

# TCFD

## Good Practice Handbook

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Climate  
Disclosure  
Standards  
Board





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#### **ABOUT CDSB**

The Climate Disclosure Standards Board (CDSB) was founded in 2007 and is an international consortium of nine business and environmental NGOs committed to advancing and aligning the global mainstream corporate reporting model to equate natural capital with financial capital. It does so by offering companies a framework for reporting environmental and climate information with the same rigour as financial information. In turn, this helps them to provide investors with decision-useful environmental and climate information via the mainstream corporate report, enhancing the efficient allocation of capital. Regulators also benefit from compliance-ready materials. Collectively, CDSB aims to contribute to more sustainable economic, social, and environmental systems.

#### **ABOUT SASB**

The Sustainability Accounting Standards Board (SASB) connects businesses and investors on the financial impacts of sustainability. An independent, standard-setting organization founded in 2011, SASB's mission is to help businesses around the world identify, manage, and report on sustainability factors that matter to investors. SASB standards are developed based on extensive feedback from companies, investors, and other market participants as part of a transparent, publicly documented process. By focusing on the sustainability factors most likely to have financially material impacts in each of 77 industries, SASB standards enable investors and companies to compare performance from company to company within an industry.

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## Introduction

In May 2019, the Climate Disclosure Standards Board (CDSB) and the Sustainability Accounting Standards Board (SASB) published the *TCFD Implementation Guide: Using the SASB Standards and CDSB Framework to Enhance Climate-Related Financial Disclosures in Mainstream Reporting*. By offering how-to guidance, the *TCFD Implementation Guide* aims to help companies enhance the robustness, consistency, comparability, and utility of TCFD implementation and reporting through use of CDSB and SASB's market-tested frameworks, standards and resources.<sup>1</sup>

The *TCFD Implementation Guide* introduces the Task Force on Climate-related Financial Disclosures' (TCFD) reporting principles and requirements. It offers key action steps for companies to take to lay the groundwork for effective climate-related financial disclosures. Mock disclosures from annual reports, drawn from three sectors – agriculture, automobiles, and oil and gas – are included to illustrate what effective TCFD disclosures could look like. Whilst these sectors are used as examples, the guidance is universally applicable. The mock disclosures are accompanied by narratives to provide companies with a practical understanding of the four core elements of the TCFD recommendations and their specific underlying recommended disclosures. For each recommended disclosure, there is a discussion of how the CDSB Framework and the SASB standards can be helpful resources for a company to both develop and strengthen its climate-related financial disclosures and incorporate these in the mainstream report.

This first TCFD-focused resource was well-received as evidenced by market feedback. Common across the feedback was overall support for additional practical TCFD-focused resources. Since we published the *TCFD Implementation Guide*, companies have continued to ask us for specific examples of effective TCFD reporting, who is doing it well, and how it compares across different geographies. This handbook aims to do just that – to tease out good practices from existing climate-related financial disclosures from across the G20. It is intended to be read alongside the *TCFD Implementation Guide*.

As part of their research for the *First Steps: Corporate climate and environmental disclosure under the EU Non-Financial Reporting Directive* publication, CDSB and CDP examined the climate-related financial disclosures of 30 of the largest 80 European companies by market capitalisation who made statements in support of the TCFD and/or provided some specific TCFD-aligned disclosures in their management reports for the 2017 financial year.<sup>2</sup> The findings of this review are summarised in CDSB and CDP's *First steps on climate-related financial disclosures in Europe: A snapshot of 30 companies' initial disclosures* and signpost to many companies who have already begun their TCFD implementation journey and made some disclosures in their mainstream report.<sup>3</sup> These documents are a good starting point for those looking for examples of early TCFD adopters. What was clear from the snapshot of the first year of TCFD reporting was that there was great diversity in the approaches undertaken, in the quality of disclosures, and where each company is along their TCFD reporting journey (with many beginning by expressing their support for TCFD implementation and stating their reporting intentions).

<sup>1</sup> CDSB and SASB, *TCFD Implementation Guide: Using SASB Standards and the CDSB Framework to Enhance Climate-Related Financial Disclosures in Mainstream Reporting* (2019).

<sup>2</sup> CDSB and CDP, *First Steps: Corporate climate and environmental disclosure under the EU Non-Financial Reporting Directive* (2018).

<sup>3</sup> CDSB and CDP, *First steps on climate-related financial disclosures in Europe: A snapshot of 30 companies' initial disclosures* (2018).



Now that the majority of annual reports are publicly available for the 2018 financial year and there is evidence that report preparers are moving along the TCFD's five-year implementation path towards achieving widespread adoption of its recommendations, CDSB and SASB believe it is an opportune time to look at the second year of disclosures and identify good practices within them.

Through this handbook, we offer some specific examples of different aspects of effective TCFD reporting across the four core TCFD elements of governance, strategy, risk management, and metrics and targets. Whilst we draw out good-practice examples from across sectors and geographies, we do not assess the overall quality or effectiveness of the TCFD reporting for each of the companies included in this handbook. For an assessment of the quality or effectiveness of the TCFD disclosures globally, see the TCFD's *2019 Status Report*. For each of the companies included in this handbook, we have identified some good practices in their reporting that are worth disseminating to others to help with the iterative process of learning-by-doing and enhancing the quality and completeness of TCFD disclosures over time. The TCFD notes that companies traditionally engaged on climate-related issues "demonstrate that disclosing climate-related information consistent with the TCFD recommendations is

possible and is a journey of continuing improvement."<sup>4</sup> The surfacing of good practices in this handbook aims to facilitate this progression.

The handbook is structured as follows:

- **Chapter 1** introduces the handbook, its origins and objective;
- **Chapter 2** provides a brief overview of the current state of TCFD disclosures globally drawing on the findings of the TCFD's *2019 Status Report*;
- **Chapter 3** highlights investors' demands for decision-useful climate-related financial information;
- **Chapter 4** offers examples of good practice from many G20 countries, grouped under the four TCFD core elements of governance, strategy, risk management, and metrics and targets; and
- **Chapter 5** notes the lessons learned and key takeaways that were raised through the identification of these good practices.

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<sup>4</sup> TCFD, 2019 Status Report (2019).

## Current state of TCFD disclosures globally

In June 2019, the TCFD released its second *Status Report* highlighting global progress by reporting entities in making disclosures under its voluntary framework. The report summarises the findings of a review of more than 1,000 companies' climate-related financial disclosures over a three-year period spanning multiple sectors and regions, which was supplemented by a user survey. Whilst there was an increase in the number of companies disclosing, overall disclosures remain low.<sup>5</sup> In fact, only 1 in 4 companies disclose information aligned with more than 5 of the 11 recommended disclosures, and only 4% of companies globally make disclosures aligned with at least 10 of 11 recommended disclosures.<sup>6</sup> When looking at disclosure rates across the four core elements, the TCFD found that none of the 11 recommended disclosures shows reporting rates over 50%, even those within the governance and risk management core elements, which the TCFD requires all entities to disclose regardless of undertaking a materiality assessment.<sup>7</sup> The average number of disclosures was 3.6 of 11 in 2018, illustrating that partial TCFD disclosure is the global norm.<sup>8</sup>

Michael Bloomberg, TCFD Chair, at the beginning of the second *Status Report*, pointed out that “[t]oday’s disclosures remain far from the scale that the markets need to channel investment to sustainable and resilient solutions, opportunities, and business models.”<sup>9</sup> Similarly, Mark Carney, Governor of the Bank of England, recognises that “[o]ver the next few years, the current iterative process of disclosure, reaction and adjustment will be critical to ensure that these market standards are as comparable, efficient and decision-useful as possible.”<sup>10</sup> Disclosures therefore can be accelerated and strengthened by identifying current TCFD good practice disclosure across the G20 and beyond.

## Ensuring decision-useful climate disclosures for preparers and investors

Effective TCFD disclosures have a dual purpose. Firstly, they can influence internal decision-making regarding how to identify, assess and manage climate-related risks and opportunities, thereby strengthening policies, programmes, practices and behaviours. Secondly, they ensure that the climate-related financial information disclosed is decision-useful for investors. We have already highlighted that partial disclosure is the norm and the incomplete picture that emerges of how organisations identify and manage climate risks and opportunities impairs the decision-usefulness of the disclosures for organisations and investors alike.

Between 2016 and 2018, the TCFD identified an increase of almost 50% of information aligned with the recommended disclosures being included in financial filings or annual reports.<sup>11</sup> This is the preferred vehicle which the TCFD advocates for reporting climate-related disclosures to investors.<sup>12</sup> According to the *2019 Status Report*, 85% of investors say they have seen an increase in the availability of climate-related financial disclosures since publication of the TCFD's *Final Report* in June 2017.<sup>13</sup> And since then, approximately three-quarters of users of climate-related financial disclosures say they have incorporated the information in their financial decision-making processes.<sup>14</sup>

There is a growing demand for consistent, comparable and decision-useful climate-related disclosures, and recognition by investors that the overall quality of climate-related disclosures is improving. At the same time, users are demanding companies provide increased clarity on the financial impacts of climate-related issues. They are calling for a general increase in the availability of disclosure, as well as disclosure of standard industry-specific climate-related metrics.<sup>15</sup> Investors are helping to drive the uptake of disclosures at scale with “340 investors with nearly \$34 trillion in [assets under management]... asking companies to report under [the] TCFD.”<sup>16</sup>

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*

<sup>8</sup> *Ibid.*

<sup>9</sup> *Ibid.*

<sup>10</sup> Mark Carney, *Enable, Empower, Ensure: A New Finance for the New Economy* (speech given 20 June 2019).

<sup>11</sup> TCFD, *2019 Status Report* (2019).

<sup>12</sup> TCFD, *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures* (2017).

<sup>13</sup> TCFD, *2019 Status Report* (2019).

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*

## Highlights of Good Practice in TCFD disclosures from across the G20

This handbook identifies good practices in implementing the TCFD recommendations. The examples are drawn from across the G20 to cover multiple jurisdictions and a diversity

of practices in making the 11 TCFD recommended disclosures across the four core elements of governance, strategy, risk management, and metrics and targets (Figure 1).

Governance	Strategy	Risk Management	Metrics & Targets
Disclose the organisation's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material.	Disclose how the organisation identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	a) Describe the organisation's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	b) Describe the organisation's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and if appropriate Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

Figure 1. TCFD's 11 recommended disclosures. Source: TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (2017).

We note that there are more organisations disclosing in line with the TCFD’s universally applicable voluntary framework than contained in this handbook. We have drawn on our collective knowledge of the market and reporting entities to identify select highlights representing current good practices for making climate-related disclosures. The TCFD advocates strongly for climate-related financial disclosures in the mainstream report, i.e. in annual financial filings.<sup>17</sup> This is particularly important given the challenges identified in the TCFD’s *2019 Status Report* regarding connecting financial and non-financial information, which is at the core of the TCFD recommendations.<sup>18</sup> For this reason, and to show that many organisations are already making TCFD recommended disclosures in their annual financial filings, all the examples of good practice TCFD disclosures in this handbook are drawn from mainstream reports and not from sustainability reports or stand-alone TCFD or climate risk reports.

At the same time, the handbook aims to ensure an appropriate geographic representation across the G20. This was somewhat of a challenge for some G20 countries – Argentina, Brazil, Indonesia, Russia, Saudi Arabia, South Korea and Turkey – as we found fewer examples of TCFD disclosures widely available for review. The handbook also aims, where possible, to provide balanced coverage across financial and non-financial sectors, drawing examples from across the banking, insurance, asset owners/managers, energy, transportation, materials and buildings, and

agriculture, food and forests groups. In summary, the handbook provides a snapshot of the state of climate-related financial disclosures across many G20 countries based on the second year of TCFD reporting.

**The extracts of the organisations’ annual reports contained in this handbook should be seen as examples of good practices in respect of the particular points made in relation to the corresponding TCFD core element. For more comprehensive examples across all of the recommended disclosures, we refer you back to the *TCFD Implementation Guide* and its annotated mock disclosures.**

The good practice examples contained in this handbook are also provided for capacity development purposes and to aid in making the TCFD disclosures in the mainstream report. They are not meant to be boilerplate disclosures for replication. We offer these in response to the common request made to both CDSB and SASB: What does good practice on TCFD disclosure look like, and which company reports can we look at? We are aware that there are other companies with good practice disclosures in the public domain and we encourage those to be brought to our attention and disseminated widely, such as through case studies on the TCFD Knowledge Hub ([www.tcfdhub.org](http://www.tcfdhub.org)) to facilitate learning-by-doing and learning from others and, most importantly, to enhance the uptake, quality and completeness of TCFD disclosures going forward.

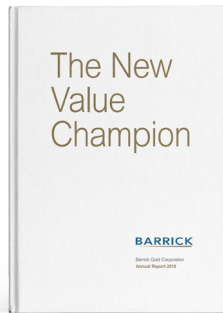
<sup>17</sup> TCFD, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (2017).

<sup>18</sup> TCFD, 2019 Status Report (2019).



## Part I: Good Practice in TCFD Governance Disclosures





## Barrick Gold Corporation

### “The New Value Champion” Annual Report 2018

In this succinct extract, the Canadian mining company Barrick states which board-level committee is responsible for overseeing policies, programmes and performance related to climate change. It states that this committee met quarterly, although it could be made explicit whether climate change featured on the agenda of each of these meetings.

This governance disclosure on board oversight also helpfully explains the roles of both the audit and risk committees and their interface with the company’s Board, which is not always clear in other governance disclosures.

The disclosure also states that climate change is built into the company’s formal risk management process. This shows the interconnectivity of the governance and risk management core TCFD elements and associated disclosures, with the two TCFD governance disclosures covering who in the business is involved and the risk management disclosures covering what processes are used to manage and monitor the associated climate-related risks.

Throughout 2018, the Board’s Corporate Responsibility Committee, which met quarterly, was responsible for overseeing Barrick’s policies, programs, and performance relating to the environment, including climate change. The Risk Committee assisted the Board in overseeing the Company’s management of enterprise risks as well as the implementation of policies and standards for monitoring and mitigating such risks. Climate change is built into our formal risk management process, outputs of which were reviewed by the Risk Committee throughout 2018 (as of January 1, 2019, this Committee has been combined with the Audit Committee). In addition, the Audit Committee reviewed the Company’s approach to climate change in the context of Barrick’s public disclosure.



## Royal Bank of Canada Annual Report 2018

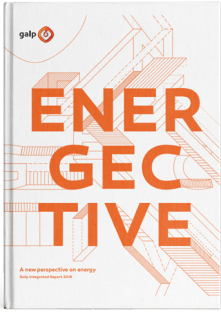
This extract from the Royal Bank of Canada, a Canadian multinational banking and financial services company, shows that climate issues feature prominently at the top. Here, the Chair of the Board, in introducing the annual report, refers to climate change as the “most pressing issue of our age” and explains the Board’s oversight function in this respect.

