Climate changes your business.

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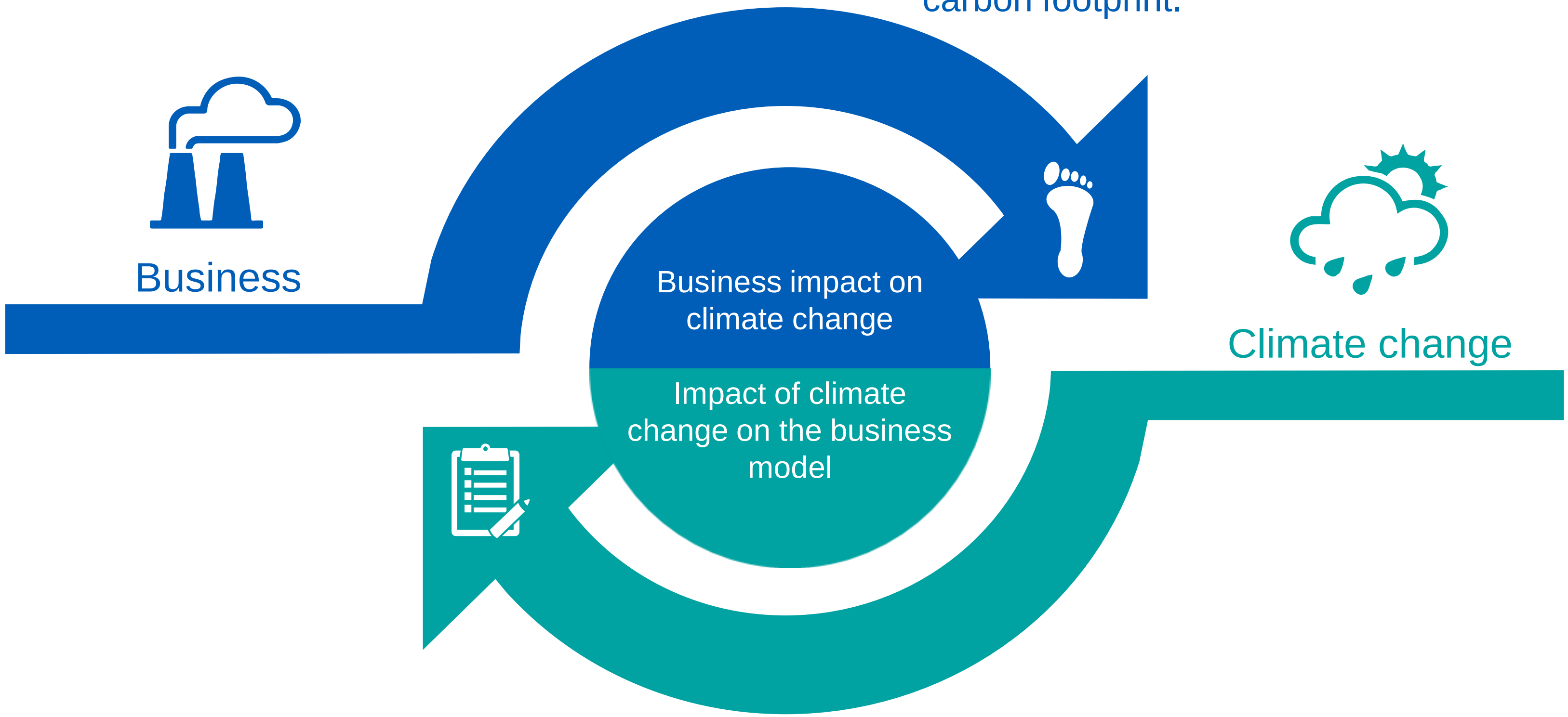
Climate-related financial risks and opportunities

Climate-related reporting today:
Focus on business models' carbon footprint.



Reporting promoted by Task Force on Climate-related Financial Disclosures (TCFD):
Focus on financial impact of climate change on business models.

