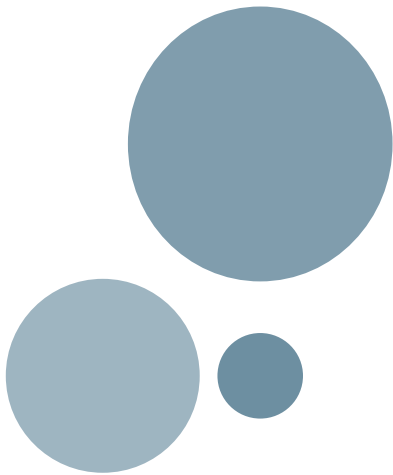


-  **Green and Sustainable**
-  Finance Cluster
-  Germany



**TCFD Think Tank**

# **TCFD in a nutshell**

**A short overview of the most  
important terms in the context of TCFD**

-  **Green and Sustainable**
-  Finance Cluster
-  Germany

## Symbols

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**Definition**



**Further Reading**



**Key Message**



**Examples**



**Food for Thought**

## Abbreviations

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<b>BoE</b>	Bank of England
<b>CCS</b>	Carbon Capture and Storage
<b>COP21</b>	21. Conference of the Parties
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>ETDF</b>	Enhanced Disclosure Task Force
<b>FSB</b>	Financial Stability Board
<b>GCECA</b>	Global Centre of Excellence on Climate Adaptation
<b>G20</b>	The 20 largest economies including those of developing nations
<b>HLEG</b>	High-Level Expert Group on Sustainable Finance

<b>NBG</b>	Non-Binding Guidelines
<b>NDC</b>	Nationally Determined Contributions
<b>NFRD</b>	Non-Financial Reporting Directive
<b>PRI</b>	Principles for Responsible Investment
<b>SASB</b>	Sustainable Accounting Standards Board
<b>TCFD</b>	Task Force on Climate-related Financial Disclosures
<b>TEG</b>	Technical Expert Group on Sustainable Finance
<b>UNEP FI</b>	United Nations Environment Programme Finance Initiative

## Foreword Green and Sustainable Finance Cluster Germany

Transparency is fundamental to evaluating risks and allocating capital efficiently. For this purpose, the consistent disclosure of financial results, the handling of opportunities and risks, the status and the making of forecasts are indispensable. This also applies to understanding the effects of the climate crisis. The analysis of climate-related risks is challenging, as neither the exact path towards a world compatible with the Paris Agreement nor the exact timing and extent of the physical effects of the climate crisis can be predicted. Many actors are only slowly recognising the significance of the climate crisis for their future economic success. In fact, changes due to the climate crisis affect all parts of the global economic system. The associated changes not only represent a considerable risk, but also open up new business opportunities for companies that strategically consider the climate crisis.

Risk-return profiles in the lending business and in asset management will change considerably as a result of the climate crisis. They are a result of the physical effects of climate change, climate policy and regulation, changing demand structures and new emerging technologies. Avoiding climate-related risks will prove difficult in certain asset classes or sectors, which may lead to a revaluation of such activities. The Financial Stability Board has set up an industry-led Task Force on Climate-related Financial Disclosures (TCFD) to assess information relevant to climate-related risk. The TCFD has issued recommendations for the voluntary and consistent disclosure of climate-related financial information. These are intended to help investors, lenders and insurance companies understand significant climate-related risks and opportunities. Globally, the TCFD recommendations are now understood as a guideline and numerous companies have committed themselves to their implementation.

The Green and Sustainable Finance Cluster Germany e.V. (Cluster) showed in its Baseline Report published in August 2018 that the TCFD recommendations seem too abstract for German financial institutions. There is little understanding of practical implementation approaches of the TCFD recommendations. In cooperation with experienced financial market practitioners, the Cluster has therefore established a think tank for overcoming practical implementation issues. This is supported by the in-depth knowledge of the Frankfurt School of Finance & Management, PwC Deutschland, d-fine and right. based on science. Within the framework of the TCFD Think Tank, four workshops with selected financial market practitioners were held. In the course of this process, a deeper understanding of the TCFD recommendations was built up. The findings are now made available to the interested public, in particular financial institutions, in the form of short briefs. They are tailored to the needs of practitioners in order to independently advance the implementation of the TCFD recommendations.

