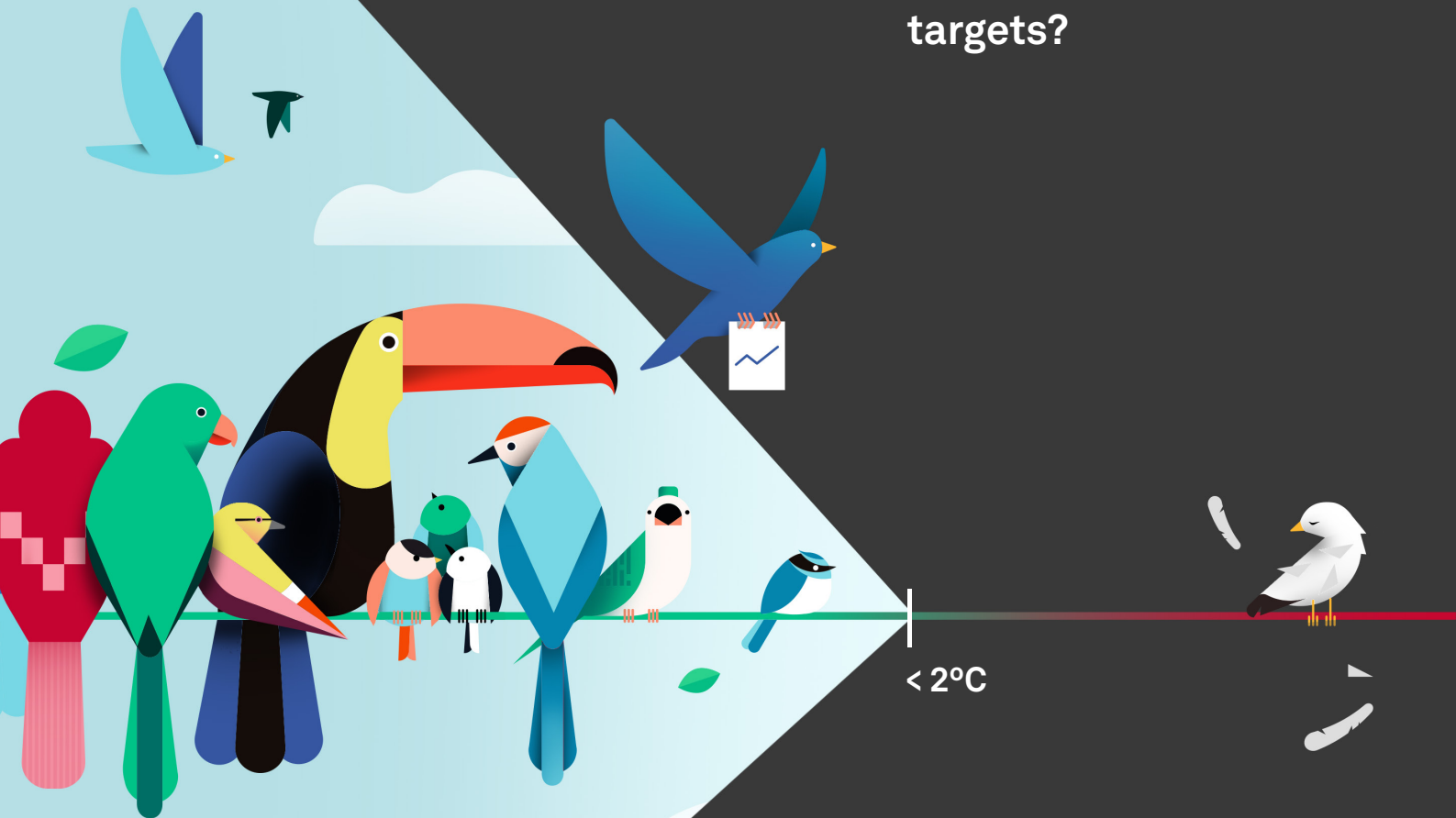


#whatif

the 30 German
stock market's
largest and most
liquid companies
would reach their
current climate
targets?



For every complex problem there is an answer that is clear,
simple and wrong. (H.L. Mencken)

This analysis covers the 30 German stock market's largest and most liquid companies. Though they are covered by specific indices, such as DAX30 or Solactive Germany 30, the analysis does not refer to such financial products. Together, we call this group of companies "**The Companies**".

Please bear in mind that the results shown in this report have been generated with a forward-looking climate impact model. Models are never perfect, and their results must be interpreted through the lens of the rationale the model was built upon and the assumptions made. As such, the results of our analysis should by no means be interpreted as a ranking nor as a claim to the sole truth. Rather, they should be used as a starting point from which further plausible variations of the individual assumptions about sector or company-specific parameters can be applied. It is precisely this ability to vary assumptions and see the resulting effects on the output that makes such models useful tools for gaining insight into an inherently uncertain future.

With this in mind, it is important to note that the scenarios which play a role in this report are not probabilistic forecasts. That is, we cannot assign probabilities to the likelihood of a given forecast. Rather, these forecasts describe coherent developmental trajectories for the achievement of each company's individual climate targets. Because such targets are constantly evolving, the report is only able to depict targets which were known to us in or prior to October 2019.

We kindly ask you to take this into account when interpreting the results of our analysis.

right. based on science (right.) is a young software and model developer founded in 2016 by Hannah Helmke and Dr. Sebastian Müller, LL.M. The Frankfurt (Germany) based company develops the economic climate impact model **X-Degree Compatibility (XDC) Model**.

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The company information and the sector classification for each of The Companies has been compiled with the kind consent of FactSet Research Systems.

We are thankful to the 16 out of the 30 companies which actively cooperated with right. to ensure a plausible quantification of their current climate targets.

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Frankfurt am Main, 27th November 2019



Dear reader,

What would you think about an athlete who starts his first triathlon full of confidence, but only trained for an 800m run?

Would you bet on him?

Would you trust him to be your trainer?

Would you agree with his priorities?

Probably not.

Laying down the tracks for transitioning safely into a world shaped by global warming is a once in a lifetime challenge for globally operating companies. Against this backdrop, the level of sincerity and determination of a corporate climate strategy as well as the extent to which it is based on science can help to separate the wheat from the chaff. This is made evident by looking carefully into climate scientific insights and the lessons that humanity has gathered about its very nature through the years.

Up until now corporate stakeholders have never been able to assess how maturely a company treats such insights and lessons.

This is rapidly changing with our generation strongly concerning themselves with global warming. Such concerns lead us to offer our talent, integrity and energy to pursuing sensible solutions. As the team of right. based on science, we believe in the importance of transparency on climate-related risks and opportunities in the market. Consequently, we create tools for internal and external stakeholders to analyse the impact of an economic entity on global warming under various scenarios.

For you to:

Bet on the best ones.

Pick the strongest leaders.

Set the right priorities.

Yours sincerely,

the right. based on science team

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Forewords

Climate change is a fact, as are objective scientific requirements set out in the IPCC reports to reduce emissions to keep on track to achieve the Paris Agreement of 2015. Based on the physical reality of the global carbon budget, every state as well as every business has a duty of care to set out on a path to reduce emissions in line with the Paris Agreement. We call this a “modern or social duty of care” – and this duty is already applied in court cases, such as in the action against Royal Dutch Shell in the Netherlands. Several courts, legal scholars and practitioners are currently struggling to define these duties of care, mostly in the context of human rights obligations that are – to some degree – also applicable to globally operating private entities. It is in the interest of every business worldwide to know where it stands in relation to these duties, and not only in the context of corporate transparency and reporting duties.

I therefore fully support this initiative in the hope that businesses assume and take responsibility in times where governments fail to do so.

Dr. Roda Verheyen, attorney at law, Hamburg Germany, founder of Climate Justice Programme and legal counsel for various “climate” cases in the EU and Germany

The index business is extremely dynamic. When developing new indices, it is important to have your finger on the pulse of the market: What do market participants and their customers want and need? For some time now, we have been seeing the topic of sustainability steadily gaining momentum. We already offer ESG versions of well-known indices such as our STOXX Blue Chips, and the number of ESG options will continue to grow. Perhaps one day there will be a predominance of sustainability benchmarks in use that are as transparent, rule-based and investable as our STOXX and DAX indices. This facilitates the issuance of ESG financial products that also appeal to end investors on a broader basis.

Dr. Holger Wohlenberg, Chairman Board of Directors, STOXX Ltd.

With the Federal Government’s climate resolutions announced in September 2019, we are currently on a path toward 3–5°C of global warming. In order to avoid such a high-risk world for the young people who will be living in it, it is important to set ambitious targets that are based on the remaining CO2 budget, and to control these effectively.

This cannot be taken for granted: in 2007, the German government had set a goal to achieve a reduction of 221 Mt of CO2 per year by 2020. According to the BMU’s most recent forecast (2019), only about 136 Mt will be achieved. This is approximately 62% of the target set by the BMU. As scientists, we are grateful for every business that demonstrates how ambitious goals can be combined with effective controlling.

Dr. Gregor Hagedorn, Initiator of Scientists for Future

Ecosia was founded with the vision to help solve the climate and biodiversity crisis by using our profits to plant trees where they are needed most. Everything we do stems out of this vision. Despite the challenge of investing all of the Ecosia's profits into tree-planting, we have managed to grow sustainably and scale the positive impact we have on the planet.

As a company you have a responsibility to act in the best interest of society. At a minimum this means being co2-neutral, and this is one of the reasons we have invested in our own solar energy plants as well as channeling our profits into tree planting. These solar plants allow us to run on more than 100% renewable energy and actually channel additional green energy back into the grid. We are in no way perfect, but we need big companies to join us in adopting a similar attitude to carbon neutrality and be part of the solution instead of the problem.

Christian Kroll, CEO, Ecosia

Today, the public awareness of our planet's state of health is probably at an all-time high. Our generation shows a broad willingness to change their way of life to preserve our climate. Improving our personal climate performance on the one hand but working for a company with a poor climate performance on the other hand, feels, frankly speaking, hypocritical. So, it is just consistent and reasonable, that we expect our future employers to stronger prioritize environmental protection as well.

As potential employees, we want to identify with and work for a company that shares our values. Appropriate efforts to improve one's climate performance show that the company is forward-oriented, and its strategy is aligned with the personal goals of its employees. Hence, it attracts more top talent and improves commitment and motivation in its workforce, therefore maximizing its capacity utilization and efficiency.

In summary, prestige, salary, work-life balance and development opportunities remain important aspects in making a choice on where to best put our individual skill sets to work. But on top of that, ambitious climate goals and a good climate performance are additional decision criteria that steadily gain importance within the pool of potential employees and which should not be neglected.

Lisa Neisel and Benjamin Wels, Dean's List¹ Members, Faculty of Economics and Business, Goethe University Frankfurt

¹ The Top 5 percent of Bachelor and Master students are admitted to the Dean's List.

Introduction

This report revolves around the question of how effective Germany's largest and most liquid stock listed companies' climate targets are. In order to approach this question, we calculated the contribution of each of The Companies to global warming under two scenarios and compared the results. The scenarios consist of first, a baseline scenario, in which the analysed company does not have a climate target and second, a scenario, in which the company reaches its current climate target.

Whilst results about The Companies' impact under both scenarios are surely interesting, we would like to draw your attention to the magnitude of the actual difference between those two outputs: Looking at the respective differences, allows us to shed light on the comparable effectiveness of climate targets of Germany's largest and most liquid stock listed companies.

We consider the value of such an analysis lies in contextualizing corporate activities with most precious insights from climate science. Such insights show us not only how humanity is affecting the earth system and thus global warming, but also what consequences result from it for socioeconomic and natural systems under various scenarios and what mitigation and adaptation options are available.

Thanks to the intense work of the Intergovernmental Panel on Climate Change (IPCC), we know enough about various X°C Worlds depicting different levels of global warming. This enables us to start connecting their X°C Worlds- consequences with trajectories of corporate activities. This means we know enough to begin connecting trajectories of corporate activities with the overall climate goal of limiting global warming to well below 2°C.

And although this task is not easy, we see an urgent need for it to be carried out since it contributes to developing meaningful answers to challenging climate-related questions posed by companies' internal and external stakeholders. Best example being the European Commission demanding transparency about the impact of a company on global warming as a practical implementation of the concept of Double Materiality. The Commission's 2019 Non-Binding Guidelines on Non-Financial Reporting - which should be used for the interpretation of the national German implementation of the 2014 EU Non-Financial Reporting Directive (NFRD)² in particular § 289c HGB - clarify that the element "impact of [the company's] activities" on climate change must be considered when assessing the materiality of non-financial information.³

² EU Parliament, 2014/95/EU, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0095&from=EN> (also CSR Directive).

³ EU Commission, Guidelines on non-financial reporting: Supplement on reporting climate-related information, 2019/C 209/01; [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XC0620(01)); see in particular „2.2. Materiality“; in this section „double materiality“ is defined (outside-in and inside-out).

Methodology

In a first step, we contacted all The Companies and informed them about the upcoming analysis. We invited them to support us in the upcoming process by clarifying whether we had understood their publicly communicated climate targets correctly and quantified them plausibly.

In a second step, we collected information about The Companies' climate targets. The sources from which we extracted information on climate targets were mainly CDP questionnaires⁴, sustainability and annual reports, and company webpages. For those companies who accepted the invitation to collaborate with us in the quantification, we sourced additional information from direct conversations.

In a third step, we quantified climate targets into annual emission reduction rates starting from 2017.

Finally, we calculated the impact of each company on global warming until 2050 under two scenarios:

- 1. Baseline Scenario:** Under this scenario, the company's emissions decouple from economic activity along historic trends, whereby no climate-policy-induced effects are considered. The rate of decoupling results from improvements to energy efficiency and from general economic change and restructuring as developing economies become more mature. The scenario chosen is the Marker Scenario of the Shared Socioeconomic Pathway Scenario 2 (SSP2)⁵. SSP2 data describes Gross Domestic Product (GDP) and emission growth rates for various geographical regions. We decided to use global assumptions for the development of GDP and emissions because the companies under consideration operate globally.
- 2. Climate Target Scenario:** Under this scenario, only growth rates for the financial performance of a company follow the Baseline Scenario. The company's emissions decouple from economic activity along the company's communicated climate target(s), if any. Therefore, the rate of decoupling results from the climate-targets-induced emissions reductions. For all years and emissions scopes which were not covered by the climate targets, we assumed Baseline growth rates of both emissions and GDP. Please note that we took into consideration only those targets which were clearly communicated as targets. Isolated commitments, Scope 4 emissions targets⁶ and any vague declaration of intentions were not considered as climate targets.