The Task force on Climate-related Financial Disclosures

RISKS

Transition	**Policy and Legal** – Carbon pricing and reporting obligations – Mandates on and regulation of existing products and services – Exposure to litigation **Technology** – Substitution of existing products and services with lower emissions options – Unsuccessful investment in new technologies **Market** – Changing customer behavior – Uncertainty in market signals – Increased cost of raw materials **Reputation** – Shift in consumer preferences – Increased stakeholder concern/negative feedback – Stigmatization of sector
Physical	– Acute: Extreme weather events – Chronic: Changing weather patterns and rising mean temperature and sea levels

OPPORTUNITIES

Resource Efficiency	– Use of more efficient modes of transport and production and distribution processes – Use of recycling – Move to more efficient buildings – Reduced water usage and consumption
Energy Source	– Use of lower-emission sources of energy – Use of supportive policy incentives – Use of new technologies – Participation in carbon market
Products & Services	– Development and/or expansion of low emission goods and services – Development of climate adaptation and insurance risk solutions – Development of new products or services through R&D and innovation
Markets	– Access to new markets – Use of public-sector incentives – Access to new assets and locations needing insurance coverage
Resilience	– Participation in renewable energy programs and adoption of energy-efficiency measures – Resource substitutes/diversification

Strategic Planning
Risk Management

Financial Impact

Revenues
Expenditures

Income Statement

Cash Flow Statement

Balance Sheet

Assets & Liabilities
Capital & Financing

Are companies at risk or have an opportunity?

Aegon: may have to pay higher settlement amounts for indemnity insurance and benefit from life insurance payments not settled

Ahold Delhaize: faces supply chain risks and can see changing consumer demand

Signify: can benefit from the energy transition with its light solutions, but could be vulnerable for energy transition, water issues and weather issues at its production locations

Gemalto: can face physical risks for its data centers as well as risks due to energy transition

Akzo Nobel: faces risks of carbon pricing/capping, resourcing, physical risks in production

Arcelor Mittal: is prone to carbon pricing/capping and potential litigation and changing market demand (automotive)

KPN: can gain from the need to reduce travel with its communication solutions, but may face physical risks at its data centers

Unilever: faces supply chain risks for its products as well as a risk of changing market conditions

Heineken: faces physical risks of (clean) water supply for some of its breweries and may see changing consumer behaviour and markets due to migration

ASML: can benefit from further digitalization to tackle carbon emissions from transportation and may face resource risks

Philips: can benefit from increasing health issues due to climate change and faces risks with regard to the energy use of their products

Galapagos: may capture market opportunities for its pharma products due to changing population health

Unibail-Rodamco: may be vulnerable for weather risks and changing markets

Randstad Holding: can benefit from new workers' skills needed, but may face risks from changing labour markets due to energy transition

Royal Dutch Shell: can benefit from the energy transition and faces regulation risks and a risk of 'stranded assets'

ING Group: faces risks due to loans to and investments in sectors at risk (including fossil fuel energy) and has opportunities to enter new markets (e.g. energy efficiency, renewable energy)

DSM: faces a risk of carbon pricing and energy transition risks, but can benefit from providing energy-efficient bio-based solutions

Vopak: has to prepare itself for the energy transition and is subject to physical risk due to the location of its premises

Is climate change a real legal risk?

ClientEarth

Client Earth – Balfour Beatty

On 7 September 2018, we intend to submit a complaint to the Financial Reporting Council (**FRC**) in relation to Balfour Beatty's Annual Report (**Complaint**). In the Complaint (draft included with this letter), we submit that by failing to refer to climate change or the low carbon transition in relevant sections of its Annual Report, Balfour Beatty has failed to provide an adequate description of:

- the principal risks and uncertainties facing its business;[1]
- the main trends and factors likely to affect the future development, performance and position of its business;[2] and
- the long term viability and prospects of the company in light of these risks and trends.[3]

Risk identification (Intesa Sanpaolo) & management model (Eni)

Identify and manage climate-related risks and opportunities

Indirect risks for the Intesa Sanpaolo Group

Potential risks	Timeframe*	Potential impact	Actions
Uncertainty surrounding environmental regulations	Short term	Negative impact on the possibility of implementing new products and services	Active collaboration with policy makers to highlight the need for stable and clear regulations and to be kept up-to-date on changes underway
Regulations and incentives on renewable energy	Short term	Negative impact on loans to customers that want to invest in renewable energy sources, due to an Italian scenario characterized by uncertainty and a sharp reduction in public incentives	Offering of advisory services to customers on new regulations and incentives for the energy efficiency sectors
Introduction of new rules related to waste reduction or emission reduction	Short term	Increased costs for corporate customers	Study of possible scenarios for Intesa Sanpaolo's customers and creation of financial solutions to prevent excessive costs
Extreme atmospheric events	Short/medium/long term	Financial implications related to the default risk of businesses seriously damaged by extreme atmospheric events	Suspension of repayments of loans and allocation of specific funding at special conditions in favour of damaged customers
Fluctuation of socio-economic conditions	Medium/long term	Reduction of customers' economic capacity and subsequent difficulty in repaying debts	Implementation of a Disaster events ceiling for the reconstruction of damaged properties and suspension of payments in the case of major natural events

* 0-3 years short term; 3-6 years medium term; over 6 years long term.