The board believes strongly that achieving sustainable growth goes beyond generating profits, and that RBC has an important role to play as a corporate citizen that is fully involved in each of the communities where we do business. Specifically, we recognize that climate change is the most pressing issue of our age, and we oversee the bank’s enterprise-wide approach to accelerating clean economic growth and supporting the transition to a low-carbon economy.

This second extract from the Royal Bank of Canada explains which functions are involved in identifying, assessing, monitoring and reporting on climate-related issues, and ties this back to performance goals at a management level.

The Board and its Committees oversee senior management who is responsible for the execution of the management of E&S risks and opportunities. The Board provides oversight of our environmental strategy and our E&S risks, including our approach to managing these risks. GRM has a dedicated E&S risk team that develops approaches to identify, assess, monitor and report on climate-related risks, as appropriate. Performance goals on climate-related risks have been established at the management level.





# Galp

## “Energetive – a new perspective on energy” Integrated Report 2018

In this extract, Portuguese oil and gas company, Galp identifies the full suite of actors and bodies engaged in overseeing and managing climate-related risks and opportunities.

The disclosure provides details of the respective remit of the specialised committees, as well as the Board, Executive Committee and other business units.

### The role of management



Galp's report also includes a skills matrix of the Board (see pg. 120 of its Integrated Report), which considers the collective climate competence of its individual Board members. This aids the Board in ensuring it has the expertise available to effectively perform its oversight function of climate-related risks and opportunities.

Retrieved from page 66: <https://www.galp.com/corp/en/investors/reports-and-presentations/reports-and-results>





## Eni Annual Report 2018

### GOVERNANCE

Eni's decarbonization strategy is part of a structured system of Corporate Governance; within this, the **Board of Directors** (BoD) and the Chief Executive Officer (CEO) play a central role in managing the main aspects linked to climate change. The BoD examines and approves, based on the CEO's proposal, the Strategic Plan, which sets out strategies and includes objectives also on climate change and energy transition. Eni's economic and financial exposure to the risk that may derive from new carbon pricing mechanisms is examined by the BoD both in the phase leading up to the authorisation of every investment and in the following half-year monitoring of the entire project portfolio.

The BoD is also informed annually on the result of the impairment test carried out on the main Cash Generating Units in the E&P sector and elaborated with the introduction of a carbon tax valued according to the IEA SDS scenario (see pages 99-100). Finally, the BoD is informed on a quarterly basis of the results of the risk assessment and monitoring activities of Eni's top risks, including climate change. Since 2014, the BoD has been supported in conducting its duties by the **Sustainability and Scenarios Committee** (CSS), with whom examines, on a periodic basis, the integration between strategy, future scenarios and the medium/long-term sustainability of the business. During 2018, the CSS discussed in detail climate change issues at all meetings, including the decarbonisation strategy, energy scenarios, renewable energies, research and development to support the energy transition, climate partnerships and water resources and biodiversity issues<sup>2</sup>. Since the second half of 2017, the BoD and the CEO are also supported by an **Advisory Board**, composed of international experts, called to analyze the main geopolitical, technological and economic trends, including issues related to the decarbonization process<sup>3</sup>. In 2018, Eni also contributed to the "Climate Governance"<sup>4</sup> initiative of the World Economic Forum (WEF), with the involvement of the Eni BoD. From 2015, the CEO also chairs the Steering Committee of the **Climate Change Program**, a cross-functional working group composed of members of Eni's top management that assists the CEO in developing and monitoring an appropriate short/medium/long-term decarbonization strategy.

The strategic commitment to reduce greenhouse gas emissions is part of the Company's key goals. Therefore, the CEO's short-term incentive plan includes the objective of reducing the intensity of GHG direct emissions from upstream operated activities by 12.5%. This objective is consistent with the target of reducing greenhouse gases by 2025 announced to the market and is applied to the incentives for Company managers who have a strategic role on this matter.

Italian multinational oil and gas company Eni makes clear linkages between its decarbonisation strategy and corporate governance, showing the importance of interconnectivity of information across all TCFD recommended disclosures. According to the extract, the Board also examines and approves Eni's Strategic Plan, which includes specific objectives on climate change and the low-carbon transition.

Specific information is given about how the Board exercises its oversight function, e.g. it considers the company's economic and financial exposure to the risks deriving from new carbon pricing mechanisms.

The disclosure also informs the reader about how the Board is supported by various committees, including the Sustainability and Scenarios Committee. The Board brings in external expertise through its Advisory Board, which was established to undertake trend analysis including in relation to the transition to a low-carbon economy.

The extract also illustrates the CEO's active engagement and leadership on climate-related issues, for example, in chairing the Steering Committee of the Climate Change Program, a cross-functional working group drawn from Eni top management which assists the CEO in developing and monitoring the decarbonisation strategy.

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[https://www.eni.com/docs/en\\_IT/enicom/publications-archive/publications/reports/reports-2018/Annual-Report-2018.pdf](https://www.eni.com/docs/en_IT/enicom/publications-archive/publications/reports/reports-2018/Annual-Report-2018.pdf)



## Total

### Registration Document 2018

French multinational oil and gas company Total states that the Board has oversight of climate-related issues, and that these are incorporated into the company's strategy. These issues are examined by the Board during its annual strategic review of Group business segments.

Total explains how it has assigned its Strategic & CSR Committee with responsibility for climate-related issues in the company's strategy and has changed its rules of procedure to reflect and codify this change.

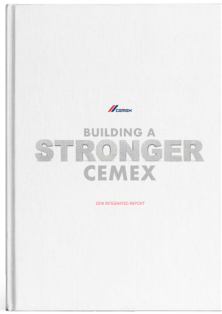
Since 2016, to incentivise the Chairman and CEO, part of Total's variable compensation is related to taking better account of meeting CSR and Group HSE targets. In 2018, this was amended further to clarify that CSR performance is assessed by considering the extent to which climate issues are incorporated into the strategy of the company. This disclosure also illustrates how governance and strategy TCFD disclosures are intertwined.

#### Oversight by the Board of Directors

TOTAL's Board of Directors ensures that climate-related issues are incorporated into the Group's strategy and examines climate change risks and opportunities during the annual strategic outlook review of the Group's business segments.

To carry out its work, the Board of Directors relies on its Strategic & CSR Committee, whose rules of procedure were changed in September 2017 then in July 2018 in order to broaden its missions in the realm of CSR and in questions relating to the inclusion of climate-related issues in the Group's strategy.

Aware of the importance of climate-change challenges faced by the Group, the Board of Directors decided, in 2016, to introduce changes to the variable compensation of the Chairman and Chief Executive Officer to take better account of the achievements of Corporate Social Responsibility (CSR) and the Group's HSE targets. For fiscal year 2018, the importance given to these criteria rose further: CSR performance is assessed by considering the extent to which climate issues are included in the Group's strategy, the Group's reputation in the domain of Corporate Social Responsibility as well as the policy concerning all aspects of diversity.



## CEMEX

### “Building a Stronger Cemex” 2018 Integrated Report

CEMEX, a Mexican multinational building materials company, states that the company has board-level oversight of climate change, including of the company’s carbon dioxide management strategy through its Sustainability Committee, which supports the Board. This excerpt from CEMEX’s integrated report lists the most relevant topics on the Committee’s Agenda, which include climate change management and strategy. The disclosure then explains what the Committee achieved in terms of outcomes, notably the CEMEX CO<sub>2</sub> Reduction Roadmap.

#### SUSTAINABILITY COMMITTEE\*

The Sustainability Committee is responsible for ensuring sustainable development is embedded in our strategy; supporting our Board of Directors in fulfilling its responsibility to shareholders regarding our company’s sustainable growth; evaluating the effectiveness of our sustainability programs and initiatives; providing guidance to our Chief Executive Officer and senior management team regarding our strategic direction on sustainability; and endorsing our model of sustainability, priorities, and key indicators. The Committee also pursues CEMEX’s board-level oversight on Climate Change and CO<sub>2</sub> Management Strategy. During 2018, the Sustainability Committee met four times with meeting attendance of 100%.

Some of the most relevant topics in the 2018 Agenda included:

- › CEMEX’s 2017 Integrated Report Structure and Content
- › Sustainability KPI’s Annual Performance and Improvement Plan
- › Health & Safety Overview and Action Plan for ZERO4Life Goal
- › Global and Regional Sustainability Risks Agenda Update
- › Climate Change Strategy and CO<sub>2</sub> Management
- › Human Rights Respect Strengthening Plan
- › High-impact Social Initiatives

The enriching Sustainability Committee discussions led to valuable outcomes such as:

- › Launch of CEMEX Sustainability Scorecard to closely monitor performance of all countries in core KPIs and ensure progress towards our global objectives
- › Decision to have all contractors audited by a specialized firm to ensure compliance with H&S policies
- › CEMEX CO<sub>2</sub> Reduction Roadmap by cement installation kicked-off
- › Highlights and lessons learned from Global Environmental and Social Incidents Report monthly shared by our CEO to all operations
- › Human Rights Policy Enhancement
- › Release of a Diversity and Inclusion Policy

**Armando J. García Segovia**  
President

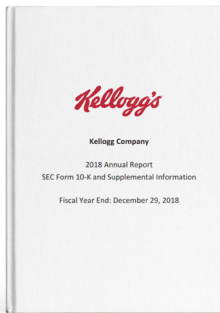
**Ian Christian Armstrong Zambrano**  
**Francisco Javier Fernández Carbajal**  
**Marcelo Zambrano Lozano**



## Part II: Good Practice in TCFD Strategy Disclosures







## Kellogg Company Annual Report 2018

As a grain-based food company, the success of Kellogg Company is dependent on having timely access to high quality, low cost ingredients, water and energy for manufacturing globally. Risks are identified annually through annual reporting and evaluated in the short (<3 years), medium (3 - 6 years) and long terms (>6 years). The Company has incorporated the risks and opportunities of climate change and food security as part of the Global 2020 Growth Strategy and global Heart and Soul Strategy by continuing to identify risk, incorporate sustainability indicators into strategic priorities, and report regularly to leadership, the Board, and publicly. While these risks are not currently impacting business growth, they must be monitored, evaluated, and mitigated.

Kellogg Company, an American multinational food company, states that it incorporates climate risks and opportunities in its global "Growth" and "Heart and Soul" strategies. It explains how these risks are incorporated into its strategic priorities using sustainability indicators that are regularly brought to the Board's attention. Importantly, it specifies the time horizons, differentiating between short-, medium- and long-term risks as identified in annual reporting. The company also concludes that the risks identified are not impacting business growth yet, but indicates that they will continue to monitor, evaluate and mitigate them. This extract also illustrates how the disclosures around the four core elements of the TCFD can be interlinked and mutually reinforcing.

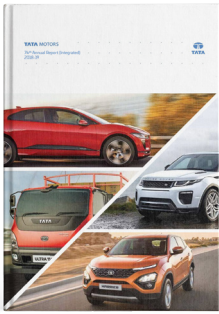
Kellogg Company identifies both physical and transition risks related to climate change affecting its business or operations. It notes that physical risks of climate change (including acute risks) are causing significant changes in global temperatures, weather patterns and increased frequency or severity of weather events, wildfires and flooding. It then explains how these risks impact the food industry, the global supply chain and energy and commodity markets, including consideration of related financial impacts. It also identifies proposed legislation and regulation at different levels that if enacted could result in increased costs for the business.

Adverse changes in the global climate or extreme weather conditions could adversely affect our business or operations.

Climate change is a core business issue for Kellogg to ensure the long-term health and viability of the ingredients we use in our products. As set forth in the Intergovernmental Panel on Climate Change Fifth Assessment Report, there is continuing scientific evidence, as well as concern from members of the general public, that emissions of greenhouse gases and contributing human activities have caused and will continue to cause significant changes in global temperatures and weather patterns and increase the frequency or severity of weather events, wildfires and flooding. As the pressures from climate change and global population growth lead to increased demand, the food system and global supply chain is becoming increasingly vulnerable to acute shocks, leading to increased prices and volatility, especially in the energy and commodity markets. Adverse changes such as these could:

- unfavorably impact the cost or availability of raw or packaging materials, especially if such events have a negative impact on agricultural productivity or on the supply of water;
- disrupt our ability, or the ability of our suppliers or contract manufacturers, to manufacture or distribute our products;
- disrupt the retail operations of our customers; or
- unfavorably impact the demand for, or the consumer's ability to purchase, our products.

Foreign, federal, state and local regulatory and legislative bodies have proposed various legislative and regulatory measures relating to climate change, regulating greenhouse gas emissions and energy policies. In the event that such regulation is enacted, we may experience significant increases in our costs of operation and delivery. In particular, increasing regulation of fuel emissions could substantially increase the distribution and supply chain costs associated with our products. Lastly, consumers and customers may put an increased priority on purchasing products that are sustainably grown and made, requiring us to incur increased costs for additional transparency, due diligence and reporting. As a result, climate change could negatively affect our business and operations.



## TATA Motors

### 74th Annual Report (Integrated) 2018-19

**The Company's future success depends on the Company's ability to satisfy changing customer demands by offering innovative products in a timely manner and maintaining such products' competitiveness and quality.**

Customer preferences, especially in many of the more mature markets, have trended towards smaller and more fuel-efficient and environmental-friendly vehicles. Climate change concerns, increases in fuel prices, certain government regulations (such as CO<sub>2</sub> emissions limits and higher taxes on SUVs) and the promotion of new technologies encourage customers to look beyond standard purchasing factors (such as price, design, performance, brand image and features). As a result, customers may look to the differentiation of the technology used in the vehicle or the manufacturer or provider of this technology. Such consumer preferences could materially affect the Company's ability to sell premium passenger cars and large or medium-sized all-terrain vehicles at current or targeted volume levels, and could have a material adverse effect on the Company's general business activity, net assets, financial position and results of operations.

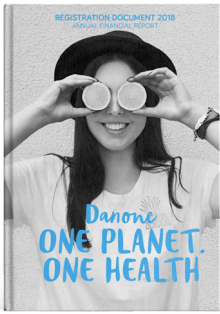
The Company's operations may be significantly impacted if it fail to develop, or experience delays in developing, fuel-efficient vehicles that reflect changing customer preferences and meet the specific requirements of government regulations. The Company's competitors can gain significant advantages if they are able to offer vehicles that satisfy customer preference and government regulations earlier than the Company are. Potential delays in bringing new high-quality vehicles to market would adversely affect the Company's business, financial condition, results of operations and cash flows and cashflows.

Indian multinational automotive manufacturing company TATA Motors considers changes in consumer demands, especially in relation to environmentally-friendly vehicles and transition risks associated with increased fuel prices or government regulations that could have a material adverse effect on the business. It further identifies that competitors might be able to bring products to the market more quickly, affecting TATA Motors' position, business and financial condition.