The climate impact of each of The Companies under both scenarios was determined with our proprietary X-Degree Compatibility (XDC) Model. Since the XDC Model measures financial activity in Gross Value Added (GVA)⁷, we adjusted SSP2 GDP growth rates to GVA growth rates.

Once we concluded the calculations, we discussed the results with the 16 companies, who decided to actively contribute to the analysis and invited them to provide a statement commenting on their climate targets.

4 CDP is a not-for-profit charity that runs a global disclosure system. For further information, see: www.cdp.net/en

5 Riahi et al., The marker quantification of the Shared Socioeconomic Pathway 2: A middle-of-the-road scenario for the 21st century, 2017.

6 Considering that the GHG Protocol does not provide for a Scope 4 category and also considering that the "Greening By" concept established by the Technical Expert Group on sustainable finance are not yet formally established via the EU taxonomy, we have not taken such activities into account.

7 GVA is defined as EBITDA plus Personnel Costs (SBTI 2015). We use GVA as the factor to relate emissions to, because it measures the actual value that a company generates between costs and revenues without distortions stemming from taxation and interest rates. Since the XDC Model cumulates values until 2050, it is not plausible that this value turns negative.

Climate impact measurement: XDC Model

The XDC Model is an economic climate impact model which determines the contribution of a single economic entity to global warming under various scenarios.⁸ It aims to serve as a dynamic analysis tool that will allow companies to understand their level of climate-friendliness in detail. Since the XDC Model is connected to a climate model and can be connected to further earth system or macroeconomic models, it provides sophisticated options for users to understand how an economic activity has the potential to exacerbate or relieve climate change.

Outputs are expressed in °C, enabling the user to associate results with different levels of climate change and use climate targets as a clear benchmark for assessing the effect of the economic entity's climate action.

The logic behind the model consists of three major steps:

Step 1: Economic Emission Intensity of the company

In a first step, we define Economic Emission Intensity (EEI) as the amount of greenhouse gas (GHG) emissions per million Euro GVA. In order to calculate the company's EEI, its emissions corresponding to the period between the base year up to 2050 are linked to the GVA corresponding to the same period. Since both direct and indirect emissions are included in the calculation of the EEI, double counting might occur. In order to avoid double counting, indirect emissions are only partially covered by the XDC analysis.

Step 2: Global Emissions

In a second step, the company-specific EEI is scaled up along the value for global GVA for the period between the base year up to 2050, resulting in an amount of emissions that would reach the atmosphere by 2050, if all companies operated as emission intensively as the one at hand under the chosen scenario.

Step 3: Climate Performance

In a third step, accredited findings on climate science are used to calculate the amount of global warming that would occur, if the amount of emissions calculated in step two were to be released into the atmosphere. In order to determine the impact of emissions on the climate we use the climate model Finite Amplitude Impulse-Response (FaIR)⁹. This model includes a comprehensive carbon cycle, it is used by the IPCC and referenced in several scientific publications.¹⁰

Please note that all XDC calculations should be based on a plausible range of scenarios and assumptions for key parameters to account for uncertainty. For the sake of simplicity and due to such functionalities being under development, we did not test sensitivities to key assumptions and use single scenarios to determine XDCs in this report.

⁸ For a more detailed description, please refer to the peer-reviewed journal article: Helmke, et al, Provision of Climate Services – the XDC Model, Handbook of Climate Services, Springer 2020 (forthcoming).

⁹ Smith, C. J., Forster, P. M., Allen, M., Leach, N., Millar, R. J., Passerello, G. A., and Regayre, L. A.: FAIR v1.3: A simple emissions-based impulse response and carbon cycle model, Geosci. Model Dev. <https://doi.org/10.5194/gmd-2017-266>, 2018.

¹⁰ IPCC 2018; Mattauch et al., Steering the Climate System: An Extended Comment. Centre for Climate Change Economics and Policy Working Paper No. 347, 2018.

Through the project [right.open](https://right.open.com)¹¹, the XDC Model is freely accessible to academic actors such as professors, PhD-, master- or bachelor students, who use it as a methodology for their climate-related academic activities. The base code of the XDC Model will be fully Open Source in 2021.

Output

In order to understand the impact of each company covered by the analysis on global warming and the level of ambition of the communicated climate targets, we computed various XDCs:

Baseline XDC

The Baseline XDC was computed under the assumptions of the Baseline Scenario SSP2 (see above). It indicates by how many °C the earth would warm up to by 2050, if all companies were to operate as emissions intensively as the one at hand under the consideration of SSP2 assumptions regarding the rate of decoupling of emissions and financial activity.

Sector XDC

The Sector XDC provides a context for a company's Baseline XDC. It yields the Baseline XDC of a company's sector. Since companies have very different economic emission intensities due to the diverse nature of their business models, a cross-sectoral comparison should be avoided.

We aggregated data on GVA and Scope 1-3 emissions¹² for a minimum number of relevant companies¹³ within a NACE (Nomenclature statistique des activités économiques dans la Communauté européenne) sector. An average emissions intensity weighted by the companies' GVAs is calculated and used to determine the corresponding Sector XDC for a company.

In this report, the sector classification for each of The Companies is based on information provided by FactSet Research Systems.

Scenario-based XDC

The Scenario-based XDC was computed under the assumption of the respective company's Climate Target Scenario. It indicates by how many °C the earth would warm up to by 2050, if all companies were to operate as emissions intensively as the one at hand under a scenario in which they reach their currently communicated climate target.

¹¹ www.right-open.com

¹² Scope 1-3 emissions as defined by the GHG Protocol.

¹³ At least 30 relevant companies within each NACE sector.

How this analysis deals with compensation

The computation of the Scenario-based XDCs in this analysis does not differentiate between companies mitigating their own emissions by means of internal measures or by means of compensation. For this analysis, we assumed that:

3. Offsetting certificates consider the issue of additionality, in order to avoid double counting of emission reductions.
4. Certificates guarantee long-term emission reductions.
5. Companies which rely on offsetting know carbon neutrality has to be eventually achieved globally. This implies a limited compensation budget. Demand for offsetting may exceed the offer for respective projects which could lead to a steep increase in prices for offsetting mechanisms over time. Considering such circumstances may lead to the conclusion that investing in emission reductions of own emissions is more cost-effective in the long-term than offsetting.¹⁴

Target XDC (IEA B2DS)

The Target XDC (IEA B2DS)¹⁵ contextualizes Baseline XDC, Sector XDC and Scenario-based XDC. It indicates the company's necessary contribution to limit global warming to 1.75°C as outlined by the International Energy Agency (IEA)'s 1.75°C Scenario B2DS.

While the overall goal of emission reductions should be aimed at achieving compatibility with the transition to a <2°C-world, this does not necessarily translate into achieving an XDC of <2°C.

Using a holistic approach, the excess of emissions caused by those industries with limited reduction potential needs to be compensated for by additional reductions in other sectors to achieve an overall <2°C compatibility. Consequently, sector-specific Target XDCs need to be defined based on the sector's emissions reduction potential in relation to the other sectors' reduction potential.

For this analysis, Scope 1, 2 and 3 emissions reduction rates are sector-specific and in line with the IEA's 1.75°C Scenario B2DS. Please note that Target XDCs may seem unintuitively high. The major reasons for this are that 1) not only Scope 1 emissions but also Scope 2 and 3 emissions are covered by the Target XDC, 2) the underlying ET emissions values can be regarded as conservatively high, and 3) the assumption of the IEA B2DS about e.g. the availability of negative emission technologies by 2040 are very optimistic.

While this anchor for <2°C-compatibility is very helpful, we would like to stress that such <2°C-alignment metrics are in their infancy which means that their reliability is not yet at a mature stage. Major unresolved issues revolve around the appropriateness of the assumptions behind the IEA B2DS¹⁶,

¹⁴ The compensation budget. Blogpost right. based on science November 2019

¹⁵ For a more detailed description, please refer to the peer-reviewed article: Helmke, et al, Provision of Climate Services – the XDC Model, Handbook of Climate Services, Springer 2020 (forthcoming).

¹⁶ E.g.: Oil Change International and Energy Economics and Financial Analysis: Off Track – How the International Energy Agency guides energy decisions towards fossil fuel dependence and climate change. 2018.

and the nature of the kind of Integrated Assessment Models (IAMs)¹⁷ with which the IEA B2DS has been created. Furthermore, it is still an open question what level of sectoral resolution provides an optimal balance between too little and too much resolution, and thus a balance between overfitted and underfitted models.

Such caveats apply not only to the Target XDC (IEA B2DS) but also to arguably all other <2°C-alignment metrics provided by other companies and initiatives.

Input

Input data for determining the various XDCs in this Report come from different data sources:

Input data	Data Source
Scope 1-3 Emissions 2017	Engaged Tracking
EBITDA respective Operating Income (corresponding to EBITDA for financial Institutions) 2017 and 2018	FactSet Research Systems
Personnel expenses 2017 and 2018	FactSet Research Systems
Global GVA for Base Year 2017	World Bank and OECD National Accounts (World Bank Open Data n.d.; OECD Data n.d.)
Atmospheric concentration CO ₂ -Equivalents (CO ₂ e) for 2017 (base year)	National Oceanic & Atmospheric Administration (NOAA) annual Greenhouse Gas Index (AGGI), 2018

Assumptions for parameters¹⁸ determining the various XDCs in this Report come from different data sources:

Parameter	Source for Assumption
Company-specific GVA growth until 2050	SSP2 Marker Scenario
Global GVA growth until 2050	SSP2 Marker Scenario
Baseline emission growth until 2050	SSP2 Marker Scenario
Scenario-based emission growth rate until 2050	Company-specific climate targets retrieved from CDP questionnaires, sustainability and annual reports, websites or direct communication with collaborating companies
Scope 1 emission consideration	right. based on science: 100%
Scope 2 -3 emission consideration	right. based on science: 50%

¹⁷ IMF WP/19/185.

¹⁸ For the sake of simplicity, climate-scientific parameters and assumptions are not included. For further details, please refer to: Smith, C. J., Forster, P. M., Allen, M., Leach, N., Millar, R. J., Passerello, G. A., and Regayre, L. A.: FAIR v1.3: A simple emissions-based impulse response and carbon cycle model, Geosci. Model Dev. <https://doi.org/10.5194/gmd-2017-266>, 2018.

Analysis

Overview

The following section provides an overview of the analysis' results for each of The Companies considered. The summary consists of a short description of each company, its respective climate targets and a depiction of the way the target was quantified by right. based on science. The rate of decoupling for emissions and GVA under the company's climate strategy is illustrated for each company. In cases, in which the company cooperated to this analysis and sought to offer a statement accompanying its climate strategy, such statement is made available and can be found at the bottom of each company profile.

The following table summarises the results reached to by comparing each of The Company's Baseline XDC to its Scenario-based XDC and provides information about the target's relative effectivity. The target's relative effectivity is expressed as the percentage share of the difference between Baseline XDC and Scenario-based XDC of the Baseline XDC: $(\text{Baseline XDC} - \text{Scenario-based XDC}) / \text{Baseline XDC}$.

Company Name	Baseline XDC	Scenario-based XDC	Relative Target Effectivity
Adidas	3.4°C	n/a	n/a
Allianz	3.2°C	1.5°C	54%
BASF	4.3°C	4.2°C	0%
Bayer	2.0°C	1.8°C	11%
Beiersdorf	2.6°C	2.6°C	0%
BMW	2.6°C	2.6°C	0%
Continental	4.1°C	2.9°C	31%
Covestro	5.1°C	5.1°C	1%
Daimler	3.0°C	2.8°C	5%
Deutsche Bank	2.8°C	2.8°C	0%
Deutsche Börse	2.0°C	1.9°C	1%
Deutsche Lufthansa	3.6°C	2.8°C	23%
Deutsche Post	2.1°C	1.6°C	23%
Deutsche Telekom	1.6°C	1.5°C	3%
E.ON	8.3°C	8.1°C	2%
Fresenius	1.6°C	n/a	n/a

Fresenius Medical Care	1.6°C	n/a	n/a
HeidelbergCement	10.7°C	10.3°C	4%
Henkel	4.5°C	4.4°C	1%
Infineon Technologies	1.8°C	1.8°C	0%
Linde plc	6.6°C	6.6°C	0%
Merck	1.6°C	1.6°C	1%
MTU Aero Engines	5.8°C	5.9°C	-1%
Munich Re	5.3°C	5.3°C	1%
RWE	13.8°C	9.5°C	31%
SAP	1.6°C	1.4°C	15%
Siemens	4.3°C	4.3°C	1%
Volkswagen Group	3.9°C	3.3°C	3%
Vonovia	2.3°C	n/a	n/a
Wirecard	2.5°C	n/a	n/a

Adidas AG

Contribution to 1.75°C

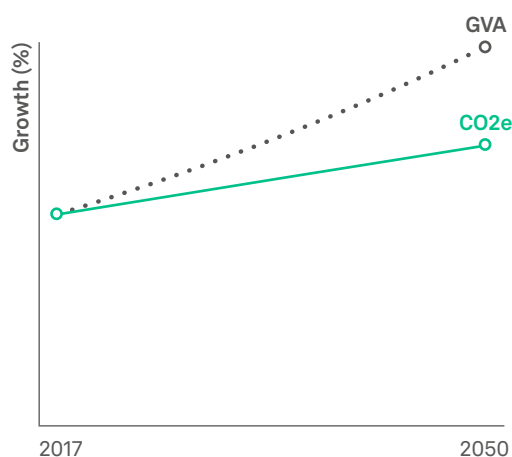
Baseline XDC	3.4°C	
Sector XDC	3.3°C	
Scenario-based XDC	n/a	
Target XDC (IEA B2DS)	2.4°C	

Adidas AG (Adidas) engages in design, distribution, and marketing of athletic and sporting lifestyle products. It operates through the following segments: Europe, North America, Asia-Pacific, Latin America, Emerging Markets, Russia/CIS, adidas Golf, Runtastic and Other Businesses. Adidas belongs to NACE sector 15 – Manufacture of leather and related products.

The analysis of Adidas' climate target is based on its 2018 CDP report.

