

## Session SBI60 (2024)

Session starts: 01-03-2024 00:00:00 [GMT+1]

Session ends: 05-06-2024 23:30:00 [GMT+1]



### Multilateral Assessment

A compilation of questions to – and answers by – **Germany**

exported on 05-06-2024 by the UNFCCC secretariat

Question by New Zealand at Thursday, 04 April 2024

Category: All emissions and removals related to its quantified economy-wide emission reduction target

Type: Before 04 April

Title: Decarbonisation in industry

In 2021 Germany implemented a "Decarbonisation in the Industry" funding programme, which supports projects in energy-intensive industries aimed at achieving the largest-possible, long-term reductions of process-related GHG emissions. Can Germany provide an update on progress to date, including mitigation impacts?

Answer by Germany

We thank New Zealand for its interest in our decarbonisation efforts.

We have successfully implemented the programme "Decarbonisation in the Industry" since 2021 and funded 14 projects so far (industry sectors: cement, paper, glass, steel, chemicals) while we plan to fund at least 10 more in the near future before phasing out the programme and renewing it in a new scheme mid-2024, subject to internal procedures.

As it is and we plan for the future, we fund both investments in climate-friendly production and R&D for the development of CO<sub>2</sub>-reducing or net-zero-technologies not yet available for energy-intensive industry. Examples of promising revolutionary CO<sub>2</sub> mitigation include change from fossil fuels to emission-free energy sources (electricity or green hydrogen), introduction of production processes without raw material-related emissions or use of alternative raw materials.

Most of the above mentioned funded projects have not yet achieved a direct CO<sub>2</sub> reduction as they have just started. The R&D projects will only generate reductions in the application in the future. We have calculated a cumulated reduction of approx. 3.4 million t CO<sub>2</sub>-equivalents by the currently funded investment projects and the projects being about to get launched until 2030. However, we deem the real impact of our funding such ground-breaking emissions-saving technologies to be much higher.

Example projects funded by the funding guideline "Decarbonisation in the Industry" include

- the electrification of process heat generation, e.g:
  - the development of an electrically heated cracker in the chemical industry
  - a (largely) electrically heated glass melting furnace for container glass and pharmaceutical glass of standard industrial size
  - the use of high-temperature heat pumps in industry

- R&D on use of hydrogen and its effect on products in the glass melting sector
  - investment in the first plant for the direct reduction of iron ore using hydrogen instead of methane as a demonstrator and to gain operating experience and further processing experience for other large industrial plants
  - the replacement of lime with alternative materials that do not cause raw material-related emissions and their further processing and use as a binding agent;
  - the replacement of petroleum distillation residues or coal tar in carbon black production
  - the further development and testing of various CO2 capture technologies in the industry
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**Question by** United States of America at Friday, 29 March 2024

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** National emissions trading scheme

Could you describe how the German national emissions trading scheme working to reduce emissions from companies that place fuels on the market vice the EU Emissions Trading Scheme that targets direct emitters?

**Answer by** Germany

The German national emissions trading scheme (nETS) is guided by the principle that whoever is responsible for carbon emissions from fuels must pay a carbon price for them.

The nETS is designed as an upstream pricing mechanism: Companies selling fossil fuels (“placing them on the market”) must purchase emissions allowances for every ton of carbon dioxide that is emitted as a result and reported under the nETS monitoring.

Responsible companies have to surrender emission allowances for these emissions and may pass on the extra costs to consumers through higher prices for the fuels sold.

The nETS scope covers emissions from all fossil fuels not covered by the EU Emissions Trading Scheme (“EU ETS-1”), i.e. emissions from fossil fuels used in the heating and transport sectors.

The nETS provides for a compensation scheme offering financial compensation for EU ETS-1 installation operators (direct emitters) using fuels which are also subject to carbon pricing under the nETS.

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**Question by** United States of America at Friday, 29 March 2024

**Category:** Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Coal decrease

Considering the report proceeds the disruption in natural gas to Germany from Russia's unprovoked invasion of Ukraine, is Germany able to stay on track in decreasing coal as major energy source by 2030?

