



2025



BELGIUM'S FIRST BIENNIAL TRANSPARENCY REPORT ON CLIMATE CHANGE

*To the United Nations Framework Convention on Climate Change
under the Enhanced Transparency Framework*

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Introduction

Belgium presents its first Biennial Transparency Report (BTR1) under the Enhanced Transparency Framework (ETF) under the Paris Agreement. This report makes an important contribution to global efforts to combat climate change by putting transparency and accountability at its core. The report provides a clear insight into the climate policies pursued at national level,

the progress made towards achieving the EU's nationally determined contribution (NDC) to which Belgium contributes, and the adaptation measures implemented to mitigate the effects of climate change. In addition, the report offers insights into the financial support that Belgium provides to developing countries, including technology transfer and capacity building.

It marks a crucial moment, as it lays the foundation for the transparent follow-up of the implementation of climate policy for the future. The National Inventory Report (NIR) supplements this report as a separate document with detailed data on greenhouse gas emissions and removals.¹ ■

¹ This was also submitted in December 2024.

Progress in achieving the Nationally Determined Contribution (NDC)

In their updated NDC, the EU and its Member States have jointly committed to a legally binding target of reducing net greenhouse gas emissions by at least 55% by 2030 compared to 1990. The NDC consists of a one-year target and the target type is 'Economy-wide absolute domestic emission reduction'. The term "domestic" means without the use of international credits. The NDC covers the 27 EU Member States. The scope of the NDC, updated on 17 October 2023, is complemented by additional information clarifying the precise amount of international aviation and maritime emissions covered by the EU NDC. Details on the EU NDC can be found in Table EU 1.

Belgium is therefore also part of the European NDC framework. An important aim of this report is to demonstrate where the EU and its Member States stand in implementing their NDC and what progress they have made in achieving it. The latest information on GHG emissions and removals under the NDC is the key information to monitor this progress. Table EU 3 provides an overview of current progress.

Based on data from the GHG inventories and international aviation and shipping data for 2022, the EU and its Member States have reduced their net GHG emissions by 31.8% compared to 1990. The EU and its Member States have made prog-

ress in implementing and achieving their NDCs. Even if the legal and institutional framework is in place to make further progress in the coming years and reach the NDC target by 2030, additional efforts are needed (read below). ■

Table EU 3 Summary of progress towards implementing and achieving the NDC

	Unit	Base year value	Values in the implementation period			Target level	Target year	Progress made towards the NDC
			2021	2022	2030			
Indicator: Total net GHG emissions consistent with the scope of the EU NDC	kt CO ₂ eq	4 699 405	3 272 650	3 205 223	NA	(at least 55% below base year level)	2030	The most recent level of the indicator is 31.8% below the base year level.

NA: Not Applicable.

Note that an annual emissions balance consistent with chapter III.B (Application of corresponding adjustment) will be provided in a subsequent BTR upon finalisation of relevant further guidance by the CMA, based on the annual information reported under Article 6.2.

Note: More detailed information can be found in CTF table 4 ('Structured summary: Tracking progress made in implementing and achieving the NDC under Article 4 of the Paris Agreement'), which has been submitted electronically together with this BTR.