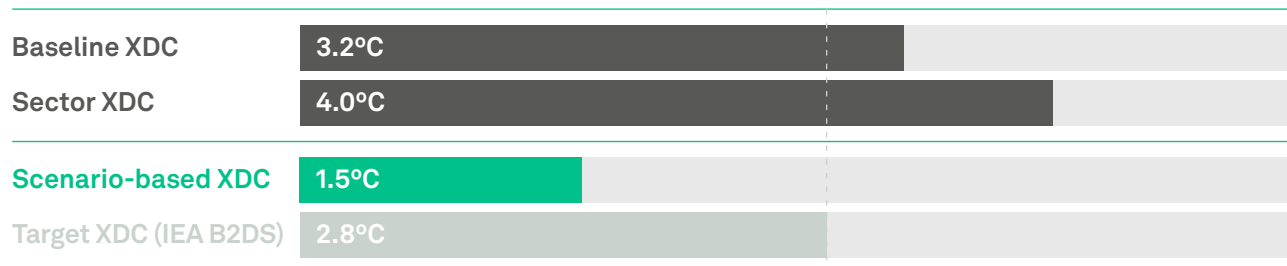
Adidas has set itself an absolute target: Scope 1 and 2 emissions are to be reduced by 29% until 2020 (base year 2015; 85% emissions in scope). According to Adidas, this target was met in 2017. Hence, we assume Baseline growth rates of both emissions and GVA between 2017 and 2050.

Growth (%) in GVA and Emissions Relative to Base Year



Allianz SE

Contribution to 1.75°C



Allianz SE (Allianz) engages in the provision of insurance and investment advisory services. It operates through following segments: Property-Casualty, Life/Health, Asset Management, Corporate and Other. Allianz belongs to NACE sector 65 – Insurance.

The analysis of Allianz’s climate target is based on its 2018 CDP report, its decarbonization goals in line with the Net-Zero Asset Owner Alliance and the RE100 initiative as well as the company’s contribution to this analysis.

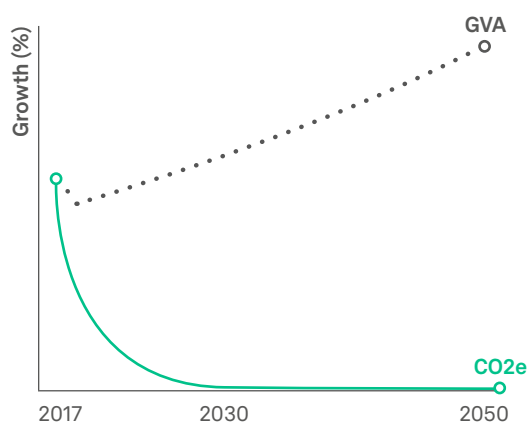
Allianz has set itself an intensity target: Scope 1, 2 and 3 (upstream) emissions per unit full time equivalent (FTE) employee are to be reduced by 30% by 2020 (base year 2010; 100% emissions in scope). In 2017, 58% of the target was met. The emission intensity in the base year was 3.67 t CO2e per FTE employee. For 2018 the number of FTE employees increased by 1.37%. As of 2019 and based on information provided by Allianz we assume a weak increase in the number of employees per year. The target value was 3.03 t CO2e per FTE employee in 2017 and is expected to be 2.57 t CO2e in 2020. Hence, we assume an annual reduction of the emission intensity per FTE employee of 5.4% until 2020.

In addition, Allianz has joined the RE100 initiative by which it plans to exclusively procure renewable electricity by 2023¹⁹ Based on this target, we assume a linear reduction of Scope 2 emissions to zero by 2023.

By becoming a member of the Net-Zero Asset Owner Alliance, Allianz also set the target to reducing the emissions of their investment portfolio (Scope 3 category 15) in line with the 1.5°C-target by 2050²⁰ Allianz publishes its Scope 3 emissions, excluding financed emissions.²¹ Hence, we calculate these financed emissions for 2017 by subtracting the Scope 3 emissions published by Allianz from the values provided by ET for Scope 3 (which include financed emissions). The 1.5°C-compatible required annual reduction rate for Scope 3 category 15 emissions was calculated by the XDC Model in various steps.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



As the Allianz Group, we set ourselves binding climate targets in 2018 for both our investments and our business operations: By 2050, we will invest our policyholder’s funds in a climate-neutral way and we will reduce emissions in our business operations in line with the 1.5°C degree target.

The current state of scientific knowledge is decisive for us. Therefore we support the limitation of global warming to 1.5°C degrees Celsius, as this ambitious goal can significantly reduce social costs compared costs associated with a warming of 2°C degrees Celsius.

Thomas Liesch, Lead Climate Strategy, Allianz SE

19 Allianz, RE100, https://www.allianz.com/en/sustainability/low-carbon-economy/environmental-management/RE100_initiative.html

20 Allianz, Net-Zero Asset Owner Alliance, www.allianz.com/en/sustainability/low-carbon-economy/climate-change/net-zero-asset-owner-alliance.html

21 Allianz, Environmental data, www.allianz.com/en/sustainability/low-carbon-economy/environmental-management/environmental-data.html

BASF SE

Contribution to 1.75°C



BASF SE (BASF) engages in the provision of chemical products. It operates through the following segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition and Care, Agricultural Solutions and Other. The Chemicals segment supplies petrochemicals and intermediates. BASF belongs to NACE sector 20 - Manufacture of chemicals and chemical products.

The analysis considers that the oil and gas business of Wintershall was part of BASF in 2017, but in 2018 merged with Dea into a new company, of which BASF holds 67%. Accordingly, we assume that BASF will hold 67% of the joint venture after its IPO which is planned for Q2 2020.²²

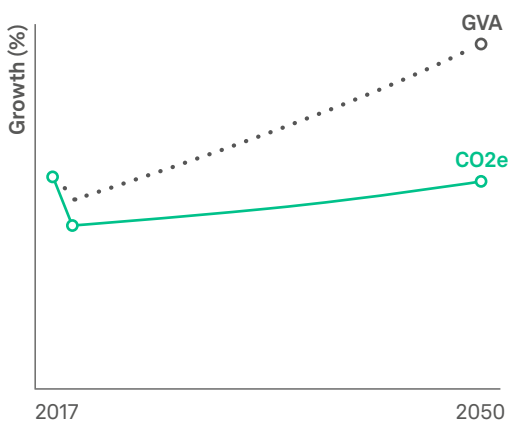
The analysis of BASF's climate target is based on its 2017 and 2018 CDP report, its 2018 Integrated Corporate Report and the company's contribution to the analysis.

BASF has set itself an intensity target: Scope 1 and 2 emissions are to be reduced by 40% per ton of products sold between 2011 and 2020 (base year 2002; 93% emissions in scope). In 2017, 89% of the target was met. This amounts to a reduction of 10.68% and results in a remaining annual rate of reduction of 0.5% to reach the target. According to BASF, the new climate strategy which was released in 2018 replaces this intensity target from 2019 onwards.

The new climate strategy of BASF is described in its 2018 Integrated Corporate Report. BASF is aiming for emission-neutral growth until 2030, keeping Scope 1 and 2 emissions flat at the 2018 level.²³ Consequently, we assume 0% growth of Scope 1 and 2 emissions between 2019 and 2030.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



²² BASF, press release, <https://www.basf.com/global/en/media/news-releases/2019/05/p-19-199.html>

²³ BASF, Integrated Corporate Report 2018, page 9.

Bayer AG

Contribution to 1.75°C

Baseline XDC	2.0°C
Sector XDC	1.6°C
Scenario-based XDC	1.8°C
Target XDC (IEA B2DS)	1.4°C

Bayer AG (Bayer) engages in the development, manufacture and distribution of products in the areas of health care, nutrition and high-tech materials. It operates through the following segments: Pharmaceuticals, Consumer Health, Crop Science, Animal Health and Covestro. The service company Currenta is not included in the analysis. Bayer belongs to NACE sector 21 – Manufacture of basic pharmaceutical products and pharmaceutical preparations.

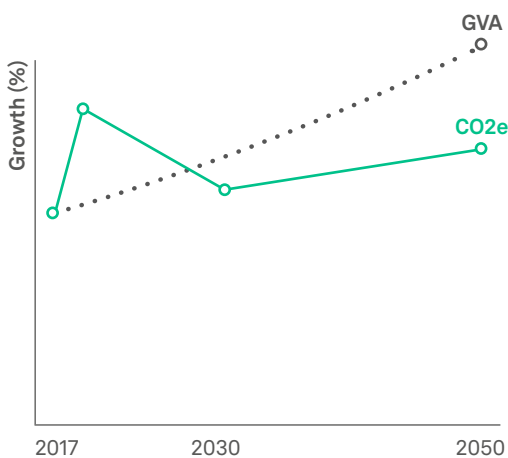
The analysis of Bayer’s climate target is based on its 2018 CDP report, its 2018 Annual Report and the company’s contribution to the analysis.

Bayer has set itself an intensity target: Scope 1 and 2 emissions are to be reduced by 20% per EUR 1000 external sales from 2015 to 2020 (base year 2015; 100% emissions in scope). In the base year, these emissions amounted to 55.7 kg CO₂e / EUR 1000 external sales. According to Bayer’s 2018 Annual Report in 2017, 85% of this target was reached.²⁴ In 2018, this target was exceeded with a reduction of 25% to 42.0 kg. For external sales, we assume Baseline GVA growth rates. According to ET emission data (2017) for Scope 1 and 2 emissions and the data for Sales (2017) from Bayer’s 2018 Annual Report, emissions amount to 45.1 kg CO₂e / EUR 1,000 sales. Assuming an intensity value of 45.1 kg CO₂e / 1000 EUR sales in 2017 and assuming this corresponds to 85% of the planned 20% reduction by 2020, the target for 2020 is 43.5 kg. We assume that the reduction in Scope 1 and 2 emissions will be achieved in equal proportions. After 2020, we assume that the intensity value of 43.5 kg CO₂e / EUR 1000 sales remains constant.

In addition, the energy efficiency per EUR 1000 external sales shall be improved by 10% from 2015 to 2020. In 2015, the value was 143 kWh. In 2017, it was 125 kWh. This represents an improvement of 12.6%. We assume this target can contribute to the achievement of the intensity target. Furthermore, the 2018 CDP report lists individual energy efficiency improvement measures that lead to annual savings of 3,461 t CO₂e in Scope 1 and the same amount in Scope 2 emissions. We assume that these measures enable the achievement of the intensity target.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



At Bayer, we have been engaged in climate protection for decades and will passionately continue our journey. Now, we are aiming to become carbon-neutral in our own operations in 2030 by implementing energy efficiency measures, switching to 100% renewable electricity and compensating remaining emissions through biodiversity-enhancing carbon capture. Most recently, we have committed to setting a science-based target and we are already listed as a company that taking action. In this regard, we are striving as well for absolute emission reduction along the entire value chain by engaging with suppliers and customers, as well as in our logistics and packaging.

Dr. Markus Hadley, VP, Head of Corporate Business Stewardship, Bayer AG

²⁴ Bayer, Annual Report 2018, page 31.

Bayerische Motoren Werke AG

Contribution to 1.75°C



Bayerische Motoren Werke AG (BMW) engages in the manufacture and sale of automobiles and motorcycles. It operates through the following business segments: Automotive, Motorcycles, Financial Services and Other Entities. BMW belongs to the NACE sector 29 – Manufacture of motor vehicles, trailers and semi-trailers.

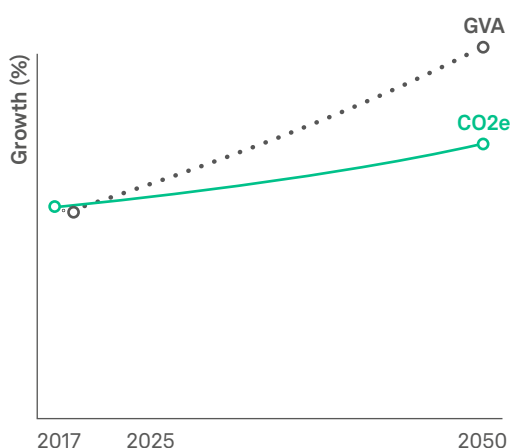
The analysis of BMW’s climate target is based on its 2018 CDP report and BMW’s 2018 Sustainable Value Report.

BMW has set itself two absolute targets and an intensity target: Scope 1 and 2 emissions are to be reduced by 20% until 2020 (base year 2015; 82% emissions in scope). This target was met in 2017. The second absolute target provides for a 100% reduction until 2050 (base year 2015; 94% emissions in scope). This target is modeled by reducing emissions by 95% until 2045 and then linearly reducing them to zero until 2050. For the years up to 2045, this results in an annual reduction rate of 10.15%.

The intensity target refers to Scope 3 category 11 emissions. These emissions are to be reduced by 25% until 2020 (base year 2015; 100% emissions in scope). The share of this category in total Scope 3 emissions is calculated based on data from 2018 BMW’s Sustainable Value Report²⁵ amounts to 72.35%. The target is to reduce CO₂e emissions per km from 182 g to 136.5 g per year from 2008 to 2020. According to the 2018 Sustainable Value Report, the value for 2017 is 141 g / km. Hence, a further reduction of 3.19% persists until 2020 which translates into an annual reduction of 1.08%. We assume that the number of kilometers driven will increase in line with Baseline GVA assumptions. Combined, this results in a growth rate for absolute emissions in the use phase of 2.09%.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



25 BMW, Sustainable Value Report 2018, page 63.

Beiersdorf AG

Contribution to 1.75°C



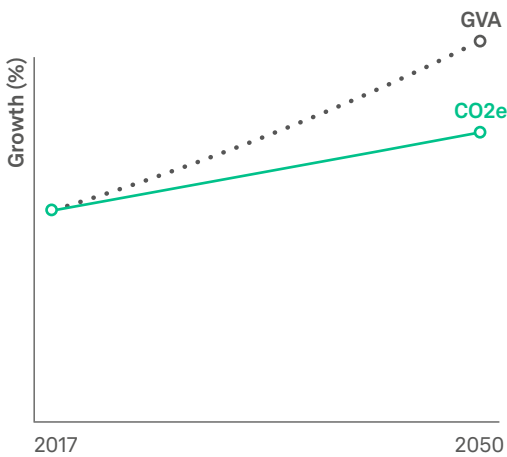
Beiersdorf AG (Beiersdorf) is engaged in the development, manufacture, and distribution of skin and personal care products. The company operates through the following segments: Consumer and Tesa. Beiersdorf belongs to NACE sector 20 – Manufacture of chemicals and chemical products.

