

TCFD REPORT 2021

OUR REPORTING ACCORDING TO THE
RECOMMENDATIONS OF THE TASK FORCE ON
CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)



EDITORIAL

DEAR STAKEHOLDERS,

The climate crisis is one of the most pressing challenges of our time. As the consequences become more and more visible, calls for urgent climate action become louder, and demanding that the public, policy makers and industry join forces. Covestro is determined to pioneer a sustainable future by taking a lead in building a better, more sustainable industry, economy, and society. In line with our vision to become fully circular and our new corporate Sustainable Future strategy, we want to do our part to achieve a circular and climate-neutral economy.

Since the founding of Covestro in 2015, we have been constantly working to improve our climate and environmental footprint, and oriented our strategy to drive sustainable value. In 2020, e.g., Covestro introduced its vision to become fully circular. Our new corporate Sustainable Future strategy as implemented in 2021 sets the course for realizing our vision including the transition to net zero within our business. The relevance we ascribe to climate action was further made transparent in the year 2021 when we received our first CDP climate rating with an A- (leader) score. In addition, in the year 2021, we delivered early on our goal to reduce specific greenhouse gas emissions by 50% by the year 2025 compared to the year 2005.

It is now time to further live up to our high ambition, and we are proud to announce our bold new climate goals and our long-term aim to achieve climate neutrality: In line with contributing to meet the 1.5 degree goal under the Paris Agreement, we are determined to reach net zero Scope 1 and Scope 2 greenhouse gas emissions by the year 2035.

In the long run, we aim for 100% renewable energy sources, 100% alternative raw materials, and a sustainable treatment of products at the end of life to secure consistent reduction in Scope 3 emissions and to become fully circular. For the year 2023, we intend to back this ambition with concrete Scope 3 targets.

Our first report according to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) is an extension of our comprehensive non-financial reporting and provides even greater transparency on how we manage climate-related risks and opportunities and contribute to the global transition to net zero within our business. We are convinced that developing more sustainable, circular, and climate-neutral products will help our customers in key sectors such as mobility, construction, nutrition, and digitalization to address global challenges, help to meet the UN Sustainable Development Goals, and ultimately realize the circular and climate-neutral economy we all aim for.



Lynette Chung,
Chief Sustainability Officer

About This Report

The Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board for the purpose of developing a uniform framework for reporting on climate-related opportunities and risks. The focus is on disclosing financial risks that companies face due to climate change and the strategies they employ to address these.

In this report, Covestro publishes relevant information on its' ongoing transformation towards a climate-neutral company. The report follows the explicit recommendations defined by the TCFD. It has four sections in which we present the following content:

In the first section, we explain Covestro's governance around climate-related risks and opportunities. In the second section we disclose the actual and potential impacts of climate-related risks and opportunities on our strategy, business, and financial planning where such information is material. In the third section, we describe how we identify, assess, and manage our climate-related risks. Lastly, in the fourth section, we present the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

All data in this TCFD report is as of, or for, the 2021 calendar year unless otherwise noted. It also includes references to the CDP (formerly known as Carbon Disclosure Project) Climate Change Response 2021 (reporting year: 2020).

Structure of the Covestro TCFD Report 2021 based on TCFD recommendations

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¹ Compensation schemes are important components of corporate governance to incentivize and steer the implementation of climate commitments and actions inside a company. We therefore include this important aspect here with reference to the section on Metrics & Targets.

Forward looking statements

This report may contain forward-looking statements based on current assumptions and forecasts made by Covestro AG. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Covestro's public reports which are available at www.covestro.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

1 Governance

Our governance around climate-related risks and opportunities.

Board Oversight

At Covestro, the Supervisory Board is directly involved in decisions on matters of fundamental importance to the company and oversees and advises the Board of Management. Covestro's Supervisory Board has twelve members, half of whom are shareholder representatives and half of whom are employee representatives. The Supervisory Board is directly involved in decisions on matters of fundamental importance to the company, regularly conferring with the Board of Management on the strategic alignment of the company, and on the implementation status of the business strategy. Alongside other committees, the Supervisory Board established a Sustainability Committee in August 2021. This committee has four Supervisory Board members with an equal number of shareholder and employee representatives. The Sustainability Committee advises the Supervisory Board, other committees, as well as the Board of Management on issues of sustainable corporate governance and the activities of the company in environmental, social, and governance (ESG) areas, including climate-related topics. It accompanies and monitors the respective strategies, objectives and initiatives of the Board of Management, including the sustainability and climate-related aspects of corporate activities, and makes recommendations in this regard.

+ Additional information is available in the [Covestro Annual Report 2021 – Composition of the Board of Management and Corporate Governance website: \[www.covestro.com/en/company/management/corporate-governance\]\(http://www.covestro.com/en/company/management/corporate-governance\)](#)

Management's Role

Covestro's Board of Management runs the company on its own responsibility with the goal of sustainably increasing the company's enterprise value and pursuing its corporate objectives. It defines the long-term goals and strategies, including relevant strategic sustainability- and climate-related goals, and coordinates and monitors the most important activities.

Sustainability and climate-related issues are core elements of our corporate strategy with an increasing impact on our business activities. Driving sustainability and climate-related topics is a shared task at Covestro, in which several functions and all business entities are involved. To support strategic guidance and implementation of sustainability across the company, a central governance body for ESG topics has been established. The ESG Governance Body is staffed with top-level executives from the business entities and relevant corporate functions. The Chief Executive Officer (CEO) of Covestro chairs the ESG Governance Body and is supported by the Chief Sustainability Officer (CSO) in this regard.

Composition of the ESG Governance Body (ESG GoB)



Further, a Sustainability Risk Subcommittee was established in the year 2021 to facilitate an integrated, overarching cross-company view and early identification, assessment, and management of sustainability-related risks, including climate-related risks.

+ Additional information is available in the [Covestro Annual Report 2021 – Sustainability](#)

Compensation System

Compensation schemes are important components of corporate governance to incentivize and steer the implementation of our commitments and actions inside our company. Therefore, the system for compensating members of the Board of Management and employees is aligned with the company's strategy and is structured to help Covestro achieve sustained business success and meet its strategic goals.