In this extract, TATA Motors explains how it has considered both physical and transition risks of climate change. Noting emerging regulatory developments affecting the automotive sector, the company explains how it intends to respond in terms of R&D, new technologies and product development, and acknowledges that a failure to do so could negatively impact its business, operations and financial position. TATA Motors also notes that the pace of changes in regulation and customer preferences will affect the speed in which it reacts. TATA Motors also identifies physical impacts of climate change in the form of changing weather patterns and increased likelihood of extreme weather events, pointing out that these affect the manufacturing and distribution of its products and the cost and availability of raw materials.

As a result of the public discourse on climate change and volatile fuel prices, the company faces more stringent government regulations, including imposition of speed limits and higher taxes on sports utility vehicles or premium automobiles. The company endeavor to take account of these factors, and it is focused on researching, developing and producing new drive technologies, such as hybrid engines and electric cars. The company is also investing in development programs to reduce fuel consumption through the use of lightweight materials, reducing parasitic losses through the driveline and improving aerodynamics. Coupled with consumer preferences, a failure to achieve its planned objectives or delays in developing fuel efficient products could materially affect the company's ability to sell premium passenger cars and large or medium-sized all-terrain vehicles at current or targeted volumes and could have a material adverse effect on the company's general business activity, net assets, financial position and results of operations. In addition, deterioration in the quality of the company's vehicles could force the company to incur substantial costs and damage its reputation. There is a risk that competitors or joint ventures set up by competitors will develop better solutions and will be able to manufacture the resulting products more rapidly, in larger quantities, with a higher quality and/or at a lower cost. It is possible that the company could then be compelled to make new investments in researching and developing other technologies to maintain its existing market share or to win back the market share lost to competitors. Finally, the company's manufacturing operations and sales may be subject to potential physical impacts of climate change, including changes in weather patterns and an increased potential for extreme weather events, which could affect the manufacture and distribution of company's products and the cost and availability of raw materials and components.





# Danone

## “One Planet, One Health” Registration Document 2018

### CLIMATE CHANGE

#### Danone’s climate policy

##### Definition

Danone works to protect natural water cycles, soil, biodiversity and ecosystems in a number of ways.

See 2.7 *Risk factors* for details of Danone’s risk identification and management policy, which explains how it assesses climate change impacts.

Danone has identified the following medium-term risks:

- ingredients such as milk and fruit could be in short supply in parts of the world experiencing drought and inclement weather;

- coastal sites could be adversely affected by extreme weather events;
- water could become scarce, and watersheds and groundwater reserves could become degraded, potentially disrupting Danone’s operations and complicating its relationship with local stakeholders (see 5.3 *Water stewardship*);
- it could prove difficult to secure funds to finance the transition to more sustainable agricultural practices (see 5.3 *Regenerative and organic agriculture*).

In this extract, Danone, a French multinational food products company, includes its climate policy, which extends beyond climate change to include natural capital. It also cross-refers to its wider risk identification and management processes. It identifies specific medium-term risks (although the duration is undefined), such as potential challenges with sourcing key ingredients for its products in different geographies due to drought and weather conditions.

In this second extract, Danone reinforces the linkages between natural capital and climate change. It notes that physical climate risks affect water cycles and availability, soil, biodiversity and ecosystems, and acknowledges the corresponding impacts on its products, processes, activities, operations, supplier and stakeholder relationships. It then makes the crucial link of how these could impact its results and financial situation. In this second column, Danone also refers to its Climate Policy and objectives as a risk management measure, illustrating the interconnected nature of the risk management and strategy TCFD disclosures. Presenting a description of the risks alongside their management actions helps to better convey this information.

#### IDENTIFICATION OF RISK

##### Natural disaster and climate change risks

###### Natural risks

Danone’s geographic expansion sometimes leads it to be present in regions exposed to natural risks, notably seismic. Natural disasters could therefore cause damage to persons, property or the environment, and directly affect Danone, its consumers or the regions where it is present, potentially having a negative impact on Danone’s activities, financial situation and image.

###### Climate change risks

Danone’s businesses are directly related to nature and agriculture and are naturally faced with climate change. This could have negative effects on the natural water cycles, soil, biodiversity and ecosystems and thus on raw materials and ingredients used in the Company’s products and processes.

In addition, climate change impact on water availability as well as on watershed and groundwater degradation could impact Danone’s activities and operations, and subsidiaries’ relationships with local stakeholders.

Climate change could therefore affect the activity of Danone, its suppliers and its customers, which could have negative impacts on its results and financial situation.

Financing the transition towards more sustainable agricultural practices and ingredients availability are both risks for Danone’s growth.

#### RISK MONITORING AND MANAGEMENT

For its new site development projects, Danone conducts a risk exposure analysis for such risks in order to choose the site with the least possible exposure. If, however, the site chosen (or the existing site in the case of an expansion) is exposed to these risks, the building construction and equipment installation take into account recommendations from prevention/protection experts to limit the potential impacts of these natural risks. In addition, each year, Danone conducts a screening of its production sites’ localization to identify its exposure to water cycles and climate change risks.

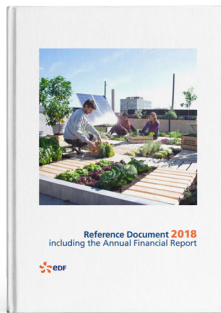
Danone is developing and implementing actions, procedures, tools and policies that seek to prevent and reduce these risks, notably its Climate Policy which aims in particular to reduce its greenhouse gas emissions, foster “carbon positive” solutions, offer healthy and sustainable products, reinforce the resiliency of its water and food cycles, and eliminate deforestation from its supply chain by 2020.

Danone aims to achieve carbon neutrality by 2050 via 3 main strategic axes: (i) emissions reduction, (ii) transforming agricultural practices to help carbon sequestration in soil and (iii) off-setting of remaining emissions.

Lastly, to strengthen the resiliency of its food chain, Danone is developing collaborative “co-created” solutions involving all its stakeholders and local communities. For more information on water resources and sustainable agriculture, particularly regenerative and organic agriculture, please refer to section 5 *Social, societal and environmental responsibility*.

**i** Retrieved from page 28 and 179: <https://www.danone.com/investor-relations/publications-events/registrations-documents.html>





## EDF

### Reference Document 2018

French electric utility company EDF identifies both the risks and opportunities of climate change on its business. It provides examples of transition risks in the forms of regulatory changes in France and the EU, as well as technological changes such as decentralised, low-carbon, digital energy.

#### 3.2.1.2.1 Risks, opportunities and impacts of climate change on EDF

Energy production now accounts for approximately 60% of global anthropogenic greenhouse gas emissions, 40%<sup>(5)</sup> of which are linked to electricity and heat generation. The electricity and heat generation sector alone produces 25% of anthropogenic CO<sub>2</sub> emissions (IPCC, AR5). In France, the EDF group's Carbon performance gives it an edge, even though, because of its size, EDF group remains a major carbon emitter worldwide.

Decarbonising electricity generation is recognised as an effective way of reducing CO<sub>2</sub> emissions; at the same time, there is general consensus on the prospects of very strong growth in global electricity demand (almost 80% by 2050).

The EDF group must anticipate major changes:

- regulatory changes<sup>(1)</sup>: the PPE<sup>(2)</sup> or carbon budgets of the National Low Carbon Strategy in France; Climate Change Act, UK Environmental Permitting Regulations (EPR), Carbon Reduction Commitment Energy Efficiency scheme or Energy Efficiency Opportunities Scheme (ESOS) in the UK; and the 2020 and 2030 Climate and Energy Packages of the European Union;
- the EU-ETS reform which impacts CO<sub>2</sub> prices; regulatory changes tending towards an increase in CO<sub>2</sub> prices represent an opportunity for EDF, which is likely to increase the profitability of the Group's largely carbon free generation facilities;
- changes in technology: increasingly decentralised, low-carbon, digital energy, customers playing an increasingly active role in their electricity consumption and generation, emergence of new economic models.

The electricity sector must also face climatic changes that are likely to impact the Company's assets and change physical operating conditions. Physical and transition risks are described in section 2.1 "Specific risks to which the Group is exposed", and the EDF group's risk process is described in section 2.2 "Control of Group risks and activities".

EDF explains in detailed bullets how climate change will impact the company's assets, operations, products and services, value chain and suppliers, financial planning and performance, capital expense and allocation, access to capital, investments and acquisitions, and R&D. It also cross-refers to where these climate risks are identified as part of the company's risk exposure.

In respect of these issues, climate change impacts EDF's operating activity and financial planning at multiple levels<sup>(3)</sup>:

- operations: the Group's thermal power plants use water as a cold source to optimise its output, and the EDF group acts in a number of ways to optimise its water usage and to reduce pressure on the environment (see section 3.3.2.2 "Water"). Moreover, the EDF group has initiated a programme to develop the flexibility of the existing nuclear facilities in order to support the accelerated development of intermittent renewable energies;
- products and services: the EDF group aims to create new decentralised competitive solutions, low-carbon energy services and smart grids to support customers and local communities in their energy transition (see section 1.3.2 "Priorities of the CAP 2030 strategy");
- EDF's value chain and suppliers: EDF pays particular attention to interactions between its value chain and climate change; for example, the purchase auditing systems, uranium supply and the bettercoal approach (involving coal supplier, Jera Trading), include an "environmental impact" component that takes into account both the issue of greenhouse gas emissions and the problem of exposure to the consequences of climate change;
- adapting to climate change: see section 3.3.1;
- operating costs and profit and loss statement: the fight against climate change impacts the Group's financial statements, especially through the price of CO<sub>2</sub>; due to the Group's low CO<sub>2</sub> emissions, an increase in CO<sub>2</sub> prices may appear as an opportunity;
- capital expense and allocation: to maintain its position as a leader in very low carbon growth the EDF group is intensifying the development of renewable energies and services while continuing its nuclear and grid investments. These investments represented almost €12.7 billion in 2018, *i.e.* 90% of the Group's net investments (excluding disposals);
- access to capital: since 2013, the Group has been using new financing tools and has conducted four Green Bond issues for a total of around €4.5 billion in order to support its development in renewable energies (section 6.8 "Information relating to the allocation of funds raised through Green Bonds issued by EDF");
- investments and acquisitions: climate change challenges, foremost among which the decarbonisation target (CSRG no. 1), are part of the Group's investment strategy and policy (see section 3.2.1.2.2 "EDF group's decarbonisation strategy");
- R&D investments: EDF's R&D plays a major role in developing low-carbon solutions (see section 1.6 "Research and Development, patents and licences"), all the while reinforcing the safe and economically efficient operation of existing and future facilities.

Retrieved from page 158-9:

<https://www.edf.fr/sites/default/files/contrib/groupe-edf/espaces-dedies/espace-finance-en/financial-information/regulatee-information/reference-document/edf-ddr-2018-en.pdf>



# Commonwealth Bank of Australia

## “Becoming a simpler, better bank” Annual Report 2018

The Commonwealth Bank of Australia, an Australian multinational bank, discloses the potential financial opportunities it sees in the low-carbon transition, in terms of sustainable finance, global environmental markets, and products and services.

In the 2017 financial year, the company also quantified these opportunities by creating a low-carbon target for 2025, against which it measured progress in the 2018 financial year. This is a further example of how strategy and metrics and targets TCFD disclosures may be interconnected, with the latter shedding light on the effectiveness of the former.

### Low carbon transition opportunities

There are significant opportunities presented by the transition to a low carbon economy.

#### Sustainable finance

This financial year our lending exposure to the renewable energy sector grew to \$3.7 billion, reflecting our expertise in this market. For the year ended June 2018, Commonwealth Bank ranked number one for Mandated Lead Arranger financing roles of renewables projects in Australia and ranked 18th globally.<sup>(1)</sup>

We have also set up a Sustainable Finance Committee to focus on identifying other low carbon opportunities, such as climate bonds. This year we led more than \$2 billion of green or sustainability notes.

We continue to support business investment in energy efficiency improvements through our \$300 million partnership with the Clean Energy Finance Corporation on the Energy Efficient Equipment Finance program.

In the 2017 financial year we set ourselves a Low Carbon Target of \$15 billion by 2025<sup>(2)</sup>. Our progress to date shows our exposure to low carbon projects as at 30 June 2018 is \$7.3 billion. Eligible projects include renewable energy, 6-star rated commercial green buildings, energy efficiency and low carbon transport. We have aligned our Low Carbon Target eligible projects with the green project categories identified in the Green Loan principles<sup>(3)</sup>.

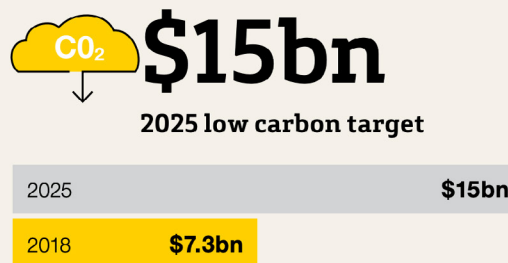
#### Global environmental markets

We are aiming to be a market leader in environmental markets, supporting our clients' transition to a net zero emissions economy. We target clients globally who have a strategy in place to support their transition. We support this transition by providing tailored financing and risk management environmental market solutions to meet client requirements. This includes facilitating liquidity across global environmental markets.

#### Products and services

Across retail and business lending, investment and insurance, we will continue to explore and develop product and service options which meet emerging customer needs, to help them reduce their exposure and/or build resilience to climate change.

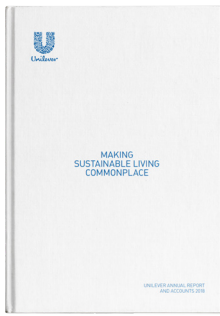
This year we added a new Alliance Partner – Affirmative Investment Management – and the Affirmative Global Bond Fund (the Fund) to the FirstChoice platform. The Fund invests in global green bonds and utilises ESG criteria and environmental impact screens; it is the first of its kind available to retail investors in Australia.



(1) IJ Global, Renewables League tables, 2018 financial year, by transaction value.

(2) Our target is on the basis of total committed exposures as at 30 June 2025, and is not a cumulative financing target.

(3) The Green Loan Principles were launched in March 2018 by the Loan Market Association, in conjunction with the Asia Pacific Loan Market Association, and supported by the International Capital Market Association. It is a high level framework for the wholesale green loan market. Indicative categories of eligibility for Green Projects are included in Appendix 1 of the Green Loan Principles. They are based on the categories provided in the Green Bond Principles 2017.



## Unilever

### “Making Sustainable Living Commonplace” Annual Report and Accounts 2018

During 2018 we developed and piloted an approach to assess the impact of climate change on our key commodities. We selected soy for this pilot based on its importance to Unilever (large purchased volume), it being a high-profile crop in the countries where it is grown and the availability of good historical price data and suitable climate models.

We developed a methodology which combined forecasting future yields and quantifying the impact on commodity prices of soybean oil. Climate change was the only price factor accounted for in the model used to calculate the impact. Other factors which impact price, such as technology and acreage, were excluded. The model considered the direct risks from climate change to the price of soybean oil, such as change in yield and change in supply. Three modelling steps were performed:

- Yield estimation: We analysed multiple agriculture and climate models to provide a forecast range of expected yields in key growing regions.
- Price relationship: An econometric model was developed, based on an analysis of the soybean oil market and historical trends, to estimate the impact of climate-induced yield changes on future prices. This model considered the importance of co-products eg soybean meal, substitution potential eg with sunflower oil and industrial uses of soybean oil, as well as the impact of yield on price.
- Impact estimation: Future yields and price impacts were then translated into an estimated financial exposure from climate change for our business, using our forecast procurement volumes.