Bron: Belgische GHG-inventaris 1990-2022

Table EU 1 Description of the NDC of the EU

Information	Description
Target and description	Economy-wide net domestic reduction of at least 55% in greenhouse gas emissions by 2030 compared to 1990. The term ‘domestic’ means without the use of international credits.
Target type	Economy-wide absolute emission reduction.
Target year	2030 (single-year target)
Base year	1990
Base year value	Net greenhouse gas emissions level in 1990: 4 699 405 kt CO ₂ eq.
Implementation period	2021-2030
Geographical scope	EU Member States (Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden) including EU outermost regions (Guadeloupe, French Guiana, Martinique, Mayotte, Reunion, Saint Martin (France), Canary Islands (Spain), Azores and Madeira (Portugal)).
Sectors	Sectors as contained in Annex I to decision 5/CMA.3: Energy, Industrial processes and product use, Agriculture, Land Use, Land Use Change and Forestry (LULUCF), Waste. International Aviation: Emissions from civil aviation activities as set out for 2030 in Annex I to the EU ETS Directive are included only in respect of CO ₂ emissions from flights subject to effective carbon pricing through the EU ETS. With respect to the geographical scope of the NDC these comprise emissions in 2024-26 from flights between the EU Members States and departing flights to Norway, Iceland, Switzerland and the United Kingdom. International maritime Navigation: waterborne maritime navigation is included in respect of CO ₂ , methane (NH ₄) and nitrous oxide (N ₂ O) emissions from maritime transport voyages between the EU Members States.
Gases	Carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF ₆), nitrogen trifluoride (NF ₃)
LULUCF categories and pools	The included LULUCF categories and pools are as defined in decision 5/CMA.3.
Intention to use cooperative approaches	The EU’s at least 55% net reduction target by 2030 is to be achieved through domestic measures only, without contribution from international credits. The EU will account and report for cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA.
Any updates or clarifications of previously reported information, as applicable	The information on the NDC scope contains clarifications/further details compared to the information provided in the updated NDC of the EU.

Note: This table is identical to table ‘Description of a Party’s nationally determined contribution under Article 4 of the Paris Agreement, including updates,’ which has been submitted electronically together with this BTR. This table is also annexed to this BTR.

Source: Updated NDC of the EU. The update of the nationally determined contribution of the European Union and its Member States, <https://unfccc.int/sites/default/files/NDC/2023-10/ES-2023-10-17%20EU%20submission%20NDC%20update.pdf>.

Institutional structure and national climate policy

Belgium is a federal state with a complex administrative structure, consisting of three regions (Flemish Region, Walloon Region, Brussels-Capital Region) and three communities (Flemish Community, French Community and German-speaking Community). Climate policy in Belgium is characterised by its cross-cutting nature, with competences in the field of climate being divided between the federal government and the regions. Given the mixed competences, this requires close cooperation and coordination between the different policy levels. In the absence of a hierarchy of norms, different consultation and coordination structures were set up to regulate consultation between these levels.

The National Climate Commission (NCC) plays a central role in the coordination of Belgian climate policy. This body is empowered to strengthen cooperation between federal and regional entities and to coordinate policies. In addition, other coordination structures, such as ENOVER² or CCIM³, play a key role in energy and climate policy.

It is precisely within this joint NCC-ENOVER structure that Belgium is preparing its National Energy Climate Plan (NECP) and its revisions to be submitted to the EU. Belgium submitted its draft updated NECP in November 2023. The final version is still pending. Belgium has a separate NECP-website <https://www.nationalenergyclimateplan.be/en>, where you can find the different versions of the plan, the results of the federal and regional public consultations and the different recommendations.

The national energy and climate targets and revenues from the auctioning of emission allowances are distributed internally between the federal government and the three regions. No agreement has yet been reached on burden sharing for the entire 2021-2030 period, but a first partial political agreement was reached for the 2021-2022 period.⁴

In order to understand the challenges faced by Belgium and the context in which it operates, the report provides an overview of Belgium's main characteristics in terms of geographical location, climate profile, economic profile, energy situation and main GHG-emitting sectors (transport, buildings, industry, waste, land and forest use). ■

² Energy consultations between the federal state and the regions.

³ Coordinating Committee on International Environmental Policy.

⁴ This agreement concerns the distribution of 2021 and 2022 revenues from the auctioning of the ETS system, the dissolution of the 'climate-response-abilisation mechanism' and the distribution of the related amounts, the guarantee of a Belgian minimum renewable energy target and international climate finance for the period 2021-2024.

Mitigation policies and measures

The report bases its analysis on the [National Energy and Climate Plan \(NECP\)](#), which is a compilation of implemented and planned measures spread over five dimensions. The report uses a range of indicators, methodologies and calculation methods to evaluate policy progress. This includes sectoral contributions, technological developments and economic factors.