Effective January 1, 2021 a sustainability component was added to the long-term variable compensation (LTI) called "Prisma", for which both the Board of Management as well as senior management is eligible. The pay-out of the LTI is determined by calculating three factors, including a sustainability component. The current sustainability component applied is an absolute reduction target for GHG emissions (CO₂ equivalents, CO₂-e) classified in Scope 1 (Covestro's direct emissions).

Effective January 1, 2022, the short term variable compensation (STI) called "Covestro Profit Sharing Plan" (PSP) was also expanded and aligned with our Sustainable Future strategy, which focuses on a circular economy and sustainable growth, including climate neutrality. Our short-term variable compensation (PSP) is applicable to all of Covestro's employees worldwide, including the Board of Management. Amongst other criteria, a fourth KPI relating to ESG (environment, social, governance) was introduced. This factor determines the pay-out based on the absolute reduction of Covestro's Scope 1 and Scope 2 CO₂-e emissions.

The entire compensation system for the Board of Management, including LTI and STI components are set forth in the 2021 Compensation Report which will be presented to the 2022 Annual General Meeting for approval.

[+ Additional information is available in the Covestro Annual Report 2021 – Compensation Report](#)

2 Strategy

Actual and potential impacts of climate-related risks and opportunities on our business, strategy, and financial planning.

Covestro is fully committed to a circular economy. As a carbon- and energy-intensive company, our circularity strategy covers our commitment to achieving climate neutrality. In moving toward a circular economy, Covestro mainly aims to provide efficient solutions so that products and materials are returned to the value creation cycle at the end of their life cycle – as a whole, in the form of polymers, or in molecular or other chemical forms. Using other renewable sources of carbon and increasingly deploying renewable energy in production are other important measures Covestro will take in this context.

For Covestro, becoming fully circular also includes the transition to climate neutrality. Circularity and climate-neutrality are two sides of the same coin in our endeavor to build a sustainable future and economy. Since 2005, we have been successful in consistently increasing our energy efficiency and subsequently lowering our specific Scope 1 and Scope 2 greenhouse gas emissions. The relevance we ascribe to climate change is further reflected in our Climate Roadmap which is to become our long-term plan toward climate neutrality. On March 1, 2022, Covestro published its mid and long-term targets and its roadmap towards climate-neutrality.

[📄 See "Metrics and Targets."](#)

In the ongoing transition to climate neutrality, we address the emerging risks and opportunities based on a systematic analysis of our risk profile.

Risks and Opportunities

We apply a comprehensive and systematic risk and opportunity management approach to mitigate the challenges and to address the opportunities from climate change.

In our systematic identification and analysis of risks and opportunities, as laid out in our Annual Report 2021 and our CDP Climate Change Response 2021, we use risk and opportunity categories in line with the TCFD recom-

mendations. In this context, risks and opportunities both include direct physical drivers and indirect transition related drivers for our business and its environment. This analysis includes an in-depth discussion of different time horizons. We consider the effects this has throughout our organization. Apart from our direct operations, this covers impacts on products we provide in our markets as well as ongoing cooperation activities in our supply and values chains.

We have identified material climate-related risks and opportunities related to both physical drivers and transition-related drivers at Covestro. The following are examples of material climate-related risks and opportunities to illustrate how we describe and analyze them. Risk A illustrates a physical risk that may directly or indirectly impact on our business, e.g., by causing loss or damage to assets or disrupting our value chain. The key driver here is permanent changes in precipitation patterns which could affect our value chains in either direction and lead to additional costs for our business. Other physical risks are for example those related to acute drivers such as potential hurricanes at our sites in the Gulf of Mexico.

Covestro example: Physical risk¹

Risk example A	Low water levels on the Rhine River
<p>The low water levels of the Rhine River (Germany) may pose major challenges for our business. Barge shipments on the Rhine River are a major means of transportation to supply Covestro's production sites in Leverkusen, Dormagen, and Uerdingen with necessary raw materials and transport finished goods.</p>	
<p>Temporary closure of river traffic due to critically low water levels for more than five consecutive days (as happened in 2018), may affect critical raw material supply for these production sites. This may temporarily impact on our production output and increase our logistics costs as a result of shifting to alternative shipping modes (e.g. trucks and railroads).</p>	

¹ Data source: CDP Climate Change Response 2021

Furthermore, climate change already induces shifts in the policy, technology, social and economic landscapes. In combination, these developments can be described as climate-related transitional risks. Our risk example B on increased costs from the EU ETS is an example of policy-driven risk factors. The existing system plays a role here – as does the dynamically evolving regulatory environment, which is changing the relevant parameters and the outlook on impacts and adaptation requirements.

Covestro example: Transitional policy related risk¹

Risk example B	Increased costs from the EU ETS
<p>Since the Paris Agreement was ratified in 2015, we have been observing a tightening of existing carbon pricing schemes, especially in the European Union (EU). The EU Emission Trading Scheme (EU ETS), which covers around 300 kilotons of our Scope 1 GHG emissions, is the most relevant pricing scheme for Covestro.</p>	
<p>As Covestro competes with its products in global markets, additional direct and indirect costs from the EU ETS may affect our international competitiveness. We assume, that as free allocations of European Union Allowances (EUAs) will decrease, EUA prices will rise and result in additional direct costs to our operations. Nevertheless, as of today Covestro is sufficiently covered with certificates and employs a sourcing strategy to lower the risk of a negative financial impact in future.</p>	

¹ Data source: CDP Climate Change Response 2021

Further material climate related risks for Covestro are market and technology driven, which our strategy and business activities are intended to address proactively. Our illustration in risk example C briefly discusses a downstream deselection risk that may impact on our revenues and competitiveness, unless we adapt our portfolio to customers' aspirations toward more climate-friendly products.