The analysis of Beiersdorf’s climate target is based on its 2018 CDP report.

Beiersdorf has set itself an intensity target: Scope 1 and 2 emissions per product are to be reduced by 70% until 2025 (base year 2014; 100% emissions in scope). By 2017, savings of 27% were achieved. Part of the reduction is to be reached by completely switching the energy supply to renewable energies by 2020. We assume that the reduction until 2020 is achieved by a linear reduction of Scope 2 emissions to zero in 2020. To achieve the rest of the target by 2025 a further annual intensity reduction of 2.14% in Scope 1 emissions is required. We assume that the number of products will grow at the same rate as the Baseline GVA growth rate.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Continental AG

Contribution to 1.75°C

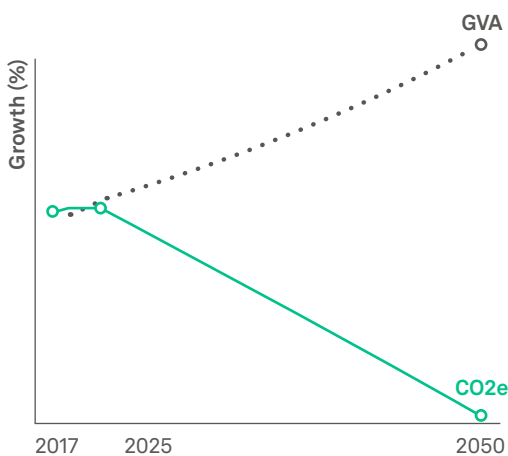
Baseline XDC	4.1°C
Sector XDC	5.4°C
Scenario-based XDC	2.9°C
Target XDC (IEA B2DS)	3.9°C

Continental AG (Continental) is a holding company which engages in the manufacture and sale of soft rubber products, rubberized fabrics, and solid tires. It operates through the following segments: Chassis and Safety, Powertrain, Interior, Tires, ContiTech and Other or Consolidation. Continental belongs to NACE sector 22 – Manufacture of rubber and plastic products.

The analysis of Continental’s climate target is based on its 2019 climate strategy²⁶ and the company’s contribution to the analysis. According to Continental, the new strategy replaces the climate target communicated in its 2018 CDP report.

Continental has set itself an absolute target: Scope 1 and 2 emissions are to be reduced to zero until 2040 (100% emissions in scope). The annual reduction rates used for the analysis are based on internal information provided by Continental. Regarding Scope 2 emissions, Continental aims to procure its electricity exclusively from renewable sources in all its worldwide production sites by the end of 2020. In addition, Scope 3 emissions are to be reduced to net-zero by 2050. We assume a linear reduction of 30% by 2030 and a linear reduction of 70% between 2031 and 2050 for Scope 3 emissions.

Growth (%) in GVA and Emissions Relative to Base Year



Three-pronged Climate Protection for a CO₂-neutral Value Chain.

Continental is fully committed to the Paris climate agreement. The industry and mobility must be CO₂-neutral by 2050 at the latest, which is why our goal is to have a CO₂-neutral value chain. As a technology company we are convinced that this is achievable.

Fulfilment of this goal is a pillar of our future viability and embedded in a comprehensive, three-pronged approach to climate protection: protection of the environmental climate, the economic climate and the social climate.

The first step involves changing the source of electricity. We aim to be using electricity from renewable sources in all our production sites worldwide by the end of 2020. Our production processes will be CO₂-neutral by 2040 and our supply chains and product usage by 2050. Renewable energy and innovative improvements in efficiency are key to achieving this. Process optimizations and new technologies are more effective in this regard than any compensation measure. This is where investment in education and research into smart technologies pays off – environmentally, economically and socially.

Dr. Elmar Degenhart, CEO, Continental AG

26 Continental, press release, www.continental.com/en/press/press-releases/continental-press-conference-iaa-2019-186292

Covestro AG

Contribution to 1.75°C

Baseline XDC	5.1°C
Sector XDC	5.1°C
Scenario-based XDC	5.1°C
Target XDC (IEA B2DS)	3.7°C

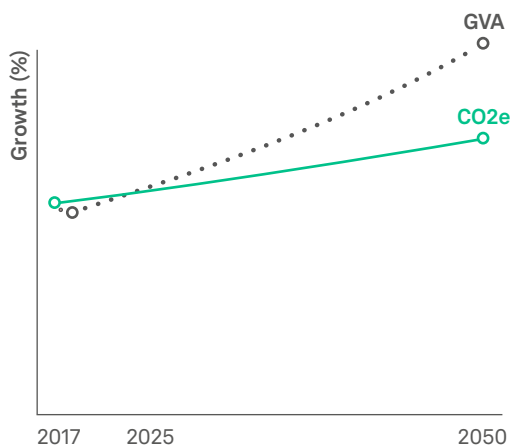
Covestro AG (Covestro) manufactures and supplies polymers. It operates through the following segments: Polyurethanes, Polycarbonates, Coatings, Adhesives and Specialties. Covestro belongs to NACE sector 20 – Manufacture of chemicals and chemical products.

The analysis of Covestro's climate target is based on its 2018 Annual Report and the company's contribution to the analysis.

Covestro has set itself an intensity target: Scope 1 and 2 emissions per tonne of manufactured products are to be reduced by 50% until 2025 (base year 2005). In 2018, emissions per tonne of products amounted to 0.4342 t CO₂e which corresponds to a 40% reduction compared to 2005 levels. The value in 2017 was lower (0.4064 t CO₂e) and the increase in 2018 is due to Covestro's conversion of the Scope 2 calculation method from location-based to market-based (GHG Protocol Standard). Against this background, we assume the value for 2005 was 0.7237 t CO₂e and therefore the target value is 0.3618 t CO₂e. We assume the manufactured products will grow according to Baseline GVA growth rates. Hence, we assume a reduction of emissions per tonne of product in Scope 1 and 2 of 2.57% on an annual basis until 2025 to reach the target level.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Daimler AG

Contribution to 1.75°C



Daimler AG (Daimler) engages in the production and distribution of cars, trucks, and vans. It operates through the following segments: Mercedes-Benz Cars, Daimler Trucks, Mercedes-Benz Vans, Daimler Buses and Daimler Financial Services. Daimler belongs to NACE sector 29 – Manufacture of motor vehicles, trailers and semi-trailers.

The analysis of Daimler’s climate target is based on its 2018 CDP report and its 2018 Sustainability Report.

Daimler has set itself an absolute and two intensity targets: The absolute target consists of the reduction of Scope 1 and 2 emissions by 20% until 2020 (base year 1994; 80% emissions in scope). This target applies only to European-based plants. The reduction process started in 2013 and by 2017, 95% of the target was met, which results in the remaining annual reduction rate of 0.41% until 2020 to reach the absolute target.

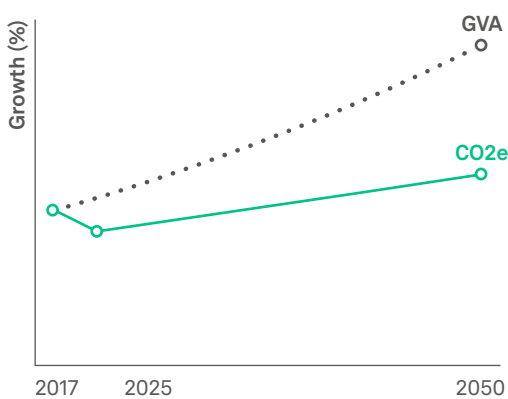
The first intensity target also relates to Scope 1 and 2 emissions. Emissions per ton of product are to be reduced by 40% by 2020 (base year 2007; 100% emissions in scope). By 2017, 85% of the target was met. With this intensity target, savings of 7.7% in Scope 1 and 2 emissions are expected over the term.

The absolute target and the first intensity target overlap. Since the absolute target reduced 16% (20% of 80%) of Scope 1 and 2 emissions which is higher than the 7.7% savings of the intensity target, we only consider the absolute target.

The second intensity target refers to Scope 3 category 11 emissions. The emissions per kilometer driven are to be reduced by 37% until 2021 (base year 2010; 100% emissions in scope). The base value for passenger cars is 158 g CO₂e per km. In 2017, 57% of the target was met (125 g CO₂e). The target value for 2021 is 100 g CO₂e per km which results in an annual reduction rate of 3.6% until 2021. Since values for other vehicle classes are not specified, we assume that the reduction rates for these are at least identical. Emissions from the Scope 3 category 11 emissions accounted for 73% of all Scope 3 emissions in 2017.²⁷ As of 2022, we assume that the emissions per kilometer traveled increase according to Baseline GVA growth rates.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



27 Daimler, Sustainability Report 2018, Appendix Scope 3 Emissions, page 2.

Deutsche Bank AG

Contribution to 1.75°C

Baseline XDC	2.8°C
Sector XDC	2.5°C
Scenario-based XDC	2.8°C
Target XDC (IEA B2DS)	1.9°C

Deutsche Bank AG (Deutsche Bank) engages in the provision of corporate banking and investment services. It operates through the following segments: Corporate & Investment Bank (CIB), Private & Commercial Bank (PCB) and Deutsche Asset Management (Deutsche AM). Deutsche Bank belongs to NACE sector 64 – Financial service activities, except insurance and pension funding.

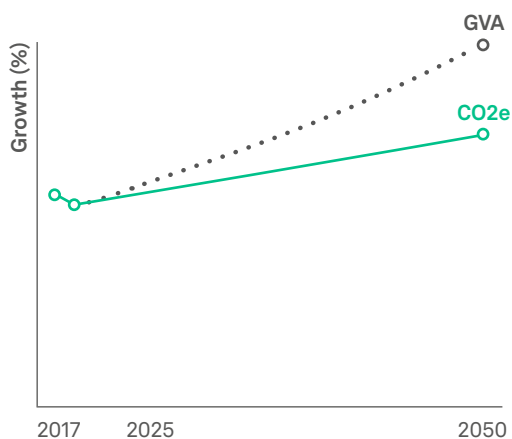
The analysis of Deutsche Bank’s climate target is based on its 2018 CDP report and its 2018 Non-Financial Report.

Deutsche Bank has set itself an absolute target: The target is to reduce Scope 2 emissions by 1.5% for the upcoming year (base year 2016; 100% emissions in scope). According to the 2018 CDP report, the target is reviewed annually and if no other target is set, it continues to apply for the next year. Therefore, we assume an annual reduction of Scope 2 emissions by 1.5% until 2050.

In addition, Deutsche Bank plans to fully offset all annual emissions up to 2020, excluding financed emissions (Scope 3 category 15).²⁸

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



28 Deutsche Bank, Non-Financial Report 2018, page 62.

Deutsche Börse Group

Contribution to 1.75°C

Baseline XDC	2°C	
Sector XDC	2.7°C	
Scenario-based XDC	1.9°C	
Target XDC (IEA B2DS)	2°C	

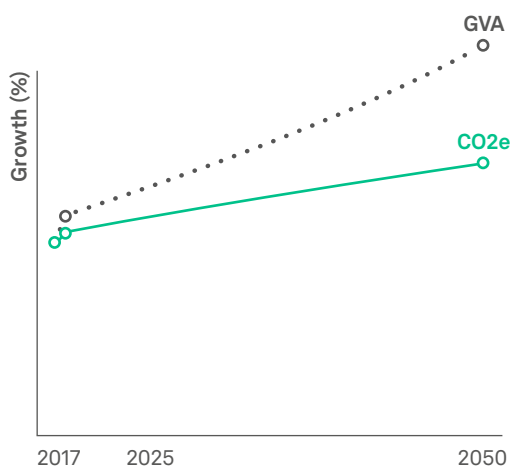
Deutsche Börse Group (Deutsche Börse) is an international exchange organization and provider of market infrastructure. Its business areas include pre-trading and post-trading, as well as services for collateral management and liquidity management. Deutsche Börse belongs to the NACE sector 66 – Activities auxiliary to financial services and insurance activities.

The analysis of Deutsche Börse's climate target is based on its 2018 CDP report and the company's contribution to the analysis.

Deutsche Börse has set itself an intensity target: The target is to reduce Scope 1 and 2 emissions per workplace by 0.5% until 2020 (base year 2016; 100% emissions in scope). A reduction of absolute Scope 1 and 2 emissions of 0.5% until 2020 is expected. This translates into the required annual reduction rate of 11.4% to reach the target value. As of 2021, we assume that the emission intensity per workplace remains constant.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Deutsche Lufthansa AG

Contribution to 1.75°C

Baseline XDC	3.6°C
Sector XDC	3.9°C
Scenario-based XDC	2.8°C
Target XDC (IEA B2DS)	3°C

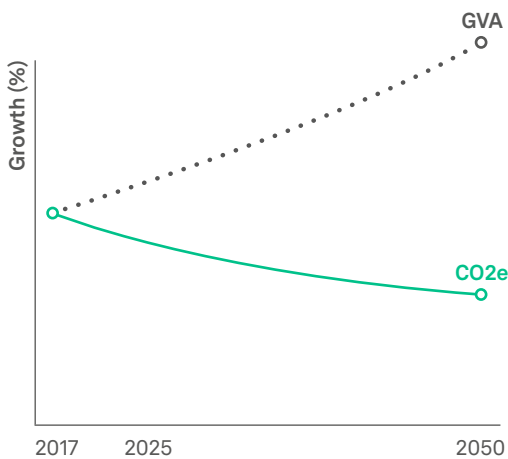
Deutsche Lufthansa AG (Lufthansa) engages in the provision of passenger, freight, and cargo airline services. It operates through the following segments: Network Airlines, Eurowings, Logistics, Maintenance Repair Overhaul, Catering and Additional Businesses and Group Functions. Lufthansa belongs to NACE sector 51 – Air transport.

The analysis of Lufthansa’s climate target is based on its 2018 CDP report and the company’s contribution to the analysis.