Some key measures included in this report (Table 5 of the Annex to CTF-NDC) from the NECP include:

- The phasing out of coal in power generation.
- Encouraging renewable energy sources such as wind and solar energy.
- Increasing energy efficiency in buildings and industry.
- Promoting sustainable mobility, including the electrification of transport.

However, Belgium continues to face challenges, such as the high dependence on fossil fuels in certain sectors and the slow progress in emission reduction within the transport sector. The report highlights the need for accelerated action and further investment in innovative technologies and sustainable solutions. Additional efforts are needed to achieve the objectives under the ‘Effort Sharing Regulation’ (ESR) and the ‘Land Use, Land Use Change and Forestry’ (LULUCF) Regulation. Belgium has a reduction target for the non-ETS sectors (transport, buildings, agriculture and waste) of -47% by 2030 compared to 2005, as laid down in the revised European Effort Sharing Regulation (ESR). In addition, the revised LULUCF Regulation requires Belgium to achieve an additional net storage of 320 kilotonnes of CO₂ equivalents by 2030. This corresponds to the amount of CO₂ absorbed from the atmosphere within one year by more than 45,000 hectares of mature forest.

Note that emissions from international aviation and shipping are not covered by national targets, given the international nature of these sectors. Actions are being taken at global level, including ICAO's⁵ CORSIA⁶ and adjustments to the EU Emissions Trading Systems. ■

⁵ International Civil Aviation Organization.

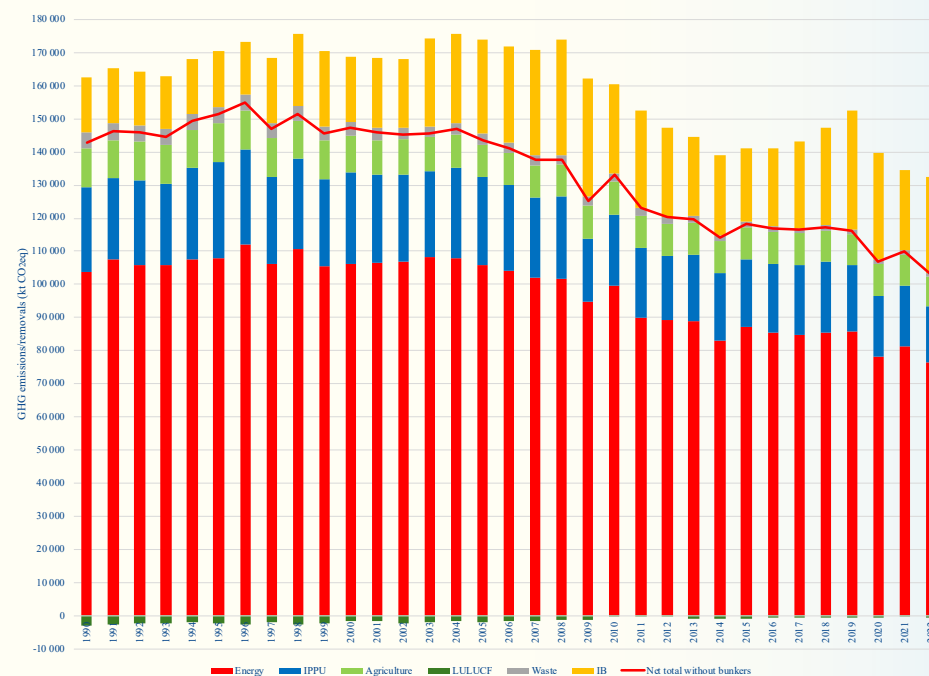
⁶ Carbon Offsetting and Reduction Scheme for International Aviation.