Covestro example: Transitional market related risk¹

Risk example C	Decreased revenues due to changing customer behavior
<p>Customers increasingly demand sustainable products with climate-friendly attributes. As a company in an energy-intensive industry and producer of mainly fossil-based products, Covestro may face a deselection risk on our clients' side if we do not adapt our portfolio with innovative and sustainable products that meet this future demand. Such changing customer behavior may result for example in a preference for competitor products over Covestro products or avoidance of certain product applications we currently supply to our markets. Covestro wants to be a transformational leader in the plastic industry, as described in our corporate vision to become fully circular.</p>	

¹ Data source: CDP Climate Change Response 2021

The flipside of risks in a changing environment, if options to adapt and innovations are at hand, is new climate-related opportunities. As a technology leader in our industries and an early mover on climate-relevant developments, ongoing adjustments to our own business will also help us to capitalize on emerging opportunities. The opportunity impact drivers are identified in both existing and emerging markets and range from increased resource efficiency in our production, the upscaling of renewable and lower-emission energy sources, to the availability and expansion of innovative climate-friendly products and the development of new markets. Benefiting from growing demands for more sustainable products ultimately depends on the realization of customers' demand for these products.

Opportunity examples A and B below illustrate two market driven opportunities where we may benefit from growth in demand for existing products that play an important role for energy efficiency downstream in their use phase or where alternative raw materials play a role, e.g., due to renewable inputs in products. Our expansion of such more sustainable products may increasingly benefit our revenues in the mid-term. With increasing customer demand for more sustainable and climate-friendly solutions, we also expect new markets to emerge, either for our existing products or for new products and technologies. Being a technology leader, we see an opportunity in expanding our business into new markets. Example opportunity C illustrates this in the growth market for battery technology in electronic vehicles.

Covestro examples: Opportunities in existing and emerging markets¹

Opportunity example A	Growing demand for products increasing energy efficiency in buildings
In order to increase the energy efficiency of buildings in line with global climate and energy objectives, demand for products that help to reduce energy loss in buildings is rapidly increasing. Covestro produces methylene diphenyl diisocyanate (MDI) and polyols that are the key raw materials for the production of polyurethane (PU) foams for insulation boards and panels. As such we see the business opportunity from the PU building insulation application, which is expected to continue to grow strongly due to its key role in reducing the effects that buildings have on climate.	
Opportunity example B	Growing demand for plant-based raw materials in coatings sector
Covestro's products form the backbone of paints, coatings, adhesives, and inks for a diverse range of applications including automotive, building and construction, furniture, footwear, and industrial. Covestro's Decovery® portfolio in this sector includes products with as much as 52% plant-based content. All raw materials are sustainably sourced. As consumer demand for less carbon-intensive products based on alternative raw materials is expected to increase, Covestro sees a strong business opportunity for its Decovery® products.	
Opportunity example C	New market potentials in Electric Vehicles (EV) battery technology
Climate change is driving the electrification of the mobility sector. The expected growth of battery EVs will mean the creation of new market segments for high-performance materials. Additional growth is expected in the market of electric vehicle supply equipment that will be part of the future electric vehicle ecosystem infrastructure. Covestro believes its high-performance polycarbonate materials can play a decisive role in these emerging segments. Here we see a clear opportunity to expand our business in the automotive industry.	

¹ Data source: CDP Climate Change Response 2021

 [Additional information is available in the Covestro CDP Climate Change Response 2021: module C2: C2.2a, C2.3a, C2.4a](#)

Response to Risks and Opportunities

We aim to avoid or mitigate risks by actively deciding on the form of response. At the same time, we strive to take maximum advantage of opportunities by incorporating them into our entrepreneurial decisions. We bear manageable and controllable risks that are in reasonable proportion to the anticipated opportunities. Where necessary we take appropriate countermeasures or transfer them to third parties (such as insurers) to the extent possible and economically acceptable. Opportunities and risks are continuously monitored using indicators so that, for example, changes in the economic or legal environment can be identified at an early stage and suitable countermeasures can be initiated, if necessary.

In the tables below we present three specific examples of material climate-related risks and opportunities from our assessment in 2021.

Covestro examples: Risk impacts on our business and our responses¹

Risk example A		Low water levels at Rhine River
Potential impact	The risk-assessed impact is medium and includes losses from shipments of major precursors between Covestro sites along the Rhine River and production losses incurred due to a limitation of raw material supplies from external vendors. The calculated costs of foregone business are mainly driven by the range of possible durations of the low water situation, with cost ranging from €20 million to €50 million. This rough cost estimation is based on the exemplary event in 2018.	
Our response	The production network including all inbound and outbound Rhine River material flows are regularly analyzed and documented. Additional mitigation measures include safety stocks, increased logistics capacities, use of and planning for alternative routes and means of transportation.	
Risk example B		Increased costs from the EU ETS
Potential impact	Assuming additional instruments like the Carbon Border Adjustment Mechanism and the end of free EUA allocation as well as increasing certificate prices, we calculated an additional need of around 900,000 EUAs for Covestro until 2030, which we consider medium impact. Based on the lower and higher end of the assumed certificate prices (€40 or €80), additional costs will accrue, ranging from €40 million to €80 million.	
Our response	We mitigate the risk by reducing emissions from our own operations. Moreover, we implement a hedging and sourcing strategy. A key part of such a strategy is the purchase of EUAs at defined price limits.	
Risk example C		Decreased revenues due to changing customer behavior
Potential impact	Based on an internal Covestro survey, we estimate the share of sales to customers driven by sustainability at 10%. Further assuming a deselection by these customers in the range of 10% to 15% on average, our annual sales could fall by €100 million to €150 million per year respectively, which we currently consider medium impact. This first approximation will be further refined and validated. We are convinced that the number of customers driven by sustainability topics will further increase in the future.	
Our response	To mitigate the risk of decreasing demand, we are enhancing our product portfolio in terms of sustainability aspects in order to meet future customer preferences.	