Europe: Intesa Sanpaolo Group, 2017 Consolidated Non-Financial Statement, p. 55

The TCFD recommends that companies disclose processes for…

A. Identifying and assessing climate-related risks;
B. Managing climate-related risks;
C. Integration in overall risk management.

Eni's integrated risk management model, Eni, Path to Decarbonization 2017

Integrated climate risk management model

The process for managing the risks and opportunities related to climate change is a part of the Integrated Risk Management (IRM) Model developed by Eni to ensure that management takes risk-informed decisions, by taking into full account current and potential future risks, including medium and long-term ones, in the frame of an integrated and comprehensive approach. The IRM Model also aims to raise awareness, at all levels, that appropriate risk assessment and management can effect on the achievement of company objectives and values.

RISK ASSESSMENT IN ENI MODEL

→ It is carried out by adopting metrics that take into account the potential quantitative impacts (i.e. economic, financial or operational) as well as the potential qualitative impacts (i.e. on the environment, health and safety, social, reputation).

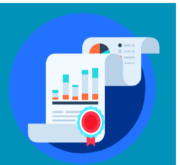
→ It is based on risk prioritization with the use of multi-dimensional matrices so that the level of each risk is obtained by combining clusters of probability of occurrence and clusters of impact.

→ It includes assessments at inherent level and at residual level, respectively before and after the mitigation actions are implemented.

Sources: *Recommendations of the Task Force on Climate-related Financial Disclosures,* TCFD, June 2017.
Climate-related financial disclosure by oil and gas companies: implementing the TCFD recommendations, WBCSD, July 2018

Allianz' BoM oversees risk management including climate risks

Define governance around material risks and opportunities



The TCFD recommends that companies disclose…

A. The board's oversight of climate-related risks and opportunities;

B. Management's role in assessing and managing those risks.

ALLIANZ'S CLIMATE-RELATED FINANCIAL DISCLOSURE

The Allianz Group has had a **Climate Change Strategy** in place since 2005, which steers our business and is regularly updated. In our corporate reporting on climate change, we are applying the recommendations developed by the G20 Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD). […]

GOVERNANCE

Within the Allianz Group **diverse committees steer sustainability topics**, including climate change, within their scope of influence. The **Group ESG Board** is the highest governing body for sustainability issues, such as climate change, and oversees the Allianz Group Climate Change Strategy. It consists of three members of the Allianz SE Board of Management (BoM), meets quarterly, and informs the BoM on relevant topics and activities at least twice a year.

It also reviews and recommends policy proposals for consideration by the BoM and/or relevant Board committees. **The Group Finance and Risk Committee (GFRC), consisting of members of the BoM, oversees risk management and monitoring, including sustainability and climate risks, and serves as an escalation point based on analysis and deliberations within the Group ESG Board**. Risks identified as emerging and/or significant are addressed either in the GFRC or the Group Underwriting Committee (GUC). The GUC consists of Members of the BoM, the Group Chief Risk Officer, Chief Underwriting Officers, and other executives of the Group. It monitors underwriting business, as well as its risk management and strategy and develops an underwriting policy.

Source: *Allianz Group Sustainability Report 2017* , Allianz Group, 2018.

Equinor performs a portfolio stress test and calculates effects of CO_2 pricing

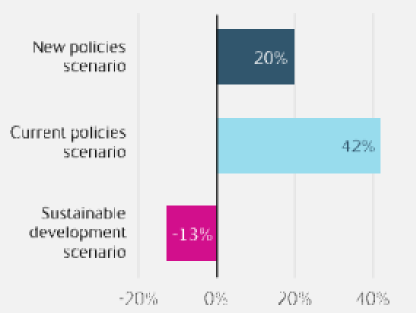
Develop resilience strategies for business portfolio

The TCFD recommends that companies disclose…

A. Identified short, medium and long-term risks and opportunities;
B. The impact of risks and opportunities to the business, strategy and financial planning;
C. The resilience of the strategy, taking into consideration different scenarios.