**Answer by** Germany

We assume diversified gas supplies and normalized gas prices by 2030. We therefore assume that Russia's unprovoked invasion of Ukraine will not hinder a German coal phase-out, even by 2030. However, a flexible approach is necessary. For instance, if the gas supply or the renewable deployment are lower than expected, coal power plants may run longer than 2030.

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**Question by** United States of America at Friday, 29 March 2024

**Category:** Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Technologies

Germany has very aggressive climate targets, including a negative emissions balance by

2050. What type of technologies does Germany predict it will need (Direct Air Capture, etc) to reach negative emission in 2050?

[Answer by Germany](#)

According to the German federal climate change act, greenhouse gas emissions shall be reduced to the point of net greenhouse gas neutrality by the year 2045. After the year 2050, negative greenhouse gas emissions are aimed to be achieved, in accordance with the European climate act.

To reach these targets, the particular important contribution of the land use, land-use change and forestry sector is to be improved to at least minus 40 million tons of carbon dioxide equivalent by the year 2045. With the revision of the federal climate act adopted by parliament in April 2024 an additional section on industrial sinks will be introduced. In order to achieve net greenhouse gas neutrality by 2045 and net negative emissions after the year 2050, targets for industrial sinks are to be set for the years 2035, 2040 and 2045, taking into account the particular importance of the contribution of the land use, land use change and forestry sector. The German federal government is currently working on a long-term strategy on negative emissions for dealing with unavoidable residual emissions, which shall form the basis for the determination of those targets. According to the published key points of the strategy, negative emissions are not limited to specific technologies and include direct air capture and bioenergy with carbon capture and storage.

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[Question by Japan at Friday, 29 March 2024](#)

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Distinguishing between EU's policies and Germany's policies

Can each of the policies and measures implemented in Germany and their reduction effects be distinguished between the EU's policies and Germany's policies?

[Answer by Germany](#)

The German projections do not distinguish the impacts of European policies from the impacts of German policies. In our opinion, a meaningful differentiation between "EU induced " vs. "nationally induced" mitigation impacts is difficult for following reasons:

While EU regulations apply directly in EU member states, EU directives need to be transposed into national law. EU directives provide some leeway on how they are to be transposed, so national legislation may vary from the directive upon which it is based.

Attributing a specific mitigation impact to one individual activity is difficult from a methodological perspective. In practice, a mitigation activity is influenced by several regulatory, economic, fiscal and informatory PaMs, to varying degrees. Separating the effect of EU policies along is therefore not possible.

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**Question by** Japan at Friday, 29 March 2024

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Reduction effects by phase-out of coal-fired power

Germany plans to phase out coal-fired power by 2038, and the reduction effect of this is reported to be 54 MtCO<sub>2</sub>e in 2025 and 114 MtCO<sub>2</sub>e in 2030. What is this reduction effect estimated in comparison with? Also, are there any overlaps with the reduction effects of other measures such as the Renewable Energy Sources Act and the EU-ETS?

**Answer by** Germany

The individual measures are each evaluated against a model run without the respective measure. For this purpose, each measure is switched off individually by varying the relevant input data in the model for its impact period. The resulting CO<sub>2</sub> emissions of a model run with the measure switched off are compared with the CO<sub>2</sub> emissions of the “with measures scenario” (MMS) in order to quantify the reduction effect of the measure. Overlaps with other policies are thus avoided in the calculation.

A full “without measures scenario” (OMS) is not calculated for the electricity sector as part of the projection report because it is difficult to estimate how the structure of electricity generation in Germany would have developed without the influence of instruments such as the Renewable Energy Sources Act (EEG) or the EU ETS that have been in effect for many years.

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**Question by** Japan at Friday, 29 March 2024

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** The German Council of Experts on Climate Change

The German Council of Experts on Climate Change provides opinions and reports for the federal government and the German Bundestag on the assessment of emissions data, the update of Climate Action Plan, and the effectiveness of reduction measures. A scientific and objective assessment and analysis by external experts would be extremely useful in identifying approaches to achieving reduction targets. To what extent are the opinions of this expert council actually reflected in federal government policies?

