



Focus report on

Sustainability





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Preface

Treating natural resources with care to preserve them for following generations, is an important objective of economic policy – also during the corona pandemic. With this in mind, the Federal Government of Germany and the European Union have linked some of the support given to help alleviate the economic damage wrought by the coronavirus to sustainability objectives, in particular with regard to climate policy.

The limitation of global warming is a key element of the United Nations' 17 environmental, social and governance sustainability objectives (ESG). The challenges facing companies continue to grow, not decrease, as climate objectives become more ambitious. Only recently, the European Commission tightened up its CO₂ reduction targets for the year 2030 from 40 percent to “at least” 55 percent compared with the year 1990; the European Parliament went even further, voting for a reduction target of 60 percent.

A number of diverse action groups have already formulated the objective of promoting sustainability, and an increasing number of companies want to pursue their business activities in a climate-neutral way. And sustainable finance, which used to be a minor segment of financing, has seen extraordinary growth with the issuance of green and social bonds.

A decisive factor determining their success is transparency – in particular the question of where the proceeds from sustainable bonds actually go, and if they do lead to the social and/or ecological results intended.

Financial institutions, however, play a significant role and not just with regard to transparency. They are also capital providers on debt capital markets and act as important intermediaries by directing capital from other institutions towards such green projects – thus facilitating the transition of companies outside the financial sector to more sustainable production and responsible actions.

Entrepreneurial responsibility is a guiding principle of Commerzbank, and ecological criteria play a central role for us in this context. With our core business, we want to exert influence on the sustainable development of the economy and society as a whole, give our customers fair and competent advice and steadily reduce our ecological footprint. By making sustainable investment decisions today, Commerzbank is making its commitment to the society of tomorrow.

On that note, I hope you enjoy reading our focus report on sustainability.



Michael Kotzbauer
Member of the Board

Executive summary

How to manage our natural resources has been a focal point of public discussion for some time now. Companies have to react to this political and social change by making their products and production processes as well as their value and supply chains more sustainable.

Although there is a broad definition of sustainability, German and European policy is dominated by the efforts to reduce greenhouse gas emissions – especially CO₂ emissions – to limit the increase in the average temperature of the Earth to 2 degrees centigrade compared to the preindustrial era, if possible – or better still, to just one and a half degrees. In this context, sustainability is all about achieving a significant reduction in greenhouse gas emissions. This definition is the basis of our report. Where it is objectively appropriate, the definition of sustainability is broadened to include the protection of other resources too.

The European Union (EU) and Germany have set themselves the target of reducing greenhouse gas emissions by 95 percent by the year 2050, and the interim goal by the year 2030 is by at least 55 percent. The transition to a climate-neutral economy poses great challenges for companies, as demonstrated by two examples from the real economy.

An increasing number of companies in the automotive and supply industries have set themselves the target of producing in a climate-neutral way in the coming years. In order to achieve the CO₂ emissions targets set by the EU and produce vehicles which emit no CO₂ while they are running, the perspective is to replace traditional automobiles which use petrol or diesel engines with vehicles using battery or fuel-cell drive.

In the retail business, many companies are improving the energy efficiency of their buildings with the help of modern technology, using renewable energy and climate-friendly air-conditioning and cooling systems. They are reducing the use of resources, e.g. in packaging, and choosing electric mobility as well as an environment-friendly selection of products.

The EU would like to use the financial sector more as a lever to help transform companies from the real economy, for example with the help of the new taxonomy which gives a general definition of ecologically sustainable investments valid at a European level.

For Commerzbank, sustainability is an integral part of its corporate strategy. It supports the transformation process of its clients with consultation and sustainable financial products.

Introduction: why sustainability has ascended the corporate agenda

Sustainability is the hot topic of our times. At the very latest since the global “Fridays-for-Future” demonstrations, the way we deal with our natural resources is in the focus of public discussion.

Our understanding of sustainability as an economic principle relating to resources goes back to forestry in the early 18th century. That was when the chief mining administration officer of Freiberg in Saxony, Carl von Carlowitz, called for no more trees to be felled in a forest than could grow back within a certain period. He spoke of a “clever way to conduct forest management” and “a consistent and sustainable way to use the forest”.¹

Relating that to economic life means protecting the environment for people in the future. Specifically, this means reducing the consumption of finite raw materials and the emission of harmful substances to sustain quality of life on Earth for future generations.

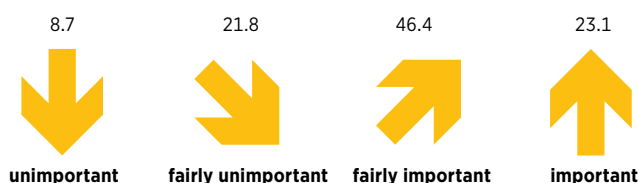
The Corona pandemic will not relegate this topic to the back pages of news media. Sustainability will remain on the agenda, independent of whenever economic life returns to normal. It is a matter of fact that sustainability and environmental aspects already play an important role in German and European policies to overcome crises. Only awarding purchase bonuses for automobiles with electric drive is as much a sign of the times as the European Union’s “Green Deal” and Reconstruction Fund, which define the economic policy focuses of this decade. Economic growth should not just be in harmony with the environment, it is more about sustainability becoming a driver of growth itself.

Social change is apparent in the increasingly important role played by the topic of sustainability when young people are looking for a job. In the “War for Talents”, sustainable businesses have an advantage, as shown in a survey of the job portal Stepstone among more than 7,000 users, **see fig. 1.**

As a topic, sustainability is “quite important” or “important” for nearly 70 percent of those surveyed when they are looking for a new job.

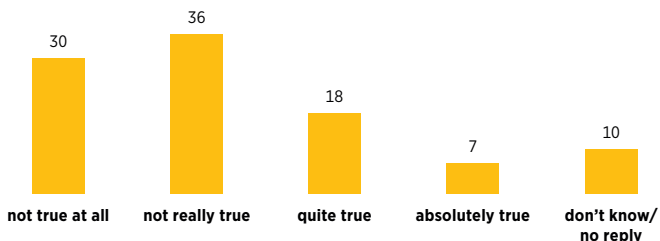
And there is a sign that sustainability also has growing importance for shoppers – expressed at least verbally in a survey of 3,500 people conducted by the German Retail Association (HDE) in the summer of 2019. Sustainability was only considered not important when shopping by 25 percent of those consumers surveyed, **see fig. 2.**

Figure 1: Sustainability and the appeal of an employer: “If a potential employer attaches high importance to sustainability, I would be more likely to apply for a job or accept a job offer there.” in % of interviewees



Source: Stepstone

Figure 2: Sustainability and shopping habits: “I don’t think sustainable shopping is so important.”, in % of interviewees



Sources: HDE/YouGov

Companies have to react to this political and social change by making their products and production processes more sustainable as well as their value and supply chains.

The report will begin with a presentation and analysis of the federal government’s sustainability targets. This also includes a brief definition of the term sustainability: although there is a broad definition of the term, German and European policy is dominated by efforts to reduce greenhouse gas emissions – above all CO₂ emissions² – to limit the increase of average temperature on Earth to two degrees centigrade compared with the preindustrial era by the year 2100 – or better still, to one and a half degrees. In this context, sustainability means a significant reduction of greenhouse gas emissions. This definition is the basis of our report. Where it is objectively appropriate, the definition of sustainability is broadened to include the protection of other resources too.

This is followed by a presentation of sustainability potential as well as the economic and technical ways and means to achieve the targeted greenhouse gas emissions level.

Then, by way of example, there is an analysis of the sustainability concepts and climate protection measures used by the automotive and retail industries.

Finally, there is a description of how Commerzbank supports its clients' transformation process against the background of the EU taxonomy for sustainability, under the heading "Sustainable Finance", with consultation, financing, etc., enabling them to reach their sustainability targets.



Sustainability targets

The European Union

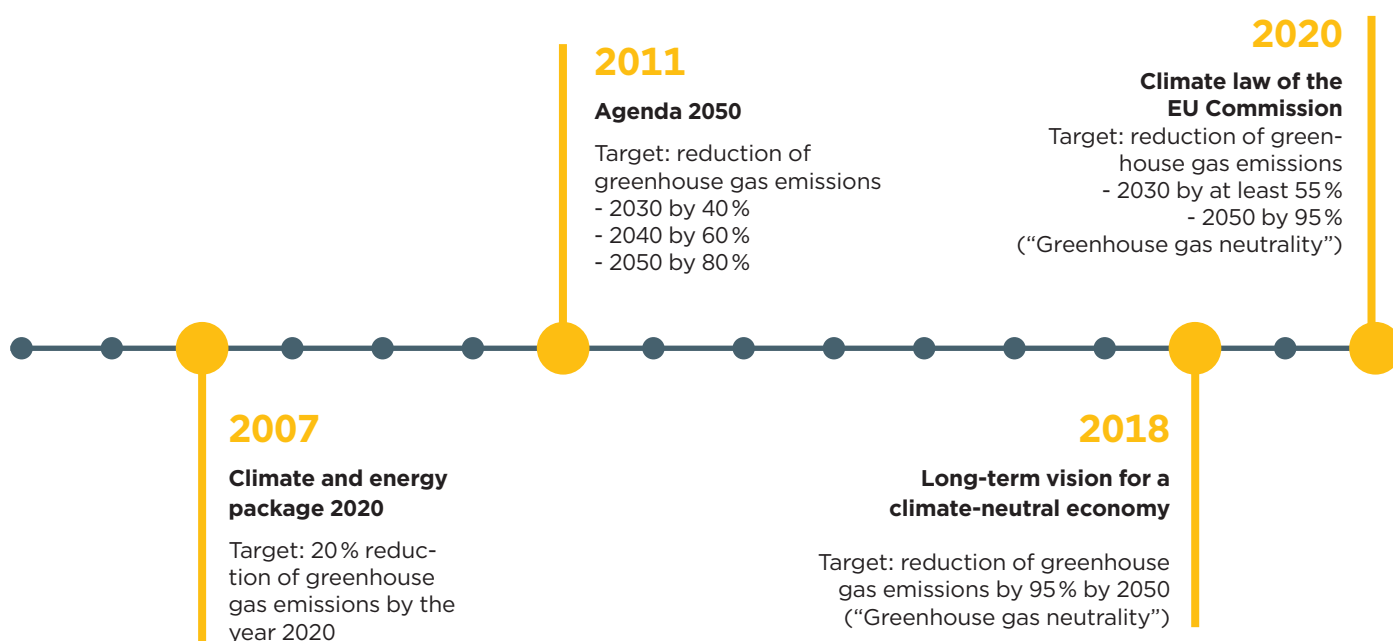
Following the so-called Kyoto Protocol, which was agreed in 1997 and became effective in 2005, the European Union (EU) and the Federal Republic of Germany have successively specified their climate targets in the last few years and defined them for an increasingly longer period.³ The Kyoto Protocol is the first legally binding global climate agreement.