Main trends in the evolution of greenhouse gas emissions and removals

Between 1990 and 2022, Belgium achieved a significant reduction of 27.8% in net greenhouse gas emissions, representing a reduction of 39.7 million tonnes of CO₂ equivalents. This progress is largely due to efforts within the energy sector, improvements in industrial processes and higher energy efficiency. The transition to cleaner energy sources, such as renewable energy, played an important role in this reduction. In 2022, Belgium's total net greenhouse gas emissions (including LULUCF, excluding international bunkers) decreased by 6.7 million tonnes, corresponding to a decrease of 6.1% compared to 2021. The energy sector remains the largest source of

emissions, followed by the transport and industrial sectors. While the energy sector remains the largest source of emissions, it has also achieved the largest reductions in absolute terms, with a decrease of 11.2 million tonnes of CO₂ equivalents. The industrial sector follows with an almost large reduction of 11.0 million tonnes of CO₂ equivalents. Emissions in the agricultural sector and waste management have remained broadly stable, but efforts are also being made in these sectors to achieve further reductions. The trends at sector level and in each sector's share of total Belgian greenhouse gas emissions are shown in Figure 17. ■

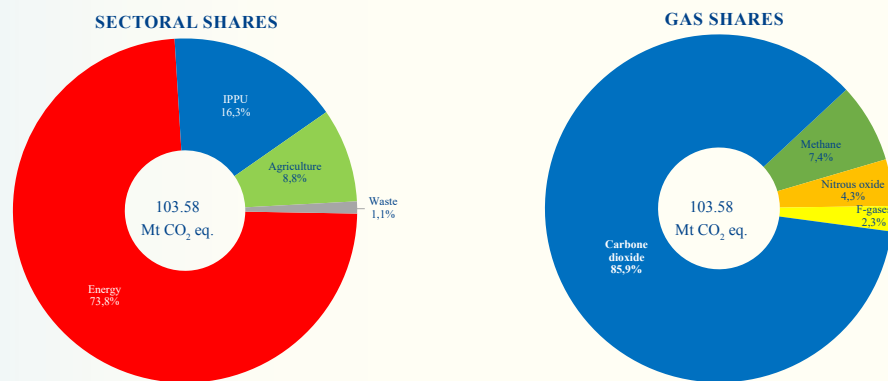
Figure 17 Greenhouse gas emissions/reductions by sector, 1990 to 2022



Note: All GHG inventory information presented in this report is based on the November 2024 version of the UNFCCC Common Reporting Table (CRT) tool. Further updates and corrections in the CRT tool may result in changes to the final GHG inventory data. IPPU = Industrial processes and product use. IB = International Bunkers

Source: Belgian GHG inventory 1990-2022

Figure 18 Share of total GHG emissions (excluding LULUCF and international bunkers) by sector and by gas in 2022



Note: Indirect CO₂ emissions are excluded.
 IPPU = Industrial processes and product use
 F-gases = Fluorinated gases