# 1 Classification of the TCFD and scope of recommendations

The Governor of the Bank of England (BoE) and former Chairman of the Financial Stability Board (FSB) founded in 2009, Mark Carney, had warned in September 2015 in his speech „Breaking the tragedy of the horizon - climate change and financial stability“ about the effects of climate change on society. Following the tragedy of the commons known from the environmental economy, the tragedy of the time horizon is inherent in the effects of climate change. The planning horizon of most states and companies is too short to meet the challenges of climate change effectively. As soon as climate change becomes a decisive issue for financial stability, it may already be too late. However, the adjustment should not be too abrupt so that financial stability is not jeopardised. According to Carney, an adequate information basis would have to be created in order to break through the tragedy of the time horizon and achieve a better understanding of climate-related risks. To this end, the industry-led Task Force on Climate-related Financial Disclosures (TCFD), which he initiated and led, has developed a voluntary standard for companies' climate change-related reporting that met the criteria of consistency, comparability, reliability, clarity and efficiency<sup>1</sup>. The TCFD was established in December 2015 and published its recommendations in June 2017<sup>2</sup>. Interim reports on the implementation status of the recommendations followed in September 2018 and June 2019.

The Principles for Responsible Investment (PRI), an investor initiative supported by the UN, with currently more than 2,200 signatories and jointly managed assets of more than 80 trillion US dollars has adopted the TCFD recommendations, making TCFD-based reporting mandatory for its signatories from 2020<sup>3</sup>.

Within the framework of Measure 9.2 of the EU Action Plan published in March 2018, a future adaptation of the Non-Binding Guidelines (NBG) of the Non-Financial Reporting Directive (NFRD) will be explained, which, among other things, offers further indications for the inclusion of climate change-related information in line with the TCFD recommendations<sup>4</sup>. The Technical Expert Group (TEG), which was convened to support the preparation of (technical) proposals for detailing the first three legislative proposals published in May 2018, describes the link between the TCFD recommendations and the NFRD in its „Report on Climate-related Disclosures“<sup>5</sup>.

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1 Breaking the tragedy of the horizon - climate change and financial stability (Carney, M., September 2015): <https://www.bankofengland.co.uk/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability>

2 Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, Juni 2017): <https://www.fsb-tcf.org/publications/final-recommendations-report/>

3 TCFD-based reporting to become mandatory for PRI signatories in 2020 (UNPRI, Februar 2019): <https://www.unpri.org/news-and-press/tcf-based-reporting-to-become-mandatory-for-pri-signatories-in-2020/4116.article>

4 Action Plan: Financing Sustainable Growth (EU Kommission, March 2018): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0097>

5 The subsequent consultation on the NBG at EU level was concluded in March 2019. In June 2019, the NBG in the NFRD was finally adjusted.

## 2 Recommendations and definitions of the TCFD

### 2.1 The common framework for disclosure

For the common disclosure framework provided by the TCFD recommendations, the distinction between a user and a disclosing party's view applies. The primary users are investors, lenders and insurers. Secondary users are rating agencies, equity analysts, stock exchanges and investment advisors. A common guideline on disclosure will be provided for the disclosing party. In addition, supplementary guidelines for the implementation of disclosure are provided specifically for the financial sector as well as for non-financial sectors.

Among the disclosing parties in the financial sector are banks, insurance companies, asset managers and asset owners. In particular, large asset managers and asset owners have influence in their active management on their investment recipients so that better climate-related financial information is provided. In the non-financial sector, a focus is placed on the sectors of energy, transport, materials, buildings, agriculture, food and forest products, as these sectors are responsible for the major part of greenhouse gas emissions.



#### **Further reading**

*Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures* (TCFD, June 2017):

<https://www.fsb-tcf.org/publications/final-recommendations-report/>

*Annex: Implementing the Recommendations of the TCFD* (TCFD, Juni 2017):

<https://www.fsb-tcf.org/publications/final-implementing-tcf-recommendations/>

### 2.2 Opportunities, risks and financial impacts

Climate change involves both opportunities and risks for investors, lenders, insurers and other financial market players, as it can have both positive and negative effects on financial ratios through various channels.