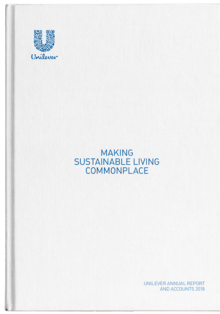
Our pilot analysis showed that soybean yields may increase over the 2030 and 2050-time horizon and that subsequent lower prices may then lead to small potential reductions in our procurement spend on soy. While the results may indicate a low financial risk to our business, we would need to consider a wider range of risk factors when determining our strategic response. Indirect risks from climate change, such as catastrophic events or external policy response and adaptation could also have an impact but were not included in our modelling. Furthermore, these pilot results are specific to soy and can't be applied to other crops. We have therefore decided to get broader understanding on the climate change risks to our agricultural sourcing and extend our analysis to two other important crops to Unilever: Palm Oil and Tea, for which suitable climate change models for yield predictions will be available in 2019.

Unilever, a British-Dutch multinational consumer goods company, shows how a staged approach can be taken to assessing climate impacts on key commodities — in this example, using soy as a pilot with the intention to later expand to palm oil and tea.

The company states the methodology was developed to forecast future soy crop yields and to quantify the impact of changes in soybean oil prices, concluding that there is a low financial risk to the business. However, the company notes that it did not include indirect climate risks in its modelling, such as catastrophic events.

This example shows the good practice of informing report users of the internal processes in place to identify and manage climate-related financial risks and opportunities, even if these are under development.





## Unilever

### “Making Sustainable Living Commonplace” Annual Report and Accounts 2018

*The following examples demonstrate different approaches for disclosing the resilience of the organisational strategy taking into account different climate scenarios.*

#### UNDERSTANDING IMPACT

Climate change has been identified as a principal risk to Unilever which has the potential to impact our business in the short, medium and long-term. Further details on the nature of climate risks and opportunities for Unilever can be found in our 2018 CDP Climate submission (see further climate change disclosures on pages 7 and 14).

To further understand the impact that climate change could have on Unilever’s business we performed a high-level assessment of the impact of 2°C and 4°C global warming scenarios. The 2°C and 4°C scenarios are constructed on the basis that average global temperatures will have increased by 2°C and 4°C in the year 2100.

Between today and 2100 there will be gradual changes towards these endpoints and we have looked at the impact on our business in 2030 assuming we have the same business activities as we do today. We also made the following simplifying assumptions:

- In the 2°C scenario, we assumed that in the period to 2030 society acts rapidly to limit greenhouse gas emissions and puts in place measures to restrain deforestation and discourage emissions (for example implementing carbon pricing at \$75-\$100 per tonne, taken from the International Energy Agency’s 450 scenario). We have assumed that there will be no significant impact to our business from the physical ramifications of climate change by 2030 – ie from greater scarcity of water or increased impact of severe weather events. The scenario assesses the impact on our business from regulatory changes.
- In the 4°C scenario, we assumed climate policy is less ambitious and emissions remain high so the physical manifestations of climate change are increasingly apparent by 2030. Given this we have not included impacts from regulatory restrictions but focus on those resulting from the physical impacts.

Unilever considers the resilience of its organisational strategy to climate change taking into consideration different scenarios. It describes the scenario analysis undertaken and choice of 2°C and 4°C scenarios with the assumptions made clear for each.

We identified the material impacts on Unilever’s business arising from each of these scenarios based on existing internal and external data. The impacts were assessed without considering any actions that Unilever might take to mitigate or adapt to the adverse impacts or to introduce new products which might offer new sources of revenue as consumers adjust to the new circumstances.

The main impacts of the 2°C scenario were as follows:

- Carbon pricing is introduced in key countries and hence there are increases in both manufacturing costs and the costs of raw materials such as dairy ingredients and the metals used in packaging.
- Zero net deforestation requirements are introduced and a shift to sustainable agriculture puts pressure on agricultural production, raising the price of certain raw materials.

The main impacts of the 4°C scenario were as follows:

- Chronic and acute water stress reduces agricultural productivity in some regions, raising prices of raw materials.
- Increased frequency of extreme weather (storms and floods) causes increased incidence of disruption to our manufacturing and distribution networks.
- Temperature increase and extreme weather events reduce economic activity, GDP growth and hence sales levels fall.

Our analysis shows that, without action, both scenarios present financial risks to Unilever by 2030, predominantly due to increased costs. However, while there are financial risks which would need to be managed, we would not have to materially change our business model. The most significant impacts of both scenarios are on our supply chain where costs of raw materials and packaging rise, due to carbon pricing and rapid shift to sustainable agriculture in a 2°C scenario and due to chronic water stress and extreme weather in a 4°C scenario. The impacts on sales and our own manufacturing operations are relatively small.

The results of this analysis confirm the importance of doing further work to ensure that we understand the critical dependencies of climate change on our business and to ensure we have action plans in place to help mitigate these risks and thus prepare the business for the future environment in which we will operate.

Unilever identified the material impacts on its business for each scenario, without any adaptation or mitigation measures undertaken or new products introduced by Unilever in the circumstances.

Unilever concludes that while there are financial risks related to climate change, its current strategy and business model are resilient and would not require material changes.

Finally, Unilever notes the need for further analysis of the dependencies of climate change on its business to ensure risk mitigation actions are taken and the business is prepared for the future.



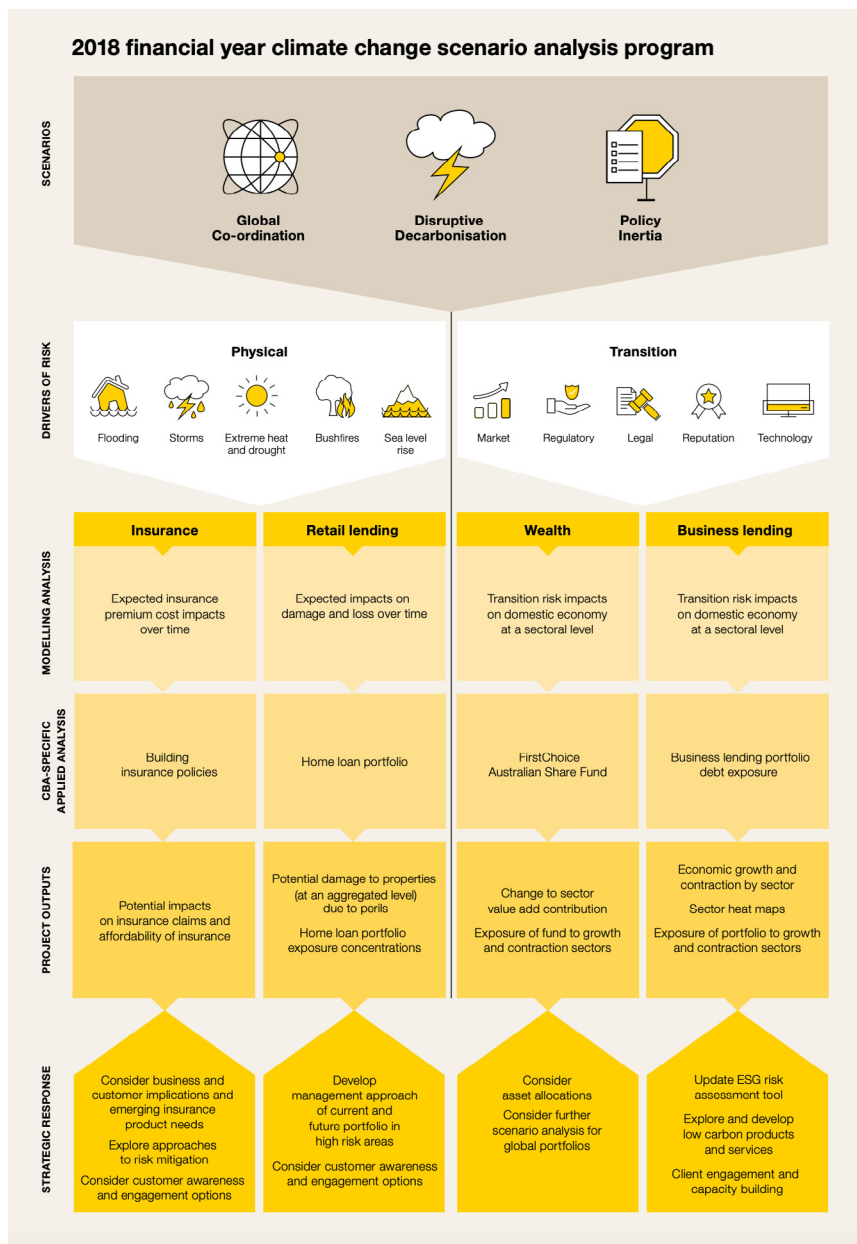
# Commonwealth Bank of Australia

“Becoming a simpler, better bank”

Annual Report 2018

The following examples demonstrate different approaches for disclosing the resilience of the organisational strategy taking into account different climate scenarios.

Strategy: Scenario Analysis



The Commonwealth Bank of Australia demonstrates the findings of the scenario analysis it conducted as a diagram. The diagram shows the three scenarios it used, the related physical and transition risks, and the strategic response of the insurance, retail lending, wealth and business lending businesses. This diagram provides a useful overview of the elements which make up its scenario analysis programme and is supported by additional narrative with further details.

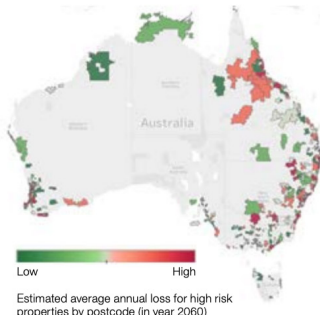
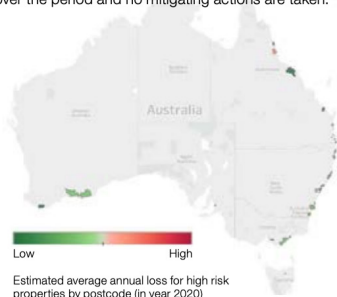
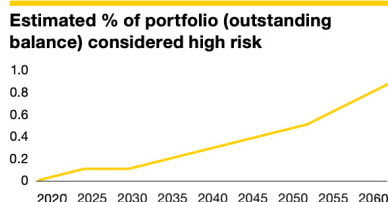
In the narrative which accompanies the diagram, the Commonwealth Bank of Australia describes the company-wide process it took to understand the potential impacts of climate-related risks and opportunities, noting that it prioritised the areas most material to its portfolios. It states that the scenarios are based on assumptions and should not be viewed as forecasts or predictions, offering descriptions of the underlying assumptions made for each of the three scenarios considered (i.e. 2°C with and without global coordination and a 3°C policy inertia scenario).

Retrieved from page 50-53: <https://www.commbank.com.au/content/dam/commbank/about-us/shareholders/pdfs/results/fy18/cba-annual-report-2018.pdf>

**High risk properties**

To better understand our potential credit risk, we have estimated the part of our current portfolio which may be high risk, where this is located and how it could change over time. We have considered high risk to be properties where the increase in insurance costs from 2018 as a result of climate change have the potential to create financial strain for customers and their property values.

High risk properties make up only 0.01% of our portfolio (by outstanding balance) in 2020 and rises to be around 1% in 2060 if there are no changes in the way we lend in these areas. This assumes no change in the portfolio over the period and no mitigating actions are taken.



In considering its home lending and insurance portfolios, using scenario analysis as a tool, the Commonwealth Bank of Australia disclosed its detailed findings, including the potential adverse impact on demand and valuation of properties in certain areas affected by climate risk, and the potential credit risk of high climate risk properties.

Strategy: Scenario Analysis

**Physical risks and opportunities in our home lending and insurance portfolios**

**What we found**

This project has undertaken a forward-looking, portfolio-level assessment based on current home lending and insurance portfolios.

The analysis suggests the impact of physical climate change risk will greatly vary across the geographic locations as well as the vulnerability of each property. The diversity in geographic and climate conditions determine the climate risks experienced within a location, as well as the severity of impact. The analysis indicates that whilst all locations in which our residential property portfolio is situated will be subject to impacts of climate change to varying degrees, only a small proportion of properties in high risk locations and with vulnerable characteristics are projected to experience a significant increase in impacts over the scenario time period.

Locations affected by climate risk are expected to experience an increase in maintenance and damage costs, leading to higher insurance costs, due to flooding, storms, bushfire and drought, with rising sea levels expected to have the most significant increase. For the small proportion of current properties that may be significantly affected, this may lead to difficulties in customers servicing their loans.

Based on these results, if we were to continue to lend in these areas, property demand and valuations in locations more prone to physical climate risk may be adversely impacted.

To understand the potential credit implications of the physical impact of climate change, we have analysed the annual average loss associated with both extreme events and incremental changes in climate. Through this project, we have analysed where damage, and associated loss, is likely to occur for customers currently in our portfolio and the rate that it will increase. We have also analysed which perils, not all of which are currently covered under mainstream insurance policies, are likely to cause the problems, and their rate of increase. The results for estimated annual average loss and the high risk proportion of our portfolio are shown in more detail on the following page.





## Wipro

### “Outperform with Wipro” Annual Report 2018-19

**The following examples demonstrate different approaches for disclosing the resilience of the organisational strategy taking into account different climate scenarios.**

#### Environmental Risks

The Enterprise Risk Management and Sustainability functions at Wipro jointly oversee environmental and climate change related risk identification and mitigation. Impacts of extreme weather events, urban water stress, air pollution, waste management and their impacts on employee health and wellbeing are the most material issues we engaged with. We are currently carrying out a comprehensive climate change risk assessment program, encompassing both physical and transitional risks, for our major operational locations across the globe, covering India, China, Philippines, Germany, Romania, the UK and the US. This is being done for two scenarios (based on the IPCC defined RCP 4.5 and RCP 8.5) for the medium to long term (2030-2050). This assessment provides detailed analysis of the changes in key climatic parameters such as temperature and rainfall that are likely to impact Wipro's operations. It takes into consideration a variety of climate risks which include, an increase in extremely hot days and extremely warm nights, increasing frequency of heat waves, exacerbated urban heat island effect, air quality deterioration, urban flooding and decreasing water availability.

As part of this assessment, Wipro considers multiple risks, such as extremely hot days or urban flooding. It then discloses the results of its climate modelling, including the cost implications in India for procuring water.

The company also identifies physical risks faced in other countries (e.g. tropical storms) that could impact its operations. It also considers how transition risks related to policies and regulations in support of the low-carbon transition might manifest themselves in the countries in which it operates. The disaggregation of risks by geography is a good practice.