Lufthansa has set itself eleven absolute targets and one intensity target: The eleventh absolute target includes the ten other absolute targets as well as the intensity target. Therefore, only the eleventh target was considered. The target is to reduce Scope 1 emissions by 50% until 2050 (base year 2005; 100% emissions in scope) which results in an annual rate of reduction of 3.15% until 2050. Scope 2 emissions are to be reduced to zero by using CO₂-neutral electricity in Lufthansa’s buildings in Germany, Austria and Switzerland from 2019 on. In Scope 3, all business trips of Lufthansa employees will be compensated from 2019 onwards which results in zero Scope 3 category 6 emissions between 2019 and 2050.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Deutsche Post AG

Contribution to 1.75°C

Baseline XDC	2.1°C
Sector XDC	3.4°C
Scenario-based XDC	1.6°C
Target XDC (IEA B2DS)	2.4°C

Deutsche Post AG (Deutsche Post) engages in the provision of mail and logistics services. It operates through the following business segments: Post-eCommerce-Parcel (PeP), Express, Global Forwarding, Freight, Supply Chain and Corporate Center. Deutsche Post belongs to the NACE sector 53 – Postal and courier activities.

The analysis of Deutsche Post’s climate target is based on its 2018 CDP report, its 2018 Corporate Responsibility Report and the company’s contribution to the analysis.

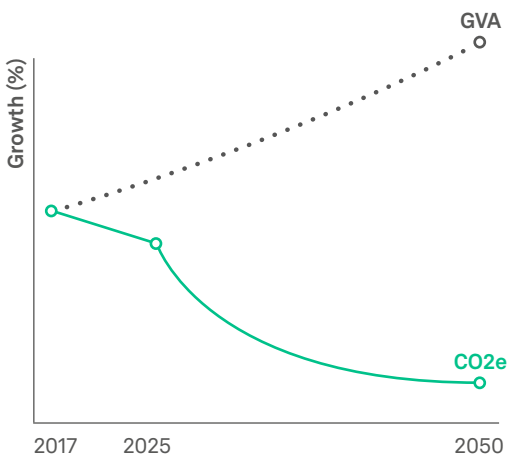
Deutsche Post has set itself an absolute and an intensity target: The absolute target is to reduce Scope 1, 2 and 3 (upstream and business travel) emissions by 100% until 2050 (base year 2016; 74% emissions in scope).

The first intensity target relates to a “carbon efficiency index” and includes various metrics, such as CO2e per letter/parcel or CO2e per t km/TEU-km for Express. The index covers Scope 1, 2 and 3 (upstream transportation and distribution and business travel) emissions. It is to be reduced by 50% until 2025 (base year 2007; 75% emissions in scope) which is expected to result in an absolute emissions reduction of 33%. In 2017, 64% of the target and thus an 21.12% absolute emission reduction was achieved. In order to fully reach the target by 2025, another absolute annual reduction rate of 2.02% for Scope 1, 2 and 3 (upstream transportation and distribution and business travel) emissions is required and therefore assumed for the quantification.

Accordingly, Scope 1, 2 and 3 (upstream and business travel only) emissions will be reduced by 2.02% annually until 2025. Subsequently, the absolute target is addressed. It includes a reduction of the same emission categories to zero. Emissions are reduced exponentially by 95% until 2045 and then linearly until 2050 to zero.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



As the first logistics company to set a zero emissions target, we consider ourselves an industry pioneer. Our Group-wide environmental and climate protection program GoGreen is constantly developing new ways to improve fuel efficiency (“Burn less”) and increase our use of alternative drive technologies and sustainable fuels (“Burn clean”). E-mobility remains our primary solution for pick-up and delivery operations, with our very own StreetScooter now a market leader in commercial electric transport. For long-haul and heavy-duty transport, we are currently testing a range of different sustainable fuels, and are engaged in several initiatives to promote further development of these fuels. We believe that synthetic PtL fuels – produced using green electricity – have the most potential over the medium term, especially in aviation.

Jill Meiburg, SVP Communications & Sustainability Strategy, Deutsche Post DHL Group

Deutsche Telekom AG

Contribution to 1.75°C

Baseline XDC	1.6°C
Sector XDC	1.7°C
Scenario-based XDC	1.5°C
Target XDC (IEA B2DS)	1.5°C

Deutsche Telekom AG (Telekom) engages in the provision of telecommunication and information technology services. It operates through the following segments: Germany, United States, Europe, Systems Solutions, Group Headquarters and Group Services. Telekom belongs to NACE sector 61 – Telecommunications.

The analysis of Telekom’s climate target is based on its commitment within the RE100 initiative and the company’s contribution to the analysis.

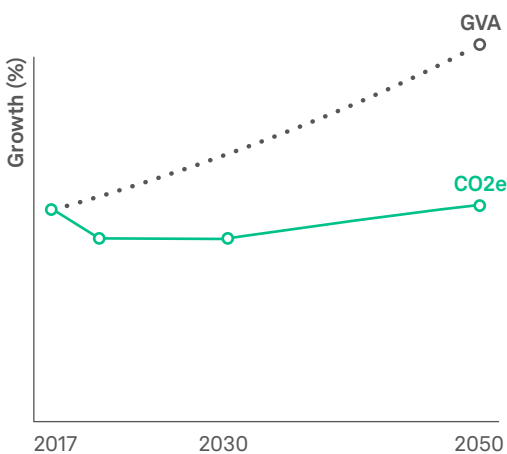
Telekom has set itself an absolute and an intensity target: The absolute target is to reduce Scope 1 emissions by 90% until 2030 (base year 2017; 100% emissions in scope).²⁹ Based on information provided by Telekom, the absolute target is to be reached by an almost linear reduction of Scope 1 emissions until 2030.

The intensity target is to reduce emissions per customer by 25% until 2030 (base year 2017; 60% emissions in scope). Based on information provided by Telekom we assume an almost linear reduction rate until 2030.

In addition, Telekom has joined the RE100 initiative by which it commits itself to exclusively procuring renewable electricity by 2021.³⁰ Based on this target, we assume a linear reduction of Scope 2 emissions to zero by 2021.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



In 2019 we became one of the first DAX companies in aligning our new climate protection goal to the current state of science on climate change. As a result, our goals are now more ambitious than ever.

Birgit Klesper, Senior Vice President for Corporate Responsibility, Telekom

²⁹ Telekom, press release, <https://www.telekom.com/en/corporate-responsibility/climate-and-environment/is-01-climate-and-environment-context/reducing-co2-355308>

³⁰ <http://there100.org/news/14290536>

E.ON SE

Contribution to 1.75°C

Baseline XDC	8.3°C
Sector XDC	7.9°C
Scenario-based XDC	8.1°C
Target XDC (IEA B2DS)	5.2°C

E.ON SE (E.ON) engages in the provision of energy solutions. It operates through the following business segments: Energy Networks, Customer Solutions, Renewables, Non-Core Business and Corporate Functions/Other. E.ON belongs to NACE sector 35 – Electricity, gas, steam and air conditioning supply.

E.ON's analysis takes into account the restructuring of E.ON and RWE, whereby E.ON transfers its Renewable Energies Division to RWE and takes over innogy, except for innogy's Renewable Energies Division. The climate targets communicated by E.ON do not relate to additional emissions from innogy.

Since there is major uncertainty regarding certain details on this restructuring, we based our analysis on the following plausible assumptions:

- E.ON's new company structure will come fully into effect in January 2020.
- The pro rata GVA of the individual divisions can be calculated based on the EBITDA and headcount data for the divisions as reported in the respective 2018 Annual Reports.
- As of 2020, GVA values for E.ON are supplemented by GVA values for innogy (excluding the Renewable Energies Division). GVA corresponding to E.ON's own Renewable Energies Division will be subtracted, as it is assigned to RWE.
- Emissions can be broken down according to the pro rata GVA in 2018. Hence, 88.6% of innogy's Scope 1 and 2 emissions are allocated to E.ON, while 11.9% of E.ON's own emissions belonging to the Renewable Energies Division are deducted. innogy's Scope 3 emissions are fully allocated to E.ON, as they originate predominantly from the sales business and not from the Renewable Energies Division which is transferred to or remains with RWE, respectively.
- As of 2020, innogy's sales business will be continued at E.ON as before.
- The additional emissions for the business areas acquired from innogy develop according to Baseline assumptions until 2019, as no targets were communicated by innogy.
- The restructuring does not result in major savings which might have additional effects on E.ON's GVA or emissions.

The analysis of E.ON's climate target is based on its 2018 CDP report, its 2019 Sustainability Strategy and the company's contribution to the analysis.

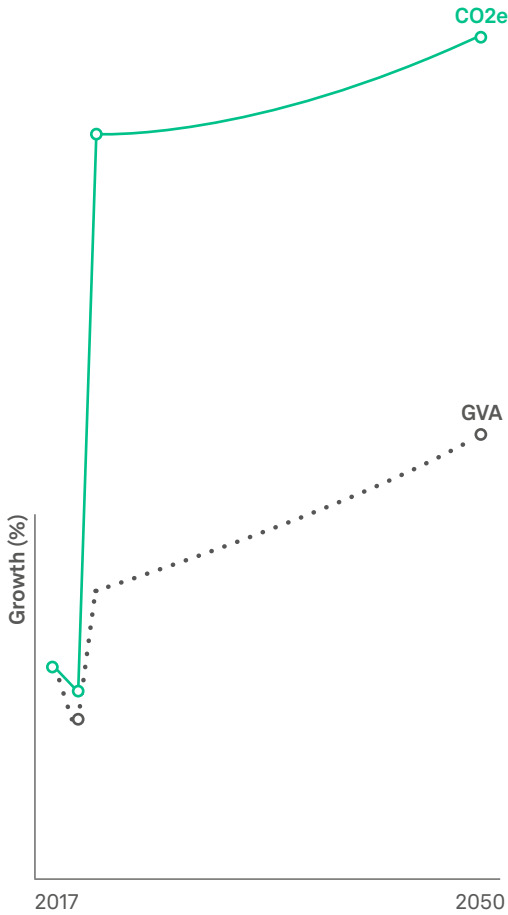
E.ON has set itself an absolute and an intensity target: The absolute target is to reduce Scope 1, 2 and 3 emissions by 30% until 2030 (base year 2016, 100% emissions in scope). 4% of the target was achieved in 2017. Hence, a further absolute emission reduction of 29.15% is necessary, starting from 2017. We assume a linear reduction of emissions under this target until 2030.

The intensity target is to reduce Scope 3 category 3 emissions by 50% until 2030 (base year 2016; 100 % emissions in scope). Since the intensity target for Scope 3 contributes to the absolute target and no further effect is targeted, we assume that the impact is already included in the absolute target.

As of 2031, a further absolute target applies for Scope 1 and 2 emissions which are reduced to zero by 2050. By 2040, we assume a linear reduction path, which then changes into an exponential development. For the sake of simplicity, we assume that the remaining emissions in 2030 are reduced by 50% until 2040. Subsequently, for the exponential reduction, we assume that emissions will be reduced by 95% until 2049 and are then reduced to zero in 2050.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



As an energy company, climate protection is a crucial topic for us. That's why we developed a completely new climate strategy with targets and measures after the spin-off of our fossil generation portfolio in 2017. The underlying scenarios reflect the achievement of the climate and energy saving targets. With our recent focus on intelligent power grids and customer solutions, we also want to work with our customers and partners to advance the energy transition in Europe. Therefore, it is also important for us to consider the carbon reduction effects of our energy solutions on the customer side, beyond our own GHG Scope 1-3 balance.

Bernhard Grünauer, Sustainability Manager
& Climate Expert, E.ON SE

Fresenius SE & Co. KGaA

Contribution to 1.75°C

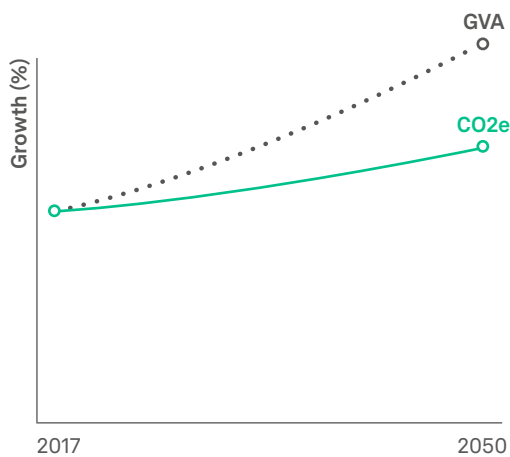
Baseline XDC	1.6°C
Sector XDC	2.3°C
Scenario-based XDC	n/a
Target XDC (IEA B2DS)	1.8°C

Fresenius SE & Co. KGaA (Fresenius) is a healthcare group which engages in the provision of products, and services for dialysis, hospitals, and outpatient medical care. It operates through the following segments: Fresenius Medical Care, Fresenius Kabi, Fresenius Helios, Fresenius Vamed, Corporate and Other. Fresenius SE & Co. KGaA belongs to NACE sector 26 – Manufacture of computer, electronic and optical products.

Fresenius has not set itself a climate target. However, Fresenius was actively involved in the analysis.

For all years and emission scopes we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Fresenius Medical Care AG & Co. KGaA

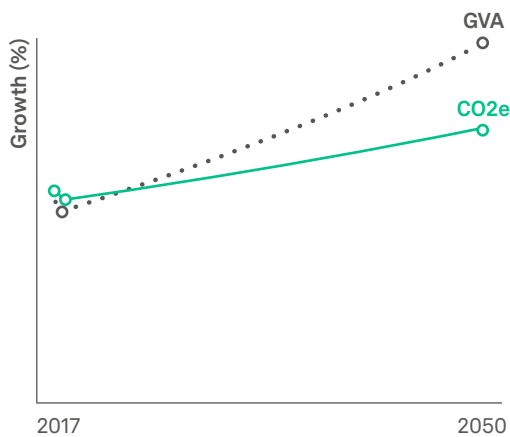
Contribution to 1.75°C

Baseline XDC	1.6°C	
Sector XDC	2°C	
Scenario-based XDC	n/a	
Target XDC (IEA B2DS)	1.6°C	

Fresenius Medical Care AG & Co. KGaA (Fresenius Medical Care) engages in the provision of products and services for patients with chronic kidney failure. It also develops and manufacture a variety of health care products which includes dialysis and non-dialysis products. Fresenius Medical Care belongs to NACE sector 86 – Human health activities.

