NATIONAL BANK OF ROMANIA

Climate risk dashboard for the banking sector in Romania 2024

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2024

Year IV, No. 4

NOTES

The report was prepared by the Financial Stability Department, under the coordination of Deputy Governor Florin Georgescu.

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Contents

Overview

This report is drafted in accordance with measure 12 in *NCMO Recommendation No. R/6/2021 on supporting green finance* addressed to the National Bank of Romania, namely to "create a dashboard to monitor climate change risks to the banking sector, which should be regularly updated and disseminated, as well as conduct annual stress tests on climate risk-related issues and publish the results".

The dashboard captures the main developments in terms of climate change and green finance through several indicators under five categories, i.e. (i) real economy, (ii) physical risk, (iii) transition risk, (iv) green finance, and (v) government policies. The key topics highlighted in this analysis cover the following:

- Greenhouse gas (GHG) emissions in Romania went down in 2022, the commitment to reduce emissions by 55 percent compared to the 1990 level under the Paris Agreement being already fulfilled. However, Romania's reaching Net Zero by 2050 implies a step-up in efforts for the transition towards a sustainable economy.

- The physical risks assessed in the analysis refer to floods, drought and extreme heat. Similarly to previous years, non-financial corporations in Romania operating in sectors that are vulnerable to these risks are relevant for the economy. They generated 12.7 percent (companies vulnerable to floods), 2.3 percent (drought) and 10.4 percent (extreme heat) respectively of total value added.

- Brown companies play a significant role in the real economy. Their profitability and financial soundness deteriorated slightly in 2023, similarly to economy-wide trends. Bank exposure to brown companies remained relatively unchanged from a year earlier, accounting for about half the stock of credit to non-financial corporations. The carbon footprint of the corporate loan portfolio narrowed marginally in 2022, amid a slight decline in financed emissions and an increase in portfolio value.

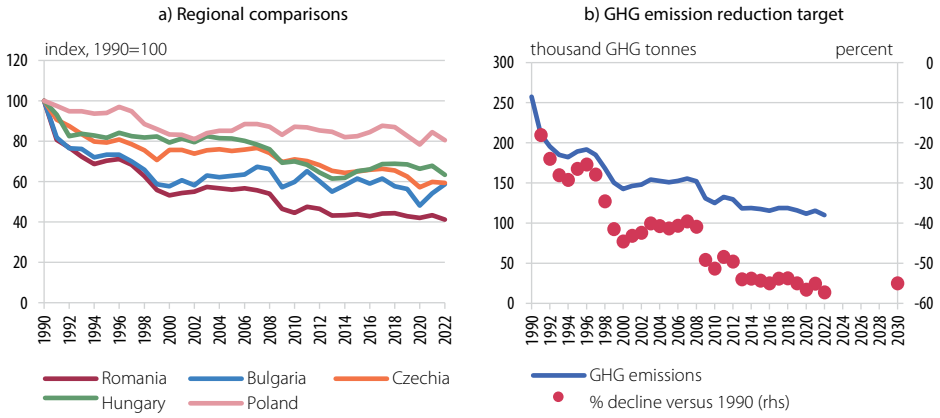
- Global green bond issuance stood 6.5 percent higher at end-November 2024 versus 2023 as a whole, without however exceeding the 2021 peak. In Romania, seven green bond issues were recorded in the course of 2024, totalling EUR 8.1 billion, with the Government of Romania as issuer. Moreover, green bank loans to non-financial corporations stayed on an upward path in 2024, with an annual growth rate of 93 percent against September 2023, accounting nevertheless for 2.9 percent of the stock of bank loans to firms. As for households, green loans reached approximately lei 10 billion in September 2024 (up 50 percent from September 2023) and made up 5.7 percent of the banks' portfolio of loans to this segment.

1. Real economy

Greenhouse gas (GHG) emissions

In 2022, greenhouse gas (GHG) emissions in Romania accounted for 41 percent of the 1990 level, the lowest value over the past 24 years. This enabled Romania to achieve the emission reduction target of at least 55 percent compared to 1990 levels to which the EU committed under the Paris Agreement. The increase in relevant investment in the decarbonisation of the economy should contribute to meeting the climate neutrality objective by 2050, given the slow-paced GHG emission reduction over the past years (Chart 1.1).

Chart 1.1. Greenhouse gas emissions



Source: Eurostat, NBR calculations

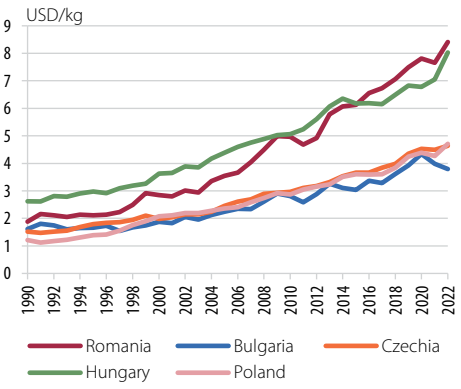
The dynamics of greenhouse gas emissions re-entered negative territory at end-2022, after having increased in both Romania and the countries in the region in 2021. An exception is Bulgaria, in whose case GHG emissions further rose in 2022 as well.