The EU defined its targets by the year 2050 with the publication in 2011 of “Schedule for the transition to a competitive low-CO₂ economy by 2050”. According to this, by 2030 there should be a reduction of greenhouse gas emissions by 40 percent compared with 1990, by 60 percent in 2040 and by 80 percent in 2050. In its draft of the climate law submitted early in 2020, the EU Commission plans to increase the reduction target by the year 2030 to at least 55 percent. Moreover, the EU has affirmed its long-term target announced in 2018 to reduce emissions by the year 2050 by 95 percent compared

with the year 1990, in effect making the economy and society practically climate-neutral by that date, but without naming specific interim targets for 2030 and 2040. From 2050 onwards, EU states are not permitted to produce more greenhouse gases than can be stored, for example, in forests, **see fig. 3.**⁴

The planned reduction path for greenhouse gas emissions shows that the speed of reduction is scheduled to increase: so far, an average annual reduction of CO₂ emissions of 81 million tonnes is planned between 2017 and 2030. From 2030 onwards, this annual CO₂ emissions figure should be 157 million tonnes less, in order to reduce emissions by 95 percent by the year 2050.⁵ Even if the reduction path until 2030 is now being adjusted, the ambitious part of the climate plan has been postponed to the period after 2030. However, it can still be assumed that EU regulatory and financial climate protection demands on companies will continue to increase, and do so in the near future.

Figure 3: Chronology of the European Union’s climate policy



Reduction of greenhouse gas emissions compared with status of 1990
 Sources: Federal Government of Germany, EU Commission

According to the climate bill, which the EU Commission still envisages passing into law this autumn, the Commission, the Parliament and the Council will decide on EU climate targets with a qualified majority and thus be able to cancel the power of veto of individual member states. And in future the Commission will also be able to impose sanctions on member states if they undermine EU climate protection targets. Last but not least, the EU commission is to be given the right from 2030 onwards to stipulate interim climate protection targets every five years.⁶

In order to finance the climate-neutral conversion of European economies, at the beginning of 2020 the EU Commission announced it was planning a “Green Deal”. “Green” investments of around €1 trillion in this “Deal” are planned by 2030; half of this is to be financed from the EU budget and the other half from the budgets of member states, capital from the European Investment Bank and investments by companies.⁷

The EU presented its “Action plan for a ‘sustainable finance strategy’” as early as March 2018, with a view to implementing the Paris Climate Agreement and the EU agenda for sustainable development. This was intended to emphasise and strengthen the role of the financial sector in transforming the economy.⁸ Within the framework of the “Green Deal”, plans are now being discussed for a substantial expansion of the existing action plan in order to intensify climate protection efforts (a so-called “Renewed Sustainable Finance Strategy”).

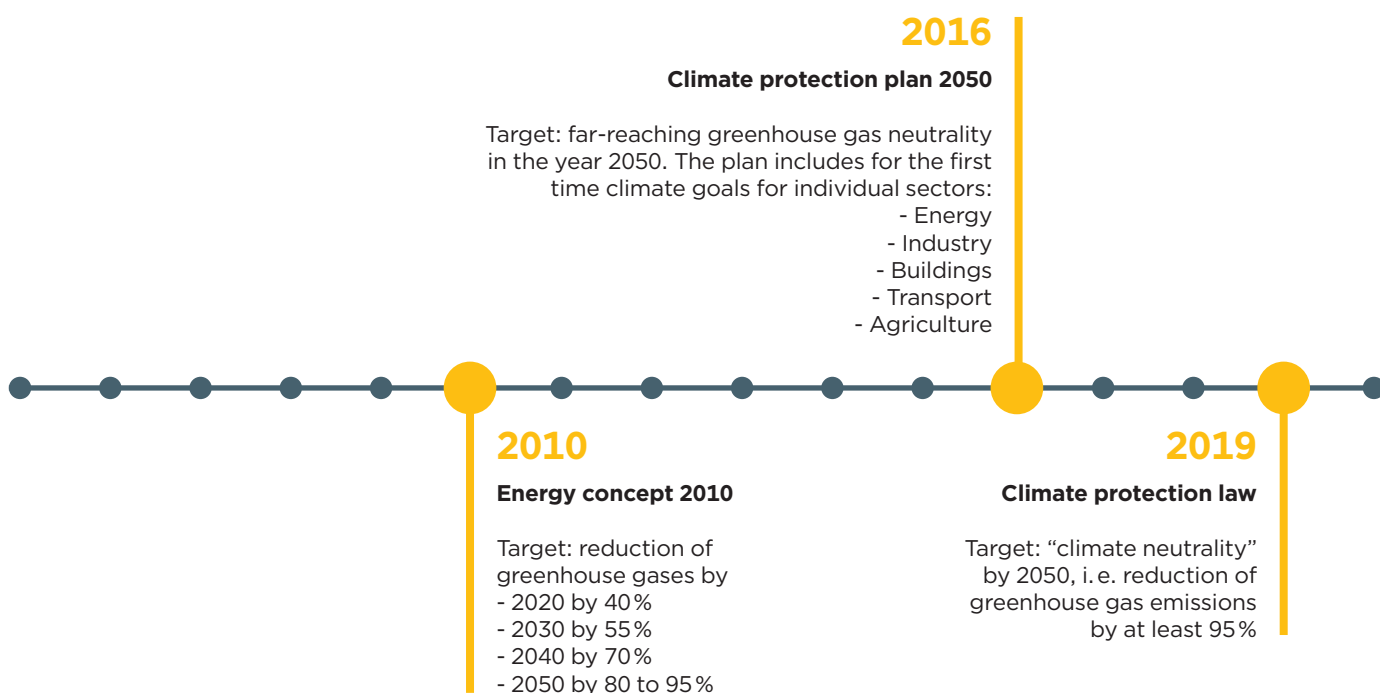
This is to enable the financial sector to be used more than it has been up to now as a lever to help implement reform of the real economy.

The “Green Deal”, the climate law and the EU taxonomy for ecologically sustainable investment (see page 23), described below, are the most important features of the EU’s climate protection and sustainability policy.

Germany

The EU leaves it to national member states to decide on suitable measures to achieve climate targets and define their own interim targets. The Federal Republic of Germany committed to the following medium- and long-term targets within the framework of the “Energy concept 2010”. By 2030, greenhouse gas emissions are to be 55 percent below the levels of 1990, by 2040 70 percent and by 2050 between 80 and 95 percent lower. Furthermore, target paths were defined for the share of renewable energy as a percentage of total energy consumption and gross electricity production. By 2020 the total amount of energy used is to decrease by 20 percent compared with 2008 and by 50 percent by the year 2050. The “Climate protection plan 2050”, passed in 2016, served to complement the plans announced for concrete target paths for the individual sectors, **see fig. 4.**⁹

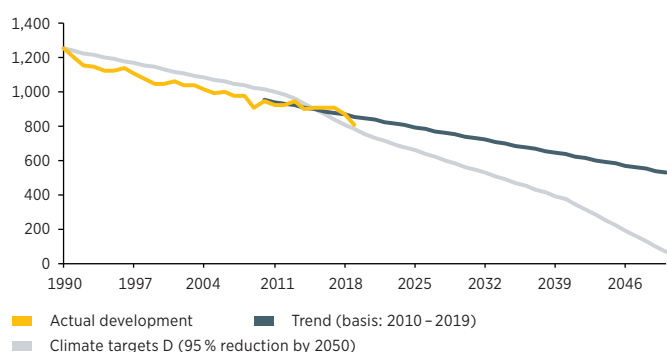
Figure 4: Chronology of climate policy: Germany



Reduction of greenhouse gas emissions vis-à-vis status of 1990
 Sources: Federal Government of Germany, EU Commission

The German Climate Protection Act of autumn 2019 tightened up the CO₂ reduction target still further. The long-term target to be pursued in the period up to 2050 is now “greenhouse gas neutrality” or “climate neutrality”.¹⁰ Without saying so explicitly, this means a reduction of CO₂ emissions by at least 95 percent compared with 1990, **see fig. 5.**

Figure 5: Germany: Greenhouse gas emissions: actual development, trend and objectives, in m tonnes CO₂ equivalent

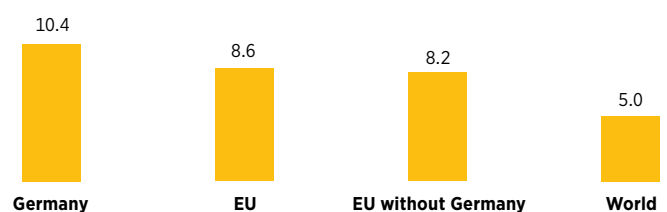


Sources: UBA, EEA, EU, Agora Energiewende, Commerzbank

German greenhouse gas emissions fell by a surprising 56 million tonnes of CO₂ in the year 2019. Up to and including 2019, the reduction compared with 1990 was over 35 percent.¹¹ To reach the interim target for 2020 to reduce greenhouse gas emissions by 40 percent, emissions in the current year would have to fall by a further 60 million tonnes. In all probability, this will be achieved as a consequence of the corona pandemic. Then, by the year 2030, greenhouse gas emissions should fall by 55 percent compared with 1990. That means a good 540 million tonnes more CO₂ can be emitted compared with 805 million tonnes in the year 2019. This would mean every resident of Germany would have on average a CO₂ budget of less than seven tonnes, compared with 9.7 tonnes in the year 2019 and 10.4 tonnes in the year before that.