Wipro, an Indian multinational company that provides informational technology, consulting and business process services, discloses that it is conducting a climate risk assessment programme in multiple countries, applying two scenarios based on the Intergovernmental Panel on Climate Change's (IPCC) defined Representative Concentration Pathways 4.5 and 8.5.

#### Key outputs from climate modeling:

Our assessment shows that we are likely to observe an increase in day-time temperature (0.02-2.98°C) and night-time temperature (0.35-1.74°C) across all locations except Chennai, where a decrease (0.7°C) in the day time temperature is likely, in both the short term (by 2030) and long term (by 2050). This increase in day time temperatures could contribute towards an increase in the energy consumption and associated operating costs at each location. This change could also adversely impact the health and well-being of our employees decreasing their productivity.

When it comes to rainfall, our risk assessment model predicts an increase in rainfall, ranging from 11 to 267mm, for every city except Kolkata, Pune and Vishakhapatnam which will likely see decreases (13.2-126mm) in rainfall in the long term. Increase in extreme precipitation is likely to lead productivity loss due to employee absence caused by disruption in city infrastructure and an increase in tropical diseases. Given that every city other than Kochi and Kolkata already lie in highly water stressed zones, the predicted rise in temperature coupled with increasing urbanization is likely to accelerate water stress. The corresponding increase in rainfall in most cities is unlikely to help improve this situation unless additional water conservation measures are taken up in the city. Thus, across the country we are likely to experience increasing challenges and costs for procuring water.

We notice that our operations in Romania, China, Philippines and USA are likely to be susceptible to physical risks such as floods, tropical storms and tornadoes. These events could impact the wellbeing of our employees in the affected regions thus impacting our operations. Philippines in particular is likely to face significant fluctuations in rainfall and humidity patterns which could lead to an increase in the spread of infectious diseases in the country, affecting the health of our employees. On the other end of the spectrum, we find that our operations in Germany, the UK, the US, China and Romania, are the ones most exposed to transitional risks arising from policies and regulations geared towards enabling these countries' transition into low carbon economies. However, we must point out here that the majority (more than 70%) of our employees are based out of India. In addition the fact that all our overseas locations are leased premises reduces the direct infrastructural risk in our overseas centers.



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## Part III: Good Practice in TCFD Risk Management Disclosures





## Lloyds Banking Group

### “Helping Britain Prosper”

#### Annual Report and Accounts 2018

UK financial institution Lloyds Banking Group describes its approach to risk management and notes that it engages all business functions (by way of divisions) in “identifying and prioritising climate-related risks and opportunities and integrating them into existing risk management processes.” It applies the materiality concept and horizon scanning and makes use of “traditional risk categories,” classifying them based on short-, medium- and long-term timeframes.

Moreover, it cites the role of the Group’s sustainability team in facilitating cross-business collaboration and understanding of climate-related issues and their connection with financial information, reinforcing management’s role in identifying, assessing and managing climate-related risks and opportunities.

#### Risk management

Each division within the Group is responsible for identifying and prioritising relevant climate related risks and opportunities and integrating them into their risk management processes, which determine materiality and classify risks into traditional risk categories. This includes identifying potential risks through horizon scanning of changes in regulation, technology and consumer demand. Risks are classified in terms of whether they impact the Group in the short, medium or long term. Examples include possible changes in the sustainability of homes, how vehicles are powered, changes in UK energy mix, through to changes in the frequency and severity of extreme weather events. The Group sustainability team facilitates collaboration across divisions to increase understanding of consistent issues, as well as our risk, opportunities and financial impact on an aggregated basis.

The disclosure gives examples of physical and transition risks but does not label them as such.



## Eni Annual Report 2018

### RISK MANAGEMENT

Eni has developed and adopted an Integrated Risk Management (IRM) model to ensure that management takes risk-informed decisions, taking fully into consideration current and potential future risks, including medium and long-term ones, as part of an organic and comprehensive vision.

The process is implemented using a “top-down, risk-based” approach, starting from the **contribution to the definition of Eni’s Strategic Plan**, by means of analyses that support the understanding and evaluation of the likelihood of underlying risk (e.g. definition of specific de-risking objectives) and continue **with the support for its implementation** through periodic risk assessment & treatment cycles and monitoring. Risk prioritization is carried out on the basis of multi-dimensional matrices that measure the level of risk by combining clusters of probability of occurrence and impact in both quantitative and qualitative terms. The risk of Climate Change is identified as one of Eni’s top strategic risks and is analysed, assessed and monitored by the CEO as part of the IRM process.

Having outlined the overall risk management framework, Eni then explains where climate risks fit in – noting that climate risks are identified as a top strategic risk, which are “analysed, assessed and monitored” at the highest level in the organisation, i.e. by the CEO as part of the overall risk management framework.

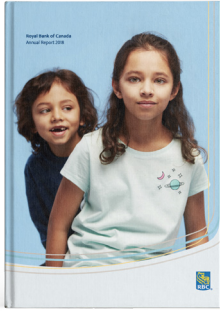
Eni explains that it has developed and adopted an Integrated Risk Management model to ensure management takes risk-informed decisions over different time horizons.

Eni relates the risk to its Strategic Plan showing the connectivity of TCFD disclosures between strategy and risk management elements. Eni also outlines its process for prioritising risks using matrices considering its level of risk, probability of occurrence, and quantitative and qualitative impacts.

### Main risks and opportunities

Climate change is analysed, evaluated and managed by considering energy transition aspects (market scenario, regulatory and technological evolution, reputational issues) and physical phenomena. The analysis is carried out using an integrated and cross-cutting approach which involves specialist departments and business lines and considers the related risks and opportunities. The main findings are shown below.

The disclosure also states the scope of risk coverage, addressing relevant categories of climate risks including both transition and physical risks, and the process for identifying risks and who is involved within the business. The interconnectivity of the TCFD disclosures is reinforced here with a strong link between risk coverage and use of scenario analysis as a tool for assessing energy transition risk.

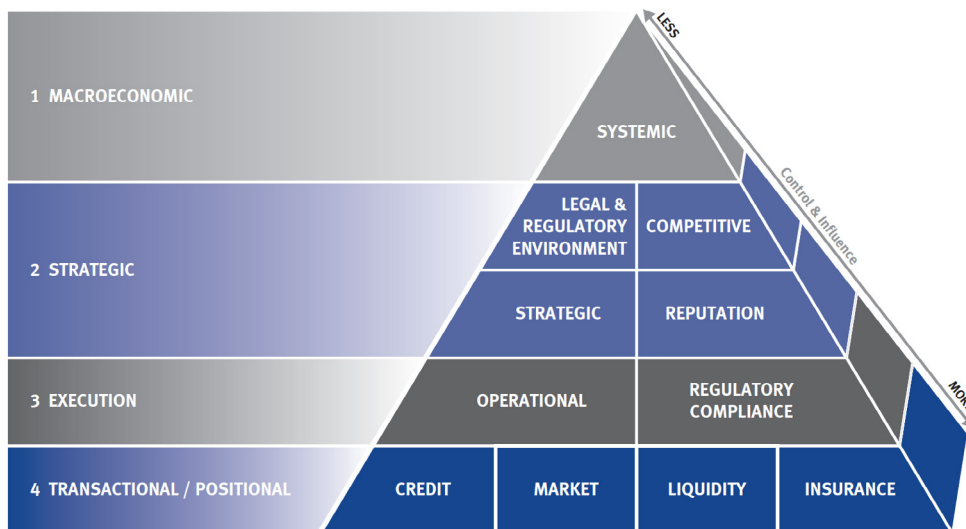


## Royal Bank of Canada Annual Report 2018

Royal Bank of Canada shows how top and emerging material risks, such as climate change, fit within its organisational risk management framework using a risk pyramid. Those risks at the base are the ones over which the bank has the greatest level of control and influence, and those at the top are the least controllable.

### Risk pyramid

Our risk pyramid identifies the principal risks the organization faces and provides a common language and discipline for the identification and assessment of risk in existing businesses, new businesses, products or initiatives, and acquisitions and alliances. It is maintained by GRM and reviewed regularly to ensure all key risks are reflected and ranked appropriately. The placement of the principal risks within the risk pyramid is a function of two primary criteria: risk drivers and level of control and influence.



### Top and emerging risks

Our view of risks is not static. An important component of our risk management approach is to ensure that top risks and emerging risks, as they evolve, are identified, managed, and incorporated into our existing risk management assessment, measurement, monitoring and escalation processes. These practices ensure a forward-looking risk assessment is maintained by management.

Identification of top and emerging risks occurs in the course of business development and as part of the execution of risk oversight responsibilities by risk owners and risk oversight stakeholders.

A top risk is a risk already identified and well understood that could materially impact our financial results, reputation, business model, or strategy in the short to medium term.

In recognising that risk management is an evolving not static process, it has adapted its management process to address this and enable “forward-looking risk assessment.” Royal Bank of Canada also assigns risk owners, which relates back to TCFD Governance disclosure b) on management’s role.

Retrieved from page 50:  
<https://annualreports.rbc.com/ar2018/>



**Risk Management**

Climate change may be a driver of other risk types including systemic, regulatory, competitive, strategic, reputation, credit, and market risk. Climate change was initially identified in 2017 as an emerging risk and as such it is reported on a regular basis to senior management and the Board.

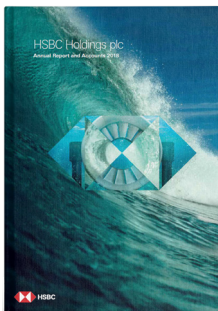
We conduct portfolio, client and scenario analysis to assess our exposure to, and the impact of, climate-related risks. We may be exposed to climate risk through emerging regulatory and legal requirements, disruptions to our operations and services, and the products and services we provide to our clients. We define climate risk as risks related to the transition to a lower-carbon economy (transition risks) and risks related to the physical impacts of climate change (physical risks).

Potential Risk	Actions
Emerging regulatory and legal requirements	<ul style="list-style-type: none"> <li>We monitor regulations that may be applicable to the bank, including those related to carbon pricing, climate-related disclosures, and sustainable finance.</li> <li>For clients in sectors categorized as medium and high environmental risk, such as those in carbon-intensive sectors, we evaluate whether clients have assessed and quantified the regulatory impacts of climate change.</li> </ul>
Disruptions to operations and client services	<ul style="list-style-type: none"> <li>We identify properties that we lease or own, which contain business processes and supporting applications that require enhanced facility infrastructure to mitigate site disruptions, such as those caused by extreme weather events. We classify critical environment sites based on our business risk tolerance for site-specific downtime and, among other things, site location, power supply, exposure to flooding, geological stability, and other hazards.</li> <li>We take steps to mitigate and adapt to climate change through our building design and our purchasing decisions.</li> <li>As required, we assess the impact of climate-related events (e.g., floods, hurricanes) on our businesses and client operations.</li> </ul>
Products and services we provide	<ul style="list-style-type: none"> <li>We provide products, services, and advice to assist clients in responding to climate-related risks and opportunities (i.e., carbon trading services, green bond underwriting, clean technology advisory services, and socially responsible investing).</li> <li>In fiscal 2018, we participated in a United Nations initiative to develop and publish methodologies for assessing the impact of transition and physical risks on our loan portfolio under different climate change scenarios. We piloted this methodology on some of our retail and wholesale lending portfolios, selected based on the potential materiality of the risk and our level of credit exposure to the portfolio. Based on our analysis the impact of climate change was not deemed financially material to those portfolios.</li> <li>Our asset management businesses integrate ESG issues into their investment process when doing so may have a material impact on investment risk or return. In 2018, our Approach to Responsible Investment, which is applicable to our asset management business, was amended to include climate change related issues.</li> <li>The insurance industry as a whole has exposure to longer term shifts in climate patterns such as rising temperatures and hurricanes, which may indirectly impact our Insurance business results.</li> </ul>

Royal Bank of Canada notes that climate change may be a driver for multiple risk types. It explains the processes for assessing the bank’s exposure to and the impact of climate-related (physical and transition) risks. These processes include portfolio, client and scenario analysis. It also states how climate risks are reported on a regular basis to both management and the Board, showing the interconnectivity and the dual focus of the risk management and governance disclosures.

Finally, the excerpt contains a table noting the potential risks associated with climate change and the management actions to be taken to address these.

Retrieved from page 89:  
<https://annualreports.rbc.com/ar2018/>



## HSBC Holdings Plc Annual Report and Accounts 2018

British multinational banking and financial services institution HSBC shows how climate risks can be integrated into existing risk management processes over time. For example, it explains how the bank is working to embed transition risks into its day-to-day credit management. Moreover, the bank has identified six higher transition risk sectors based on their contribution to global carbon dioxide emissions and considers its exposure to these.

### Risk Management

We are increasingly incorporating climate-related risk, both physical and transition, into how we manage and oversee risks internally and with our customers. Climate risk is now included as a theme in our 'Top and emerging risks report' to ensure that it receives monthly management oversight via the Risk Management Meeting of the Group Management Board ('RMM') (see page 30). In addition, our Board-approved risk appetite statement contains a qualitative statement on our approach to sustainability, which will be further expanded in 2019 to include climate risk explicitly.

We have a number of sustainability risk policies covering specific sectors. In 2018, we updated our energy policy to limit the financing of high-carbon-intensity energy projects, while still supporting energy customers on their transition to a low-carbon economy. From the release of the new energy policy in April 2018 until the end of 2018, HSBC financed no new coal-fired power plants.

Transition risk, in the context of climate change, is the possibility that a customer's ability to meet its financial obligations will deteriorate due to the global movement from a high-carbon to a low-carbon economy. HSBC is working to embed transition risk into its day-to-day credit risk management. The aim is that over time, each wholesale counterparty will receive a client transition risk rating based on their susceptibility to, and ability to manage transition risk.

Climate risk will also be explicitly included in the Board-approved risk management statement for 2019, showing the crucial linkages between board oversight of climate-related issues and risk management.

We have identified six higher transition risk sectors based on their contribution to global carbon dioxide emissions. These sectors are: oil and gas; building and construction; chemicals; automotive; power and utilities; and metals and mining. Over time we may identify additional sectors as having higher transition risk depending on a variety of factors, including country-level carbon dioxide reduction plans per the Paris Agreement.

The table below presents our exposure to the six higher transition risk sectors. These figures capture all lending activity, including environmentally responsible customers and sustainable financing. Further details on our approach to the quantification of exposures can be found in footnote 37 on page 67. This is expected to evolve over time as we develop new climate-related metrics.

The excerpt also shows how risk management disclosures and underlying approaches are likely to mature and evolve over time and will include development of related metrics.