Note: Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons and perfluorocarbons. All sectors are sources of emissions, aviation included, except the land use, land use change and forestry (LULUCF) sector.

Green growth indicators

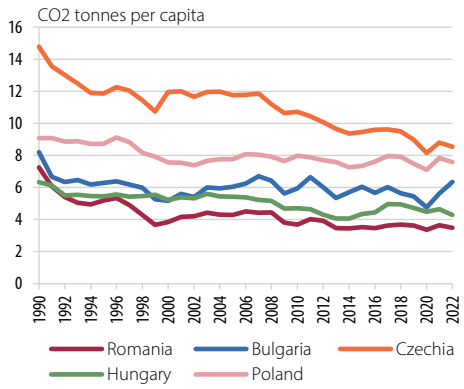
Production-based carbon productivity and production-based CO2 intensity further enable Romania to fare better than its regional peers, both indicators monitored by the OECD with respect to the decarbonisation of the economy posting positive developments. As far as Romania is concerned, production-based CO2 productivity calculated as real GDP generated per unit of CO2 emitted stood at USD 8.41 per kg versus a regional average of USD 5.3 per kg (Charts 1.2 and 1.3).

Chart 1.2. Production-based CO2 productivity, regional comparisons



Source: OECD

Chart 1.3. Production-based CO2 intensity, regional comparisons



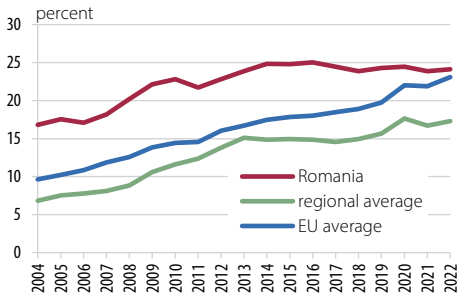
Source: OECD

Note: The indicators presented herein are included among the green growth indicators calculated by the OECD[9]. Production-based CO2 productivity is calculated as real GDP generated per unit of CO2 emitted. Production-based CO2 intensity is calculated as CO2 emissions per capita (tonnes/person). CO2 emissions from combustion of coal, oil, natural gas and other fuels are included for both indicators.

Renewable energy

Energy from renewable sources exceeds the regional average or the EU average, yet the gap narrowed significantly over the past four years. The most important type of renewable energy in Romania is further hydropower, which is however impacted by extreme climatological events such as drought, which have become increasingly frequent (Charts 1.4 and 1.5).

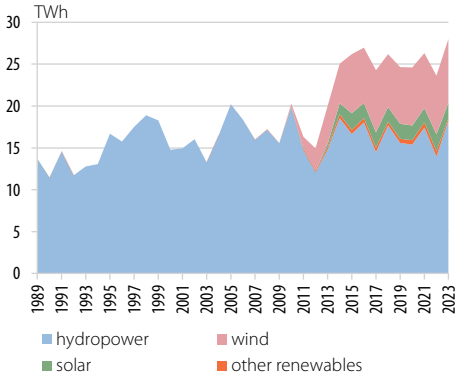
Chart 1.4. Consumption of energy from renewable sources (percent of total final consumption), international comparisons



Note: The average of economies in the region includes Bulgaria, Czechia, Hungary, Poland.

Source: Eurostat, NBR calculations

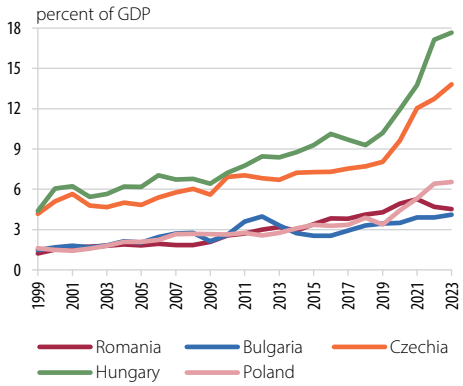
Chart 1.5. Breakdown of electricity by renewable source in Romania



Source: Our World in Data (Oxford University)

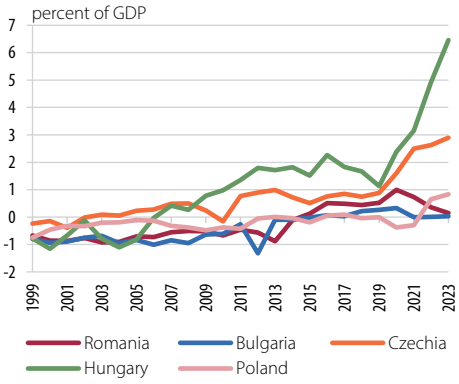
As regards trade in technology goods that contribute to pollution control and resource management, which are of the essence in transitioning to a green economy, Romania is below the regional average. Both total trade and trade balance posted negative developments in 2022-2023, unlike Hungary and Czechia, which witnessed substantial increases (Charts 1.6 and 1.7).