**Answer by** Germany

Since its establishment in 2020, the Council has given its expert opinion on GHG data calculations. This includes the most recent data on previous years' GHG emissions that are used to assess whether Germany met its national climate targets, as well as estimates of the GHG mitigation impact of Climate Policy Programmes.

In addition, every other year, the Council publishes a comprehensive review on latest GHG emission development and future trends.

With its assessment, the Council contributes to a wider awareness within the Government and the general public on whether Germany met its climate targets, and if it is on track to meet future targets. In its opinions, the Council usually assesses the overall development of GHG emission data, but also looks into the developments of individual sectors defined in the Federal Climate Change Act. The Council's expert opinion also resulted in the further development of immediate action programmes with additional measures.

So far, the Council's mandate was focused on assessing GHG emission data, both historic and projections of future trends. Once the current amendment of Germany's Federal Climate Act enters into force, the mandate of the Council of Experts on Climate will be extended to include specific climate policy recommendations if emission trends should not be in line with future climate targets.

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**Question by** Japan at Friday, 29 March 2024

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Sensitivity analysis of framework data for projections

Sensitivity analysis based on framework data -Economic growth, Population, prices for EUA European Allowances, and BEHG prices- was conducted. Could Germany tell us specifically how Germany uses the results of these sensitivity analysis?

**Answer by** Germany

The results of the sensitivity analysis provide an assessment of the robustness of the main results. In individual cases, the figures give an ad hoc indication to what extent or speed changes in emissions can be expected if it is observed that framework parameters are moving in the direction that is assumed in the sensitivity analysis.

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**Question by** United Kingdom of Great Britain and Northern Ireland at Thursday, 28 March 2024

**Category:** All emissions and removals related to its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Question to Germany on their energy efficiency bills

Thank you, Germany, for the opportunity to comment on your 5<sup>th</sup> Biennial Report and 8<sup>th</sup> National Communication. We note that in 2022 you were able to pass several energy efficiency bills through Parliament. Can you please share how this was received by the public and how implementation is progressing?

**Answer by** Germany

The Energy Efficiency Act came into force in November 2023. For the first time, it creates a cross-sectoral framework for increasing energy efficiency. It defines specific savings targets for the public sector, obliges large companies to introduce energy and environmental



management systems and sets energy and waste heat requirements for data centres. The aim is to reduce final energy consumption by at least 26.5% by 2030 compared to 2008 to 1867 TWh. The implementation of the law raises many questions. We are working hard on providing answers to ensure the law's timely implementation.

Amendments to the Building Energy Act are crucial for the decarbonisation of the building sector. The first amendment in July 2022 set stricter energy standards for new buildings. A second amendment came into force on 1 January 2024.

The Heat Planning Act also came into force on 1 January 2024. It creates the framework for the introduction of comprehensive and systematic heat planning in Germany. It also defines binding targets for the use of renewable energies and unavoidable waste heat in heating networks for the first time.

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**Question by** Australia at Thursday, 28 March 2024

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Q3

Germany's NC8 identifies that efforts will be made to interlink health-monitoring and environmental-monitoring resources more effectively on a federal level (pg. 197). **Can Germany elaborate further on these efforts, and comment on expected benefits?**

**Answer by** Germany

Already in 2013 the Robert Koch Institute (RKI) together with the German Environment Agency (UBA) published a paper commissioned by the Federal Ministry of the Environment, Nature Conservation, Nuclear Safety and Consumer Protection and the Ministry of Health - suggesting a stronger interlink between health and environmental monitoring. Within the section 'key area of action: development of an integrated health and environmental monitoring system – targets and suggestions', four key targets were formulated as follows:

1. Target: Interlink health and environmental monitoring
2. Target: further develop existing monitoring systems
3. Target: observe and monitor vector-mediated pathogens, allergenic plants and animals hazardous to health

#### 4. Target: Capturing indicators for climate change associated health studies

In the following years the suggestion got brought up again and again, most recently e.g. as a specific measure in the 2020 Progress Report and Adaptation Plan of the German Adaptation Strategy (DAS), within the Health Cluster. Expected benefits are gaining more holistic insights into effects of climate change induced effects on human health and strengthen synergies between authorities.