#### 2.2.1 Chances

The development of new products and services, the opening up of new markets, the increased use of low-emission energy sources and a more efficient use of resources and the associated cost savings in response to climate change open up many new opportunities for economic and financial market players. In particular, organisations that demonstrate high adaptability to incorporate sustainability considerations into their investment and business decisions could benefit from the opportunities offered by activities on climate change mitigation



### Example

- » The higher demand for low-emission energy promotes investments in the expansion of renewable energy sources such as wind and solar energy, as well as biomass and hydropower
- » The CO2 fleet limits of 95 g CO2/km for car manufacturers set by the EU from 2021 onwards will boost the market for electric cars and other alternative modes of transport.

## 2.2.2 Risks

On the side of climate-related risk, the TCFD distinguishes between physical and transition risks



### Example

- » Snowstorms, hail, floods represent acute physical risks, whereas the rise in global temperature or sea level corresponds to a chronic physical risk.
- » The reduced use of fossil fuels to achieve a political climate target or the introduction of a CO2 price represent a transitory risk.



### Definition

Physical risks result from impairments to business operations due to damage to assets (direct effects) and from market risks, e.g. due to rising material costs or the reduced availability of required resources, up to the complete interruption of supply chains (indirect effects), which arise due to an event-related (acute) or long-term (chronic) change in the climate.

Physical risks naturally include both a short-term and a long-term time horizon. Even if physical risks have changed and increased in their form and frequency in recent years, this type of risk assessment is not new. For physically measurable direct effects, monetary estimations can already be made. Insurance companies include direct effects of physical risks, for example, in the determination of their insurance premiums. However, economic, social and environmental impacts beyond the company's boundaries are more difficult to quantify, making it particularly difficult to project and limit these indirect impacts.



### Further reading

TCFD Think Tank: *Physical climate-related risks* (2019)

Advancing TCFD guidance on physical climate risk and opportunities (European Bank for Reconstruction and Development and Global Centre of Excellence on Climate Adaptation, 2018):

<https://www.physicalclimaterisk.com/knowledge-hub/>



### Definition

Transition risks result from the transition to a low-emission economy, which is aimed at mitigating the consequences of climate change through political, legal, technological, market and reputational measures..

Transition risks thus describe impacts that may result in the medium to long term from the transformations necessary to limit climate change towards a low-emission economy across all sectors. To this extent, they represent a new challenge for the entire economic system, including the financial system, since these risks are new in their expected form and materiality and there is therefore no history of past events that can be used to quantify risk.

### 2.2.3 Financial implications

Physical and transition risks can manifest themselves in altered present and future capital flows. They therefore have a potential impact on a company's income statement and balance sheet. The impact of climate-related risks depends on the economic sector concerned, the geographical location, the business areas, in other words the specific exposure of the organisation. The TCFD distinguishes four categories of financial impact:

- Revenues
- Expenditure
- Assets and liabilities
- Capital and financing

In this context, stranded assets arise, which include, e.g. investments that are depreciated or impaired before the end of their useful economic life due to climate change-related changes or loss of liquidity as a result thereof.



### Example

An energy company loses value because the available coal reserves can no longer be used up due to new emission standards and are therefore subject to a value adjustment. These reserves represent an example of stranded assets.



## 2.3 Recommendations and guidelines

The TCFD divides its recommendations on disclosure of climate change-related financial impacts applicable to organizations in all sectors and countries into four thematic areas:

- **The organisation's governance** with regard to climate change-related opportunities and risks
- Current and future impacts of climate change on the company's **strategy**
- Identification, assessment and **risk management** in a climate change context
- **Metrics and targets** for assessing climate-related opportunities and risks

In addition, guidelines on the implementation of disclosure are recommended specifically for the financial sector as well as for non-financial sectors.

### 2.3.1 Disclosure recommendations for all sectors

Table 1 shows an overview of the TCFD recommendations for the disclosure on climate change-related opportunities and risks broken down into the four areas of governance, strategy, risk management and metrics & targets.

### 2.3.2 Disclosure guidelines for all sectors

#### Governance

In the area of corporate governance, the monitoring process and the role of the management in assessing and managing climate-related risks should be discussed. It is also important to disclose the extent to which climate-related challenges can be overcome and how the issue is anchored in the organisational structure.

