina Schoehl, Senior Manager, Audit & Assurance
Dr. Ramona Achermann, Assistant Manager, Sustainability Services
Emilie Lundsgaard Jensen, Senior Consultant, Sustainability Services

Deloitte.