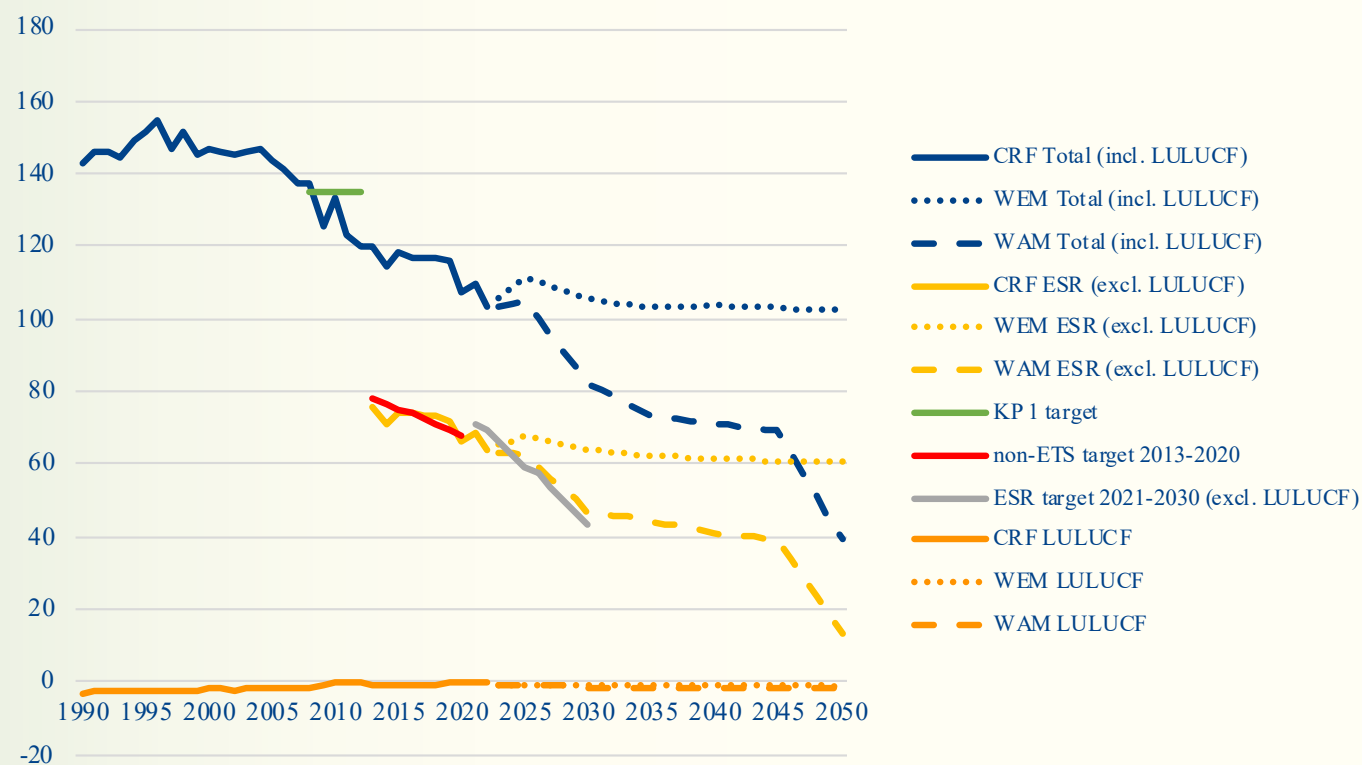
Source: Belgian GHG inventory 1990-2022

The most important greenhouse gas in Belgium is carbon dioxide (CO₂), which accounts for as much as 85.9% of total greenhouse gas emissions in 2022. Methane (CH₄) accounts for 7.4%, nitrous oxide (N₂O) for 4.3% and fluorinated gases for 2.3%. The share of each major sector and of each gas in total Belgian emissions (excluding LULUCF) in 2022 is shown in Figure 18.

The greenhouse gas inventory uses internationally recognised methodologies and reporting protocols. This ensures the comparability of Belgian data with other countries and contributes to a better understanding of national emission profiles. Key challenges, such as the need to further reduce emissions in the transport sector and address the emergence of new emission sources, are highlighted. ■

Projections of greenhouse gas emissions and removals

Figure 23 Greenhouse gas emissions (Mt CO₂ eq.)



Source : own calculation

The projections, which are based on the IPCC guidelines, are drawn up with a bottom-up approach. Electricity production is modelled nationally, while sectoral projections are developed regionally. The WEM (With Existing Measures) scenario focuses on policy measures implemented until the end of 2022, such as energy efficiency standards and existing renewable energy subsidies. The With Additional Measures (WAM) scenario provides an outlook on the expected impact of additional policy measures, including national and regional investment programmes. The projections are based on a large number of assumptions and the use of different models. Both are described in detail in the report. Figure 23 shows a clear decrease in total greenhouse gas emissions in the inventory between 1996 and 2022. Total emissions in the WEM scenario show a slight decrease in the period 2025-2050. Total emissions in the WAM scenario show a marked decrease in the period 2020-2050. These projections do not take into account emissions or removals from LULUCF. In addition, there are uncertainties related to exogenous variables such as economic growth, climate conditions and electricity imports and their level can affect the resulting GHG emissions. ■

Climate adaptation

Belgium recognises that climate change has unavoidable consequences, even with ambitious emission reductions. The impact of climate change has clearly increased in recent decades. Climate adaptation is therefore a crucial part of national climate policy. This chapter discusses the risks, vulnerabilities and adaptation measures taken at national, regional and local level.