German per capita emissions are considerably higher than the EU average and twice as high as the global CO₂ emissions average, **see fig. 6.**

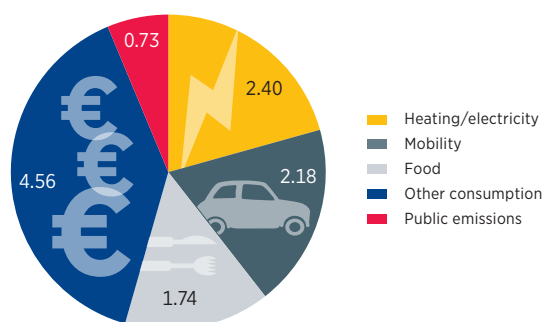
Figure 6: German per capita CO₂ emissions in an international comparison, 2018, in tonnes



Sources: EU Commission, Our World in Data, Commerzbank

According to the Federal Ministry of the Environment, the highest amounts of CO₂ attributable to an average (private) consumer are not the result of heating or electricity, but are caused by consumer habits, e.g. our shopping and travelling behaviour, **see fig. 7.**

Figure 7: Per capita CO₂ emissions of an average consumer in Germany, in tonnes

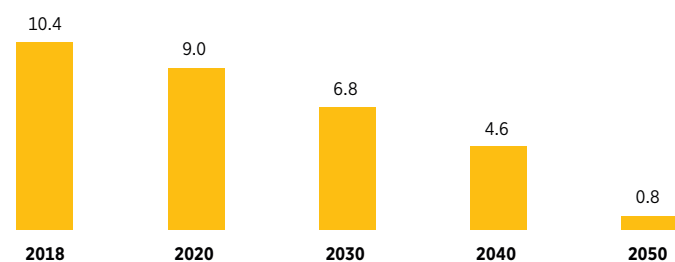


Sources: UBA, Commerzbank

By 2050 the CO₂ footprint must be reduced by more than two-thirds if the 80 percent reduction target is to be achieved. Then, only an annual total of 250 million tonnes of CO₂ more can be emitted – if we accept the Federal Statistical Office’s¹² current advance estimate of population size – which is equivalent to three tonnes per head. A study by the Boston Consulting Group (BCG) and Prognos¹³ comes to the conclusion that this ambitious target is “technically possible” and [...] “economically manageable”. This would, however, require “a considerable intensifying of existing efforts [...]”

The authors of the study are more sceptical about the increased 95 percent reduction target. That would be “at the limits of foreseeable technical feasibility and the acceptance of society today”. In 30 years only about 65 million tonnes of CO₂ could be emitted, less than one tonne per capita, **see fig. 8.**

Figure 8: Permitted CO₂ emissions per capita after reaching 95% reduction target, in tonnes, in Germany



Sources: EEA, Agora Energiewende, Destatis

That would mean, according to the conclusions of the study, practically zero emissions from large sections of the German economy. It would also require practically no consumption of fossil fuels (oil, natural gas, coal), the import of renewable fuels (green hydrogen), the selective use of unpopular technologies like “Carbon Capture and Storage” (CCS) and even mean lower emissions from the agricultural sector. Experts base their hopes on new technologies having the effect of “game changers”.

To make the magnitude of the task at hand even clearer: in the 29 years between 1990 and 2019, Germany saved 440 million tonnes of greenhouse gases. In the 31 years until 2050, a further 750 million tonnes have to be saved if we are to reach the 95 percent target. To exacerbate the situation still further,

the “low-hanging fruit” has already been picked! A large proportion of the CO₂ emissions saved was due to the demise of industry in the former German Democratic Republic during the 1990s.

The additional economic investment in line with the reference path, which plans a decrease of CO₂ emissions by 60 percent by the year 2050, amounts to €1.8 billion (in real terms, based on prices of 2015) in the period from 2015 to 2050 according to the study of BCG and Prognos. The additional costs after deduction of savings effects from new technologies and cheaper sources of energy are more than €700 billion.¹⁴ Reaching the 95 percent reduction target will incur high incremental costs above and beyond the 80 percent reduction target.

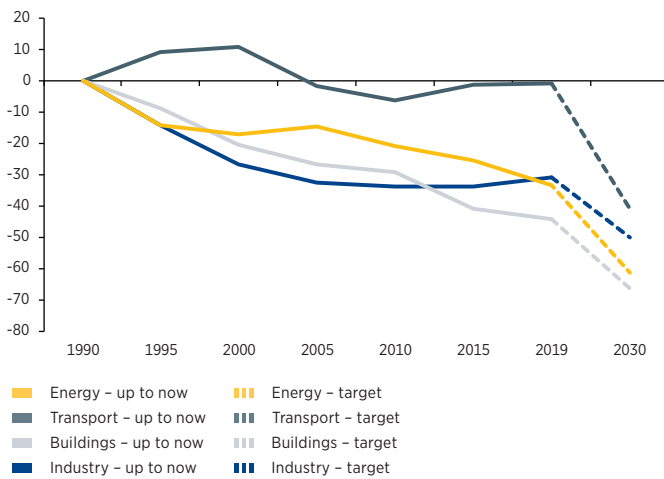


Potential measures to be taken

Responsibility of the sectors

The individual sectors of the economy will have different contributions to make to the reduction of greenhouse gases, see **fig. 9**.

Figure 9: Greenhouse gas emissions of the sectors: development and targets, in % of 1990



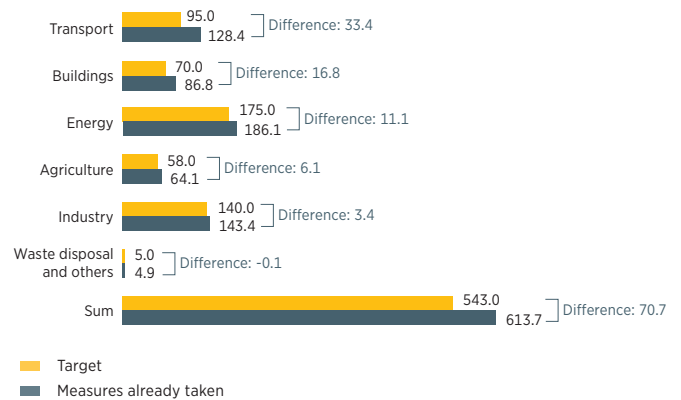
Source: BMU

It is noticeable that the emissions of the transport sector, which are to fall by over 40 percent by the year 2030, are currently at the starting level of the year 1990. CO₂ emissions overall rose here slightly by 1.2 million tonnes compared with the previous year 2018 to 163.5 million tonnes.¹⁵ Forecasts for the period up to the year 2030 show a considerable need for action – especially with regard to road traffic. According to a study of the Freiburg-based Öko Institute (Institute of Applied Ecology) commissioned by the Federal Ministry of the Environment, targets of the climate protection programme will be missed by a considerable margin if no further measures are taken, see **fig. 10**.¹⁶

The federal government's climate package of September 2019 features extensive measures – like, for example, making train travel cheaper and petrol more expensive.¹⁷ But it will require additional, comprehensive impulses which will affect the automotive industry in particular.

The building sector, while its emissions are more than 40 percent under 1990 levels, will still have to use less fossil fuels for heating and forge ahead with the energy-oriented refurbishment of residential and industrial real estate.

Figure 10: Climate protection: level of target reached by 2030 in the sectors, in m tonnes CO₂



Sources: UBA/Ökoinstitut

The electricity sector will not fully reach its reduction target due to the postponement of an exit from coal-fired generation to the second half of the 2030s. It would need an even bigger expansion of renewable energy forms and a higher CO₂ price.

There was a big fall in emissions by the industrial sector, but only up to 2005. The target for the year 2030 will only be slightly exceeded due to technical progress. Here too, the CO₂ price plays an important leverage role, as parts of energy-intensive industry belong to the European Emissions Trading Scheme.

The agricultural and waste management sectors are not covered within the framework of this report.

The bottom line for companies in this decade is that they need to redouble technological efforts to implement the sustainability targets set by politicians. The management consultancy, Oliver Wyman, comes to the conclusion, in a still unpublished study, that in order to reach climate targets, companies in the EU will have to invest €120 billion annually in new technologies.¹⁸

Not all sectors of industry are negatively affected by necessary investments in sustainability, some are beneficiaries: a study by the Association of German Machine and Plant Construction (VDMA) and the management consultancy Boston Consulting Group (BCG) forecasts an annual market potential by 2050 of more than €300 billion, due to the introduction of "green technologies" like more efficient electric motors, recy-

cling plants, wind turbines and electrolysis plants for the production of hydrogen. This sum represents 12 to 15 percent of the sector's global revenues. According to the study, German manufacturers, in particular, stand to benefit from the growing demand for green technologies.¹⁹

The challenge is not to financially overburden companies in the short term, especially heavy users of energy who are therefore still high-level emitters of CO₂, and to give these companies long-term planning security along the further CO₂ reduction path to prevent them moving abroad or shutting down their businesses altogether. The EU Emissions Trading System is a suitable instrument for this.

Emissions trading and CO₂ pricing

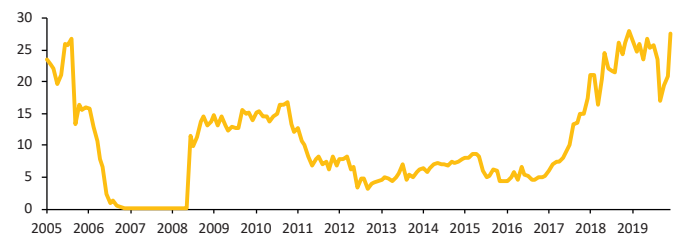
The EU acted relatively early in the year 2005, when it created the European Union Emissions Trading System (EU-ETS), a mechanism to encourage companies to reduce their CO₂ emissions. The EU-ETS is currently in its third trading period, which runs up to the year 2020. It covers around 11,000 industrial plants and power stations as well as European air traffic, i.e. around 45 percent of total CO₂ emissions in Europe and around 50 percent of German CO₂ emissions. However, the agricultural, transport and heating/building sectors have not signed up for it. The amount of CO₂ emissions covered by freely allocated certificates is continually decreasing, in the current period by 1.74 percent per year.