Retrieved from page 29:  
<https://www.hsbc.com/-/files/hsbc/investors/hsbc-results/2018/annual/hsbc-holdings-plc/190219-annual-report-and-accounts-2018.pdf?download=1>



## Fujitsu Group Integrated Report 2018

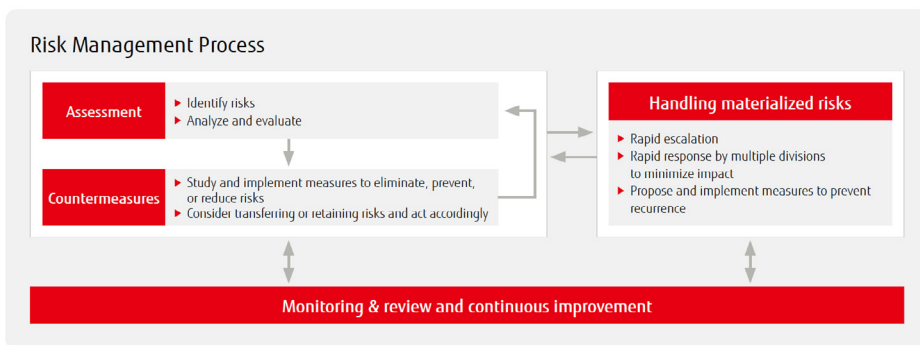
### Risk Management Process

The Risk Management & Compliance Committee, which maintains regular communication with risk management compliance officers, identifies, analyzes and evaluates the risks of business activities at each of the Fujitsu Group's divisions and Group Companies in and outside of Japan, and sets out and reviews the responsive steps upon confirming the detailed measures intended to deal with major risks by averting, minimizing, transferring or retaining them. The Committee also regularly reports significant risks it has identified, analyzed, and evaluated to the Board of Directors.

The Risk Management & Compliance Committee also prepares responses to the materialized risks despite the implementation

of various preventive measures. The Risk Management & Compliance Committee coordinates with the related divisions and workplaces for rapid resolution of the problem by taking appropriate measures such as establishing a task force. At the same time The Risk Management & Compliance Committee strives to identify the causes of the problem while proposing and implementing solutions. Additionally, for critical risks, the Committee also reports as appropriate to the Board of Directors. The Risk Management & Compliance Committee continuously confirms the implementation status of these processes and works to make improvements.

Fujitsu, a Japanese multinational IT equipment and services company, broadly illustrates its risk management process through a diagram. The excerpt notes the roles of the Risk Management & Compliance Committee and risk management compliance officers and explains the Committee's role in reporting significant risks to the Board and other business functions. Climate change, in the context of a physical risk, is listed as a principal risk. The different risks, including climate change, are considered proportionately in a summary table.



### Business Risks and Other Risks of the Fujitsu Group

The Fujitsu Group identifies, analyzes, and assesses risks inherent in business activities and takes steps to avoid or

mitigate the effects of these risks. In addition, we have established processes for responding to materialized risks.

Principal Risks	
1. Economic and Financial Market Trends	<ul style="list-style-type: none"> <li>• Risk associated with changes in the economic trends of mainstay markets</li> <li>• Risk associated with fluctuations in exchange rates and interest rates and changes in trends in capital markets</li> </ul>
2. Customers	<ul style="list-style-type: none"> <li>• Risk associated with changes in ICT investment trends among customers</li> <li>• Risk associated with the inability to continue trust-based, transactional, or contractual relationships with customers</li> </ul>
3. Competitors and the Industry	<ul style="list-style-type: none"> <li>• Risk associated with loss of competitiveness due to changes in market or competitive conditions</li> <li>• Risk associated with a decrease in competitive advantages with respect to R&amp;D</li> </ul>
4. Investment Decisions and Business Restructuring	<ul style="list-style-type: none"> <li>• Risk that investments in R&amp;D or necessary measures in such areas as capital expenditure, business acquisitions, and business restructuring are unable to generate adequate returns</li> </ul>
5. Suppliers, Alliances, etc.	<ul style="list-style-type: none"> <li>• Risk associated with tight component supply due to natural disasters or other unpredicted events</li> <li>• Risk associated with impediments resulting from the procurement of inferior quality products</li> <li>• Risk associated with the inability to continue cooperative relationships with respect to partnerships, alliances, or licensing and risk associated with the inability to gain from such cooperation</li> </ul>
6. Public Regulations, Public Policy, and Tax Matters	<ul style="list-style-type: none"> <li>• Risk associated with increased adaptive costs and business opportunity losses arising from the strengthening of, or changes in, statutory regulations or government policies in countries where the Group has businesses</li> </ul>
7. Natural Disasters and Unforeseen Incidents	<ul style="list-style-type: none"> <li>• Risk associated with the inability to continue businesses due to natural disasters or accidents, including earthquakes, typhoons, and water damage, or the spread of infectious diseases (including the increased frequency or effect of the above-mentioned due to climate change)</li> <li>• Risk associated with the effect on businesses of conflicts, terrorism, demonstrations, strikes, or political instability in the countries or regions where the Group has business</li> </ul>

Retrieved from page 66-7: <https://www.fujitsu.com/global/documents/about/ir/library/integratedrep/IntegratedReport2018-all.pdf>



Part IV: Good Practice in TCFD  
Metrics and Targets  
Disclosures







# Danone

## “One Planet, One Health” Registration Document 2018

### Annual variable compensation for 2018

#### Compensation target and annual cap set for 2018

Target amount of annual variable compensation: €1,000,000 (remains unchanged since 2014)

#### Performance conditions and cap

	Performance indicators	Portion of the target amount	Potential variation of this portion	Potential variation after weighting
<b>Economic</b> Quantifiable portion, calculated on the basis of Danone's economic targets	Like-for-like sales growth	25%	0% to 200%	0% to 50%
	Recurring operating margin growth	25%	0% to 200%	0% to 50%
	Free cash flow generation	10%	0% to 200%	0% to 20%
	<b>Total</b>	<b>60%</b>	<b>0% to 200%</b>	<b>0% to 120%</b>
<b>Social and societal</b> Reference to Danone's societal and environmental initiatives	"One Person, One Voice, One Share" program	10%	0% to 200%	0% to 20%
	2018 environmental targets	10%	0% to 200%	0% to 20%
	<b>Total</b>	<b>20%</b>	<b>0% to 200%</b>	<b>0% to 40%</b>
<b>Managerial</b> Reference to the implementation of Danone's strategy	2030 goals and B Corp™	10%	0% to 200%	0% to 20%
	Product Innovation	10%	0% to 200%	0% to 20%
<b>Total</b>	<b>Total</b>	<b>20%</b>	<b>0% to 200%</b>	<b>0% to 40%</b>
<b>Total</b>		<b>100%</b>	<b>0% to 200%</b>	<b>0% to 200%</b>

Danone discloses how performance on social and societal factors, including environmental initiatives, are factored into the company's remuneration policies. Specifically, it notes that its 2018 environmental targets, which includes its climate-related targets, contribute 10% of the target amount of annual variable compensation.

### Scope 1 and 2 greenhouse gas emissions

Scope 1 and 2 emissions are calculated in accordance with the methodology set out in the GHG Protocol Corporate Standard (January 2015 revised edition). In January 2015, the GHG Protocol published a guidance document on the method used to account for scope 2 greenhouse gas emissions, which introduces dual reporting:

- location-based reporting, which reflects emissions due to electricity consumption from a conventional power grid. It therefore uses primarily an average emissions factor of the country's energy mix;
- market-based reporting, which reflects emissions from energy consumption taking into account the specific features of the energy contracts chosen, and also considers the impact of the use of energy from renewable sources.

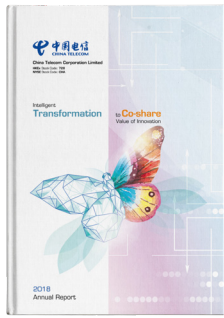
Danone has set its reduction targets according to the market-based method.

Danone also discloses the methodology by which it has reported its emissions, citing the GHG Protocol Corporate Standard. Danone further specifies the global warming potentials and emission factors used in its reported emissions by citing the IPCC Fifth Assessment Report. It also notes how it determined electricity emissions factors, heating, steam and fugitive refrigerant emissions. Such details support the comparability of Danone's disclosures for investors by ensuring transparency of the basis upon which Danone calculated its emissions.

Emissions (scopes 1 and 2) are calculated by applying global warming potentials and emissions factors to the activity data:

- the global warming potentials used for methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) as well as the impact of fugitive emissions of refrigerants, correspond to data in the IPCC Fifth Assessment Report (AR5), Climate Change 2013. The IPCC (Intergovernmental Panel on Climate Change) is a group of inter-governmental experts specialized in climate change;
- the emissions factors used to calculate emissions related to energy combustion correspond to data in the 2006 IPCC Guidelines (2006 IPCC Guidelines for National Greenhouse Gas Inventories);
- electricity emissions factors follow the hierarchy defined in the new scope 2 guidance document of the GHG Protocol for market-based reporting. Suppliers' specific factors must be certified by instruments that prove the origin of electricity (guarantee of origin certificates). If some of the electricity used is not of certified origin, the emissions factors used are the national residual mixes published by official bodies such as the Association of Issuing Bodies (AIB) in Europe and Green-e in North America. For countries that do not have green-electricity attribute instruments, the emissions factors used are those used for location-based reporting provided by the International Energy Agency (2017 publication of energy mixes in 2015);
- the factors used for heating and steam are from the 2017 version of UK Department for Environment Food & Rural Affairs (DEFRA) and the factors used for cooling are from the carbon database of the French Agency for the Environment and Energy Management (ADEME, 2015);
- the emissions factors used to characterize the impact of fugitive refrigerant emissions are based on the IPCC Fifth Assessment Report (AR5) "Climate Change 2013: The Physical Science Basis", published in 2013.

Retrieved from page 207 and 255:  
<https://www.danone.com/investor-relations/publications-events/registrations-documents.html>



# China Telecom Corporation Limited

## “Intelligent Transformation to Co-share Value of Innovation” 2018 Annual Report

Telecommunications company China Telecom provides a data table with an extensive breakdown of several climate-related performance factors impacting the company. By providing a suite of metrics related to its emissions, China Telecom provides investors with a more holistic view of its risk profile related to both direct and indirect greenhouse gas emissions.

In addition to its aggregate Scope 1 and Scope 2 emissions, China Telecom provides a normalised measure of its emissions by unit operating revenue.

China Telecom also provides significant resolution on sources of emissions as well as waste production, which contribute to waste-related emissions.

The disclosure also provides a breakdown of its energy mix by source, including electricity, natural gas, coal, gasoline and diesel as well as purchased heat. Such information is helpful for investors in understanding how China Telecom’s use of various energy sources may be differentially impacted by climate-related risk factors.

Issues	Name of Indicators	Units	Year 2018	Year 2017
Emissions	Scope 1: Direct greenhouse gas emissions <sup>1</sup>	million tons CO <sub>2</sub> e	0.28	0.29
	Scope 2: Indirect greenhouse gas emissions <sup>1</sup>	million tons CO <sub>2</sub> e	11.75	11.22
	Total greenhouse gas emissions <sup>1</sup>	million tons CO <sub>2</sub> e	12.02	11.51
	Greenhouse gas emissions per unit operating revenue	tCO <sub>2</sub> e/million yuan	31.88	31.42
	Sewage emissions <sup>2</sup>	million tons	36.42	37.55
	SO <sub>2</sub> emissions <sup>3</sup>	tons	65.69	122.11
	Waste disposal amount <sup>4</sup>	tons	101,917.88	121,276.15
	Waste storage batteries disposal amount <sup>4</sup>	tons	11,397.72	11,588.42
	Waste telecommunications equipment disposal amount <sup>4</sup>	tons	10,201.40	14,005.04
	Waste cables disposal amount <sup>4</sup>	tons	67,891.16	85,561.88
Use of Resources	Waste terminals disposal amount <sup>4</sup>	tons	625.63	587.56
	Other waste disposal amount <sup>4</sup>	tons	11,801.97	9,533.23
	Domestic waste emissions <sup>5</sup>	tons	21,711.10	19,134.93
	Electricity consumption	100 million kwh	170.96	162.76
	Natural gas consumption	million m <sup>3</sup>	9.21	8.50
	Coal consumption	10,000 tons	0.49	0.91
	Gasoline consumption	10,000 tons	6.28	6.15
	Diesel consumption	10,000 tons	1.73	2.04
	Purchased heat consumption amount	GJ	1,464,480.69	1,500,277.53
	Overall energy consumption <sup>6</sup>	tce	2,285,326.69	2,191,379.37
Use of Resources	Overall energy consumption per unit of information flow	kgce/TB	5.91	7.10
	Overall energy consumption per operating revenue	kgce/million yuan	6,059.89	5,983.63
	Power consumption per carrier frequency at base stations	kwh/carrier frequency	678.31	721.77
	Water consumption	million tons	42.85	44.18
	Water consumption per unit operating revenue	tons/million yuan	113.61	120.63
	Coverage rate of energy-saving technology at base stations	%	63.03	67.00
	Coverage rate of energy-saving technology at telecommunications equipment room	%	67.85	72.81
	Reclaimed water consumption	tons	44,574.97	36,531.37

In addition, the company provides a normalised measurement of its energy consumption per unit of information flow in terabytes, per operating revenue and per carrier frequency at base stations, each of which provides users with a better understanding of the efficiency with which China Telecom delivers economic value per unit of energy consumed.



# BASF

## BASF Report 2018

BASF, a German chemicals company, describes two sets of targets that it has set. First, it describes targets it established for 2020 with a baseline in 2002. Its first set target is a normalised greenhouse gas reduction target, measured as CO<sub>2</sub> emissions per ton of sales product, for which it set a 40% reduction target.

BASF also notes that it has set a new goal from 2019 onward to achieve CO<sub>2</sub>-neutral growth and specifies that this target will apply from 2019 through to 2030.

The second target relates to the coverage of BASF's primary energy demand through certified energy management systems, for which it set a 90% coverage target. For both of these targets, BASF reports its progress to date as well as in the most recent reporting year.

### Global goals and measures

We aim to reduce our greenhouse gas emissions per metric ton of sales product by 40% by 2020, compared with baseline 2002 (BASF operations excluding the discontinued oil and gas business). In absolute terms, our emissions declined slightly in 2018 compared with the previous year. We reduced greenhouse gas emissions per metric ton of sales product by 34.2% compared with baseline 2002 (2017: reduction of 35.5%). Since 1990, we have been able to lower our overall greenhouse gas emissions from BASF operations (excluding the oil and gas business) by 49.2% and even reduce specific emissions by 74.2%.

We will pursue a new goal from 2019 onward: CO<sub>2</sub>-neutral growth until 2030. We will maintain greenhouse gas emissions per metric ton of sales product as an additional reporting indicator.

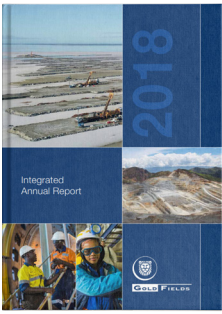
By 2020, we want to have introduced certified energy management systems (DIN EN ISO 50001) at all relevant production sites.<sup>1</sup> Taken together, this represents 90% of BASF's primary energy demand.