The main risks for Belgium are:

- **Floods:** Both river and heavy rainfall floods pose a significant threat, especially in low-lying areas and urban centres. During the summer of 2021, many European countries, including Belgium, were affected hard. The speed and power of the water took a heavy human toll and caused enormous socio-economic damage, mainly in the Walloon Region. The high-impact scenario⁷ shows an increase in flood risk by a factor of 5 to 10 by 2100.

- **Drought and water scarcity:** Periods of drought have an impact on agriculture, drinking water supply and energy production, among other things. The high-impact scenario shows that summer precipitation can drop from an average of 194 mm in the current climate to 157 mm (-19%) by 2050. In addition, the potential evaporation can increase from 252 to 279 mm (+11%) over the same period. This combination leads to a huge increase in the precipitation deficit during the summer. The impact in Flanders on the groundwater level is extremely high due to the high soil sealing, which prevents water from seeping into the ground, increasing the risk of flooding and creating problems with the replenishment of the groundwater level.

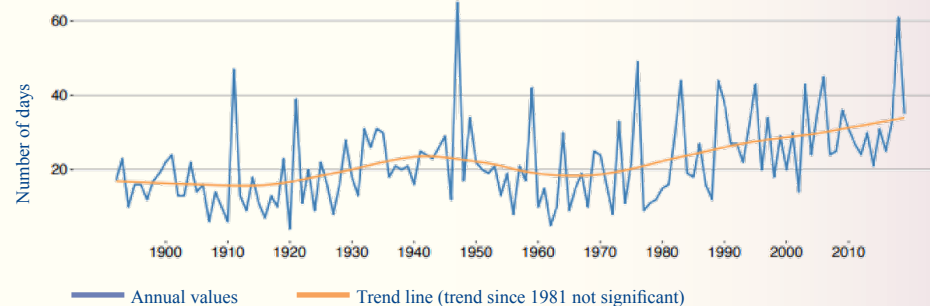
- **Sea level rise and sea water temperature:** The Belgian coastline is particularly vulnerable to rising sea levels and storm surges. Peak water levels during storm surges are increasing, increasing the risk of coastal flooding and coastal erosion. The annual average of global sea levels has risen by 1.7 mm/year over the past century and by 3.0 mm/year since the early 1990s, causing sea levels in the North Sea to rise by 20 cm since 1925. The seawater temperature is also rising in all sub-areas of

the North Sea. In the area closest to the Belgian coast, the increase is around 0.034°C per year or 3.4°C per century.

- **Heat waves:** The temperature in Uccle is now on average 2.4°C higher than in the pre-industrial era. There is a significant increase in the number of tropical days ($T_{max} \geq 30^{\circ}\text{C}$); On average, one extra tropical day per year is added every 14 years. The number of heatwaves in Belgium has also increased significantly since the 1970s. The frequency

has risen from an average of one heat wave every three years to one per year in recent decades. The 22 warmest years since 1833 have all been recorded after 1988, and the 6 warmest years have all occurred after 2005, highlighting the recent acceleration of warming. Urbanised areas, such as Brussels and Antwerp, are also particularly sensitive to the heat island effect, which poses health risks.