Fresenius Medical Care has not set itself a climate target. For all years and emission scopes we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



HeidelbergCement AG

Contribution to 1.75°C

Baseline XDC	10.7°C
Sector XDC	9.1°C
Scenario-based XDC	10.3°C
Target XDC (IEA B2DS)	7°C

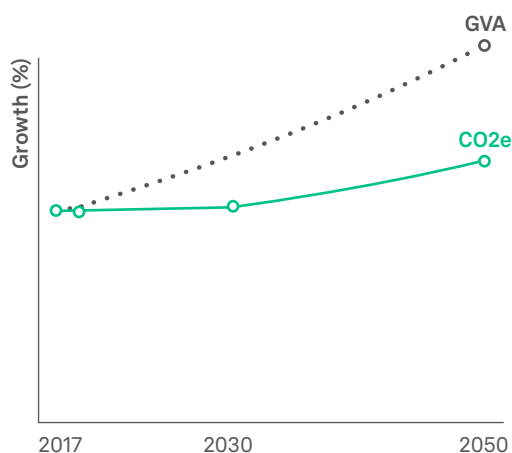
HeidelbergCement AG (HeidelbergCement) engages in the production and distribution of cement, aggregates, ready-mixed concrete, and asphalt. It operates through the following geographical segments: Western and Southern Europe, Northern and Eastern Europe, Central Asia, North America, Asia-Pacific, Africa-Eastern Mediterranean Basin and Group Services. HeidelbergCement belongs to NACE sector 23 – Manufacture of other non-metallic mineral products.

The analysis of HeidelbergCement’s climate target is based on its 2018 CDP report.

HeidelbergCement has set itself an intensity target: The target is to reduce emissions in Scope 1 and 2 (location-based) emissions per ton of cementitious products by 30% until 2030 (base year 1990; 99% emissions in scope). By 2017, 63% of the target was met, meaning a reduction of 18.9% has been achieved. To reach the intensity target, an annual absolute emission reduction rate of 1.13% until 2030 is required and therefore assumed for the quantification.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Henkel AG & Co. KGaA

Contribution to 1.75°C



Henkel AG & Co. KGaA (Henkel) engages in the manufacture and distribution of home and beauty care products and provides adhesive solutions. It operates through the following business segments: Adhesives for Consumers, Craftsmen and Building, Industrial Adhesives, Beauty Care, Laundry and Home Care. Henkel belongs to NACE sector 20 – Manufacture of chemicals and chemical products.

The analysis of Henkel’s climate target is based on its 2018 CDP report and the company’s contribution to the analysis.

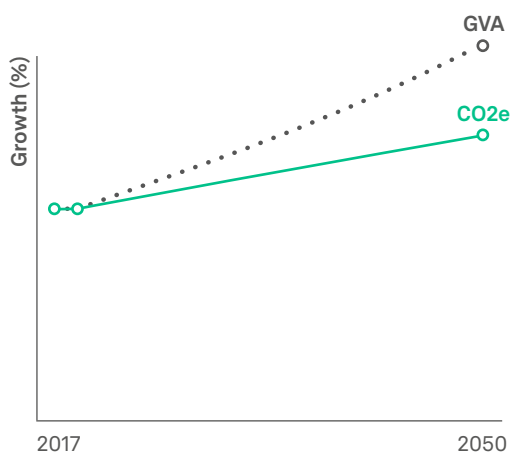
Henkel has set itself two intensity targets. The first target is to reduce its Scope 1 emissions per metric ton of manufactured products by 30% until 2020 (base year 2010; 95% emissions in scope). The intensity in the base year was 0.1 t CO2e per ton of manufactured products. In 2017, 80% of the target was met. A reduction of 30% means the target is 0.07 t CO2e per ton of product; in 2017 an intensity value of 0.076 t CO2e was reached. An annual reduction of 2.7% is thus required for the upcoming years up to 2020 and therefore assumed for the quantification. From 2021 we assume that the intensity will remain unchanged and that the emissions in Scope 1 will increase according to Baseline assumptions.

The second target is to reduce emissions in Scope 3 category 9 per metric ton of manufactured products by 5% until 2020 (base year 2015; 1% emissions in scope). Since the manufacturing of products increases, we assume a linear growth of the emissions in scope of 1.49%.

In addition, Henkel plans to exclusively procure renewable electricity by 2030. Based on this target, we assume a linear reduction of Scope 2 emissions to zero by 2030.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



In view of the urgent need to reduce CO2 emissions, it is our long-term vision to become a climate-positive company and make progress in further relevant parts of our value chain. As a first step, we plan to achieve a 75-percent reduction in the carbon footprint of our production by 2030. We also want to obtain 100 percent of our electricity from renewable sources by 2030. In addition, we would like to leverage our brands and technologies to help customers and consumers save 50 million tons of CO2 when using our products by 2020.

Uwe Bergmann, Director Sustainability Management,
Henkel AG & Co. KGaA

Infineon Technologies AG

Contribution to 1.75°C

Baseline XDC	1.8°C	
Sector XDC	2.3°C	
Scenario-based XDC	1.8°C	
Target XDC (IEA B2DS)	1.8°C	

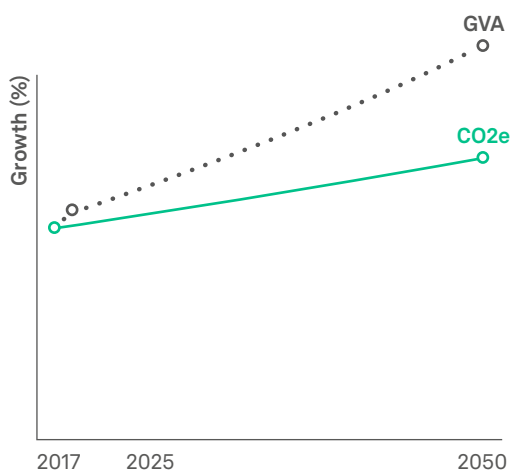
Infineon Technologies AG (Infineon) engages in the provision of semiconductor and system solutions. It operates through the following segments: Automotive; Industrial Power Control; Power Management and Multimarket; and Digital Security Solutions. Infineon belongs to NACE sector 26 – Manufacture of computer, electronic and optical products.

The analysis of Infineon’s climate target is based on its 2018 Non-Financial Report supplementing the 2018 Annual Report, whereby each of them refer to the same climate targets.

Infineon has set itself an intensity target: PFC (Perfluorinated Compounds)-relevant emissions per square meter of processed water area should constantly be below 2.2 tons CO₂e.³¹ This target was met both in the base year 2017 with a value of 1.35 and in 2018 with a value of 1.24 and further applies to 2019. Due to a lack of detailed information about this target, no further quantification of this emission reduction target was feasible.

For all years and emission scopes we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



31 Infineon, Non-Financial Report 2018 supplementing the Annual Report 2018, page 26 et seq.

Linde PLC

Contribution to 1.75°C

Baseline XDC	6.6°C
Sector XDC	5.1°C
Scenario-based XDC	6.6°C
Target XDC (IEA B2DS)	3.7°C

Linde plc engages in the production and distribution of industrial gases. It operates through the following segments: North America, Europe, South America, Asia, Surface Technologies, and Linde AG. Its primary products include atmospheric and process gases. The firm also designs, engineers, and builds equipment that produces industrial gases primarily for internal use. Linde plc belongs to NACE sector 20 – Manufacture of chemicals and chemical products.

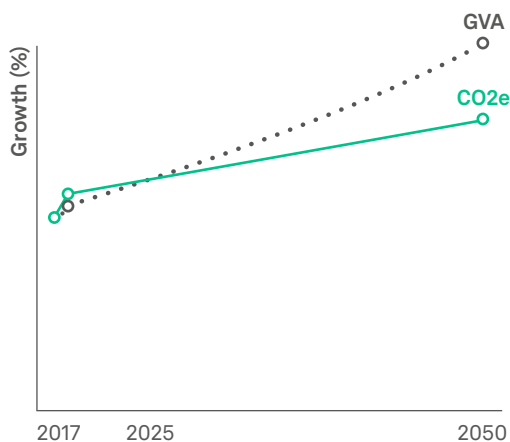
In October 2018 Linde plc emerged from the merger of the industrial gases companies Praxair Inc. and Linde AG. For the year before the merger (2017), values for EBITDA, personnel costs and emissions for Linde AG were used. Since no data for the new company Linde plc is yet available, we modelled GVA and emissions for Linde plc as of 2018 as follows: Since the merger with Praxair Inc. is already included in 2018 full year financial data and is extrapolated pro rata in the annual financial statements, we use values for EBITDA reported by FactSet for Linde plc. In the absence of data on personnel costs, these were modelled pro rata according to the reduction in the number of employees from Praxair Inc. and Linde AG in 2017 to Linde plc in 2018. The resulting GVA is then modelled from 2018 onwards using Baseline growth assumptions. Regarding emissions, we use Scope 1 and 2 emissions reported in Linde plc's 2018 Sustainable Development Report.³² Since Scope 3 emissions are not included in this report, the total emissions of Praxair Inc. and Linde AG are taken in 2017 and reduced by the decline in the joint GVA of Praxair Inc. and Linde AG in 2017 to the GVA of Linde plc in 2018.

The analysis of Linde plc's climate target is based on Linde plc's 2018 Sustainable Development Report and Linde plc's contribution to the analysis.

Linde plc. has set itself an avoidance target: The target is to avoid 100,000 additional tonnes of Scope 1 and 2 emissions compared to a business as usual emission development pathway until 2020 (baseline: 2018). In order to achieve this target, Scope 1 and 2 emissions grow slightly less than under Baseline assumptions.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



³² Linde plc, Sustainable Development Report 2018, page 5.

Sustainability is core to Linde's corporate strategy. In our operations, we work to continuously improve our own energy efficiency and avoided more than 5 million metric tons of CO2e from 2009-2018. Our business model and core values allow us to provide high-quality solutions, technologies and services that can support our customers to be more successful and help to sustain and protect our world: In 2018, for example, we enabled our customers to avoid 90 million metric tons of CO2e. The results we have achieved in making our world more productive have been recognized by premier sustainability investment indexes and rankings, including the Dow Jones Sustainability World Index.

Since the merger between Linde AG and Praxair Inc., and the lifting of the Hold Separate Order in March 2019, the combined company has started to work on defining its Sustainable Development targets for 2025, including its climate change targets and strategy. Those will be officially published in 2020. In the meantime, Linde continues to work towards the existing 2020 targets of both legacy companies which were adjusted to reflect the required divestitures as a result of the merger.

For further information on Linde's carbon management please see 2019 CDP Climate Change Report.

Riva Krut, Chief Sustainability Officer, Linde plc

Merck KGaA

Contribution to 1.75°C

Baseline XDC	1.6°C	
Sector XDC	1.6°C	
Scenario-based XDC	1.6°C	
Target XDC (IEA B2DS)	1.4°C	

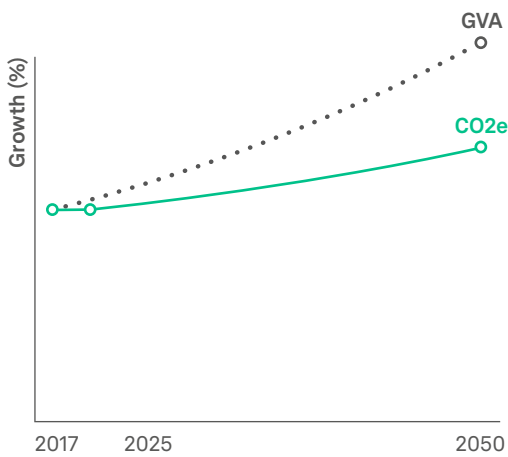
Merck KGaA (Merck) is a science and technology company which engages in the manufacture of pharmaceutical and chemical products. It operates through the following sectors: Healthcare, Life Science and Performance Materials. Merck belongs to NACE sector 21 – Manufacture of basic pharmaceutical products and pharmaceutical preparations.

The analysis of Merck’s climate target is based on its 2018 CDP report.

Merck has set itself an absolute target: The target is to reduce its Scope 1 and 2 (location-based) emissions by 20% until 2020 (base year 2006, 100% emissions in scope). By 2017, 8% of the planned reduction were achieved. Location-based emission figure were converted into market-based figures. Based on that, we assume a remaining annual rate of reduction of 5.4% for the years up to 2020.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



MTU Aero Engines AG

Contribution to 1.75°C

Baseline XDC	5.8°C
Sector XDC	5.5°C
Scenario-based XDC	5.9°C
Target XDC (IEA B2DS)	3.9°C

MTU Aero Engines AG (MTU) is engaged in the development, manufacture and trade of aviation engine and components. It operates its business through the following segments: Original Equipment Manufacturing, and Maintenance, Repair and Overhaul. MTU belongs to NACE sector 30 – Manufacture of other transport equipment.

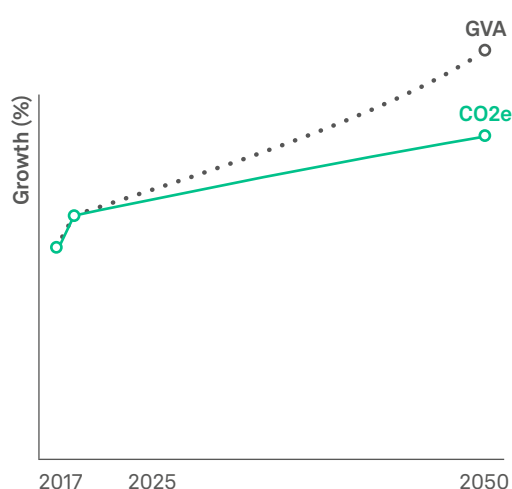
The analysis of MTU's climate target is based on its 2018 CDP report and its 2018 Sustainability Report.

MTU has set itself an absolute and an intensity target: The absolute target relates to its Munich headquarters. Scope 1 and 2 emissions are to be reduced by 25% until 2020 (base year 1990). For Scope 1, this target was met in 2017. For Scope 2, 92% of the target was reached in 2017. Based on absolute values in 2017 and target values for 2020, a further reduction of 0.87% per year is required and therefore assumed for the quantification.

The intensity target relates to emissions per flight kilometer. These emissions are to be reduced by 40% until 2050 (base year 2000).³³ By 2015, 16% of this target was met. The next interim targets are 20% by 2020 and 25% by 2030. We assume that the corresponding emissions relate to the Scope 3 category 11. For 2017, this category accounted for 86.6% of all Scope 3 emissions. To meet the interim targets, the following annual emission growth rates are required and therefore assumed for the quantification: 0.94% by 2020, 1.27% from 2021 to 2030 and 0.8% from 2031 to 2050. Please note that these growth rates exceed the Baseline assumptions, for which MTU's Baseline XDC is higher than its Scenario-based XDC. We assume that the number of air kilometers will increase in line with Baseline assumptions for economic growth.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



33 MTU, Sustainability Report 2018, page 51 et seq.

Münchener Rückversicherungs-Gesellschaft AG

Contribution to 1.75°C



Münchener Rückversicherungs-Gesellschaft AG (Munich Re) engages in the provision of insurance and reinsurance services. It operates through the following segments: Life and Health Reinsurance, Property-Casualty Reinsurance, ERGO Life and Health Germany, EGRO Property-Casualty Germany and ERGO International. Munich Re belongs to NACE sector 65 – Insurance.