**BASF Group's greenhouse gas emissions according to the Greenhouse Gas Protocol<sup>1</sup>**

Million metric tons of CO <sub>2</sub> equivalents	2002	2017	2018
<b>BASF operations including the discontinued oil and gas business<sup>2</sup></b>			
Scope 1 <sup>3</sup>			
CO <sub>2</sub> (carbon dioxide) <sup>4</sup>	14,634	16,813	16,956
N <sub>2</sub> O (nitrous oxide)	6,407	0,747	0,740
CH <sub>4</sub> (methane)	0,244	0,048	0,064
HFC (hydrofluorocarbons)	0,061	0,081	0,091
Scope 2 <sup>5</sup>			
CO <sub>2</sub> <sup>4</sup>	5,243	3,796	3,361
<b>Total</b>	<b>26,589</b>	<b>21,485</b>	<b>21,212</b>
<b>Sale of energy to third parties (Scope 1)<sup>6</sup></b>			
CO <sub>2</sub> <sup>4</sup>	0,347	1,086	0,567
<b>Total</b>	<b>26,936</b>	<b>22,571</b>	<b>21,779</b>

<sup>1</sup> BASF reports separately on direct and indirect emissions from the purchase of energy. Scope 1 emissions encompass both direct emissions from production and generation of steam and electricity, as well as indirect emissions from the generation of steam and electricity for sale. Scope 2 emissions comprise indirect emissions from the purchase of energy for BASF's use.  
<sup>2</sup> The assets and businesses acquired from Bayer are not yet included in the reported greenhouse gas emissions of the BASF Group for 2018.  
<sup>3</sup> Emissions of N<sub>2</sub>O, CH<sub>4</sub> and HFC have been translated into CO<sub>2</sub> emissions using the Global Warming Potential, or GWP, factor. GWP factors are based on the Intergovernmental Panel on Climate Change (IPCC) 1995 (2002 emissions) and IPCC 2007, errata table 2012 (2017 and 2018 emissions). HFC (hydrofluorocarbons) are calculated using the GWP factors of the individual components.  
<sup>4</sup> In 2018, we changed how emissions are allocated for two BASF Group companies with interdependent operations, with part of the Scope 2 emissions included within Scope 1. Total emissions (excluding sales of energy to third parties) remain unchanged. Since double counting of emissions is avoided (see footnote 6), direct emissions from sale of energy to third parties are reduced accordingly.  
<sup>5</sup> Location-based approach. Under the market-based approach, Scope 2 emissions were 3,657 million metric tons of CO<sub>2</sub> in 2018.  
<sup>6</sup> Includes sale to BASF Group companies; as a result, emissions reported under Scope 2 can be reported twice in some cases.

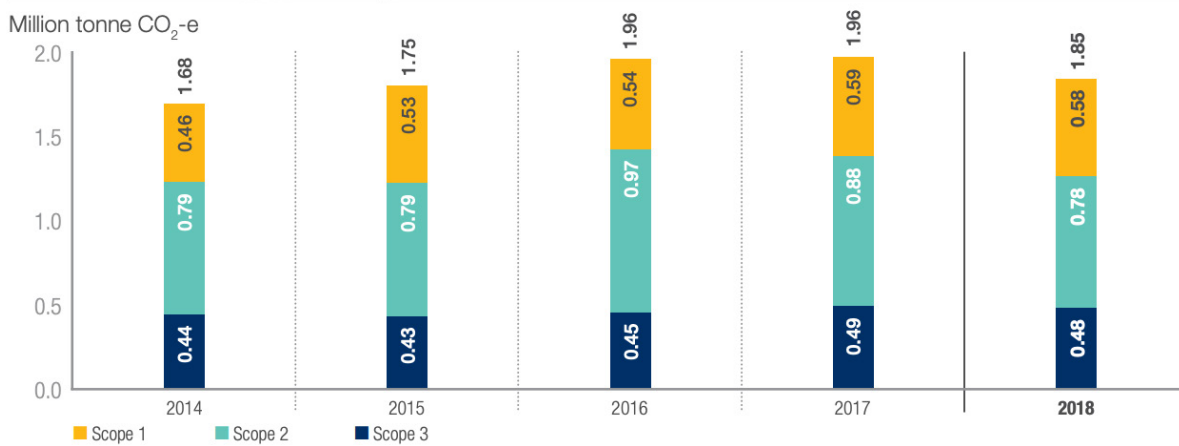
BASF reports its Scope 1 and Scope 2 emissions. For its Scope 1 emissions, BASF breaks out its emissions by constituent, including carbon dioxide, nitrous oxide, methane and hydrofluorocarbons. BASF includes data from its most recent reporting year, as well as from the previous year, and finally its performance in 2002, which was the base year for its 2020 targets.



# Gold Fields

## Integrated Annual Report 2018

### Gold Fields Scope 1 – 3 CO<sub>2</sub> emissions



Gold Fields, a South African mining company, reports its Scope 1, 2, and 3 emissions both separately and in aggregate, providing investors with a complete picture of its major sources of emissions associated with its operations.

Gold Fields describes the changes year-over-year in its emissions and attributes these changes to a decrease in its total energy usage.

In addition to reporting its emissions in millions of tonnes of CO<sub>2</sub> equivalent, the company also provides a normalised emissions factor by ounce of gold produced, noting that this factor was unchanged year-over-year due to a decrease in gold production coincident with its decrease in energy usage.

Finally, Gold Fields notes an aspirational target with a base year of 2017 and a target year of 2020 to reduce its cumulative carbon emissions and reports its progress against this target in the two most recent reporting years.

Our carbon emission performance mirrors the energy usage trends at our operations. These are detailed on p70 – 73. Gold Fields’ disclosures cover all three carbon emission scopes, Scope 1 – 3, both in absolute figures and intensities. Total Scope 1 – 3 CO<sub>2</sub>-e emissions during 2018 amounted to 1.85Mt, a significant drop from 1.96Mt in 2017, reflecting the decrease in total energy usage to 11.62TJ in 2018 from 12.18TJ in 2017. Emission intensity was unchanged from the 0.66t CO<sub>2</sub>-e/oz in 2017, due to a decline in Group gold production. Our aspirational target is to reduce cumulative carbon emissions by 800kt CO<sub>2</sub>-e between 2017 and 2020. Cumulative carbon emission reductions from 2017 – 2018 totalled 265kt CO<sub>2</sub>-e.

Retrieved from page 97: <https://www.goldfields.com/pdf/investors/integrated-annual-reports/2018/iar-2018.pdf>





# Total

## Registration Document 2018

Indicators related to climate change

		2018	2017	2016	2015
<b>SCOPE 1</b> Direct greenhouse-gas emissions (operated scope)	Mt CO <sub>2</sub> e	40	38	41	42
<b>Breakdown by segment</b>					
Exploration & Production	Mt CO <sub>2</sub> e	18	17	19	19
Gas, Renewables & Power	Mt CO <sub>2</sub> e	2	0	0	-
Refining & Chemicals	Mt CO <sub>2</sub> e	21	21	22	22
Marketing & Services	Mt CO <sub>2</sub> e	<1	<1	<1	<1
<b>SCOPE 1</b> Direct greenhouse-gas emissions based on the Group's equity interest	Mt CO <sub>2</sub> e	54	50	51	50
<b>SCOPE 2</b> Indirect emissions attributable to energy consumption by sites	Mt CO <sub>2</sub> e	4	4	4	4
<b>GHG emissions (Scopes 1 &amp; 2) on operated oil &amp; gas facilities</b>	Mt CO <sub>2</sub> e	42	41	45	46
Net primary energy consumption (operated scope)	TWh	143 <sup>(a)</sup>	142	150	153
Group energy efficiency indicator	Base 100 in 2010	88.4	85.7	91.0	90.8
Daily volume of all flared gas (Exploration & Production operated scope) (including safety flaring, routine flaring and non-routine flaring)	Mm <sup>3</sup> /d	6.5	5.4	7.1	7.2
Of which routine flaring	Mm <sup>3</sup> /d	1.1	1.0	1.7 <sup>(b)</sup>	2.3 <sup>(c)</sup>

(a) Excluding primary energy consumption of Direct Énergie gas power plants.  
 (b) Estimated Volume at end 2016 based on new definition of Routine Flaring published in June 2016 by the Working Group Global Gas Flaring Reduction.  
 (c) Volumes estimated upon historical data.

Total reports both its Scope 1 and Scope 2 greenhouse gas emissions. For its Scope 1 emissions, Total reports such emissions on two different bases – Total’s operated scope as well as on an equity interest basis. Providing both of these bases helps investors to understand the nature of Total’s Scope 1 emissions in terms of its level of operational control of such emissions.

Total provides three years of trailing data, enabling investors to analyse trends in Total’s performance.

Total further breaks down its emissions by its operating segments, including its exploration and production operations, gas, renewables and power, downstream operations, and marketing and services.

Total has also set targets related to flaring, energy efficiency, methane emissions, and Scope 1 and 2 greenhouse gas emissions. Each target includes a base year as well as a period over which the target applies. Total reports progress in achieving each target to date.

The Group's climate targets:	What has been accomplished:
— an 80% reduction of routine flaring <sup>(1)</sup> on operated facilities between 2010 and 2020 in order to eliminate it by 2030;	— more than 80% reduction in routine flaring between 2010 and 2018;
— an average 1% improvement per year in the energy efficiency of operated facilities between 2010 and 2020;	— more than 10% improvement in energy efficiency between 2010 and 2018;
— a sustainable reduction in the intensity of the methane emissions of the Exploration & Production segment's operated facilities to less than 0.20% of gas produced for sale, by 2025;	— an intensity of the methane emissions below 0.25% of the commercial gas produced in 2018;
— a GHG emission reduction (Scopes 1 & 2) on operated oil & gas facilities of 46 Mt CO <sub>2</sub> e in 2015 to less than 40 Mt CO <sub>2</sub> e in 2025.	— a GHG emission reduction (Scopes 1 & 2) on operated oil & gas facilities from 46 Mt CO <sub>2</sub> e to 42 Mt CO <sub>2</sub> e between 2015

Targets include both absolute and normalised values, including a “not-to-exceed” methane target of 0.25% of its total commercial gas produced that Total seeks to achieve and maintain by 2025.

For each target, Total provides a discussion of progress to date, citing specific actions taken by Total to achieve such performance and explaining any differences between the current reporting year and prior years that relate to its progress.

<sup>i</sup> Retrieved from page 107: <https://www.total.com/sites/default/files/atoms/files/ddr2018-en.pdf>



## Eni Annual Report 2018

### METRICS AND COMMENTS

As part of its decarbonization strategy, Eni has adopted indicators that illustrate the progress achieved so far in the reduction of GHG emissions into the atmosphere, the use and consumption of energy from primary sources and the production of energy from renewables. With specific reference to emission rates, calculated on data 100% of the operated asset for which Eni has set strategic objectives, an overview of the results obtained in 2018 compared to the set targets is provided below.

**Reduction of the upstream GHG emission intensity index by 43% by 2025 vs. 2014:** the upstream GHG intensity index, expressed as the ratio between direct emissions, in tonnes of CO<sub>2</sub> eq and thousands of barrels of oil equivalent, recorded a 6% decrease in 2018 compared to 2017, reaching 21.44 tCO<sub>2</sub> eq/kboe. This is a 20% reduction compared to 2014, which is in line with the 2025 reduction target. The improvement in the index in 2018 is mainly due to the reduction in flaring emissions, the contribution to production of the gas fields in Egypt (Zohr) and Indonesia (Jangkrik) and the return to full operation in Norway (Goliat). Overall, these activities have a lower emission intensity compared to the portfolio average.

**Zero process gas flaring by 2025:** the volume of hydrocarbons sent for process flaring in 2018 was equal to 1.4 billion Sm<sup>3</sup>, a decrease of 9% compared to 2017 (1.6 billion Sm<sup>3</sup>), mainly as a result of "zero flaring" achieved in Turkmenistan (Burun field). Through the measures implemented, the volume of hydrocarbons sent for process flaring was reduced by 16% compared to 2014, in line with the goal of zero process flaring by 2025. In 2018, Eni invested €39 million in flaring-down projects, especially in Nigeria and Libya.

**Reduction of upstream fugitive methane emissions by 80% by 2025 vs. 2014:** in 2018, upstream fugitive methane emissions were 38.8 kton CH<sub>4</sub> (-66% vs. 2014) and were unchanged compared to 2017 yet overall in line with the target. In this area, monitoring and maintenance campaigns (Leak Detection And Repair - LDAR) not only in the upstream sector, but also in the mid-downstream sector (Sergaz), with a 6% reduction in total Eni fugitive methane emissions compared to 2017.

Eni describes several targets that it has set related to various climate-related factors impacting its business.

For each target, the company includes the base year in which the target was set, the time frame over which the target applies, and a description of its progress to date toward reaching that target, including that in the most recent reporting year.

Targets include both normalised and absolute values, with each described separately. In reporting its progress, Eni provides specific details around the underlying factors that drove its performance, helping investors to tie this performance to the success of Eni's underlying strategy to reach its target by the target year.

Eni provides a table of Key Performance Indicators that include both Scope 1 and Scope 2 emissions. For Scope 1 emissions, Eni provides a breakdown of such emissions by source, including combustion and process emissions, flaring, methane fugitive emissions, and venting. Such operational categories are helpful for investors in understanding how Eni’s strategy to manage emissions from these various sources is translating through to measurable performance.

**Key Performance Indicators**

		2018		2017		2016	
		Operated companies	Fully Consolidated entities	Operated companies	Fully Consolidated entities	Operated companies	Fully Consolidated entities
Direct GHG emissions (Scope 1) <sup>(a)</sup>	(million tonnes CO <sub>2</sub> eq)	43.35	28.15	43.15	28.30	42.15	27.76
of which: CO <sub>2</sub> eq from combustion and process		33.89	24.41	33.03	24.05	32.39	24.12
of which: CO <sub>2</sub> eq from flaring		6.26	3.07	6.83	3.37	5.40	2.49
of which: CO <sub>2</sub> eq from methane fugitive emissions		1.08	0.48	1.14	0.66	2.01	0.95
of which: CO <sub>2</sub> eq from venting		2.12	0.19	2.15	0.23	2.35	0.19
Carbon efficiency index	(tonnes CO <sub>2</sub> eq/kboe)	33.90	46.32	36.01	51.51	38.26	51.89
GHG emissions/100% operated hydrocarbon gross production (UPS)		21.44	20.91	22.75	24.04	23.56	22.29
GHG emissions/Equivalent electricity produced (EniPower)	(gCO <sub>2</sub> eq/kWheq)	402	407	395	398	398	402
GHG emissions/Refinery throughputs	(tonnes CO <sub>2</sub> eq/kt)	253	253	258	258	278	278
UPS methane fugitive emissions	(ktonnes CH <sub>4</sub> )	38.8	15	38.8	19.4	72.6	30.3
Volumes of hydrocarbon sent to flaring	(billion Sm <sup>3</sup> )	1.9	1.1	2.3	1.3	1.9	1.1
of which: sent to process flaring		1.4	0.6	1.6	0.6	1.5	0.8
Indirect GHG emissions (Scope 2)	(million tonnes CO <sub>2</sub> eq)	0.67	0.56	0.65	0.54	0.71	0.58
Primary sources consumption <sup>(b)</sup>	(Mtoe)	13.0	9.4	13.0	9.1	12.5	8.8
Primary energy purchased from other companies		0.4	0.4	0.4	0.3	0.4	0.4
Electricity produced from photovoltaic <sup>(c)</sup>	(GWh)	19.3	19.2	16.1	16.1	13.5	13.5
Energy consumption from production activities/100% operated hydrocarbon gross production (UPS)	(GJ/toe)	1.42	n.a.	1.49	n.a.	1.71	n.a.
Net consumption of primary resources / Electricity produced (EniPower)	(toe/MWheq)	0.17	0.17	0.16	0.16	0.16	0.16
Energy Intensity Index (refineries)	(%)	112.2	112.2	109.2	109.2	101.7	101.7
R&D expenditures	(€ million)		197.2		185		161
of which: related to decarbonization			74		72		63
First patent filing applications	(number)		43		27		40
of which: filed on renewable sources			13		11		12
Production of biofuels	(ktonnes)		219		206		181
Capacity of biorefinery	(ktonnes/year)		360		360		360

Eni also provides climate-related metrics that relate to its business model and transition risks, including R&D expenditures with expenditure towards decarbonisation broken out, its total number of patents filed as well as those related to renewable energy, and finally metrics related to its production of biofuels. Such metrics are helpful for investors seeking to understand how Eni is performing on factors that relate to climate adaptation and mitigation.