¹ Data source: CDP Climate Change Response 2021

Covestro examples: Opportunity impacts on our business and our responses¹

Opportunity example A		Growing demand for products that increase energy efficiency in buildings
Potential impact	Based on Covestro's sales in 2020 and expected demand growth of between 5% and 6% in this segment, we calculate potential sales growth of €60 million to €74 million per year in the medium term (until 2025), which we consider medium impact.	
Our response	In order to realize this business opportunity Covestro is investing approximately €0.4 billion in its production capacities in Europe for raw materials for PU insulation foams.	
Opportunity example B		Growing demand for plant-based raw materials in the coatings sector
Potential impact	We consider the impact medium: We expect annual sales of Decovery® products to reach €100 million (conservative estimation). The figure comprises estimated sales for our major segments: Industrial Wood, Deco & Flooring & Printing and Packaging. The final level of the potential financial upside will be influenced by a number of different factors such as increased demand for sustainable paints and products, increased legislation on GHG emissions and bio-based raw materials and increased brand-owner pull.	
Our response	Our focus is on investing in R&D and in application development and marketing, including dedicated activities to develop and service the growing business.	

Opportunity example C		New market potentials in EV battery technology
Potential impact	For new applications of electric vehicle battery pack and electric vehicle supply equipment, Covestro sees high-impact opportunity for additional sales of thermoplastic material of approximately €200 million per year by 2025. This expectation is based on strong self-commitments from car manufacturers, regulatory developments, and visible shifts in customer preferences.	
Our response	To realize this opportunity, we invest in the modification and/or expansion of production facilities as well as in product development, application development, and marketing.	

¹ Data source: CDP Climate Change Response 2021

 Additional information is available in the Covestro CDP Climate Change Response 2021: module C2: C2.3a, C2.4a; module C3: C3.2a, C3.3, C3.4

Resilience of Our Strategy

At Covestro, both our vision to become fully circular and our Sustainable Future strategy are built on robust targets and underlying measures to address challenges and opportunities, in order to make our vision and strategy resilient. Reducing our greenhouse gas emissions to achieve climate neutrality as well as other measures to contribute to a circular economy go hand in hand in this context. Our measures certainly also address the examples of risks and opportunities given above.

During the year 2021, we reviewed our existing greenhouse gas emission reduction targets to live up to our ambition level. Our new targets for direct emissions (Scope 1) and for emissions from the generation of externally sourced energy (Scope 2) are in line with the 1.5 degree goal under the Paris Agreement.

We improve our resilience by tackling climate-related challenges and risks in our value chain from an early stage. We address existing and emerging regulations, physical and other transitional risks, and increased demand from new markets for sustainable products. As our risk example on carbon pricing (risk example B) shows, we address challenges from regulation heads-on. We drive emission reductions at our own installations, apply an internal carbon price in our financial planning as well as through hedging. We also reduce our physical risk exposure. As laid out in risk example A, our contingency planning and other precautionary measures will ensure resilience of our logistics in case that our production sites along the Rhine River are again faced with low water river levels in the future.

In terms of opportunities, we strongly invest in maintaining and expanding our leading technology position in existing and new markets. One solution is to expand our production capacities to supply growing segments with existing products, e.g., the insulation materials segment (opportunity example A). Other opportunities involve a shift to alternative raw materials for our products (as shown in opportunity example B) or the development of new products or applications for emerging segments, e.g., products connected to the fast-expanding field of battery technology and electric vehicles (opportunity example C). Other measures and innovations are already lowering our production-related emissions and consumed energy and will continue to do so. This will further strengthen our resilience and our competitive position in a rapidly transforming economy. By realizing all these business opportunities we also effectively limit the risk of deselection (risk example C) as well as our exposure to other kinds of risks.

We also strengthen the resilience of our climate strategy through partnerships and cooperation. As Covestro's business is embedded in complex value chains, we focus on strong strategic partnerships in different directions. In our efforts toward building a circular economy and achieving climate neutrality, we cooperate with various partners, e.g., in expanding the use of alternative raw materials, renewable energies, and hydrogen, the development of innovative recycling technologies or finding end-of-life solutions for our products.

We also explore modern data science methods to support the adaptation to future value chains. On the global and regional level we engage actively in industry associations and university cooperation to foster circular economy and climate-related topics. This includes the Association of Chemical Industry (Verband der Chemischen Industrie e.V., VCI) initiative Chemistry4Climate, and e.g., our cooperation with RWTH Aachen University, Aachen (Germany), Tongji University, Shanghai (China) or Carnegie Mellon University, Pittsburgh (United States).

 Additional information is available in the Covestro Annual Report 2021 – Circular Economy and Climate Neutrality

 Additional information is available in CDP Climate Change Response 2021, module C3: C3.2, C3.2a

3 Risk Management

Our process to identify, assess, and manage climate-related risks.

Conscientious management of opportunities and risks is part of responsible corporate governance and is the foundation of sustainable growth and financial success for us. At Covestro, this encompasses identifying, assessing, and managing climate-related risks and opportunities to make sure our business activities are appropriate to achieve our vision to become fully circular and achieve climate neutrality.

Risk Identification and Assessment Process

Our opportunity and risk management begins with the strategy and planning processes, from which relevant external and internal opportunities and risks of an economic, ecological, climate-related, or social nature are derived. Opportunities and risks are identified by observing and analyzing trends along with macroeconomic, industry-specific, regional, and local developments. The identified opportunities and risks are subsequently evaluated and incorporated into our strategic and operational processes, including those related to our materiality assessment for sustainability aspects. As part of our climate-risk identification activities, our activities include continuous monitoring of existing and emerging regulatory requirements related to climate change, such as the regulations under the EU Green Deal.

Generally, our early risk warning system, which is also used to identify climate-related physical and transformational risks, satisfies the legal requirements regarding an early warning system for risks pursuant to Section 91, Paragraph 2 of the German Stock Corporation Act, and is aligned with the international risk management standard COSO II Enterprise Risk Management – Integrated Framework (2004).

The identification and evaluation of risks and opportunities is embedded in the entire Covestro organization and spread across major functions. The Corporate Risk Management (CRM) function holds the governance function for the entire process. Risk management subcommittees are formed along functional responsibilities. These subcommittees meet regularly to review and update existing risks three times a year as well as discuss and assess emerging risks. In 2021, a Sustainability Risk Subcommittee was established to facilitate an integrated, overarching cross-company view and early identification, assessment, and management of sustainability-related risks, including climate-related risks.