If the amount covered by emission allowances allocated to companies annually free of charge exceeds the level of their actual CO₂ emissions, they can sell this surplus to other companies with a certificate deficit, keep it to sell later, or use within the framework of their EU emissions trading obligations. Conversely, companies have to buy certificates on the market if the level of their CO₂ emissions has exceeded their freely allocated amount.²⁰

Between the years 2011 and 2017, prices for certificates fell dramatically. The controlling effect of the trading mechanism was lost, and the EU reformed the system. Since then, prices for emissions certificates have increased successively. In the year 2019, the price was on average €25 – in July 2020, it was more than €27, **see fig. 11**. For old, coal-fired power stations, electricity generation became so expensive that they reduced their capacity considerably. All in all, the bottom line shows that emissions trading is a success story.

As a rule, the more global emissions trading takes place, the smaller the risk of companies relocating to save on CO₂ costs, a phenomenon known as carbon leakage. Companies which still want to avoid these costs have to look for a location outside the EU.

Figure 11: CO₂ certificates price, in € by tonnes CO₂



Source: EEX

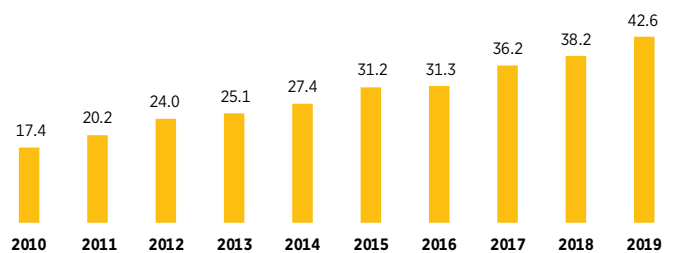
To achieve an even bigger reduction of greenhouse gas emissions, emissions trading would have to be expanded to cover the transport and heating/building sectors, where it is still not in operation. In Germany a transition solution of national CO₂ pricing is being implemented in the sectors which are not signatories of the EU-ETS.²¹ With effect from 2021, every tonne of greenhouse gas is to be priced at €25. The price is to increase in stages to €55 per tonne by 2025. An emissions trading system is planned for 2026. CO₂ certificates are to be auctioned off within a price range of €55–€65.²²

Expansion of renewable energy forms

The challenge of an actual greenhouse gas-neutral economy is enormous. Up to now, Germany's climate policy has concentrated above all on the electricity sector and renewable energy forms. Renewable energy's share of overall electricity consumption has been climbing steadily for years – in fact, more quickly than planned, **see fig. 12**.

In the year 2019, this share exceeded the 40 percent mark for the first time. However, the interim target of 65 percent by the year 2030 is very ambitious against the background of current problems expanding onshore wind energy. Necessary instalment targets are being missed by a considerable margin.

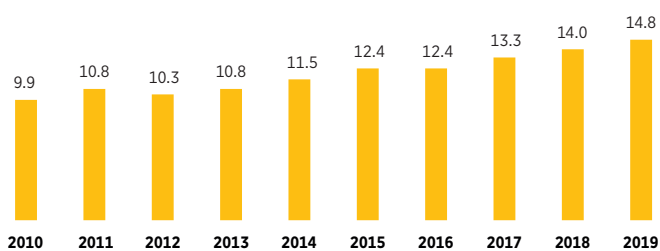
Figure 12: Share of renewable energy in gross electricity consumption, share in %



Sources: ARGE Energiebilanzen, Agora Energiewende

The situation is even more problematic with regard to primary energy consumption, where the target of 40 percent is still a long way off. Primary energy consumption takes into account all domestic energy sources being used, most of which are due to be replaced by electricity by the year 2050. Last year only about 15 percent of primary energy consumption was covered by renewable energy forms, **see fig. 13**.

Figure 13: Share of renewable energy in primary energy consumption, share in %



Source: ARGE Energiebilanzen

In other words, there is clearly a considerable gap here, given the targets and the feasibility of reaching them.

So, according to a study by the German energy agency, in a 95 percent CO₂ reduction scenario in the year 2050, primary energy requirements are to be covered exclusively by renewable and synthetic energy sources (Power-to-X-technologies on the basis of sustainably produced hydrogen).²³ On the generating side of this scenario, onshore wind energy would have to be expanded to a potential limit of 179 gigawatts generation capacity. The number of wind turbines would then have to be doubled from 30,000 to 60,000 with increasing performance from each installation.²⁴

To put this into perspective: by the end of 2019, the generation capacity of installations in Germany amounted to 54 gigawatts. The Federal Government of Germany is pursuing an expansion target by 2030 of between 67 and 71 gigawatts.²⁵ The Fraunhofer IEE (Institute for Energy Economics and Energy System Technology) assumes that by 2030, 97 gigawatts will already be needed to cover rising demand for electricity.²⁶ The problem: resistance is growing in the population to further expansion of onshore wind energy.

There also has to be major expansion of photovoltaics. The federal government recently decided to lift the installation cap of 52 gigawatts and is now planning to have an installed capacity of 98 gigawatts by 2030.²⁷

The federal government's most recent plans for offshore wind energy are to expand installed capacity from 15 to 20 gigawatts.²⁸

Overall, total installed renewable energy capacity in the above-mentioned study of the German Energy Agency would be increased by more than 400 percent by the year 2050 to 377 gigawatts.²⁹

To meet these ambitious installation targets, a suitable market offer will be needed to encourage investors to invest in onshore wind turbines. Planning and approval procedures will have to be speeded up and, above all, suitable locations identified – and, last but not least, a social consensus must be reached.

Examples from industry sectors

Automotive

An increasing number of companies from the automotive and its supply sectors have set themselves the target to achieve climate-neutral production – to run their operations with all their electricity and heating requirements free of CO₂. BMW would like to reach this target worldwide with effect from 2021 and Daimler in its European factories by 2022. Bosch wanted climate-neutral production by 2020 in all its 400 locations. Success will be due, on the one hand, to increasing use of renewable energy forms and energy-efficient technologies in the production process. On the other hand, it will be due to the compensatory effect of falling CO₂ emissions in other locations, for example, wind turbines in developing countries – made possible by voluntary payments financing greenhouse gas-reducing investments there. They represent a simple opportunity to reduce greenhouse gas emissions effectively in the short term.³⁰ From the year 2021, emissions from heating in industrial plants outside the EU-ETS will become part of the national emissions trading system, also affecting the automotive industry and its suppliers.³¹

One example: by the year 2030 the automobile manufacturer BMW plans to reduce its CO₂ emissions by a third, covering the **entire life cycle** of its cars, from the delivery chain via the manufacturing process to the operation of the cars, right up to the end of their operational life. In BMW's own production facilities, the CO₂ footprint is to be reduced by 80 percent. This year already, the concern plans to use only power generated from renewable sources in its production processes. And their suppliers are also to use green electricity for the production of battery cells for electric cars.³²

Of course, the biggest share of CO₂ emissions is not generated during production, but during the operational life of automobiles. So they are in the focus of efforts by politicians and companies to reduce greenhouse gas emissions.

Political measures

The substantial framework conditions governing permitted CO₂ emissions by automobiles are set by the EU. Current regulations coming from the EU Commission deal with **emission levels** after the year 2021. From this time onwards, all newly registered vehicles of a car manufacturer are allowed a **fleet average** maximum level of 95 grammes of CO₂ emissions/km. This corresponds to a consumption of 4.1 litres per hundred kilometres for petrol and 3.6 litres for diesel. Automobile manufacturers failing to fulfil their targets face severe financial penalties, amounting to €95 for each gramme of CO₂ too much emitted per car. Meanwhile, reduction targets for the

period after the year 2021 up to the year 2030 are also being discussed. At the end of the year 2018, environment ministers had agreed on a reduction by 35 percent. However, the negotiators of the European Parliament, the Ministers' Council and the EU Commission went further still: new car emissions are to be reduced by 37.5 percent between 2021 and 2030. Average fleet emissions are then limited to 59.4 grammes of CO₂/km. This target can only be met if cars with conventional petrol or diesel engines are replaced/complemented to a great extent by electric vehicles and plug-in hybrids.

In addition to laws and prohibitions, politicians – in this case German politicians – are also employing positive behaviour incentives for manufacturers and consumers alike. In order to help more environment-friendly electric mobility secure higher market shares, it is necessary to create and maintain a customer-friendly battery-charging infrastructure. With this in mind, the Federal Ministry for Transport and Digital Infrastructure published its **“Funding guidelines for battery-charging infrastructure”** on 15 February 2015. In the years 2017 to 2020, at least 15,000 charging stations were to be funded with a total of €300 million, 10,000 of which as normal-charging and around 5,000 as quick-charging stations. And electric cars are also subsidised, with those registered for the first time between 18 May 2011 and 31 December 2020 exempted from paying road tax for the first 10 years.

And the federal government's current **corona-linked economic package** also contains elements to promote sustainable mobility:

- As an innovation incentive, the government is doubling its share of the environment bonus limited to 31 December 2021. This means that buying an electric vehicle with a list price of up to €40,000 increases the government's subsidy from €3,000 to €6,000.
- An additional €2.5 billion is being invested in the expansion of the battery-charging infrastructure and the promotion of research and development in the area of electric mobility and battery cell manufacture.
- Investments in the future [of mobility and production] by manufacturers and suppliers in the automotive industry are being supported with a bonus programme of €1 billion in the years 2020 and 2021.
- With effect from 2021, the road tax drivers have to pay will be more closely aligned to CO₂ emissions, meaning clean cars pay less tax than models with higher emissions.

Measures taken by car manufacturers and their suppliers

In order to meet the EU's CO₂ emissions targets and produce vehicles which emit no CO₂ while being driven, the perspective is that vehicles with battery electric or fuel-cell drive will replace traditional cars with petrol or diesel engines.

Battery electric vehicles using power derived solely from renewable resources are seen by experts as a better alternative to the conventional combustion engine from an environmental point of view. Higher production and sales of these vehicles could tangibly reduce CO₂ emissions in the transport sector. A best-case scenario would be zero local CO₂ emissions – if all vehicles had battery electric drive, and their power supply were fully on the basis of renewable energy forms.