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**Question by** Australia at Thursday, 28 March 2024

**Category:** Progress towards the achievement of its quantified economy-wide emission reduction target

**Type:** Before 04 April

**Title:** Q2

**Is Germany able to elaborate on its progress made in researching new materials for electrochemical energy-storage systems, photovoltaic materials, and wind turbines?** (pg. 235).

**Answer by** Germany

BMBF has established a funding priority in the area of basic research for development of innovative materials. In 2021, projects underway in the area of materials research covered a wide range, including areas such as development of new materials for optimization of PEM fuel cells; electrochemical energy-storage systems and wind turbines; promising high-performance materials for photovoltaics; and new materials for gas turbines. These projects have mostly come to an end and the results of the research are used in further developing respective materials and components in applied research projects. Funding in basic research is now heavily focused on materials, components and processing related to the ramp-up of the green hydrogen economy. Therefore, projects are dealing with innovations along the green hydrogen value chain and deal for example with material research for cost effective electrolysis (all kinds), save hydrogen storage and transport, the production of derivatives, as well as the usage of hydrogen in fuel cells or hydrogen motors.

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Question by Australia at Thursday, 28 March 2024

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 04 April

Title: Q1

**Is Germany able to provide an overview of solutions and projects funded through the 7th Energy Research Programme? (pg. 206). How are funding priorities expected to change in the future, and what is Germany's approach to funding emerging technologies?**

Answer by Germany

The Federal Ministry for Economic Affairs and Climate Action (BMWK) provides various options to get informed about the solutions and projects funded through the 7th Energy Research Programme. EnArgus (<https://www.enargus.de/>) is a web-based database containing a short overview about each project funded by the German government within the consecutive energy research programmes since the late 1970s. Users can search the database by topics, keywords or funding codes. EnArgus is available in German, English, French, Spanish, Italian and Portuguese. Additionally, the BMWK presents an annually published report about the activities related to the Energy Research Programme: The Federal Government Report on Energy Research (Bundesbericht Energieforschung) provides an overview of the different topics as for example photovoltaics, heating systems or energy-optimised buildings. Each chapter contains examples of funded projects (funding by Federal Ministry for Economic Affairs and Climate Action (BMWK), Federal Ministry for Education and Research (BMBF), Federal Ministry of Food and Agriculture (BMEL) and Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)) and a description of the latest developments and funding statistics. Separate tables contain the funding sums and their development over the past years. The report is also available in English (<https://www.bmwk.de/Redaktion/EN/Downloads/F/federal-government-report-on-energy-research-2023.html>). Furthermore, there is the website [energieforschung.de](http://energieforschung.de). It is the central information website about current activities related to the funding of energy research related exclusively to the BMWK. Currently, the website is not available in English, but will be translated in the course of 2024.

Recently, the Federal Ministry for Economic Affairs and Climate Action (BMWK) has published the 8th Energy Research Programme. It focusses on the most important missions to reach climate mitigation, which are:

Mission Energy System: Research for a resilient and efficient energy system

- Mission Heat Transition: Research for a climate-neutral heating and cooling supply

- Mission Electricity Transition: Research for the conversion of the electricity supply to renewable energies
- Mission Hydrogen: Research for a sustainable hydrogen economy
- Mission Transfer: The rapid transfer of research results into practice

This cross-sector and cross-disciplinary research funding approach is geared towards specific, ambitious programme goals for each mission. The funding by the BMWK within this programme is geared towards achieving research results that can quickly be applied in practice. With its new energy research programme, the BMWK emphasises the importance of applied research for achieving the energy transition goals of the Federal government by 2045.

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