Risks are evaluated using estimates of the potential financial impact taking into account countermeasures, the likelihood of their occurrence and their relevance for our external stakeholders. In our assessment of climate related risks we apply defined time horizons that also fit the long-term range of climate actions ranging from short-term horizons of one year, through mid-term horizons of one to ten years, to long-term horizons of up to 30 years. To rate our climate related risks with regard to their accumulated direct financial impact on EBITDA, we make use of categories ranging from less than €50 million to more than €1,000 million.

The subcommittees are supported by CRM in identifying and evaluating both risks and opportunities. Once identified, risks and opportunities are reported back to CRM for further assessment. If their direct financial impact cannot be quantified, a qualitative impact assessment is conducted by the reporting function and evaluated by CRM.

CRM analyses each single risk applying the quantitative and qualitative criteria and thresholds. Risks and opportunities are defined as 'substantive' if they exceed a €50 million threshold in terms of their quantified financial impact (e.g. reflecting increased cost or loss of profit due to lost sales). All substantive risks and opportunities are then documented in the CRM data base so that the risks and opportunities can subsequently be tracked and managed.

➕ [Additional information is available in the Covestro Annual Report 2021 – Opportunity and Risk Report](#)

Risk Management Process

Climate-related risks and opportunities are managed on two levels: on the individual as well as on the portfolio level. While individual risk and opportunity management focusses on regular reviews and the implementation of mitigation measures, portfolio risk and opportunity management ensures that no risk exposure is taken that threatens the company's existence.

CRM is responsible for regularly reporting on single major risks and the overall risk exposure of the Covestro Group. In addition, single risks with an impact of more than €50 million have to be reported to the Board of Management without undue delay.

Based on the outcome of the risk assessment, the conventional management strategies of risk prevention, mitigation, transfer, or acceptance are applied. The selection of strategy chosen depends on the impact and likelihood as well as the cost structure of the various options at hand. Once a measure is selected, an implementation plan to execute the response is developed. Due to the iterative annual process, risks will be addressed multiple times and any updates on the effectiveness of the risk response will be discussed.

➤ [Additional information is available in the Covestro Annual Report 2021 – Opportunity and Risk Report](#)

Integration into Enterprise-wide Risk Management

As described in the previous chapters, climate-related risk identification, assessment and management are incorporated into our Corporate Risk Management, along our entire value chain. Risk management, including climate-related risk management, is interlinked with other steering activities within Covestro. In particular, it is closely linked to investment evaluations as well as to financial planning and forecasting.

➤ [Additional information is available in the Covestro Annual Report 2021 – Opportunity and Risk Report](#)

4 Metrics and Targets

Metrics and targets we use to assess and manage relevant climate-related risks and opportunities.

Climate-related Metrics

Covestro calculates greenhouse gas emissions according to the internationally recognized standards of the Greenhouse Gas (GHG) Protocol. Direct emissions, e.g., from burning natural gas for our own energy and steam production and use and from our production processes (Scope 1), as well as indirect emissions from procurement and the use of energy produced outside the company (Scope 2) at all production facilities and other relevant sites are included in the calculations.

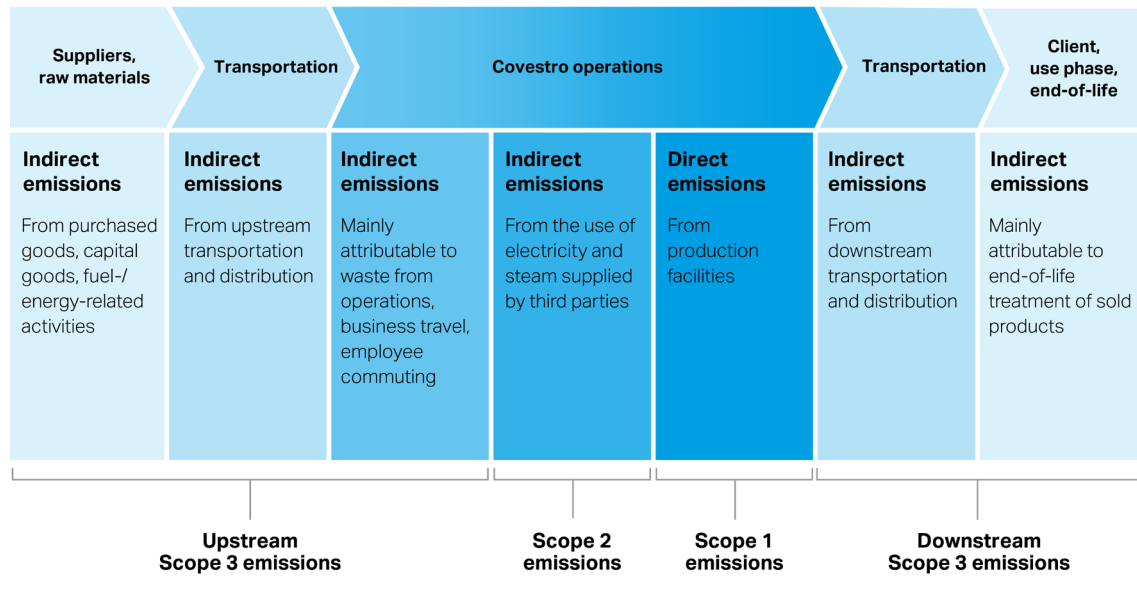
In addition to CO₂, Scope 1 emissions comprise all relevant greenhouse gases, including nitrous oxide (N₂O), methane (CH₄), and some fluorinated hydrocarbons.

Our Scope 1 and Scope 2 greenhouse gas emissions for all Covestro sites are disclosed in the Annual Report and audited with reasonable assurance by external financial auditors.