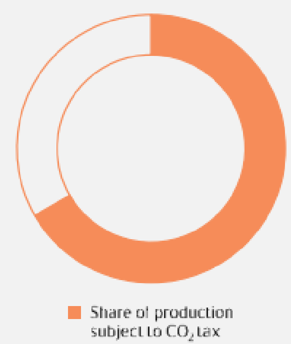
2017 Portfolio stress test

NPV impact on base case



- Statoil's portfolio value is robust to stress tests.[1]

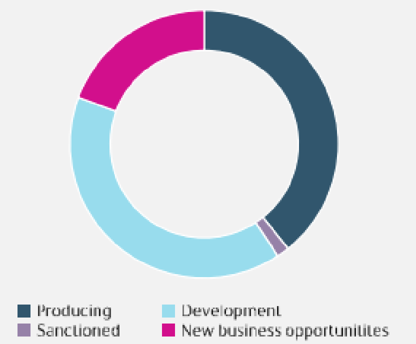
CO_2 costs included in all investment decisions



- Using a minimum CO_2 price of 50 USD per tonne
- 2/3 of existing production subject to CO_2 tax

Capex flexibility

Forecast investments in 2025 by maturity, share of total



- 60% of forecast capex in 2025 related to activities not yet sanctioned

Source: *Climate-related financial disclosure by oil and gas companies: implementing the TCFD recommendations*, WBCSD, July 2018

BHP Billiton reports Scope 1,2,3 emissions to assess performance

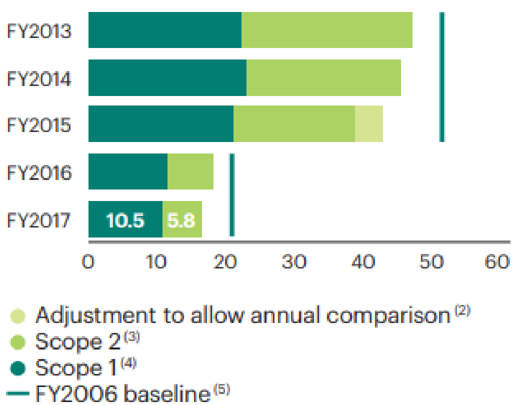
Define metrics and targets to measure performance on relevant climate-related risks

The TCFD recommends that companies disclose…

A. Which metrics are used to assess climate-related risks and opportunities;
B. Scope 1, 2, and 3 greenhouse gas emissions and their related risks;
C. Targets to manage climate-related risks and performance against those targets.

Greenhouse gas emissions [1]

million tonnes of CO_2-e



		2017	2016 [1]
Emissions			
GHG – Scope 1	millions of tonnes CO_2-e	**10.5**	11.3
GHG – Scope 2	millions of tonnes CO_2-e	**5.8**	6.7
GHG – Scope 1 & 2 [5]	millions of tonnes CO_2-e	**16.3**	18.0
GHG – Scope 3 – Use of sold products [6]	millions of tonnes CO_2-e	**254.0**	284.6
GHG – Scope 3 – Purchased goods and services (inc capital goods)	millions of tonnes CO_2-e	**7.7**	7.4
GHG – Scope 3 – Fuel and energy related activities	millions of tonnes CO_2-e	**1.4**	1.6
GHG – Scope 3 – Upstream transportation and distribution	millions of tonnes CO_2-e	**3.2**	5.1
GHG – Scope 3 – Downstream transportation and distribution	millions of tonnes CO_2-e	**2.8**	7.5
GHG – Scope 3 – Business travel	millions of tonnes CO_2-e	**0.1**	0.1
GHG – Scope 3 – Employee commuting in operations	millions of tonnes CO_2-e	**<0.1**	0.1
GHG – Scope 3 – Processing of sold products	millions of tonnes CO_2-e	**313.7**	309.1
GHG – Scope 3 – Investments	millions of tonnes CO_2-e	**1.9**	2.5
GHG – Scope 3 – Total [7]	millions of tonnes CO_2-e	**584.9**	618.0

Source: *Sustainability report 2017*, BHP Billiton, 2018

First year's status of implementation

The majority disclose some climate-related information.

The majority of companies disclosed information aligned with at least one recommended disclosure, usually in sustainability reports.

Financial implications are often not disclosed.

While many companies disclose climate-related financial information, few disclose the financial impact of climate change on the company

Information on strategy resilience under climate-related scenarios is limited.

The majority of companies disclosed information aligned with at least one recommended disclosure, usually in sustainability reports.

Disclosures vary across industries and regions.

Companies' areas of focus in terms of climate-related financial disclosures vary significantly. For example, a higher percentage of non-financial companies reported information on their climate-related metrics and targets compared to financial companies, but a higher percentage of financial companies indicated their enterprise risk management process included climate-related risk.

Disclosures are often made in multiple reports.

Companies are often provided information aligned with the TCFD recommendations in multiple reports– financial filings, annual reports, and sustainability reports.

Source: TCFD: 2018 Status Report Summary Presentation

Thank you

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