#### Strategy

Organisations should disclose what climate-related opportunities and risks particularly affect them and how they will affect their profitability, strategy and financial planning in the short, medium and long term. In particular, the resilience of an organization in a 2°C or lower scenario should be considered. In this context, the concept of the materiality of risks also plays an important role (see further literature), since recommendations on disclosure apply only to material risks.



#### Further reading on materiality

*Statement of Common Principles of Materiality of the Corporate Reporting Dialogue* (Corporate Reporting Dialogue, 2016):

<https://corporatereportingdialogue.com/wp-content/uploads/2016/03/Statement-of-Common-Principles-of-Materiality1.pdf>

## Risk management

The information on risk management is used to assess the general risk profile of an organisation. In addition to describing the identification, assessment and management of climate-related risks, the extent to which these processes are integrated into existing risk management processes should also be described. Particular attention should be paid to the factors used for assessment and to the relative importance of climate change-related risks compared to other risk categories.

## Metrics and Targets

Metrics and targets are information on the measures and methods used to capture and manage climate-related risks and how they are used in risk management and the strategic direction of the organisation. Furthermore, the most important climate-related targets of the organization should be disclosed. This also includes the reporting of Scope 1, Scope 2 and, if applicable, Scope 3 greenhouse gas emissions and the associated risks, taking into account the concept of materiality. The disclosure of information on metrics and targets should also be seen in the context of materiality.



### Definition

Scope 1 refers to all greenhouse gas emissions directly caused by the organisation. Scope 2, on the other hand, refers to indirect greenhouse gas emissions caused by the consumption of purchased electricity, district heating and cooling or steam. Scope 3 refers to other indirectly caused greenhouse gas emissions from the upstream and downstream value chain, such as emissions resulting from the use or disposal of products sold. In the financial sector, the main focus is on the Scope 3 category<sup>15</sup> (Investments) emissions („financed emissions“) in accordance with the GHG Protocol.



### Example

- » CO<sub>2</sub> emissions and targets per scope (absolute, intensity-based)
- » Proportions of sales, operating and investment costs (for mitigation and/or adaptation to climate change)
- » Energy consumption (conventional / renewable) and energy efficiency targets

### 2.3.3 Supplementary guidelines for the financial sector

For banks, insurance companies, asset owners and asset managers, supplementary guidelines in the areas of strategy, risk management, metrics and targets are provided in addition to the recommendations listed above. In addition, banks should, for example, report significant concentrations of credit exposures in exposed assets as well as consider a characterisation of climate change-related risks in the context of traditional risk categories such as credit risk, market risk, liquidity risk and operational risk.

Corporate governance	Strategy	Risk management	Metrics & targets
Description of the Management Board's overview of climate-related risks and opportunities.	Presentation of climate - related risks and opportunities of the organization in the short, medium and long term.	Explanation of the processes for identifying and assessing climate-related risks..	Disclosure of metrics to assess the extent to which climate-related risks and opportunities are consistent with the organization's strategy
Description of the role of management in assessing and managing climate-related risks and opportunities.	Description of the impact of climate-related risks and opportunities on the business model, corporate strategy and financial performance of the company.	Explanation of management processes of climate-related risks.	Disclosure of Scope 1, Scope 2 and, if applicable, Scope 3 greenhouse gas emissions and associated risks.
	Presentation of the resilience of the corporate strategy under consideration of different climate scenarios, including a „2°C or lower“ scenario.	Description of how the processes described above are integrated into the organization's risk management.	Description of the organization's objectives regarding the management of climate-related risks and opportunities and the extent to which the targets have been achieved.

Table 1: TCFD recommendations on disclosure of climate change-related opportunities and risks

The characterisation of risks should be discussed, i.e. whether climate-change-related risk will be treated as a new risk type of its own or taken into account as another important risk driver within the already established risk types. ESMA emphasises in its final paper on the integration of sustainability risks into the UCITS and AIFMD guidelines to explicitly take sustainability risks into account in addition to market, liquidity, credit and operational risks in the risk management of funds<sup>6,7</sup>.