However, there are also controversial discussions about whether electric mobility is actually superior to conventional vehicles using today's electricity mix. After all, in the year 2019 the share of gross electricity generation³³ from fossil fuels (oil, natural gas, lignite and black coal) in Germany was 47 percent.³⁴

The ecological assessment of vehicles' life cycle is also controversial. The Öko Institute conducted a study to compare conventional combustion engines and electric vehicles. The institute came to the conclusion that the climate footprint of a vehicle with electric drive, i.e. using the present German electricity mix, was already better than that of a vehicle with a combustion engine. The study works on the premise that the manufacture of an electric vehicle with a battery capacity of 35 kilowatt hours produces around five tonnes more CO₂ than the manufacture of a car with a conventional combustion engine. However, the bigger "CO₂ footprint" is more than compensated for by the car producing 12 tonnes less CO₂ emissions during its operational life.³⁵

Fuel cells, which convert hydrogen to electricity, are seen alongside electric batteries as a hopeful alternative for the drive of the future. The Japanese manufacturer Toyota, for example, is giving this technology priority over pure battery vehicles. According to a study by the Austrian Federal Environment Office³⁶, hydrogen vehicles (with combustion engine and fuel cell) are seen in a less positive light from an environmental point of view than battery electric vehicles due to the many energy conversion steps needed for power generation.

Most companies in the German automotive industry are also involved in research into fuel-cell drive. However, they have decided in favour of market-ready battery electric vehicles for passenger cars, not least of all because leaving technology choices open is too costly. And apart from the development of electric cars, investments in digitisation and the development of autonomous driving also have to be financed.

All German manufacturers have announced the introduction of new vehicles in the near future which are intended to promote the breakthrough of electric mobility in Germany. Decisive factors for their success, apart from pricing, are likely to be the range of the battery, a sufficient number of public charging stations being in place and the convenience of the battery-charging process.

The existing internal combustion technology can also be improved on with regard to sustainability aspects. For example, the development of new, **synthetic e-fuels** is also on the agenda of the automotive industry. With the help of sustainably generated electricity, hydrogen is produced by electrolysis from water and then enriched with CO₂. During the combustion process, the amount of CO₂ is emitted which was added to the e-fuels beforehand. If the CO₂ required for enrichment is taken from the air, the combustion of synthetic fuel is climate-neutral. However, e-fuels are energy-inefficient. Producing enough synthetic fuel for a distance of 100 kilometres requires the amount of electricity which would enable a battery electric car to drive 700 kilometres.³⁷

Plug-in hybrids are currently seen as transition technology and the bridge between conventional internal combustion engine drive and the electric car. They are vehicles which, with the help of a small battery and an electric motor, can drive shorter distances of 50 to 80 kilometres using electricity. When the battery is empty, the petrol or diesel engine kicks in. If the battery is regularly charged and the car is only used for shorter trips, especially in town, the technology is quite suitable for reducing CO₂ emissions. However, if longer distances are the norm, especially long motorway drives, or if the battery is not charged, the heavier weight of the vehicles becomes a negative factor, and the CO₂ emissions are then just as high as with a conventional passenger car.

Another way to help fulfil stricter emission regulations is by using **alternative materials**. Lighter materials like aluminium, plastic, high-tensile steel or carbon reduce the weight of a passenger car. 100 kilogrammes less weight reduces CO₂ emissions by 6 to 10 g/km. A limiting factor when using new materials, apart from stability, is often the price. For example, aluminium is more expensive than steel and also more time-consuming to process. For that reason, it is used above all in bigger premium vehicles. According to the management consultancy McKinsey, high-tensile steel will replace conventional steels in many areas and increase its market share in the automotive industry from 15 to 40 percent. That means it will remain the most important light construction material, whereas carbon fibre composites are the fastest-growing at 20 percent per year. Similarly, the Association of German Engineers (VDI) also expects light construction materials to constitute around 80 percent of all the materials used in car construction.

Finally, there are great expectations of progress in the area of **networked and autonomous driving**. Because if the systems of individual manufacturers are made compatible and outstanding legal questions clarified, the flow of inner-city traffic in particular can be improved. The number of traffic jams in the city would be reduced, and CO₂ emissions of conventional vehicles would also fall.

It can be said in conclusion that the automotive industry and its suppliers face major challenges in the next 10 years due to the great significance of road traffic in the context of reducing greenhouse gas emissions.

Retail

A large number of studies published in the last two years on the subject of sustainability speak of an increase in its significance and a more sensitive perception of the issue. Ecological and social sustainability standards have become more socially relevant, and topics like the environment, origin, health and animal welfare play an increasingly more important role for many consumers.

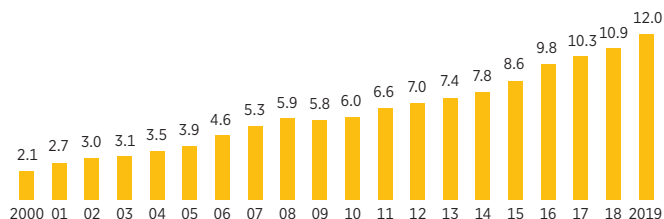
The German retail sector has been trying out and implementing different solutions and concepts for many years. For example, since the year 2013 the sector has invested more than €500 million in energy efficiency, according to the German Retail Association (HDE), and cut its CO₂ emissions in half compared with the year 1990. However, this comparison does not take into account the road traffic caused by the retail sector. Many retailers improve energy efficiency in their buildings, use renewable energy forms as well as climate-friendly air-conditioning and cooling systems. They consciously use less resources, e.g. for packaging, and choose electric mobility and an environment-friendly selection of products. With effect from the year 2021, emissions emanating from heating installations in buildings become part of the national emissions trading system – which will also affect the retail sector.³⁸ The sector is reacting to social change, as shown by the following five areas of activity:

Sustainable products

The selection of organic products and fairly traded products has been growing for years, and has led to increasing revenues in the food retailing sector. For example, retailing revenues with organic food in Germany grew from €6 billion in the year 2010 to €12 billion in the year 2019, **see fig. 14**.

By comparison: in the year 2019, the overall German food-retailing sector generated revenues amounting to €125.3 billion via all its distribution formats, according to the GfK Consumer Panel FMCG.

Figure 14: Revenues of organic food products in Germany in bn €



Sources: Statista, BÖLW

Regional food and natural cosmetics can each claim revenue shares of more than 17 percent. Regional food has on average a smaller CO₂ footprint than food which has to be delivered over long distances.

Retailing segments where consumers show particular interest in sustainable products apart from food are fashion (clothes and shoes) and furniture. Customer surveys show that the importance of sustainable product ranges in these segments has increased in recent years and that this even extends to the discount area.

Packaging

The right packaging of products is becoming increasingly important, particularly in food retailing, and this includes the non-use of unnecessary packaging. Background of the development: the amount of plastic waste in Germany increased by 29 percent between 2005 and 2015. Following an initiative by the Federal Ministry of the Environment and the Retail Association in the year 2016, which 350 companies have joined voluntarily up to now, the number of plastic bags distributed by the retail sector is calculated to have decreased by around a third. Only recently, the federal government issued a directive forbidding the use of disposable plastic packaging, so Germany is supporting the EU's plan to reduce plastic waste in Europe with a view to using resources more efficiently – all contributing to a reduction in greenhouse gas emissions. The EU would like to avoid as much waste as possible by imposing higher, legally anchored recycling quotas. According to details from the EU Commission, around half of all greenhouse gases are released by the excavation and processing of new raw materials. According to the EU, currently only 12 percent of raw materials used find their way back into the economic cycle.

According to a DVJ survey³⁹, 80.4 percent of consumers interviewed used recyclable bags or containers like paper and jute bags or rucksacks in 2018. Only 4.5 percent admitted purchasing plastic bags in a shop. However, there is not the same environmental awareness in all age groups: consumers aged between 16 and 24 chose a plastic bag three times more often than the overall average.

Whereas the substitution potential for packaging of some food and drink is still very small – bottles, for example, are difficult to replace with plastic or glass-free products – fruit and vegetables can be offered without any packaging at all. In many supermarkets it is already common practice to provide paper bags for this kind of fresh produce.

In other retailing segments, the potential to reduce packaging waste is much greater. According to a recent study⁴⁰ conducted by a company specialising in market research on packaging, mail order and furniture retailers, in particular, could reduce their use of packaging plastic by between 75 and 82 percent by, for example, replacing foam material and bubble wrap by paper and cardboard, **see fig. 15**. A systematic change of packaging to more sustainable alternatives could save around 825,000 tonnes of plastic per year.

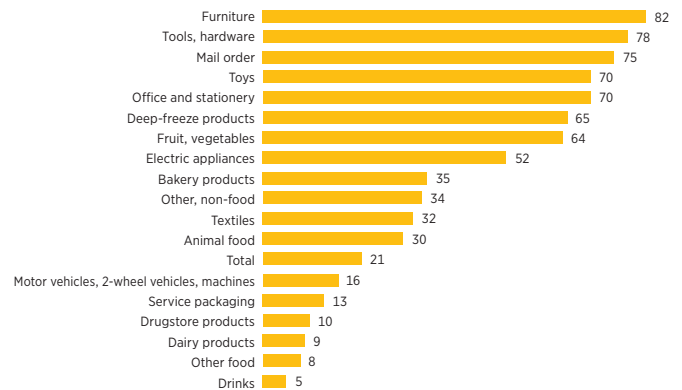
Labelling

To make it easier for them to find their bearings when choosing products, shoppers would like consumer goods manufacturers and retailers to use sustainability criteria that are as uniform and transparent as possible. This can be seen from the regular criticism of what is perceived as a confusing multitude of seals depicting origin, cultivation, harvest and quality as well as certificates and initiatives from manufacturers and retailers, their associations and other (consumer protection) organisations. Of course, these seals play an important role in the advertising activities of the companies and are communicated correspondingly. However, on the consumer side it is exactly this multitude of different activities which usually need explanation and are impossible to compare for laypeople – leading to confusion and, in some cases, distrust and a reluctance to buy.

For example, the label “bio” (organic) is only a firm definition for the food sector and is legally protected. There are no rules for descriptions like “sustainable”, “fair” and “ecological”. So consumers find it difficult to recognise at first glance what is really meant. Back in the year 2017 there were more than 1,000 such seals in Germany, leading the federal government to initiate web content aimed at creating an overview.