Figure 25 Annual number of days with a maximum temperature of at least 25°C (RMI)



⁷ CORDEX.be II: Scenarios & Global Climate Model Selection

One of the priorities at Belgian level is a climate risk and vulnerability assessment that builds on the results of the European Climate Risk Assessment (EUCRA) report published by the European Environment Agency (EEA) in 2024. Belgium has developed several national and regional adaptation plans, including the [National Adaptation Plan](#) and the [Federal Adaptation Measures 2023-2026](#) and specific plans for Flanders ([Flemish Climate Adaptation Plan](#)), Wallonia ([Plan Air Climat Énergie](#)) and Brussels (Regional Integrated Air-Climate-Energy Plan). In addition to research, crisis management, international cooperation and awareness-raising, these plans also focus on:

- **Nature-based solutions:** implementing solutions based on the dynamics of water, soil and nature to address the different climate risks identified above.
- **Water management:** integrated rain-water management to address drought and flood risks: investments in flood control, such as dikes, water buffering and natural water retention areas.
- **Infrastructure:** Climate resilient infrastructure projects to increase resilience to extreme weather events.
- **Health care:** Measures to protect vulnerable populations during heatwaves.
- **Biodiversity:** Protection of natural areas and promotion of natural carbon storage in forests and wetlands.

Belgian adaptation efforts are monitored and evaluated by indicators and periodic assessments. Furthermore, cooperation between public, private and civil society actors is encouraged to support, develop and evaluate adaptation measures at all levels. Despite progress, challenges remain, such as a lack of funding, insufficient data on local vulnerabilities and a strengthening of inter-federal cooperation. The federal government and the regions are committed to further expanding their adaptation capacity, increasing resilience and integrating international good practices. The Centre for Climate Change Risk Analysis (CERAC) launched a sectoral risk analysis at the end of 2024 to assess the impact of climate change on different sectors in Belgium. The results of this risk analysis are expected in the second half of 2025. ■

International climate finance

Belgium recognises its responsibility to support developing countries in their efforts to combat and adapt to climate change. International climate solidarity is an important starting point in Belgian climate policy. This chapter provides a detailed overview of the financial support, technology transfer and capacity building provided by Belgium.

Belgium contributes to climate finance through bilateral, multilateral and regional channels. In 2021-2022, Belgium provided €279 million in public support to developing countries and international funds. Financial, technological and capacity-building support to developing countries focused on:

- 47% adaptation activities (such as water management and food security), 43% transversal activities (such as inclusive climate strategies), and 10% mitigation activities (such as the development of renewable energy and energy efficiency programmes);
- Providing bilateral and multilateral support in the form of grants;
- Contributions mainly focused on Africa and the Least Developed Countries (LDCs);

- Contribute to climate-specific multilateral funds (Green Climate Fund, Adaptation Fund, Least Developed Countries Fund, etc.) or specialised UN agencies;
- Contribute to bilateral projects mainly targeting African partner countries and LDCs (64% of bilateral climate finance).

Belgium also supports developing countries' efforts to implement climate-resilient low-emission projects and programmes by (i) providing substantial basic funding to multilateral organisations and (ii) mobilising private investment through public funds for climate-related projects in developing countries. In this context, Belgium has mobilised €56 million through public interventions to support developing countries.

Technology also plays a crucial role in tackling climate change. Belgium supports developing countries in accessing climate-friendly technologies, such as solar energy, water purification technologies and sustainable agricultural practices.

Capacity building is then the third pillar of Belgian international support and is therefore present in a majority of Belgian interventions. This includes training, knowledge exchange and institutional strengthening in partner countries to enhance the capacity of local communities and institutions to address climate challenges.

Finally, Belgium works closely with international organisations, NGOs and local partners to maximise the impact of climate finance. In addition, synergies between development cooperation and climate policy are sought.

While Belgium has made significant progress, challenges remain, such as the lack of current reporting methodologies to correctly reflect projects and ensuring long-term effects of already funded projects. ■

SUMMARY OF BELGIUM'S FIRST BIENNIAL TRANSPARENCY REPORT

To the United Nations Framework Convention on Climate Change under the Enhanced Transparency Framework

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