The analysis of Munich Re’s climate target is based on its 2018 Corporate Responsibility Report.

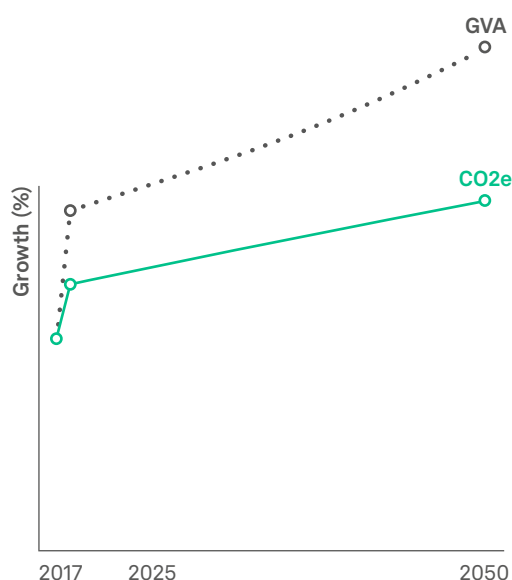
Munich Re has set itself an absolute target: Emissions (Scopes not further defined) are to be reduced by 35% until 2020 (base year 2009). This target was met in 2017.³⁴

Munich Re also plans to fully offset all Scope 1 and 2 emissions and Scope 3 emissions from travel, paper, water and waste by 2020.³⁵ Hence, emissions of these Scopes are set to zero.

Furthermore, only electricity from renewable energies is to be purchased from 2020 onwards. This is modelled by keeping Scope 2 emissions constant at zero starting in 2020.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



34 Munich Re, Corporate Responsibility Report 2018, page 9.

35 Munich Re, Corporate Responsibility Report 2018, page 57 et seq.

Baseline XDC	13.8°C
Sector XDC	7.9°C
Scenario-based XDC	9.5°C
Target XDC (IEA B2DS)	5.2°C

RWE AG (RWE) is a holding company which engages in the generation, transmission, distribution, and trading of electricity and gas. It operates through the following segments: Lignite & Nuclear, European Power and Supply & Trading. RWE belongs to NACE sector 35 – Electricity, gas, steam and air conditioning supply.

RWE's analysis takes into account the restructuring of RWE and E.ON, whereby RWE takes over innogy's and E.ON's Renewable Energies Division, while the rest of innogy is transferred to E.ON. innogy's Renewable Energies Division is included in GVA data for 2018 reported by RWE.

Since there is major uncertainty regarding certain details on this restructuring, we based our analysis on the following plausible assumptions:

- RWE's new company structure will come fully into effect in January 2020.
- The pro rata GVA of the individual divisions can be calculated based on the EBITDA and headcount data for the divisions as reported in the respective 2018 Annual Reports.
- As of 2020, GVA values for RWE are supplemented by GVA values for E.ON's Renewable Energies Division.
- Emissions can be broken down according to the pro rata GVA in 2018. Hence, 11.4% of innogy's Scope 1 and 2 emissions and 11.9% of E.ON's emissions for the Renewable Energy Division are allocated to RWE.
- Emissions from areas such as "business travel" can be disregarded, because the effects are negligible.
- Emissions from E.ON's Renewable Energy Sector develop according to E.ON's climate target for the period between 2017 and 2019 (see E.ON).
- The restructuring does not result in major savings which might have additional effects on RWE's GVA or emissions.

The analysis of RWE's climate target is based on a press release and RWE's contribution to the analysis.

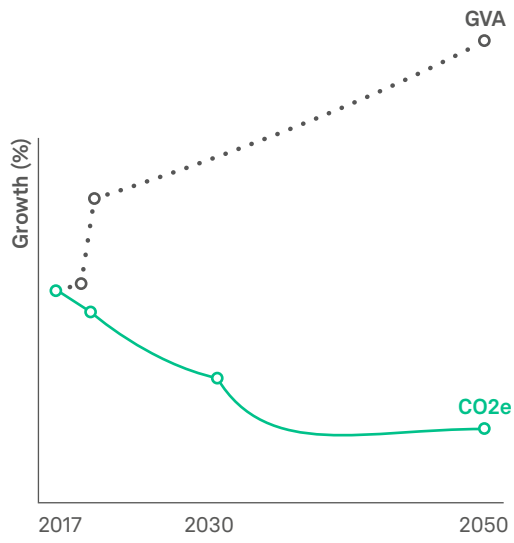
RWE has set itself an absolute target: The target is to reduce Scope 1 emissions to net-zero until 2040.³⁶ Interim targets constitute of a reduction 33% until 2020 and of 70% until 2030. Based on information about absolute emission values, an annual reduction rate of 3.83% is assumed until 2020.

We assume a further annual rate of reduction of 7.72% to meet the 2030 interim target. A reduction to zero in 2040 is assumed to be achieved by a reduction of 97% by 2037 compared to 2017 which translates into an annual reduction rate of 28.03% between 2031 and 2037. We assume the remaining emissions are subsequently linearly reduced to zero in three steps.

³⁶ RWE, press release, <https://www.group.rwe/en/press/rwe-ag/2019-09-30-the-new-rwe>

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



SAP SE

Contribution to 1.75°C

Baseline XDC	1.6°C
Sector XDC	1.7°C
Scenario-based XDC	1.4°C
Target XDC (IEA B2DS)	1.5°C

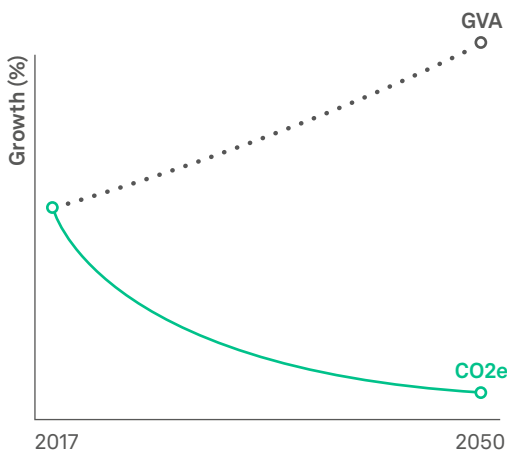
SAP SE (SAP) is an enterprise application software, analytics and business intelligence company which provides enterprise application software and software-related services. It operates through the following business segments: Applications, Technology & Services and SAP Business Network. SAP belongs to NACE sector 58 - Publishing activities.

The analysis of SAP's climate target is based on its 2018 CDP report and the company's contribution to the analysis.

SAP has set itself two absolute targets: Scope 1 and 2 emissions as well as a few selected categories of Scope 3 emissions are to be reduced by 46% until 2020 (base year 2007). This part of the target was met in 2017. For the same emissions, a reduction to zero until 2025 has been announced. Hence, we assume an exponential reduction of emissions by 95% until 2023 and then a linear reduction until 2025 to zero.

The second absolute target relates to all Scope 1, 2 and Scope 3 emissions (base year 2016; 100% emissions in scope). These emissions are to be reduced by 40% until 2025 and additionally by 85% until 2050. Hence, emissions not covered by the first target are initially reduced by 40% until 2025. Thereafter, all emissions are further reduced to 15% from 2016 levels by 2050 (if not already covered by the first target) which results in an annual emissions reduction rate of 5.39% from 2026 until 2050.

Growth (%) in GVA and Emissions Relative to Base Year



In line with our vision and purpose to help the world run better and improve people's lives, SAP is addressing climate change by providing carbon-neutral green cloud offerings and supporting our customers to reduce carbon outputs, e.g. by digitalizing business processes and applying data to optimize resource usage across their supply chains. Our ambition is to also lead by example in internal operations. For example, we use 100% renewable energy and work to become carbon-neutral by 2025. We are proud to have been the first German company to release a science-based climate target in 2017 which corresponds to an 85% reduction in SAP's 2016 emissions level by 2050. This year, our target was even aligned with limiting global temperature rise to 1.5°C above pre-industrial levels – an important step given the urgency for all of us to act.

Daniel Schmid, Chief Sustainability Office, SAP SE

Siemens AG

Contribution to 1.75°C



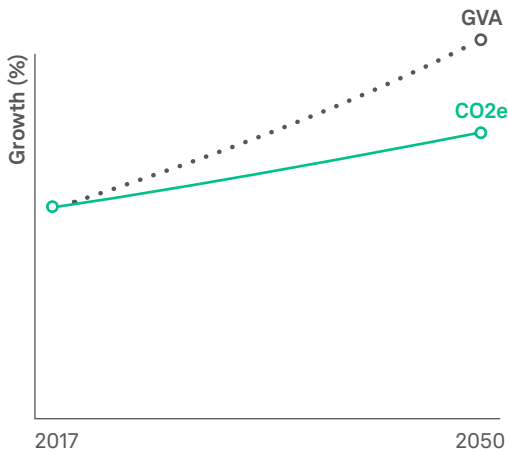
Siemens AG (Siemens) engages in the production and supply of systems for power generation, power transmission, and medical diagnosis. It operates through the following segments: Power & Gas, Energy Management, Building Technologies, Mobility, Digital Factory, Process Industries & Drives, Siemens Healthcare and Financial Services. Siemens belongs to NACE sector 32 – Other manufacturing.

The analysis of Siemens’s climate target is based on its 2018 CDP report and the company’s contribution to the analysis.

Siemens has set itself an absolute target: Scope 1 and 2 emissions are to be reduced by 100% until 2030 (base year 2014; 100% emissions in scope). As an interim target, a reduction of 50% is to be achieved by 2020. By 2018, 27% of the interim target was met. Hence, emissions are reduced exponentially by 95% until 2028 and then linearly by 2030 to zero. CO₂-neutrality for the emissions covered by the target is maintained post 2030.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Climate change is a key challenge that Siemens has been tackling for more than a decade. As such, we are committed to the Paris Agreement and to reducing emissions along the entire value chain. In 2015, as the first global industrial company, we have set us the ambitious goal to turn our operations carbon neutral by 2030. We are supporting our customers by developing and effectively implementing viable climate strategies. Within our customer base and supply chain, we continuously work jointly to help them improve energy efficiency and reduce their CO₂ footprint. With regards to our portfolio, Siemens’ products account for 20% of energy generation across the globe including both renewable and fossil fuels. As such, leveraging renewables, increasing energy efficiency and decarbonizing existing fossil fuel portfolio elements at our customers are key elements in our efforts to mitigate climate change. Since 2007, we have bundled these elements in our environmental portfolio, which in fiscal 2018 resulted in mitigated, accumulated annual customer carbon dioxide emission by 609 million metric tons. This is equivalent to 75% of Germany’s annual CO₂ emissions. Since the launch of our carbon neutral program, we managed to reduce our CO₂ emissions by 33%.

Jenny Bofinger-Schuster,
Senior Vice President Sustainability, Siemens AG

Volkswagen AG

Contribution to 1.75°C



Volkswagen AG (VW) engages in the production and sale of passenger cars and light commercial vehicles. The firm also develops vehicles and components for the brands of the group. It operates through following segments: Passenger Cars, Commercial Vehicles, Power Engineering, and Financial Services. VW belongs to NACE sector 29 – Manufacture of motor vehicles, trailers and semi-trailers.

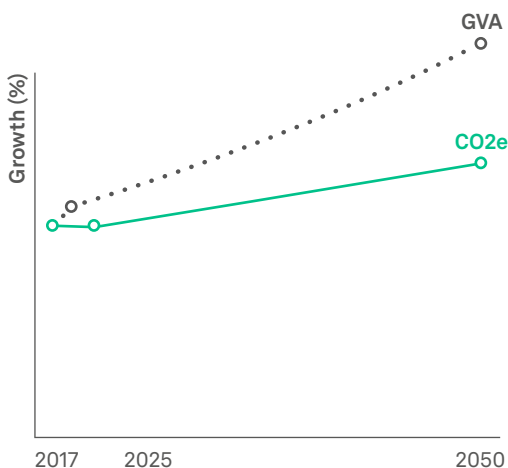
The analysis of VW's climate target is based on its 2018 and 2019 CDP report as well as on its 2018 Sustainability Report.

VW has set itself an intensity target: In the 2018 CDP report VW announces a target for the reduction of Scope 1 and 2 emissions which was met in 2017. VW has set itself a new intensity target in its 2019 CDP report. The target is to reduce Scope 1 and 2 emissions related to car production by 50% until 2025 (base year 2010, 98.6% emissions in scope). This translates into an absolute emission reduction of 6% until 2025. At the beginning of 2019, 68.6% of the target was met. This results in a remaining annual reduction rate of 0.32%.

The 2018 CDP report contains a target for Scope 3 category 11 emissions which is no longer included in the new CDP report. However, as it is still mentioned in the Sustainability Report of 2018, it was considered in the analysis. Scope 3 emissions which refer to the emission intensity of the new European vehicle fleet are to be reduced by 42.8% to 95g CO₂/km by 2020 (base year 2006; 43% emissions in scope). This means an absolute Scope 3 reduction of 18%. Based on the information that 62% of the target was achieved by 2017, a remaining annual reduction rate of absolute emissions of 2.64% results until 2020.

For all years and emission scopes which are not covered by the climate target, we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Vonovia AG

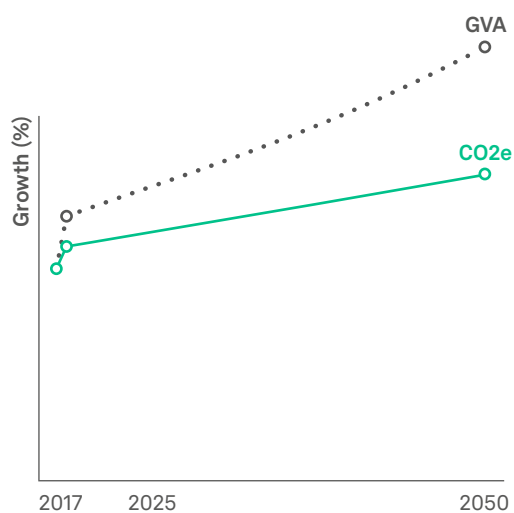
Contribution to 1.75°C

Baseline XDC	2.3°C
Sector XDC	2.9°C
Scenario-based XDC	n/a
Target XDC (IEA B2DS)	2.2°C

Vonovia SE (Vonovia) is a holding company which engages in the management of residential units. It operates through the following segments: Rental, Value-Add, Recurring Sales, Development and Other. Vonovia belongs to NACE sector 68 – Real estate activities.