We reported our upstream and downstream greenhouse gas emissions (Scope 3) determined on the basis of full-year 2020 data for the first time in our CDP Climate Change Response 2021. After that, we reported our Scope 3 emissions determined on the basis of full-year 2021 data in our Annual Report 2021. Scope 3 emissions are determined for all environmentally relevant Covestro sites according to the categories and methods of the GHG Protocol and the Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain by the World Business Council for Sustainable Development (WBCSD). All categories were reviewed for relevance under these guidelines in order to quantify all emissions associated with Covestro's business activities as completely as possible. Based on this analysis, we report the emissions resulting from the nine out of fifteen categories considered relevant to us. The basis for calculating the indirect GHG emissions (Scope 3) are internal

activity data and emissions factors from commercially and publicly available sources, or sources recommended by the GHG Protocol. The emissions for each Scope 3 category are based on individual calculations, which are described in detail in our CDP Climate Change Response 2021. By continually improving the data basis and calculation methods used, we plan to further advance the accuracy and completeness of our Scope 3 emissions reporting.

Covestro’s greenhouse gas emissions along the value chain



The Supervisory Board views the reduction in GHG emissions to be a relevant performance indicator to ensure the alignment of Covestro Group’s operations with the vision of becoming fully circular and our company strategy Sustainable Future. Therefore, this is also reflected in our remuneration policy which incentivizes and rewards climate-related commitment and performance inside the organization.

[See “Governance.”](#)

To reach the goal of becoming climate-neutral, we evaluate the CO₂ emissions (Scope 1 and 2) from our investment projects as part of our investment project steering process. Since fiscal 2020, in addition to calculating the standard project ROCE (return on capital employed), we have conducted sensitivity analysis, assuming an internal carbon price of €40 per metric ton of CO₂ equivalents (CO₂-e) for investments larger than €5 million. From 2022 onward we use two complementary concepts to incentivize CO₂ reduction in investment projects: a matrix to show the trade-off between financial impact (“ROCE over threshold”) and CO₂ impact (“CO₂-e per €1 million of investment”) and a ROCE calculation that considers an internal carbon price of €100 per metric ton of CO₂ equivalents. A standard sensitivity analysis includes a CO₂ price of €200 per metric ton of CO₂ equivalents instead of the current €40 per metric ton of CO₂ equivalents. For the internal carbon pricing as part of our capital allocation, we apply a 10-year timeframe in most cases. The internal carbon price is planned to be reviewed regularly and to be adjusted, if needed.

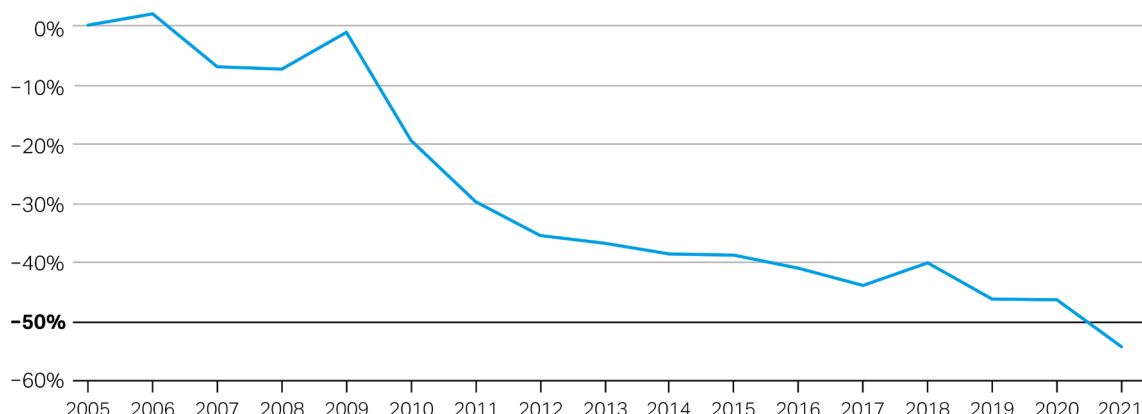
[Additional information is available in the Covestro Annual Report 2021 – Circular Economy and Climate Neutrality](#)

Scope 1, 2, 3 Greenhouse Gas Emissions

In 2021, we reduced our specific greenhouse gas emissions (Scope 1 and Scope 2) at main production sites compared to the base year 2005 by a cumulative 53.9% (in 2020: –46.2%). Main production sites are those responsible for more than 95% of our energy usage.

Development of specific greenhouse gas emissions Scope 1 and Scope 2 at main production sites

(cumulative annual change in specific GHG emissions per metric ton of product compared with 2005 benchmark – presented in %)¹



¹ The calculation methods for fiscal 2018 onward were changed to the current market-based method in accordance with the Scope 2 Guidance of the GHG Protocol. The values reported for the year 2005 to the year 2017 are calculated throughout in accordance with the methods in the GHG Protocol in effect until the year 2014. When calculating changes in percentage points from the year 2017 to the year 2018, the value for the year 2017 was recalculated on the basis of the market-based method for comparability purposes.

Compared to the previous year 2020, we reduced our specific greenhouse gas emissions by 14.2%. The decline during the year was mainly due to technical improvements in nitrous oxide (laughing gas) purification at our sites in Baytown, Texas (United States) and Shanghai (China). Furthermore, priorly reported steam volume and related GHG emissions had to be corrected for one of the US sites. In total this led to a decrease in the calculated GHG volumes.

We also determine our Scope 1 and Scope 2 greenhouse gas emissions for the entire Group. In the year 2021, the Group's GHG emissions declined by 2.8% year over year. Direct GHG emissions dropped by 21.5% and indirect GHG emissions increased by 2.5%. The indirect GHG emissions increased due to higher production volumes and changes in some site-specific emission factors.

Covestro's total greenhouse gas emissions¹ (million metric tons of CO₂ equivalents)

	2020	2021
Direct GHG emissions ²	1.25	0.98
Indirect GHG emissions calculated using the location-based method (GHG Protocol 2015) ³	4.48	4.40
Indirect GHG emissions calculated using the market-based method (GHG Protocol 2015) ³	4.33	4.44
Total GHG emissions, comprising Scope 1 and 2 emissions according to the market-based method of the 2015 GHG Protocol	5.58	5.42

¹ Portfolio-adjusted based on the GHG Protocol; financial control approach; global warming potential (GWP) factors correspond to the IPCC's Fifth Assessment Report

² In the year 2021, 83.8% of emissions were CO₂ emissions, 15.5% were N₂O emissions, 0.5% consisted of partly fluorinated hydrocarbons, and 0.2% was methane.