In addition, the existing frameworks are shown on which the supplementary guidelines are based: Enhancing the Risk Disclosure of Banks<sup>8</sup>, the various Sustainability Accounting Standards<sup>9</sup>, the Climate-Wise Principles<sup>10</sup>, Principles for Sustainable Insurance<sup>11</sup>, Reporting Framework Strategy and Governan-

6 Consultation Paper on integrating sustainability risks and factors in the UCITS Directive and AIFMD (ESMA, Dezember 2018): [https://www.esma.europa.eu/sites/default/files/library/esma34-45-569\\_consultation\\_paper\\_on\\_integrating\\_sustainability\\_risks\\_and\\_factors\\_in\\_the\\_ucits\\_directive\\_and\\_aifmd.pdf](https://www.esma.europa.eu/sites/default/files/library/esma34-45-569_consultation_paper_on_integrating_sustainability_risks_and_factors_in_the_ucits_directive_and_aifmd.pdf)

7 Final Report on integrating sustainability risks and factors in the UCITS Directive and AIFMD (ESMA, April 2019): [https://www.esma.europa.eu/sites/default/files/library/esma34-45-688\\_final\\_report\\_on\\_integrating\\_sustainability\\_risks\\_and\\_factors\\_in\\_the\\_ucits\\_directive\\_and\\_the\\_aifmd.pdf](https://www.esma.europa.eu/sites/default/files/library/esma34-45-688_final_report_on_integrating_sustainability_risks_and_factors_in_the_ucits_directive_and_the_aifmd.pdf) Final Report

8 Enhanced Disclosure Task Force (EDTF): [https://www.fsb.org/wp-content/uploads/r\\_121029.pdf](https://www.fsb.org/wp-content/uploads/r_121029.pdf)

9 Sustainable Accounting Standards Board (SASB): <https://www.sasb.org/standards-overview/download-current-standards/>

10 ClimateWise: <https://www.cisl.cam.ac.uk/business-action/sustainable-finance/climatewise/principles>

11 United Nations Environment Programme Finance Initiative (UNEP FI): <https://www.unepfi.org/psi/wp-content/uploads/2012/06/PSI-document1.pdf>

ce<sup>12</sup> and the Global Climate Risk Survey for Asset Managers<sup>13</sup>. Furthermore, the concrete metrics for the determination of the „CO2 footprint“ and the exposure to exposed assets are also used.

Furthermore, concrete metrics are provided for determining the „CO2 footprint“ and the exposure to exposed assets in order to promote the comparability of disclosed key figures.



#### **Further reading on metrics**

*Report on Climate-related Disclosures*

(Technical Expert Group on Sustainable Finance, 2019):

[https://ec.europa.eu/info/sites/info/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/190110-sustainable-finance-teg-report-climate-related-disclosures\\_en.pdf](https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190110-sustainable-finance-teg-report-climate-related-disclosures_en.pdf)

## 2.4 Scenario analysis

As a future-oriented evaluation method, scenario analysis serves to determine the robustness of a company's own strategy in a future scenario, which can be based both on the company's own assumptions and on widely used scenarios. The scenarios do not represent concrete predictions, but rather describe plausible future states of the world, which should be assessed by the users according to their plausibility and relevance for their business model before use. The scenario analysis illustrates how possible future world conditions could affect the company so that possible risk drivers and consequences can be identified. In order to uncover climate-related opportunities and risks of a company, the TCFD recommends the use of climate scenarios (e.g. from the providers IEA, IPCC, PIK).

A climate scenario describes a consistent development of the world that leads to a certain global warming under certain assumptions. In the scenario, the warming itself can be predefined or derived from a predefined atmospheric carbon concentration. Warming is the difference between the current or future global average temperature and the global average temperature measured in pre-industrial times. In the scenarios, the consistent development of the world is modelled on the basis of quantitative and qualitative risk drivers typically at sector level with a medium to long-term (e.g. 2050 or 2100) time horizon. The main focus of the TCFD in the non-financial area is on the energy, automotive, steel, aluminium, cement, aerospace and shipping sectors, as these are most likely financially affected compared to others due to their high exposure to transition risks. The factors of technological development and climate-related regulation thus have a particularly strong influence on the sectors. The corresponding risk drivers could be changes in demand for electricity, alternative drives, recycled or crude steel, or

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12 Principles for Responsible Investment (PRI): <https://www.unpri.org/Uploads/e/n/z/2.-SG-2018---final.pdf>

13 Asset Owners Disclosure Project (AODP): <https://aodproject.net/wp-content/uploads/2016/10/2017-AODP-Asset-Manager-Climate-Survey-and-Guidance-Notes-V1.pdf>

technology learning curves<sup>14</sup>. The TCFD recommends using three to four different scenarios for disclosure, including in particular a 2°C or lower scenario, as the Paris Climate Convention aims to limit global warming to 2°C, or ideally 1.5°C.