Vonovia has not set itself a climate target. For all years and emission scopes we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Wirecard AG

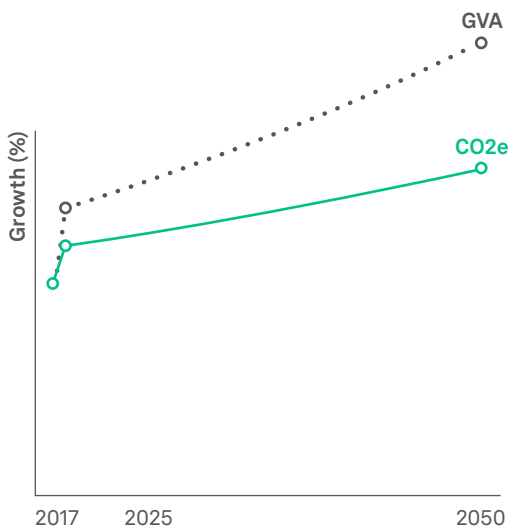
Contribution to 1.75°C

Baseline XDC	2.5°C
Sector XDC	2°C
Scenario-based XDC	n/a
Target XDC (IEA B2DS)	1.7°C

Wirecard AG (Wirecard) engages in the provision of software and information technology for payment processing and issuing products in the field of outsourcing and white label industry. It operates through the following segments: Payment Processing and Risk Management (PP&RM), Acquiring and Issuing (A&I) and Call Center and Communication Services (CC&CS). Wirecard belongs to NACE sector 62 – Computer programming, consultancy and related activities.

Wirecard has not set itself a climate target. For all years and emission scopes we assume Baseline growth rates of both emissions and GVA.

Growth (%) in GVA and Emissions Relative to Base Year



Annex

The Annex contains the complete set of XDC values for each of The Companies. This includes the Baseline XDCs, Sector XDCs, Target XDCs and, where applicable, the Scenario-based XDCs. While XDC values here are provided to two decimal places, it is important to note that these values cannot and should not be interpreted as the exact amount of warming that the world would see if it operated as emissions-intensively as a given company. Projections about the future are inherently uncertain and the XDC values produced by our model are no exception. Such projections are best understood as providing information that can help us to make decisions rather than as precise predictions about the future. Given this, we only provide XDC values to the first decimal place in the main body of the report in order to avoid the impression that these values are more precise than they really are. In this annex, however, XDC values are given to two decimal places in order to provide transparency about cases where the effect of a given climate strategy is only visible at the first or second decimal place. For example, the Baseline and Scenario-based XDCs for BMW are given above as 2.6, however when viewed to the second decimal place, they do differ slightly (Baseline XDC: 2.57, Scenario-Based XDC: 2.56).

Again given the goal of this report, we would encourage our readers to focus less on the exact XDC values themselves and to instead pay attention to the magnitude of differences between Baseline and Scenario-based XDCs.

Baseline XDC

Company Name	Baseline XDC	Baseline XDC Scope 1	Baseline XDC Scope 2	Baseline XDC Scope 3
Adidas	3.35	1.27	1.32	3.31
Allianz	3.23	1.26	1.27	3.23
BASF	4.26	2.22	1.39	3.59
Bayer	2.02	1.40	1.32	1.85
Beiersdorf	2.61	1.29	1.27	2.58
BMW	2.57	1.29	1.28	2.54
Continental	4.13	1.33	1.35	4.05
Covestro	5.12	1.55	1.84	4.74
Daimler	2.98	1.31	1.29	2.94
Deutsche Bank	2.77	1.27	1.27	2.77

Deutsche Börse	1.95	1.26	1.26	1.94
Deutsche Lufthansa	3.55	3.27	1.28	1.68
Deutsche Post	2.10	1.50	1.27	1.88
Deutsche Telekom	1.56	1.27	1.31	1.51
E.ON	8.25	1.92	1.74	7.95
Fresenius	1.61	1.30	1.29	1.54
Fresenius Medical Care	1.62	1.31	1.30	1.55
HeidelbergCement	10.69	8.25	1.85	7.83
Henkel	4.46	1.33	1.33	4.39
Infineon Technologies	1.82	1.35	1.36	1.66
Linde plc	6.62	3.22	2.77	4.83
Merck	1.64	1.32	1.29	1.56
MTU Aero Engines	5.84	1.30	1.38	5.71
Munich Re	5.26	1.27	1.27	5.30
RWE	13.82	13.19	1.46	6.36
SAP	1.62	1.27	1.27	1.61
Siemens	4.29	1.29	1.28	4.26
Volkswagen Group	3.38	1.33	1.30	3.32
Vonovia	2.28	1.28	1.26	2.27
Wirecard	2.47	1.27	1.28	2.46

Sector XDC

Company Name	Sector XDC	Sector XDC Scope 1	Sector XDC Scope 2	Sector XDC Scope 3
Adidas	3.32	1.30	1.32	3.26
Allianz	3.95	1.27	1.29	3.95
BASF	5.13	2.33	2.23	4.40
Bayer	1.59	1.29	1.67	1.55

Beiersdorf	5.13	2.33	2.23	4.40
BMW	4.19	1.33	1.28	4.12
Continental	5.44	1.29	1.28	5.16
Covestro	5.13	2.33	2.23	4.40
Daimler	4.19	1.33	1.28	4.12
Deutsche Bank	2.53	1.27	1.30	2.51
Deutsche Börse	2.67	1.27	1.27	2.65
Deutsche Lufthansa	3.86	1.31	1.33	1.76
Deutsche Post	3.41	5.33	1.33	3.10
Deutsche Telekom	1.65	1.67	1.45	1.57
E.ON	7.88	1.32	1.60	5.51
Fresenius	2.28	5.85	1.28	2.17
Fresenius Medical Care	1.95	1.28	1.29	1.90
HeidelbergCement	9.14	1.84	1.28	7.25
Henkel	5.13	2.33	2.23	4.40
Infineon Technologies	2.28	5.85	1.28	2.17
Linde plc	5.13	2.33	2.23	4.40
Merck	1.59	1.29	1.67	1.55
MTU Aero Engines	5.49	1.33	1.40	5.45
Munich Re	3.95	1.27	1.29	3.95
RWE	7.88	1.32	1.60	5.51
SAP	1.74	3.52	1.31	1.72
Siemens	3.94	1.33	1.40	3.85
Volkswagen Group	4.19	1.33	1.28	4.12
Vonovia	2.93	1.28	1.38	2.80
Wirecard	2.02	1.27	1.30	2.00

Scenario-based XDC

Company Name	Scenario-based XDC	Scenario-based XDC Scope 1	Scenario-based XDC Scope 2	Scenario-based XDC Scope 3
Adidas	n/a	n/a	n/a	n/a
Allianz	1.50	1.26	1.26	1.50
BASF	4.24	2.18	1.38	3.59
Bayer	1.79	1.29	1.28	1.76
Beiersdorf	2.60	1.28	1.26	2.58
BMW	2.56	1.27	1.27	2.55
Continental	2.86	1.29	1.27	2.84
Covestro	5.09	1.52	1.79	4.74
Daimler	2.84	1.31	1.29	2.79
Deutsche Bank	2.77	1.27	1.26	2.77
Deutsche Börse	1.94	1.26	1.26	1.94
Deutsche Lufthansa	2.75	2.43	1.27	1.68
Deutsche Post	1.62	1.35	1.27	1.54
Deutsche Telekom	1.51	1.27	1.27	1.50
E.ON	8.06	1.60	1.67	7.86
Fresenius	n/a	n/a	n/a	n/a
Fresenius Medical Care	n/a	n/a	n/a	n/a
HeidelbergCement	10.30	7.57	1.75	7.83
Henkel	4.43	1.33	1.26	4.39
Infineon Technologies	1.82	1.35	1.36	1.66
Linde plc	6.60	3.21	2.77	4.83
Merck	1.62	1.31	1.29	1.56
MTU Aero Engines	5.88	1.30	1.38	5.84
Munich Re	5.26	1.27	1.26	5.35
RWE	9.50	7.85	1.63	5.69

SAP	1.38	1.26	1.26	1.38
Siemens	4.26	1.27	1.26	4.26
Volkswagen Group	3.28	1.33	1.30	3.22
Vonovia	n/a	n/a	n/a	n/a
Wirecard	n/a	n/a	n/a	n/a

B2DS Target XDC

Company Name	B2DS Target XDC	B2DS Target XDC Scope 1	B2DS Target XDC Scope 2	B2DS Target XDC Scope 3
Adidas	2.39	1.29	1.29	2.35
Allianz	2.78	1.27	1.31	2.78
BASF	3.73	3.93	1.66	3.08
Bayer	1.43	2.04	1.42	1.41
Beiersdorf	3.73	3.93	1.66	3.08
BMW	2.94	1.30	1.27	2.90
Continental	3.87	1.62	1.27	3.62
Covestro	3.73	3.93	1.66	3.08
Daimler	2.94	1.30	1.27	2.90
Deutsche Bank	1.93	1.27	1.28	1.92
Deutsche Börse	2.01	1.27	1.31	2.00
Deutsche Lufthansa	3.04	3.32	1.29	1.52
Deutsche Post	2.44	2.85	1.29	2.26
Deutsche Telekom	1.45	1.27	1.28	1.42
E.ON	5.17	1.29	1.40	3.89
Fresenius	1.80	1.30	1.27	1.73
Fresenius Medical Care	1.62	1.28	1.27	1.59
HeidelbergCement	6.98	4.56	1.27	4.98

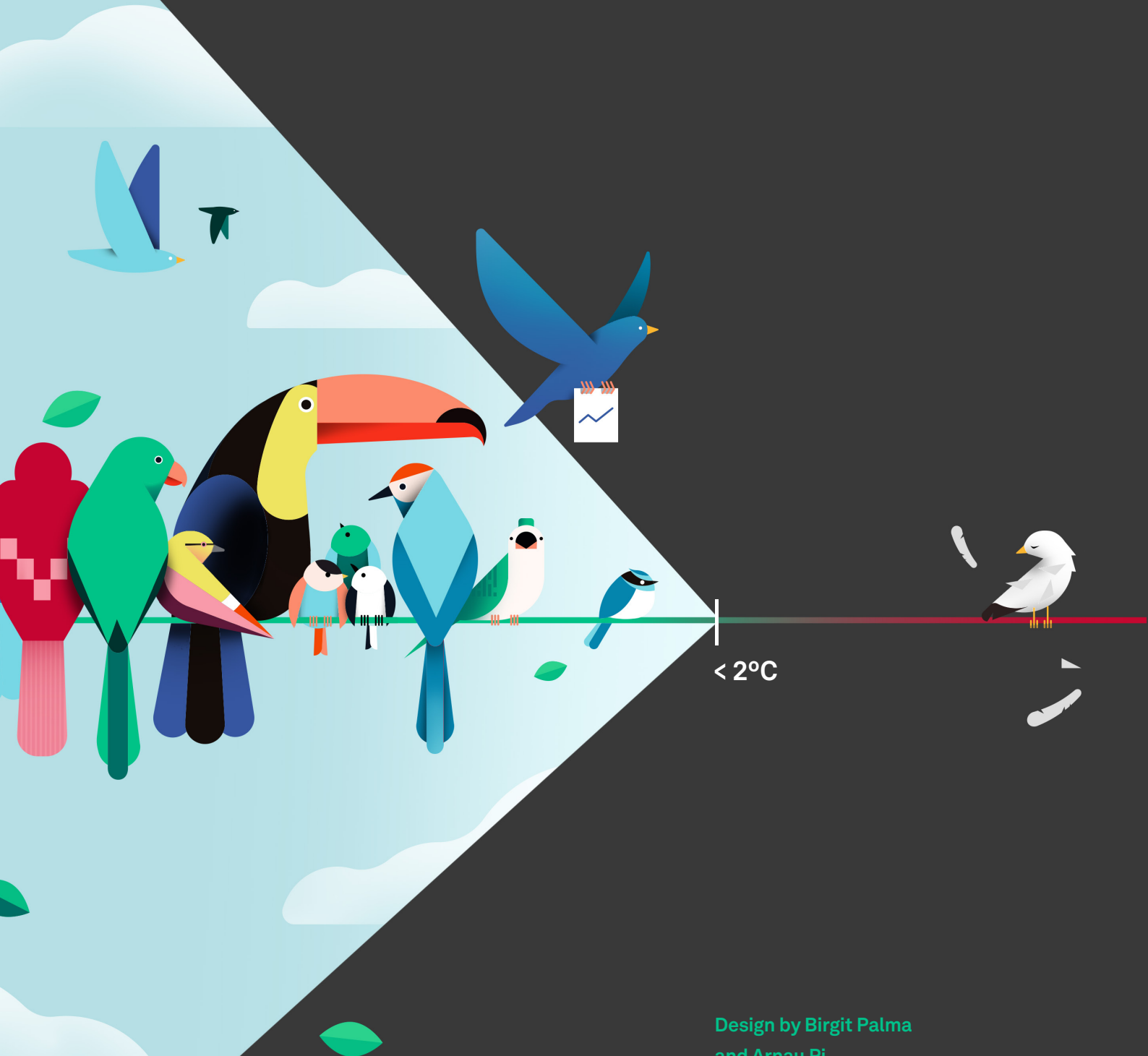
Henkel	3.73	3.93	1.66	3.08
Infineon Technologies	1.80	1.30	1.27	1.73
Linde plc	3.73	3.93	1.66	3.08
Merck	1.43	2.04	1.42	1.41
MTU Aero Engines	3.88	1.30	1.27	3.85
Munich Re	2.78	1.27	1.31	2.78
RWE	5.17	1.29	1.40	3.89
SAP	1.50	1.46	1.28	1.50
Siemens	2.77	1.31	1.32	2.71
Volkswagen Group	2.94	1.30	1.27	2.90
Vonovia	2.15	1.27	1.34	2.09
Wirecard	1.66	1.27	1.28	1.64

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