(a) The GHG emissions from methane venting have been revised following the refinement of the estimation methodology, in line with international methodologies developed thanks to the CCMP OGMP Partnership. Therefore, the historical series of this emission category has been revised in order to ensure the consistency of the performance indices with respect to the reduction targets of the GHGs communicated by Eni.  
 (b) The figure differs from the data of the last year as the reporting method was refined.  
 (c) Unlike the NFI 2017, where the data referred only to EniPower, the data shown relates to the entire Eni perimeter.



## Prudential Plc

### “We do life.” Annual Report 2018

Prudential plc, a British multinational life insurance and financial services company, provides an in-depth discussion of its climate-related performance. When discussing its Scope 1, 2, and 3 emissions, Prudential specifically notes the scope and methodology utilised to calculate its Scope 3 emissions related to the air travel of its employees. Prudential also provides in-depth discussion on its Scope 2 emissions, which make up the majority of its overall emissions.

#### Prudential Group Scope 1 and 2 GHG Emissions

We achieved a ranking of B in the 2018 CDP Climate Change disclosure benchmark, and in ClimateWise, the insurance sector climate initiative managed by the Cambridge Institute for Sustainability Leadership, we improved our score, achieving 78 per cent (2017: 72 per cent). Our performance in ClimateWise against six core principles is independently audited by PwC.

As a Group, we signed up to RE100 in 2018 to achieve 100 per cent renewable electricity by 2025 across our occupied and managed investment estates. 30 per cent of our global electricity consumption is procured from 100 per cent certified renewable sources (solar PV and on-shore wind). Our Group Scope 2 (market based) emissions are independently assured by Deloitte. Looking ahead, we will develop roadmaps in 2019 for the demerged businesses to set out strategies to achieve this target, on a country-by-country basis.

As our business becomes increasingly global, we recognise the importance of understanding the impact of air travel on our overall corporate carbon footprint. We have collated air travel data internally across all three regions for the first time. We have elected to disclose Scope 3 GHG emissions data from air travel for the UK and Europe business unit. This amounted to 21,622 tCO<sub>2</sub>e, representing a 50 per cent increase over preliminary estimates (2017: 14,413 tCO<sub>2</sub>e). The scope of this data now includes air travel from our sites in the UK, Japan, Kenya, Poland and Zambia, which are controlled by the UK and Europe business unit.

Prudential has also established a target with a base year of 2018 to achieve 100% renewable electricity by 2025 across its occupied and management investment estates.

It notes that it has had its Scope 2 group emissions independently assured, enhancing investor confidence in the reliability of the reported data.

Our combined reported and unreported carbon footprint from air travel is a significant contribution to our overall emissions. Therefore, as part of a holistic approach to the management of our climate impacts, we will focus management effort on reducing the need for travel through the deployment of digitally enabled office working practices and offsetting emissions from unavoidable flights as final mitigation. Plans will be developed in 2019 to establish a CO<sub>2</sub> offsetting programme for air travel emissions.



In its data table, Prudential reports its Scope 1, 2 and 3 emissions and breaks down such emissions by both its occupied estate as well as its investment estates. Prudential's previously discussed focus on its Scope 2 emissions are supported by the relatively high degree to which such emissions contribute to its overall emissions. Prudential also reports several normalised metrics, using factors to establish efficiency ratios that can enhance comparability across companies to the extent such ratios are generally accepted.

<b>Emissions source (tCO<sub>2</sub>e)</b>		<b>2018</b>	<b>2017</b>	<b>% Change</b>
Scope 1	Occupied estate <sup>1</sup>	9,191	10,494	-12%
	Investment properties	7,711	7,703	0%
Scope 2 – Location-based	Occupied estate <sup>1</sup>	56,554	61,154	-8%
	Investment properties	15,281	18,751	-19%
Scope 2 – Market-based (supplier and residual mix)	Occupied estate <sup>1</sup>	52,127	55,484	-6%
	Investment properties <sup>1</sup>	5,459	7,237	-25%
Scope 3	Group <sup>1</sup>	22,545	15,306	+47%
Scope 1 and Scope 2*	Occupied estate	61,318	65,979	-7%
	Investment estate	13,170	14,940	-12%
<b>Total Scope 1 and 2*</b>	Group	<b>74,488</b>	<b>80,919</b>	<b>-8%</b>
<b>Total Scope 1, 2 and 3*</b>	Group	<b>97,032</b>	<b>96,225</b>	<b>+1%</b>
<b>Carbon intensity*</b>		<b>2018</b>	<b>2017</b>	<b>% Change</b>
<b>kg CO<sub>2</sub>e per m<sup>2</sup> – Scope 1 and 2 only</b>	Group <sup>1</sup>	24	29	-17%
<b>kg CO<sub>2</sub>e per employee – Scope 1 and 2 only</b>	Group <sup>1</sup>	3.1	3.2	-3%
<b>kg CO<sub>2</sub>e per m<sup>2</sup> – Scope 1, 2 and 3</b>	Group <sup>1</sup>	32	34	-8%

Note that when reporting Group totals, the market-based emission is used.

## Key Takeaways

In surfacing these good practices, a wide range of TCFD reporting was reviewed from across the G20, a subset of which were included in the preceding sections. In combination with the insights we have garnered in recent years, we have identified a number of key takeaways based on this review which may be helpful for report preparers as they consider, develop and refine their climate-related financial disclosures for inclusion in their mainstream report:

- **Ensuring connectivity of information in the disclosures** – Whilst the TCFD includes 11 recommended disclosures, these need to be viewed holistically and connected with other information in the mainstream report. For a company to effectively tell its story of how it is managing climate-related risks and opportunities, it requires disclosures across all four core elements of the TCFD. The 11 disclosures are mutually supportive and when considered collectively inform and reinforce one another. At the same time, they also help to ensure more succinct and proportionate disclosures as the key information does not need to be repeated elsewhere.
- **Adopting the correct lens for viewing climate-related risks and opportunities** – In reviewing climate-related financial disclosures from annual reports across the G20, we found evidence that some preparers were confused by the outlook required by the TCFD. The TCFD considers the risks and opportunities likely to arise from climate change impacting the business—not the converse.
- **Adequately differentiating between the role of the board and management in respect of climate-related risks and opportunities** – Disclosures need to be clear on how the board exercises its oversight function and how this differs from management roles and responsibilities. This is the key distinction between leadership and management.
- **Clarifying the interrelationship between the strategy and risk management core elements** – The TCFD presents these as separate core elements but in practice there appears to be confusion between the two. We therefore suggest that consideration of the specific climate-related risks and opportunities should be disclosed in line with the TCFD’s strategy recommended disclosures, whereas the process for identifying and managing these climate-related risks, including their integration into existing risk management processes, should be disclosed under the risk management core element.
- **Ensuring that TCFD disclosures adequately link financial and non-financial information in the mainstream report** – This was found to be a major weakness in the second year of TCFD disclosures according to the TCFD’s *2019 Status Report*.<sup>19</sup> These linkages can be both qualitative and quantitative. This also emphasises the importance of tailoring the TCFD disclosures to the business and sector and making the crucial connections between financial planning, performance and strategy to climate-related risks and opportunities.

<sup>19</sup> TCFD, 2019 Status Report (2019).

- **Clearly addressing the materiality of climate-related impacts** – While companies acknowledged exposure to risks related to climate, as well as strategies to mitigate such risks, disclosures often did not directly explain the process by which companies assessed and determined the materiality of such risks to their business. In some cases, the metrics and targets reported did not relate directly to the risks or opportunities identified by the company in its strategy and risk management disclosures, leading to uncertainty about what risks the company viewed as material.
- **Recognising that resilience of the organisational strategy to different future climate states is at the heart of the TCFD recommendations** – Overall, we found limited discussion of the resilience of the organisational strategy. Scenario analysis can be helpful to inform this assessment but should not be the end focus for disclosures. Moreover, for scenario analysis, it is possible to begin with certain asset classes, geographies or aspects of a portfolio, and expand over time.
- **Making more complete and authentic TCFD disclosures** – We have not found any one company with full TCFD disclosures, which we note reflects the current stage of understanding and reporting practice. However, companies should be encouraged to make as many of the 11 recommended disclosures as they can to tell their story of how they are effectively managing climate-related risks and opportunities.
- **Lack of comparability can limit the decision-usefulness of disclosures** – Beyond Scope 1 and 2 emissions, climate-related performance metrics often differed from company to company, even within industries. Within industries, even where the same metric was chosen, they were often normalised on different bases. Such lack of comparability limits the effectiveness of the reported data for investors seeking to understand and compare performance.

## List of Annual Reports Referenced in this Handbook

Company	Geography	TCFD Sector	Report title
Barrick	Canada	Materials and Buildings	The New Value Champion: Annual Report 2018
BASF	Germany	Materials and Buildings	BASF Report 2018
CEMEX	Mexico	Materials and Buildings	Building a Stronger Cemex: 2018 Integrated Report
China Telecom	China	Other	Intelligent Transformation to Co-share Value of Innovation: 2018 Annual Report
Commonwealth Bank of Australia	Australia	Banks	Being a simpler, better bank: Annual Report 2018
Danone	France	Agriculture, Food and Forest Products	Registration Document 2018
EDF	France	Energy	Reference Document 2018
Eni	Italy	Energy	Annual Report 2018
Fujitsu	Japan	Other	Integrated Report 2018
Galp	EU (Portugal)	Energy	Energective – A new perspective on energy: Integrated Report 2018
Gold Fields	South Africa	Materials and Buildings	Integrated Annual Report 2018
HSBC	UK	Banks	Annual Report and Accounts 2018
Kellogg Company	USA	Agriculture, Food and Forest Products	2018 Annual Report: SEC Form 10-K and Supplemental Information
Lloyds Banking Group	UK	Banks	Helping Britain Prosper: Annual Report and Accounts 2018
Prudential	UK	Insurance Companies	We do life: Annual Report 2018
Royal Bank of Canada	Canada	Banks	Annual Report 2018
TATA Motors	India	Transportation	74th Annual Report (Integrated) 2018-19
Total	France	Energy	Registration Document 2018
Unilever	UK and Netherlands	Other	Making Sustainable Living Commonplace: Unilever Annual Report and Accounts 2018
Wipro	India	Other	Outperform with Wipro: Annual Report 2018-19



## References and Further Reading

Users of this handbook may also find value in the following CDSB, SASB and TCFD materials, as well as the many other relevant resources available from the online TCFD Knowledge Hub.

TCFD, *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures*  
<https://www.fsb-tcfid.org/wp-content/uploads/2017/06/FINAL-TCFD-Report-062817.pdf>

CDSB, *Framework for Reporting Environmental Information and Natural Capital*  
[https://www.cdsb.net/sites/default/files/cdsb\\_framework\\_2.1.pdf](https://www.cdsb.net/sites/default/files/cdsb_framework_2.1.pdf)

SASB Standards  
<https://www.sasb.org/standards-overview/>

CDSB & SASB, *TCFD Implementation Guide*  
[https://www.cdsb.net/sites/default/files/sasb\\_cdsb-tcfid-implementation-guide-a4-size-cdsb.pdf](https://www.cdsb.net/sites/default/files/sasb_cdsb-tcfid-implementation-guide-a4-size-cdsb.pdf)

SASB, *Climate Risk Technical Bulletin*  
<https://library.sasb.org/climate-risk-technical-bulletin/>

CDSB, *Uncharted Waters: How can companies use financial accounting standards to deliver on the TCFD's recommendations*  
[https://www.cdsb.net/sites/default/files/uncharted\\_waters\\_final.pdf](https://www.cdsb.net/sites/default/files/uncharted_waters_final.pdf)

CDSB & CDP, *First Steps: Corporate climate and environmental disclosure under the EU Non-Financial Reporting Directive*  
[https://www.cdsb.net/sites/default/files/cdsb\\_nfrd\\_first\\_steps\\_2018.pdf](https://www.cdsb.net/sites/default/files/cdsb_nfrd_first_steps_2018.pdf)

CDSB & CDP, *First steps on climate-related financial disclosures in Europe: A snapshot of 30 companies' initial disclosures*  
[https://www.cdsb.net/sites/default/files/supplementary\\_note\\_2\\_tcfid\\_disclosures.pdf](https://www.cdsb.net/sites/default/files/supplementary_note_2_tcfid_disclosures.pdf)

CDSB, supported by ACCA, Tullus Matter and Radley Yeldar, *Communicating climate change in mainstream reports: A guide to using CDSB's Reporting Framework Version 1.0*  
[https://www.cdsb.net/sites/cdsbnet/files/cdsbframeworkguidev1\\_0\\_2.pdf](https://www.cdsb.net/sites/cdsbnet/files/cdsbframeworkguidev1_0_2.pdf)

CDP, *Climate Change Questionnaire and Guidance*  
<https://www.cdp.net/en/guidance/guidance-for-companies>

CDP, *CDP Technical Note on the TCFD. Disclosing in line with the TCFD's Recommendations in 2019*  
[https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/guidance\\_docs/pdfs/000/001/429/original/CDP-TCFD-technical-note.pdf?1512736184](https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/guidance_docs/pdfs/000/001/429/original/CDP-TCFD-technical-note.pdf?1512736184)

CDP, *CDP Climate Change Report 2019: Major Risk or Rosy Opportunity - Are companies ready for climate change?*  
<https://www.cdp.net/en/research/global-reports/global-climate-change-report-2018/climate-report-risks-and-opportunities>

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