In addition, scenarios could be used which, are based on the Nationally Determined Contributions (NDCs) and thus only take into account the political climate targets already bindingly promised at the national level, or business-as-usual scenarios (BAU; greater than 2°C) in which greenhouse gas emissions remain unchanged from today's levels or even increase further. Ultimately, scenarios should be used that are most relevant to the company's circumstances. Key questions could be used to assist in the selection of relevant scenarios. Some examples would be: Is my focus on transition, physical risk, or on both? What is the timeframe for my analysis? Should the scenario allow a quantitative analysis or a more qualitative discussion? Would I like to use one of the common „reference scenarios“ or develop my own?<sup>15</sup>



#### **Further reading**

*Technical Supplement: The Use of Scenario Analysis in Disclosure of Climate-related Risks and Opportunities* (TCFD, June 2017):

<https://www.fsb-tcf.org/publications/final-technical-supplement/>

### **3 Degrees of freedom in the application of TCFD recommendations**

The TCFD recommendations on disclosure of climate-related opportunities and risks are voluntary in nature and therefore not (yet) mandatory at present, except for the more than 2000 signatories to the PRI initiative from 2020 (the PRI signatories will be required to report any optional disclosure)<sup>16</sup>. The recommendations of the TCFD should be applicable to all companies in providing information to investors, lenders, insurers and other stakeholders. The wording is kept open so that the organisations have sufficient degrees of freedom in implementing the recommendations. For example, a specific 2°C scenario is not explicitly recommend for the scenario analysis, but deliberately leaves room for manoeuvre. It is also not specified whether climate-related risks are treated as a separate new risk type alongside, e.g. market risk or credit risk, or whether it is taken into account as another important risk driver within the established risk types. It is important to emphasise that the scope of disclosure depends on the princi-

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<sup>14</sup> The Transition Risk-o-Meter (2ii and The CO-Firm, June 2017): <http://et-risk.eu/the-transition-risk-o-meter/>

<sup>15</sup> Navigating climate scenario analysis (IIGCC, Februar 2019): <https://www.iigcc.org/resource/navigating-climate-scenario-analysis-a-guide-for-institutional-investors/>

<sup>16</sup> TCFD-based reporting to become mandatory for PRI signatories in 2020 (PRI, Februar 2019): <https://www.unpri.org/news-and-press/tcf-based-reporting-to-become-mandatory-for-pri-signatories-in-2020/4116.article>

ple of proportionality and the principle of materiality. For reasons of proportionality, reporting by small enterprises should tend to be smaller in scope than by larger enterprises. According to the materiality principle, reporting should contain only essential information.

Despite the degrees of freedom given in implementing the TCFD recommendations, organisations should follow the following seven principles developed by the TCFD<sup>17</sup> when selecting and presenting information:

- Principle 1: Disclosures should represent relevant information
- Principle 2: Disclosures should be specific and complete
- Principle 3: Disclosures should be clear, balanced, and understandable to third parties
- Principle 4: Disclosures should be consistent over time
- Principle 5: Disclosures should be comparable among companies within a sector, industry, or portfolio
- Principle 6: Disclosures should be reliable, verifiable, and objective
- Principle 7: Disclosures should be provided on a timely basis

It is expected that the initially expected heterogeneous forms of reporting in terms of quality and consistency of the information disclosed will evolve and converge over time.

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<sup>17</sup> The principles of the TCFD were derived from the disclosure principles of Enhancing the Risk Disclosures of Banks of the ETDF derived: [http://www.fsb.org/wp-content/uploads/r\\_121029.pdf](http://www.fsb.org/wp-content/uploads/r_121029.pdf)

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