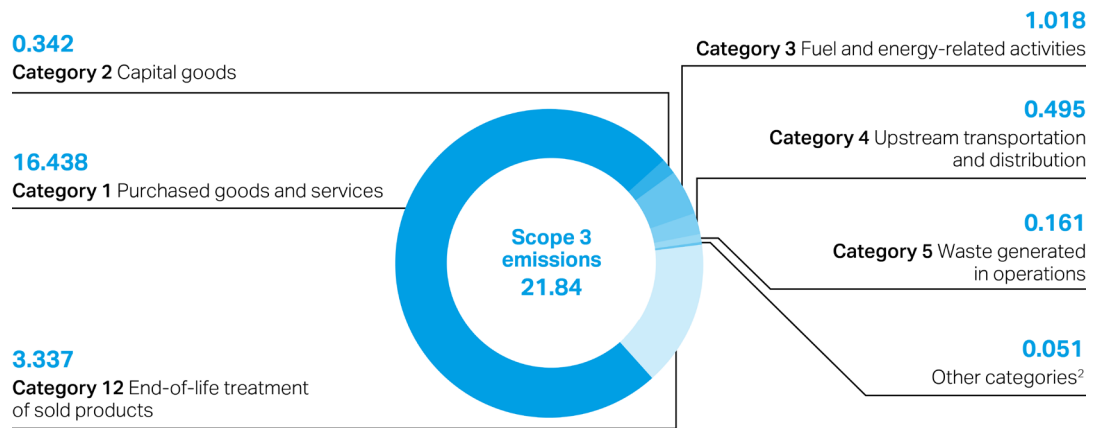
³ In combustion processes, CO₂ typically makes up more than 99% of all greenhouse gas emissions; this is why we restrict ourselves to CO₂ when calculating indirect emissions.

As Covestro operates in an energy-intensive industry, our emissions are related to our energy use. In 2021, we were able to reduce our specific energy use (energy efficiency) compared to 2005 by 40.2% (in 2020: -34%). This also contributed to the reduction in our specific greenhouse gas emissions.

In 2021, we also determined upstream and downstream greenhouse gas emission data along the entire value chain (Scope 3) in addition to our direct (Scope 1) and indirect (Scope 2) greenhouse gas emissions. Our other indirect greenhouse gas emissions (Scope 3) represent 80% of our greenhouse gas emissions (21.84 million metric tons of CO₂-e). Scope 1, 2 and determined Scope 3 greenhouse gas emissions totaled at 27.26 million metric tons of CO₂ equivalents in 2021. 18.48 million metric tons of CO₂ equivalents were determined upstream Scope 3 emissions, and 3.36 million metric tons of CO₂ equivalents were determined downstream Scope 3 emissions. There is no comparable prior-year value available for Scope 3 emissions, since this is the first year

Covestro is calculating this figure. Most of our Scope 3 emissions are attributable to categories upstream in our value chain. The categories of “purchased goods and services,” “end-of-life treatment of sold products,” and “fuel- and energy-related activities” represent the majority of our other indirect GHG emissions. Biogenic CO₂ emission equivalents that occur in the value chain (99,052 metric tons of CO₂ equivalents in absolute numbers) are disclosed separately from the gross volume of Scope 3 emissions in accordance with the GHG Protocol and the WBCSD Guidelines.

Composition of Scope 3 emissions categories according to the GHG Protocol (million metric tons of CO₂-e)¹



¹ Portfolio-adjusted based on the financial control approach of the GHG Protocol; global warming potential (GWP) factors according to the IPCC’s Fifth Assessment Report.

Non-relevant emissions categories: 8. Upstream leased assets; 11. Use of sold products; 15. Investments. Estimates indicate that these categories account for <1% of Covestro’s total Scope 3 emissions. Their levels are therefore insignificant according to the definition in the GHG Protocol.

Non-relevant emissions categories: 13. Downstream leased assets; 14. Franchises. Covestro does not operate any plants that are leased to third parties and whose emissions are not already included in Scope 1 and Scope 2 emissions reporting. Moreover, Covestro does not own or operate any franchises.

Unreported emissions category: 10. Processing of sold products. Since data could not always be obtained and there are numerous applications for Covestro’s products, calculating these emissions would require disproportionate effort. In this case, Covestro refers to the WBCSD guidance, according to which a chemical company whose product portfolio contains a broad range of intermediates is not required to report Scope 3, Category 10 (processing of sold products).

Contributions of Scope 3 emissions from the acquisition of the RFM business in the year 2021 are included to the extent that activity data was available during ongoing systems integration. Accordingly, we include the following Scope 3 categories and elements of the RFM business: 1. Purchased goods and services – only raw materials, 3. Fuel- and energy-related activities, 5. Waste generated in operations, 7. Employee commuting, and 12. End-of-life treatment of sold products.

² Other categories includes the following: 6. Business travel; 7. Employee commuting; 9. Downstream transportation and distribution

[+ Additional information is available in the Covestro Annual Report 2021 – Circular Economy and Climate Neutrality](#)

Climate-related Targets

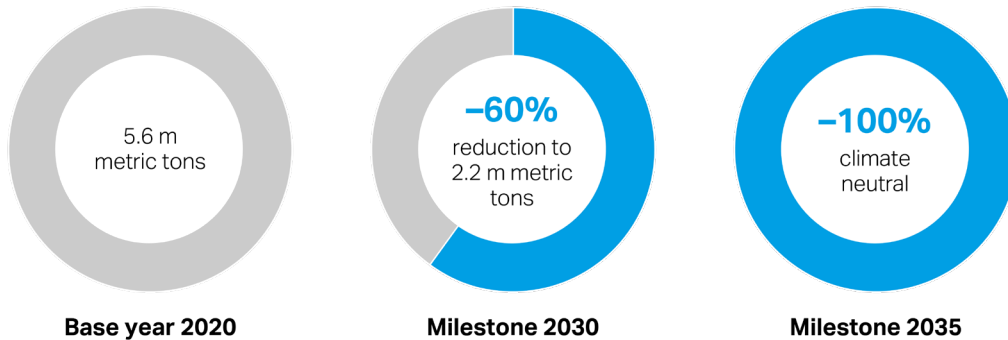
Covestro is committed to delivering on the 1.5 degree ambition of the Paris Agreement and the UN Sustainable Development Goals. Our corporate vision of becoming fully circular goes hand in hand with operating in a climate-neutral way.