“Der Blaue Engel” (the blue angel) is one of the “classic” sustainable labels, for example. It is awarded for low-emission floor coverings, wall paint, wallpaper and varnish, for mattresses examined for harmful substances, for upholstered and wooden furniture as well as for environment-friendly electrical

Figure 15: Share of plastic packaging material replaceable by corrugated cardboard by product groups in the DACH (Germany, Austria, Switzerland) area in the year 2018, in %



Sources: GVM, Statista

devices (**see fig. 16 on the next page**). The initiative “wood from here” labels products and wood grown regionally and from sustainable forestry management. The EU Commission also certifies products with the European environment sign “EcoLabel”, the Euroblume. Within the framework of its “Green Deal”, the EU Commission would like to work on the labelling of sustainable products and also introduce the “Eco-Label” for financial products as part of the 2018 action plan for a sustainable financial sector.⁴¹

A current German example of this competition for the “right” sustainability ID is the “Grüner Knopf” (green button). It was initiated in the summer of 2019 as a state-approved seal for socially and ecologically sustainable textiles marketed by responsible companies and is to be officially introduced in the summer of 2021.

Right from the beginning, the initiative was the subject of hefty criticism from associations, manufacturers and retailers from the textile and clothing sectors, but also from non-government organisations and consumer protection groups. They pointed on the one hand to a large number of already established textile seals and, on the other hand, to problems checking that regulation standards are adhered to, which should be the responsibility of the Federal Ministry for Development Aid.

Figure 16: A selection of sustainability labels in Germany



Blauer Engel

One of the best-known labels for office material, household accessories, electric appliances and much more, since 1978. It signifies that the labelled products are more environment-friendly than comparable products of this product group.



FSC

The seal of the FSC (Forest Stewardship Council) identifies products manufactured using wood from sustainable forestry. There are gradations: “100%”, “Mix” and “Recycled”.



Demeter

The label stands for organic farming using stricter criteria than EU standards. It also takes into account sustainability aspects like the recycling economy and fair-trading partnerships.



MSC

The Marine Stewardship Council (MSC) is an internationally active, non-profit organisation which has set standards for sustainable fishing. The Council comprises representatives from environmental associations, scientists, the fishing industry, industry and trade.



Ecocert

This seal has featured on labels of natural and organic cosmetics as well as ecological washing powders and cleaning agents since 1991. The Ecocert Group is a control and certification association for ecological products.



Oeko-Tex Standard 100

The Oeko-Tex Standard 100 – since November 2016 Standard 100 by Oeko-Tex – certifies textiles like clothing, bedclothes and towels, but also textile raw and intermediate products and accessories like thread, fabric, knitted fabrics, buttons, zips, sewing threads and labels.



Fairtrade

Fairtrade pursues long-term trading relationships for all trading partners, e.g. assuring small farmers receive a guaranteed cost-covering price for their products, even when global market prices fluctuate.



V-Label

This label enables vegans and vegetarians to recognise animal-free products quickly and clearly without having to study lists of ingredients or enquiring at the manufacturers.

Success story: Otto Group

The Otto Group is a global trading and services group with around 52,000 employees and revenues of €14.3 billion. With 30 main company groups, it has a presence in more than 30 countries in Europe, North and South America and Asia. With online revenues of €8.1 billion, the Otto Group is one of the world's biggest online retailers.

Prof. Michael Otto, today's supervisory board chairman, had already declared that sustainability was one of the corporate objectives of the Otto Group back in 1986. His view was that it would be the only way in the long term for the company to secure its growth-oriented focus in harmony with value-based, sustainable activities and the quality-of-life of subsequent generations.

With its CR strategy 2020, adopted in the year 2012, the Otto Group systematically took on board responsible action in all its business processes. The strategy comprises five partial strategies. In the context of the **climate strategy**, CO₂ emissions caused by location, transport and mobility were to be halved by 2020, compared with the year 2006, and this objective was achieved in the business year 2019/20. For **textiles**, the Otto Group wants to adapt the entire supplies of cotton used for its own and licensed brands to sustainably produced cotton – 96 percent of this goal has been achieved. The range of **wooden furniture** is to be adapted to items carrying FSC® certificates by 2025 – in fact, 80 percent of articles already have FSC® origins. In the **paper sector**, the Otto group wants to increase the share of FSC®-certified paper used for catalogues and promotion material to 60 percent by 2020. With 64 percent, this target has already been exceeded. Furthermore, by 2020 all suppliers are to be integrated in the company's **social programme** whose factories are in countries where adherence to minimum standards is not a given, or only partially so. As per business year 2019/20, 95 percent of this target has been achieved. In future, the Otto Group is dealing with the whole issue of sustainability at the highest strategic planning and decision-making level of the concern.

Specific measures to reduce greenhouse gases include transitioning from airfreight to more climate-friendly sea transport and the use of high-value, certified green electricity in the concern's German companies. Currently, this share constitutes 40 percent of the total quantity of electricity used and is being systematically increased. And the increasing use of electric vehicles and cargo bikes to deliver packages at the Hermes subsidiary also reduces the emission of greenhouse gases.

The implementation of this sustainability strategy is a costly procedure. Changing the way packages are delivered, especially the last mile to the customer, requires big investments in the vehicle fleet and infrastructure. The charging network for electric vehicles has to be expanded considerably in many places. To facilitate efficient use of cargo bikes, small parcel stations have to be set up in towns where parcel carriers pick them up and distribute them on cargo bikes. But space for these parcel stations is very limited and in demand, especially in city centres. More political and administrative support is needed here to be able to create an infrastructure of such "microhubs".

For the financing of sustainability investments, the Otto Group created a Sustainable Finance Framework in the year 2019. It can issue bonds according to the "green and social bond" principles of the International Capital Markets Association. Funds from the bond issues of this programme are used to finance the procurement of sustainable products, e.g. sustainable textiles with the label "Cotton made in Africa" and sustainable furniture with the FSC label. Early in 2019, the Otto Group issued its first "sustainable bond".

Online retailing

The importance of online retailing, which has been growing for years, also draws increasing attention to its carbon footprint. According to the Federal Association of E-Commerce and Mail-Order Retailing (bevh), online retailing in Germany grew by 11.6 percent in the year 2019 compared with the previous year, with gross revenues of €65.2 billion. In the year 2020, online retailers can be expected to further expand their market shares at the expense of classic retailers against a background of outlets closing during the Covid-19 pandemic.

The carbon footprint of the online retailing sector is better than that of stationary trading operations, according to the Öko Institute, because many individual shopping trips by car are saved, and products can be transported by delivery services with less damage to the environment. According to the institute, sending a parcel causes only about a quarter, a dispatched parcel which is returned only half of the greenhouse gas emissions generated by an average six kilometre-long shopping trip by car.⁴²

Of course, this isolated perception of the net result depends very much on the mode of transport used to visit the stationary retailer and the number of returned products – itself a problem in some segments of retail trading.

A draft law is being planned at a European level to promote sustainability in the retail sector and consumer goods industry. The idea is to regulate goods disposal and product life. The background to this are studies on high return rates at big online retailers and the disposal of goods which are as good as new, but considered unsellable. This concerns primarily the consumer electronics and clothing/shoes segments. Some online retailers have return rates of up to 50 percent, with around 3 percent of the returned goods being destroyed and disposed of as waste, according to a study by the University of Bamberg.⁴³ According to this “action plan for the recycling economy”, it is planned to forbid the destruction of unsold durable goods. Electrical devices should be constructed so they last longer and can be repaired. Indeed, consumers should have a right to have goods repaired. But the issue of goods disposal affects not just the online sector; surplus goods from stationary retailers are also partially disposed of instead of being sold.

New technologies

Experts attribute great importance to digitisation and the use of artificial intelligence in the development and implementation of sustainability strategies in the retailing sector. However, this would require (extensive) investment in modernisation in parts of the sector. The German Retail Association (HDE) gives examples like the exact measurement to the minute of energy flows on the basis of smart sensor technology which, for example, alerts the energy manager if a freezer door is open in a supermarket.

Another example is artificial intelligence, which can register exactly the flows of people in a shopping mall, so that these data, combined with weather forecasts, create a self-learning system which can provide an optimal alignment of the building management systems. This makes energy savings possible.

In conclusion, despite many claims by consumers in surveys that they have an affinity with sustainability, it remains unclear if all the efforts (investment) made by retailers are worthwhile, and how long it takes for the implementation of sustainability strategies to increase profitability.

Sustainability as a commercial risk for the retail sector

There are certainly signs that while some consumers do call for sustainable products and socially fair actions, they are not all prepared to adapt their own shopping habits or accept higher prices. This touches on a fundamental problem: an Ipsos survey⁴⁴ on changes in personal behaviour due to concerns about climate change showed comparatively little momentum in terms of real shopping behaviour. Only 28 percent of interviewees said they would look out for sustainable brands and/or origin when buying clothing. On the other hand, every second interviewee claimed to have changed his/her behaviour with regard to energy use, heating generation, water consumption and the purchase of household appliances.

So, based on this, sustainability can potentially be a risk for the retail sector and even endanger livelihoods in the long term – if, for example, one retailer accepts the need for high costs while a less sustainability-minded competitor does not.⁴⁵

Moreover, the Covid-19 pandemic currently has the potential to slow down sustainability efforts. For example, a new study by the Boston Consulting Group (BCG) and the Sustainable Apparel Coalition (SAC)⁴⁶ for the fashion segment shows that many large companies in the sector have seen the corona crisis as a reason to discontinue their sustainability efforts. Initiatives ranging from sustainable material procurement to carbon reduction and employees' rights have been downgraded at best to subordinate considerations – in favour of efforts to overcome a short-term financial emergency.

The role of the financial sector – and what does Commerzbank have to offer?

The key role of the banking sector

Banks have an important function in transforming the economy in the direction of sustainability. As financial intermediaries, they play a key role in channelling investments towards sustainable investment opportunities. In this regard, a bank's role is multi-faceted: it can offer sustainability-linked products to its clients or originate funding via the capital debt markets. Banks typically advise companies on issuing green bonds – the proceeds of which can finance environmentally friendly practices. Banks also play an instrumental role in helping to fill order books, thanks to their extensive network. On the other hand, banks issue their own sustainable bonds, the proceeds of which are subsequently channelled into sustainable financial investments. The decision to lend to sustainably acting Mittelstand or large companies is a prudent one. After all, from a risk perspective, those forward-looking companies are more likely to have longer-term financial resilience and, therefore, could remain clients well into the future. And, lastly, banks and savings banks offer sustainable financial investments, creating a new product for environmentally aware private and institutional investors; they are expanding the supply of capital.⁴⁷

The banks also have to decide how and how strongly to integrate the sustainability aspect in their portfolio management and lending processes. And they must also consider that different sectors and companies can be affected in different ways during the transition to a more sustainable economy.

