TCFD Reference Table

Task Force on Climate-related Financial Disclosures

thyssenkrupp

Our approach to climate change and the TCFD recommendations

The Paris Climate Agreement from 2015 has been an important landmark towards keeping the increase of global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C.

Since many years we systematically drive the energy and climate efficiency of our production and aim at developing efficient solutions to reduce greenhouse gas emissions together with our customers. Our climate action efforts have been externally acknowledged on a regular basis. For the sixth year in a row, thyssenkrupp has been awarded with the CDP A-List in 2021.

In 2019, thyssenkrupp has taken the next step and embarked on an ambitious transformation pathway: we are committed to achieve net zero emissions by 2050 and to reduce Scope 1 and 2 emissions by 30% until 2030 and Scope 3 emissions, with focus on the use phase of our products, by 16% respectively. In 2019, the Science Based Targets initiative (SBTi) has assessed our mid-term targets carefully based on the latest climate science and officially confirmed that they are in line with the goals of the Paris Agreement. To systemize our efforts in pursuing our climate targets, we have initiated our group wide Climate Action Program for Sustainable Solutions (CAPS).

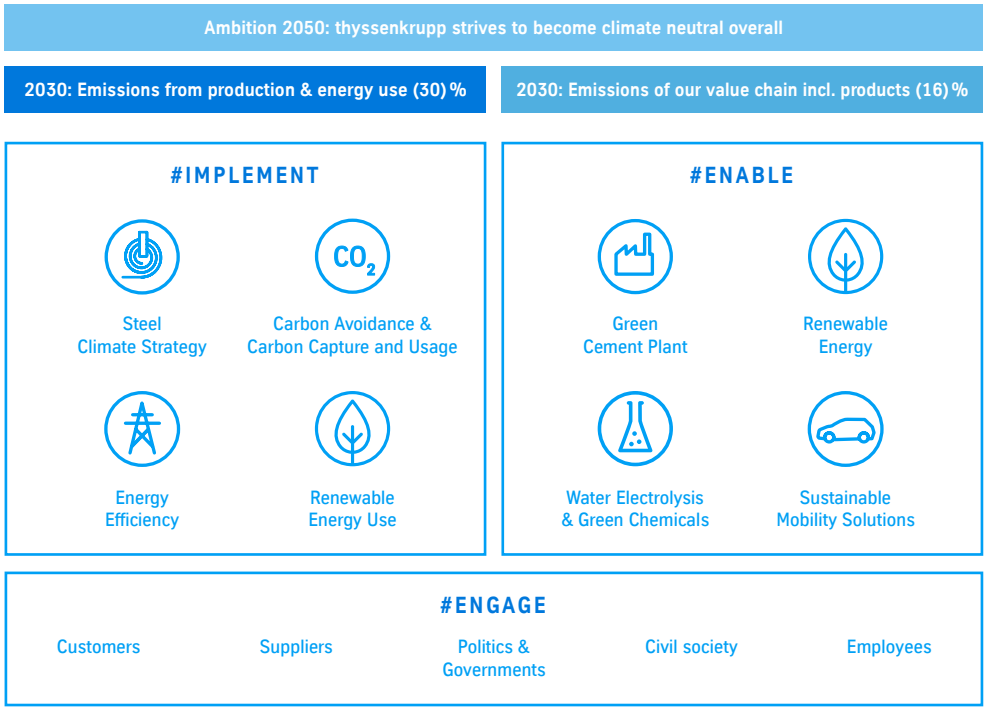
Within its three pillars #IMPLEMENT, #ENABLE and #ENGAGE we bundle our activities to realize synergies most effectively.

Recent developments in climate science, policy and disclosure requirements are gaining speed rapidly. For instance, the EU aims to raise its 2030 greenhouse gas emissions reduction target to at least 55% compared to 1990.

In 2021, the German Government approved the Climate Change Act aimed at achieving greenhouse gas neutrality by 2045 and at reducing emissions by 65 percent of 1990 levels by 2030. In view of the current debate and the German Climate Change Act we are reviewing whether we can become climate-neutral at an earlier date.

We recognize that achieving these targets requires bold actions and systemic economic change, and that we, as a company are part of this transformation. It entails risks to be monitored and managed as well as promising technological opportunities. We believe that thyssenkrupp is well prepared to meet these challenges. Therefore, we follow the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) with great interest and will continuously aim to implement further aspects of the TCFD recommendations in the future.

