

Introduction

Context

Reliable data on historic emissions are key to the political process and to decisions on abatement technology promotion. However, future emission paths also do have the power to shed a new light on these discussions. Therefore, greenhouse gases (GHG) and air pollutants are inventoried and projected in the same database system using the same structure of detailed time series.

For the National Air Pollution Control Programme, a new database within this system was created in 2018 that is basically a copy of the German inventory database. In addition, multiple scenarios are taken into account, sketching development of activity data and emission factors up to 2040 and beyond. The system features integrated assessment for both greenhouse gases (GHG) and air pollutants. In particular, existing projections for GHG can be applied to air pollution contexts. The database used also allow for the flexible combination of distinct scenarios for specific sectors and source categories to add up to a complete projection of the inventory. Furthermore, reduction potentials of mitigation measures can be modelled in detail and quantified directly in the database. The projection database is fully operational and used as the common basis for reporting on emission projections under NEC directive and CLRTAP reporting obligations

Policies

For the past years, climate change and greenhouse gas (GHG) emissions have been an important issue in society and politics. GHG emission inventories have seen a lot of attention as a consequence. However, there have also been a couple of air pollution related headlines, including “diesel gate” and particulate matter concentrations caused by residential wood burning. In Germany, these discussions have led to a number of legislative projects and new regulations which have the power to significantly change emission levels. Thus, projections generally show a further decline in emissions. Some main policy drivers are listed and contextualized below:

- Energy
 - Phase-out of coal use for energy production until 2038 with significant reductions before 2030 (last modified for lignite burning power plants on December 2nd, 2023, see (KVBG, Annex 2))
 - increasing prices in the Emissions Trading System (EU-ETS1)
 - transfer of the national Emissions Trading System (n-ETS) into the Emissions Trading System for buildings, Transport and other sectors (EU-ETS 2)
 - the EU Carbon Border Adjustment Mechanism (CBAM)
 - increasing capacity and production of renewable energy (e. g. modified Renewable Energy Sources Act from 2023 (EEG 2023))
 - new regulations with stricter emission limit values for some installation types (e. g. modified 13th BImSchV from 2021, modified 17th BImSchV from 2024, LCP BREF 2021, WGC BREF 2023)
- Transport
 - new vehicle regulations (e. g. Emission Performance Regulation (EU) 2019/631 ¹⁾, Euro 7 Regulation (EU) 2024/1257)
 - increasing share of electric vehicles, increasing shift to public transport
- Agriculture
 - Amendments of the “Düngeverordnung” (fertiliser ordinance) in 2017 and 2020 as well as other legislative and incentive measures to reduce fertiliser use, increase the nitrogen use efficiency and increase the share of low emission application techniques.

¹⁾ (EU) 2019/631: Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO₂ emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011 (recast)