Sustainable finance

The term “sustainable finance” has not been unequivocally defined until now. According to the definition of the German Federal Bank, which this report is using for orientation purposes, it is the inclusion “of environmental, social and governance (ESG) aspects in the decisions of financial players. Against the background of the Paris Climate Agreement, the mitigation of climate change, in particular, and adapting to its consequences have come into focus.”⁴⁸

Prominent examples of sustainable finance products in particular are sustainable bonds and sustainable loans.

Sustainable bonds can take different forms, although for most transactions, sustainability credentials are best demonstrated by offering full disclosure of how proceeds will be used. **Green bonds** have the biggest market share, with their funds used exclusively to finance new or existing environmental projects worthy of support, for example climate protection projects,

renewable energy, energy-efficient buildings or other projects aimed at reducing CO₂ emissions. The capital raised must be allocated to corresponding “green” projects.

Then there are “**social bonds**”, where funds are not used for environmental or climate protection projects – like with green bonds – but for social projects. Proceeds of social bonds are typically allocated to projects that promote better access to health care, education, affordable housing or improve food provision, for example.

And then there are bonds that finance both green and social projects – broadly defined as “**sustainable bonds**”.

On the credit side, sustainability can also be documented with details of a corresponding green or social intended use. For instance, “Schuldscheine” can be used for financing or refinancing (either partially or in full) new or existing green projects.

What's more, sustainability-linked loans have evolved in the market for syndicated loans. Here the loan can be used by the company for general corporate purposes. However, the conditions of the loan depend on the sustainability credentials of the borrower. In this way, the loans give the borrower an incentive to achieve substantial, predefined environment, social and governance (ESG) sustainability objectives. ESG is often defined using the targets set by the United Nations. A total of 17 targets for sustainable development are political objectives of the United Nations, intended to help secure globally sustainable development on economic, social and ecological levels. Aside from climate goals, they also embrace social and corporate management objectives such as gender equality and combating food poverty.

ESG targets were initially associated with interest rate levels in “**revolving credit facilities**” (RCF). The ESG connection was subsequently extended to the “Schuldscheine” and loans market. A core element of this innovative product is the linking of the sustainability performance of the borrower to the level of interest charged for a loan. Before the loan is syndicated, the borrower defines sustainability objectives and stipulates by which date these objectives are to be achieved. The objectives can be defined either internally (e.g. by the borrower in accordance with his sustainability strategy) or stipulated externally (e.g. by independent sustainability rating). If the borrower fails to achieve his targets beforehand, then terms of the loan, such as the interest rate, may change until the predetermined targets are met. And, conversely, if the borrower meets the respective targets earlier than agreed, the interest rate falls accordingly. For reasons of transparency, it is recommended that

a third-party sustainability rating company is appointed to independently assess the borrower's actions and disclose these findings publicly.

Aligning financing terms with ESG objectives gives the borrower greater flexibility because the use of proceeds is not limited to "green" investments. It is also a comparatively simple credit instrument since no comprehensive set of rules has to be developed. The focus is on broadly formulated sustainability and/or transformation targets.

Another central instrument to contain climate change, to promote sustainable expansion of renewable energy forms and invest in energy efficiency is **trading with CO₂ emission allowances**. The emission rights trading system of the EU allocates specific upper limits to member states for greenhouse gas emissions by their industry and energy producers. If these upper limits are exceeded, then the companies have to purchase additional emission allowances. The number of certificates allocated free of charge decreases continually because emission limits become smaller every year. The companies can decide, depending on the level of their respective avoidance costs, whether to purchase certificates or invest in modern technology to reduce emissions. In order to levy one price worldwide for CO₂ emissions, which corresponds to the costs of the damage caused by greenhouse gases, Commerzbank is actively involved in the Carbon Pricing Leadership Coalition (CPLC) of the World Bank.

As a result, there are now a number of financial products which promote sustainable development. But what is sustainability at the end of the day, and what are "green investments"? This subjective question cannot be answered solely by the financial sector and is the subject of the EU taxonomy.

EU taxonomy

What is "ecologically sustainable"?

As there was no clear government definition of the term "green investments" in place, the European Union agreed on a generally binding definition and a classification system for green investments, the so-called EU taxonomy, at the end of 2019. It determines which economic activities –including investment – can be seen as "ecologically sustainable".⁴⁹ According to the EU, it is not intended to replace existing sustainability strategies, but open up new possibilities for companies which fulfil taxonomy criteria to obtain "green" funding for their projects.⁵⁰

At the same time, it is an opportunity to tackle the problem of "greenwashing". "Greenwashing" refers to the attempt by companies to give themselves superficial "green" status, which is not real and does not help the environment, because they are not in fact making their business processes more sustainable.⁵¹

Sustainable financial products from banks also have to correspond to the criteria of EU taxonomy. According to the EU taxonomy, "ecologically sustainable" economic activities have to fulfil all four of the following conditions:

First, they must contribute "substantially" to achieving one of six defined environmental objectives (more about this below).

Second, they must not "significantly" impede any of these environmental objectives.

Third, they have to fulfil "technical evaluation" criteria which measure the terms "substantially" and "significantly".

And finally, they have to be in agreement with a "minimum protection" for employees.

The six environmental objectives of the EU are:

- improvement of climate protection, i.e. the avoidance or reduction of greenhouse gas emissions,
- adapting to climate change,
- sustainable utilisation and protection of water and ocean resources,
- expansion of the recycling economy, avoidance of waste, reusing and recycling,
- avoidance and reduction of environmental pollution, i.e. reduction of harmful emissions as well as CO₂ and
- protecting the restoration of biological diversity and ecological systems.

The challenges of the EU taxonomy are hidden in the details. The strict catalogue of criteria gives rise to the question of how investment in nuclear energy and fossil fuel-fired gas power stations is to be evaluated. Are these "ecologically sustainable" investments? Nuclear energy is CO₂-free – so it makes a substantial contribution to climate protection – but still presents the unsatisfactorily solved problem of nuclear waste storage. Gas power stations do emit CO₂, in contrast to wind or solar power systems, but considerably less than coal-fired power stations.

In order to remove this dilemma and enable a compromise at EU level between Council, Commission and Parliament, two further forms have been established in addition to the purely “green investments” which fulfil the catalogue of requirements:

Enabling activities

They do not achieve the environmental objective by a direct route, but “enable” a substantial contribution in another way. An example is the construction of wind turbines, with which CO₂-free electricity can be generated.

Transition activities

These are activities for which there is no technically or economically meaningful low-carbon alternative, and the greenhouse gas emissions of which are among the lowest in the sector or industry; they do not impair the development and introduction of low-carbon alternatives and against the background of the economic lifetime of the plant in question do not lead to a lasting dependency on CO₂-intensive plants in general.

In this context, according to the EU Commission, nuclear energy and natural gas are currently “neither included in the EU taxonomy nor excluded from it”.⁵² In essence, that means that the construction of nuclear and gas power stations suitable for covering base loads, which produce electricity independent of wind power and sun radiation, are included in “green investments” for the time being. But this explicitly does not apply to the construction of coal-fired power stations because there is a low-CO₂ alternative to them, i.e. gas power stations. It is highly contentious whether “greenwashing” is officially permitted, whether it is a political solution or just a bad compromise. The pragmatic approach would be to emphasise that every tonne of CO₂ saved contributes to climate protection.

Transparency obligations of companies

The EU taxonomy also applies to banks which have to reveal “in which form, and to what extent investments in their financial products” support economic activities which meet the criteria for “ecological sustainability”. Investments which do not conform to taxonomy criteria have to be expressly declared as such by the bank.⁵³

However, the regulation also includes companies from the real economy. It applies in companies covered by the guidelines on disclosure of non-financial information. The regulation obligates “companies of public interest” to adhere to transparency obligations from 2022 (for the business year 2021), **see fig. 17 on the next page.**⁵⁴

This includes, among others

- companies whose shares are traded on the stock exchange and
- other companies of public interest in Germany. This includes joint-stock companies (AG), partnerships limited by shares (KGaA) and limited companies (GmbH).

In addition, companies must have

- more than 500 employees and
- a balance sheet total of more than €20 million or annual revenues of more than €40 million.

That means some of the larger “Mittelstand” companies by the definition of Commerzbank are subject to disclosure vis-à-vis the EU taxonomy.⁵⁵

The share of revenues has to be declared which is generated with ecologically sustainable products or services, as does the share of investment (Capex) and/or operating expenses (Opex) which is sustainable according to taxonomy or is connected to such activities. “Enabling” or “transition” activities do not have to be disclosed.⁵⁶

As a result, companies have to reckon with considerably more bureaucracy. It should be added that the term sustainability – as shown above – is defined in a very complex way.