THYSSENKRUPP CLIMATE ACTION PROGRAM FOR SUSTAINABLE SOLUTIONS (CAPS)



Category	Description	Recommended disclosures	thyssenkrupp approach	Annual Report 20/21	CDP Reporting	Website
Governance	Disclose the organization's governance around climate related risks and opportunities.	a) Describe the board's oversight of climate-related risks and opportunities.	The board exercises its oversight of climate-related issues in the Sustainability Committee. The Sustainability Committee meets annually and decides on thyssenkrupp's overall climate strategy, which manifests itself in our Climate Action Program for Sustainable Solutions (CAPS) and accompanying Science-Based Targets (SBTs). The Sustainability Committee monitors the progress towards both, our Indirect Financial Targets as well as climate targets as defined in CAPS and also assesses, monitors and manages climate-related risks and opportunities. To reflect our climate targets, in fiscal year 2021 / 2022, emissions intensity excluding the steel business and, with reference to the steel business, the volume of balance sheet CO_2-reduced steel produced will be integrated into long-term compensation. This points out the overall responsibility and accountability of the executive board with regard to our climate strategy.	Page 5-12 Page 33-35	C1.1 a, C1.1 b	Sustainability strategy and targets
		b) Describe management's role in assessing and managing climate-related risks and opportunities.	Two institutions are at the core of thyssenkrupp sustainability efforts – the Sustainability Committee and the Sustainability Council. At thyssenkrupp climate change is a top priority and a strategic element of our transformation to a high-performing group of companies. The Chairwoman of the Executive Board bears responsibility for sustainability and climate change. The Sustainability Committee is composed of the Executive Board of the group, the CEOs of the segments, the heads of the corporate centers and is prepared by the department of Technology, Innovation & Sustainability. The Sustainability Committee lies at the core of thyssenkrupp's organizational structure and brings together all major decision makers of the group. The Sustainability Council, made up of representatives from the group functions, service lines and the segments, is responsible for implementing central processes and coordinating data collection and initiatives as part of thyssenkrupp's sustainability efforts.	Page 5-12 Page 33-35	C1.2, C1.2a	Sustainability strategy and targets
Strategy	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Climate-related risks According to TCFD, climate-related risks can be classified into two major categories: risks related to the transition to a lower-carbon economy and risks related to the physical impacts of climate change. thyssenkrupp's segment Steel Europe is Germany's largest flat steel manufacturer and its activities are subject to the Greenhouse Gas Emissions Trading Act and thus to the EU Emissions Trading Scheme (EU ETS), which is related to transitional risks. The revised EU ETS Directive, which will apply for the period of 2021-2030, aims at decreasing the overall number of emission allowances by an annual rate of 2.2%. Our experts expect prices for allowances to vary significantly in this period, which implies uncertainty concerning the actual impact on our business. Steel Europe has steadily and significantly reduced emissions in steel production in recent years, bringing processes close to their theoretical optimum. As a next step, we are committed to produce our steel climate-neutrally by 2045 and to reduce our Scope 1 and 2 emissions by 30% until 2030. This means that fundamental technological changes will be necessary to achieve our targets. For this we are pursuing an open approach and focusing on two routes: the avoidance of CO_2 through the use of hydrogen ("Carbon Direct Avoidance", CDA) and the use of CO_2 produced in steelmaking ("Carbon Capture and Usage", CCU). Physical risks are considered in our risk management system, which explicitly includes environmental and climate risks. In the frame of physical risks there are considered e.g. single flood events or dynamic water levels, which might impact the supply chains of operations which rely on different modes of transport, including shipping activities. Relevant group companies have developed countermeasures to mitigate such potential risks. Of course, there is currently still uncertainty whether these events are related to long-term physical climate change or whether they are one-time events or dominated by other effects.	Page 115-141	C2.1a, C2.3, C2.3a, C2.4, C2.4a	Climate strategy and targets thyssenkrupp Steel climate strategy Risk Report 6 breakthrough technologies for our climate The Ruhr region – A new Hydrogen Valley Hydrogen from water electrolysis – solutions for sustainability Green ammonia: contribution to tackle climate change