Back in the year 2016, we set the sustainability goal of cutting specific greenhouse gas emissions by 50% compared to the 2005 benchmark by the year 2025. In 2021, we reached our 2025 reduction goal for specific greenhouse gas emissions by achieving a 53.9% cut four years ahead of plan. Our success to date builds on a number of measures. Since 2008, our energy efficiency program STRUCTese™ which has been gradually rolled out, is now used in many of our energy-intensive production facilities around the world to increase efficiencies and will be implemented in other facilities going forward. In the year 2021, we reached further milestones by signing different power purchase agreements (PPAs) for renewable electricity supply, e.g., for our sites in Belgium, China and Germany.

In the year 2021, we updated our global climate targets to align our goal of reducing greenhouse gas emissions with our new corporate vision, regulatory requirements as well as stakeholder expectations. In order to develop our new targets, we applied different scenarios, analyzed different methodologies, such as for setting science-based targets and incorporated the views of our stakeholders. In order to contribute in meeting with the 1.5 degree goal under the Paris Agreement ahead of the year 2050, we are determined to reach net zero Scope 1

and Scope 2 GHG emissions by the year 2035. As an intermediate goal we plan to deliver on a 60% emissions reduction for Scope 1 and 2 emissions by 2030, compared to 2020 levels.

Covestro's goals toward climate neutrality¹



¹ Greenhouse gas emissions comprise Scope 1 (emissions from own production) and Scope 2 (emissions from external energy sources).

Our goals are backed by a strong set of activities to ensure we meet them and we continuously look out for further actions in the process. We rely on technological measures to go beyond our previously successful and important energy efficiency projects. We are investigating options of nitric acid treatment as well as process technology measures in order to reduce our Scope 1 and Scope 2 emissions further. A number of procurement-related activities complete the set of measures that will take us toward climate neutrality. We plan to double our efforts in purchasing renewable energy. Steam is essential for our production, and we plan to elaborate further on possibilities to reduce the carbon footprint of steam use. Ultimately, technological approaches to carbon sinks will be explored. In the future, hydrogen is also expected to contribute substantially to the energy transition – for example, as part of CO₂ conversion for the generation of climate-neutral sources of energy, for use as energy and as a raw material. We intend to deliver as far as technologically feasible absolute emission reductions. While we do our utmost and would there still be residual emissions unavoidable, we will as a last resort consider credible compensation measures.

The implementation of the activities specified above, and our continuous search for measures beyond those currently in use go hand in hand with a full transformation of our production sites. We are confident that our actions put us in a strong position to become fully circular and climate-neutral. We are determined to achieve our goal of net zero Scope 1 and Scope 2 emissions by 2035.

Apart from lowering our Scope 1 and 2 emissions, the reduction of our Scope 3 emissions is critical to achieving full circularity in the long run. In the course of our Climate Program, we are currently evaluating targets as well as measures for Scope 3 emission reduction.

➕ Additional information is available in the Covestro Annual Report 2021 – Circular Economy and Climate Neutrality

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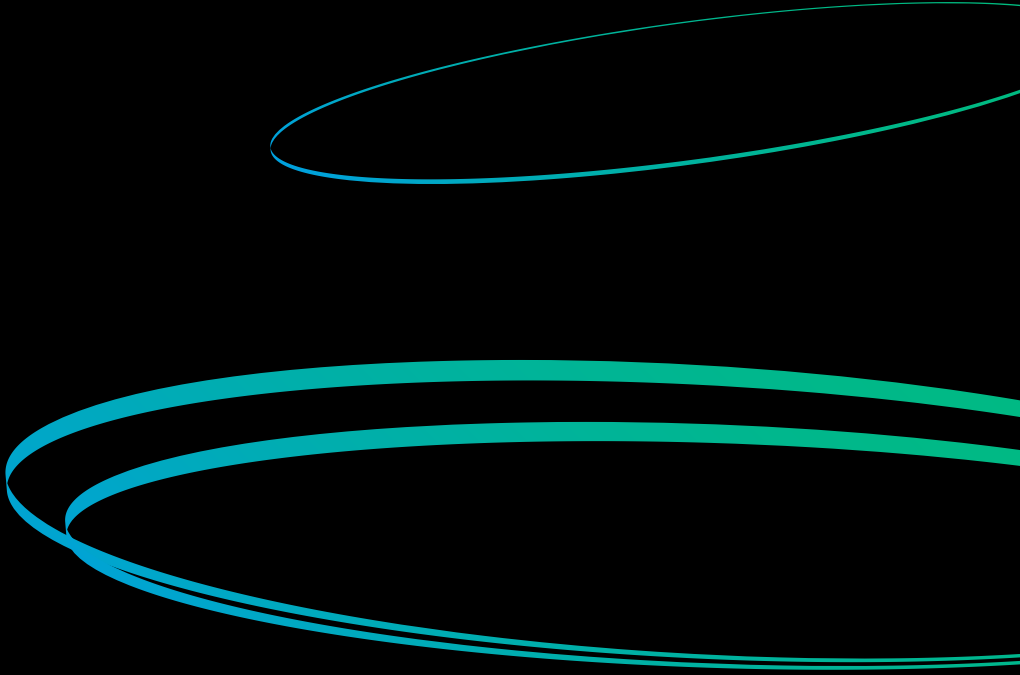
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