It should also be mentioned that currently German companies already provide information – on a voluntary basis or because they are legally obligated – about the sustainability of their business activities, **compare fig. 18 on the next page.**

Sustainable financing by Commerzbank

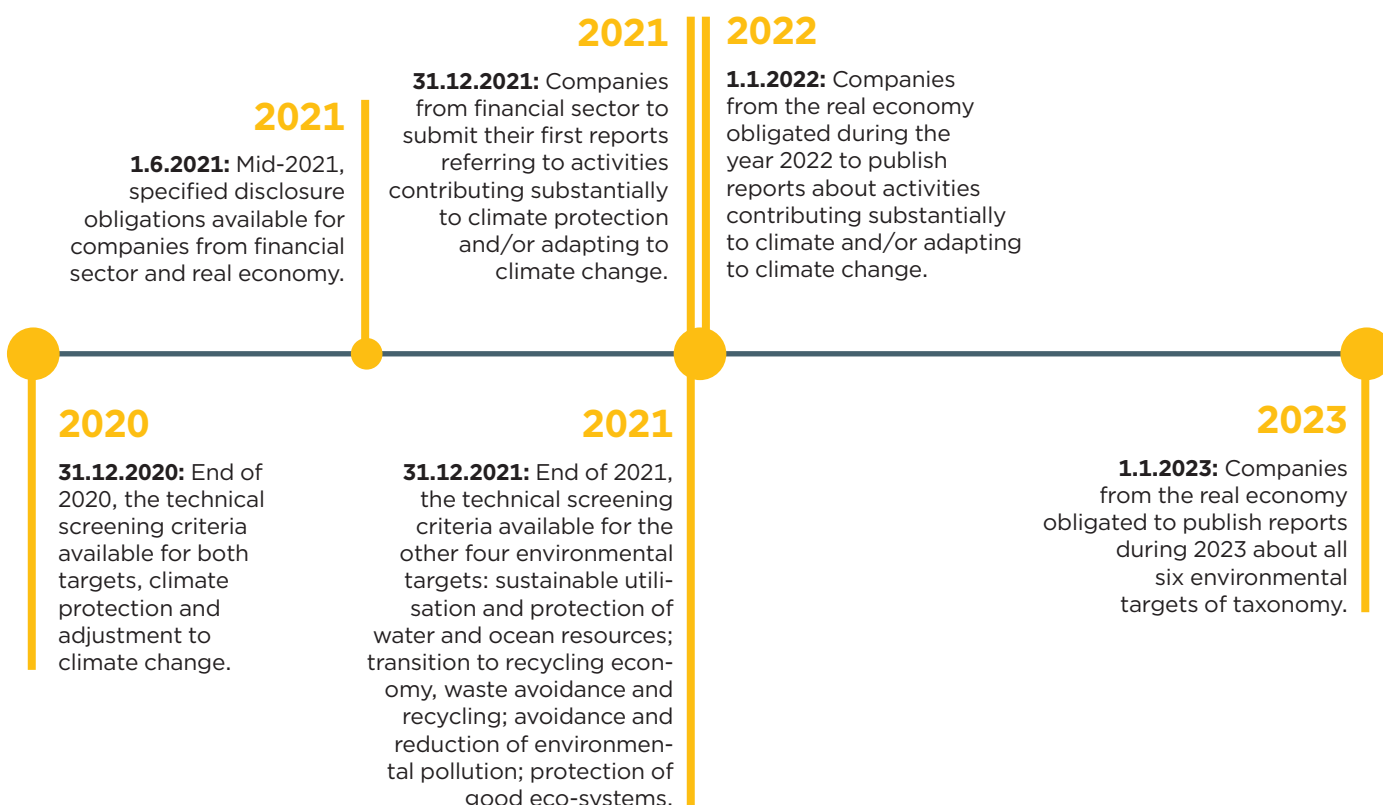
Commerzbank and sustainability

For Commerzbank, sustainability is an integral part of the corporate strategy it has pursued in the market for decades.

In 2019 Commerzbank was one of the first signatories of “Principles for Responsible Banking”, emphasising the high level of relevance the company attaches to responsible banking. Moreover, it acknowledges its responsibility to support companies in their transformation process to more sustainable business activities.⁵⁷

Furthermore, in June 2020 Commerzbank, along with 15 other companies from Germany’s financial sector, signed a commitment to climate protection, pledging to align loan and investment portfolios to the objectives set out by the Paris Climate Agreement. Specifically, the pledge seeks to allocate capital in

Figure 17: Time schedule for companies of public interest to introduce disclosure requirements



Sources: EU: Technical Report, March 2020, CRIC

ways that ease the transition towards a low-carbon economy. Every signatory has committed to introducing methodologies able to measure the effects of their loan and investment portfolios on the environment by 2022. The effects on the climate must, in turn, be mitigated in accordance with national and international climate objectives.⁵⁸

In addition to this, Commerzbank has been offering its clients a variety of sustainable financing solutions in the financial markets for many years.

Sustainable bonds

Commerzbank has been active in the sustainable bond market since the asset class' nascency. For example, when the European Investment Bank issued the world's first ever green bond in 2007, Commerzbank played the role of lead arranger. Since then, Commerzbank has played a leading role in more than 80 further sustainable bond issues.

In fact, the bank covers the entire spectrum of green, social and sustainable bonds for its clients. Commerzbank also supports its clients, not just with the placement of sustainable bonds, but also with the preparation and structuring of issues.

This includes, for example, creating a sustainable bond framework, obtaining a second party opinion and preparing reports during the term of the sustainable bond before maturity.

Market standards play an increasingly important role, in particular the "Green Bond Principles" of the International Capital Market Association (ICMA) which were published for the first time in January 2014. The aim of these principles is to promote transparency and integrity in the market for sustainable bonds by prescribing voluntary recommendations for issues. Commerzbank has subscribed to the Green Bond Principles since 2014.

Commerzbank also issued its first proprietary green bond in October 2018 – a €500 million issue with a five-year term for which the order book reached volumes of more than €1.1 billion. The bank used the proceeds of the issue to refinance sustainable projects in the area of renewable energy (wind and solar).

Figure 18: Sustainability reporting in Germany

Reporting obligations	Voluntary reporting	
<p>CSR guidelines-implementation law</p> <ul style="list-style-type: none"> • National implementation of EU Non-Financial Reporting Directive 2017 • Affects about 600 companies in Germany (of public interest with >500 employees and revenues >40m euros or balance-sheet sum >20m euros) • Contents: environmental, social and employee issues. Combating corruption and bribery as well as respect for human rights • https://www.csr-in-deutschland.de/DE/Politik/CSR-national/Aktivitaeten-der-Bundesregierung/CSR-Berichtspflichten/csr-berichtspflichten.html 	<p>Global Reporting Initiative (GRI)</p> <ul style="list-style-type: none"> • Global standard since 1997 for the biggest and/or listed firms (e.g. 83 percent of DAX30 report according to GRI) • Contents: 36 standard modules and over 120 indicators on the economy, ecology and society/social issues • Selection of indicators to report on about individual companies by materiality • https://www.globalreporting.org/standards/gri-standards-translations/gri-standards-german-translations-download-center/?g=d0c406d-0fc6-4042-9430-a81ab9548337 	<p>German sustainability codex (DNK)</p> <ul style="list-style-type: none"> • Developed by the Council for Sustainable Development • 563 companies reported acc. to DNK (status: 17.12.2019) • Contents: 20 criteria for strategy, implementation, environment and society • Fulfils reporting requirements of the National Action Plan for Economy and Human rights • https://www.deutscher-nachhaltigkeitskodex.de/
<ul style="list-style-type: none"> • Reports are on those contents defined as essential; there are no figures which can be found in all reports, leading to a low level of comparability of the respective reports • An objective evaluation of the sustainability performance is made by specialised rating agencies, like e.g. ISS Oekom, Sustainalytics, Imug, MSCI and others (our evaluation, see www.commerzbank.de/factsheet) 		

Source: Commerzbank

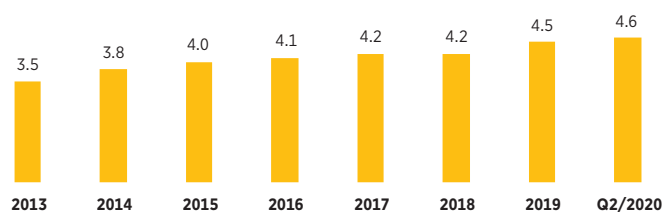
Sustainable loans and “Schuldscheine”

Commerzbank is one of the leading arrangers of sustainable and sustainability-linked loans in Germany and Europe. In 2019, 74 sustainable/sustainability-linked loans (credits and RCFs) were issued on the European market with a total volume of €73.8 billion. Commerzbank was involved in 20 of these transactions with a total volume of €27.3 billion, which corresponds to a market share of 37 percent.

Project financing for renewable energy

Commerzbank has been actively involved in the financing of renewable energy forms for more than three decades. In 2003 it set up its own competence centre in Hamburg (Competence Center for Renewable Energies, CoC Energy), which today is one of the biggest financiers of renewable energy in Europe. The portfolio volume has increased by more than 30 percent since 2013, see fig. 19.

Figure 19: Renewable energy portfolio volume of Commerzbank, in bn €



Source: Commerzbank

In Hamburg and New York, more than 40 specialist staff are at the disposal of Commerzbank clients – whether they are manufacturers, project developers or investors. The core markets of CoC Energy, apart from Germany, include the countries of Western Europe and North America (USA, Canada) and a selection of other countries worldwide.

The bank’s comprehensive approach is to provide service to all the companies involved in a value-added chain. Clients benefit from profound expertise about technologies, market players and financing structures.

CoC Energy offers bilateral and syndicated project financing for renewable energy as well as the whole spectrum of corporate banking services. Financing is provided primarily for solar and wind parks (onshore and offshore) managed by institutional investors, utility companies and/or private investors.

Trading with CO₂ emissions allowances

Commerzbank is one of the leading banks on the European emissions allowances market. It is a driving force for the development of the sector and is able to support “Mittelstand” companies with its extensive, long-term market experience and profound, expert knowledge of emissions trading. All in all, the bank is a reliable partner offering innovative solutions for CO₂ risk management.

Currently Commerzbank is concentrating primarily on the market for emissions credits and certificates within the framework of the EU emissions trading system. Up to now, companies nearly always purchased certificates just to cover their obligations, or they sold surplus certificates they didn’t need – either immediately or selling forward. But, more recently, in an increasingly liquid market, companies have also used emissions certificates for liquidity management purposes or as a financing instrument to optimise their working capital or cash position.

In addition, Commerzbank has recently begun supporting its clients in the voluntary carbon market. This is where clients purchase emissions credits or compensation to offset their CO₂ footprint and become CO₂ neutral. Commerzbank predicts that demand for such services (C.L.E.A.N. – Commerzbank Low Emission And CO₂ Neutral) will increase as a consequence of climate change.

Commerzbank also offsets emissions which are (still) unavoidable by purchasing and cancelling CO₂ certificates from climate protection projects and has been climate-neutral since 2015.

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The report is based on industry analysis and assessments by Commerzbank AG.

The editorial and graphic presentation of the report is done in cooperation with the Handelsblatt Research Institute.

This report was prepared in November 2020.