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Strategy	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Climate-related opportunities We expect that our customers' demand for more greenhouse gas efficient products will constantly grow. Being able to accommodate this demand with solutions tailored to the requirements of our customers e.g. to meet their specific emission reduction targets, implies substantive climate-related business opportunities: opening up new markets and portfolio segments as well as growth in existing markets for green technologies. Therefore, we strive to develop and implement climate-friendly solutions for our most greenhouse gas intensive customer sectors especially cement, steel and automotive. For instance, in the steel and cement sector, the application potential for our innovative solutions for Carbon Capture and Usage, such as Carbon2Chem and Oxyfuel, is significant. They enable our customers to reduce emissions by capturing CO_2 from CO_2-intensive processes and using it for the production of base chemicals, thereby replacing fossil feedstock. Furthermore, our solutions contribute to the required transformation towards an economy powered to a high extent by renewable energy carriers like hydrogen, methanol and ammonia. Case Study Green hydrogen Green hydrogen is gaining in importance worldwide as an energy carrier and CO_2-free feedstock for the chemical industry. As a result, demand is rising for industrial electrolysis plants that can produce green hydrogen cost-efficiently. Based on our robust and efficient chlor-alkali technologies we have developed our own advanced alkaline water electrolysis technology. thyssenkrupp Uhde Chlorine Engineers has significantly expanded its manufacturing capacities for such electrolysis plants and can now per year produce electrolysis cells with a total capacity of up to one gigawatt, together with its strategic supplier and joint venture partner De Nora. These production capacities can be extended efficiently if required. Green hydrogen, produced by electrolysis using renewable electricity, is essential for a successful energy transition and for meeting international climate targets. Hydrogen is not only a clean energy carrier and fuel; it is also a CO_2-neutral feedstock for the production of green chemicals. As a specialist in the engineering and construction of chemical plants, thyssenkrupp can already realize entire value chains, from the large-scale production of hydrogen to the subsequent manufacture of sustainable base chemicals such as ammonia and methanol. In corresponding industrial processes, this makes it possible to dispense with fossil raw materials and reduce CO_2 emissions directly at source.	Page 115-141	C2.1a, C2.3, C2.3a, C2.4, C2.4a	Green supply chains: Saving CO_2 with digitization Slewing bearings – in the service of wind energy Bye-bye single-use plastic! The quiet revolution in cement production
		b) Describe the impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning.	Climate-related risks and opportunities influence thyssenkrupp's strategy and the development of products and solutions for our customers: thyssenkrupp addresses risks relating to emerging greenhouse gas emissions regulation as well as opportunities relating to the increasing demand for climate-friendly products with its ambitious climate strategy. As an initial target, thyssenkrupp is aiming to reduce emissions from its own production and processes and from the purchase of energy by 30% versus the base year 2018 by 2030. For our steel operations, thyssenkrupp has announced a detailed timeline for the required fundamental technological changes for the production of climate-neutral steel by the use of hydrogen. Many of thyssenkrupp's customers are active in carbon intensive industries and demand innovative and low carbon technologies. Hence thyssenkrupp's businesses are influenced in aspects of its strategy, supply chain, its investment behavior in R&D and furthermore in its overarching operations. thyssenkrupp's financial planning considers climate-related risks & opportunities. For instance, energy efficiency is part of our companies financial performance improvement program. Individual energy efficiency measures are planned bottom up at our group companies and documented in the same IT tool as financial savings. This shows that efficiency measures can also be considered from climate protection as well as a cost perspective.	Page 115-141	C2.3a, C2.4a, C3.1, C3.1b, C3.3, C3.4	Please see under Strategy a)

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Strategy	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	thyssenkrupp is committed to the goals of the Paris agreement and aims to become climate-neutral by 2050. To achieve this, the company has set two binding medium-term targets which have both been validated by the SBTi: Compared with the base year 2018, emissions from production and sourced energy (Scope 1 and 2 greenhouse gas emissions) are to be cut by 30% by 2030. This target is in line with an emission reduction pathway of "well below two degrees Celsius". In addition, emissions from the use of products and technologies by customers (Scope 3 greenhouse gas emissions) are to be reduced by 16% compared with the base year 2017. Both targets are considered ambitious by the SBTi, especially so as the company operates within hard-to-abate sectors. All our businesses develop roadmaps and action plans for meeting these targets. In view of the current debate and the German Climate Change Act we are currently reviewing whether we can become climate-neutral at an earlier date. thyssenkrupp is experienced in conducting scenario analysis to inform its strategy. Climate-related scenarios specifically are approached from two different angles: Firstly, technology lever scenarios for net-zero pathways in thyssenkrupp's key sectors support us in generating insights on possible levers in different steps of the industrial value chain, technology readiness, greenhouse gas emissions reduction potentials, also in view of the Paris Agreement, and current implementation barriers. This approach focuses on the future from a today's situation working forward. Secondly, foresight scenarios for energy and greenhouse gas emissions systems support us in gaining insights on alternative futures. This approach looks at diverse thinkable far away futures and then works backward. In addition, thyssenkrupp is currently piloting scenario analysis methodology as recommended by the TCFD framework.	Page 5-12 Page 92-96	C3.2, C3.2a	Please see under Strategy a)
Risk Manage-ment	Disclose how the organization identifies, assesses, and manages climate-related risks.	a) Describe the organization's processes for identifying and assessing climate-related risks.	Our risk management encompasses measures for a systematic and transparent management approach. With its integral link to planning and reporting processes in controlling, risk management goes far beyond the early identification of risks required by law. thyssenkrupp defines risks as events or developments that reduce our ability to achieve the group's forecasts and targets. Efficient, forward-looking risk management also serves the interests of capital providers and other stakeholders. The value chain stages covered in this process are direct operations, upstream and downstream. The determination which risks and opportunities could have a substantive financial or strategic impact consists of the following steps: Identification: At company level, risks can be identified based on commonly defined risk scenarios and within the regularly conducted risk inventory, which is done via the group wide risk management system. Group companies have dedicated risk managers responsible for assessing, tracking and reporting risks. They are supported by various processes and guidelines. A risk catalogue defines the scope of risks including environmental and climate risks related to environmental licenses, regulations, natural disasters and others. Assessment: The size and scope of risks are assessed in risk classes, which are based on the probability of occurrence and the impact of the total net damage in the planning period. Climate-related risks are assessed following the same approach as all other risks. The process to determine the significance of climate-related risks is subject to the permanent exchange of the risks officers and risk managers with internal and external experts. The reporting of identified and assessed risks is subject to the Risk and Internal Control Committee, the Executive Board and the Supervisory Board Audit Committee on a quarterly basis. Regarding opportunities, the segments describe bands for their earnings and liquidity targets related to the following fiscal year. For the inclusion of strategic aspects such as relevant market and technology trends – which in some cases remain relevant far beyond the forecast period – management conducts a detailed evaluation and assessment of the opportunities. In the subsequent monthly reports, the segments update these opportunities with corresponding earnings and liquidity projections.	Page 115-141	C2.1, C2.2, C2.2a	Risk Report

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Risk Management	Disclose how the organization identifies, assesses, and manages climate-related risks.	b) Describe the organization's processes for managing climate-related risks.	The Risk and Internal Control Committee as well as the Audit Committee decide on counteractive measures and required provision for the risk. Strategic opportunities from climate change, such as the development of innovative materials or completely new business models, are dealt within the regular strategic exchange between the businesses and the Executive Board and also in the Sustainability Committee.	Page 92-94 Page 115-141	C2.1, C2.2	Risk Report
		c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Climate-related risks are considered in thyssenkrupp's planning and reporting processes in risk management, for details please see a).		C2.1, C2.2	Risk Report
Metrics and Targets	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	a) Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.	Different metrics are employed to assess climate-related risks and opportunities within thyssenkrupp group on an overarching corporate level and on different levels in our businesses. Exemplary metrics are related to our Group's Indirect Financial Targets as well as to further KPIs related to the topic of climate, energy and environment: – Annual energy efficiency gains (in GWh) – Sites certified in accordance with ISO 50001 (in % of total energy consumption) – Sites certified in accordance with ISO 14001 (in % of total workforce) – Adjusted R&D intensity (in %) – Total net energy consumption (in TWh) To reflect our climate targets, in fiscal year 2021 / 2022, emissions intensity excluding the steel business and, with reference to the steel business, the volume of balance sheet CO_2-reduced steel produced will be integrated into long-term compensation.	Page 33-34 Page 92-94	C-ST6.14	Sustainability strategy and targets Environment and energy
		b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	FY 2020/2021: Scope 1: 23.2 Mio. t CO_2e Scope 2: 1.3 Mio. t CO_2e Scope 3 (fuel and energy related activities that are not included in Scope 1 or 2): 4.0 Mio. t CO_2e For details on our Total Carbon Footprint including Scope 3 categories, please see CDP response for a detailed breakdown.	Page 92-94	C6.1, C6.3, C6.5	Environment and energy
		c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	thyssenkrupp is taking the next step in the further development of the climate strategy and setting ambitious goals: thyssenkrupp aims to be climate neutral by 2050. As an important milestone towards climate neutrality, thyssenkrupp has also defined ambitious mid-term goals up to 2030: by then thyssenkrupp wants to reduce the total of our direct emissions (Scope 1) and emissions from energy procurement (Scope 2) by 30% compared to 2018. Indirect emissions in the value chain – especially from the use of thyssenkrupp products – should decrease by at least 16%. In view of the current debate and the German Climate Change Act we are currently reviewing whether we can become climate-neutral at an earlier date. The implementation of the climate goals is carried out through the group program CAPS (Climate Action Program for Sustainable Solutions), in which the clusters #IMPLEMENT, #ENABLE and #ENGAGE bundle activities and create synergies. All our businesses develop roadmaps and action plans for meeting these targets. Our climate targets will be integrated into long-term compensation in fiscal year 2021 / 2022, for details please see a).	Page 33-34 Page 92-94	C4.1, C4.1a, C4.2, C4.2c	Climate strategy and targets

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