Chart 1.6. Total trade in environmental goods



Source: IMF, Climate Change Dashboard– Cross Border Indicators

Chart 1.7. Balance on trade in environmental goods

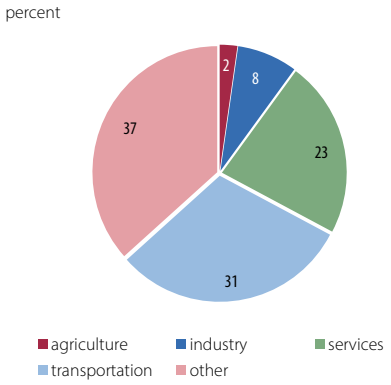


Source: IMF, Climate Change Dashboard – Cross Border Indicators

Note: Low carbon technology products are those that are related to environmental protection such as pollution control and resource management, and goods that have been specifically adapted to be more environmentally friendly (industrial air filters, wastewater treatment products, solar panels, wind turbines, etc.).

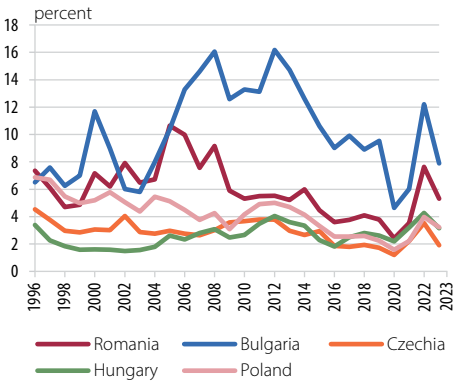
The main economic sectors by consumption of energy were industry and transportation in 2023 too. Fossil fuel exports as a share of total exports declined in both Romania and the countries in the region in 2023, after having increased markedly the year before (Charts 1.8 and 1.9).

Chart 1.8. Consumption of energy in the main sectors



Source: OECD, Green Growth Indicators

Chart 1.9. Fossil fuel exports (percent of FOB exports), regional comparisons

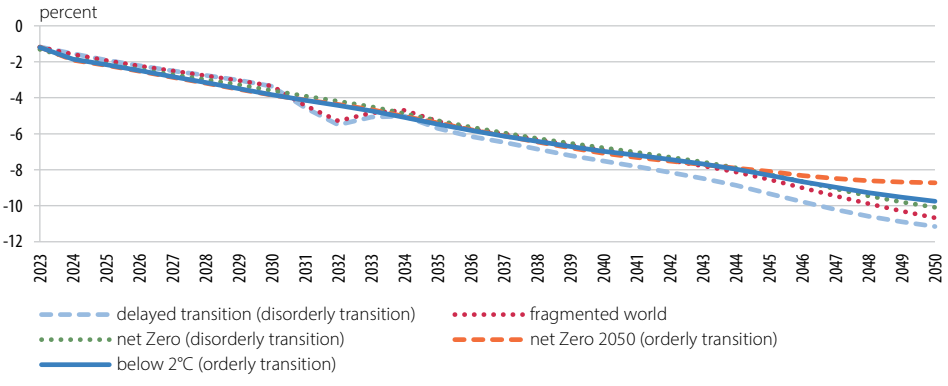


Source: World Bank

The NGFS climate scenarios

The new up-to-date version of climate scenarios released by the Network for Greening the Financial System (NGFS)[1] on 31 October 2024 shows, in Romania's case, the same downward path of GDP in each of the five scenarios under analysis. In comparison with the previous version, the magnitude of the economic deterioration is larger, exceeding -10 percent in three of the five scenarios for the 2050 time horizon (Chart 1.10[2]).

Chart 1.10. GDP percentage change according to NGFS scenarios* (Romania)



*) GDP percentage change versus 2022, 2010 prices

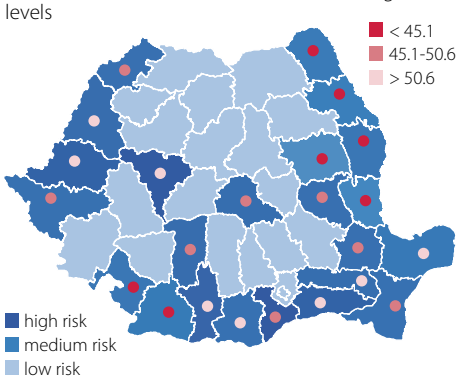
Source: Network for Greening the Financial System Phase 3 Scenario Explorer DOI v4.1: 10.5281/zenodo.10079020

2. Physical risk

Flood risk

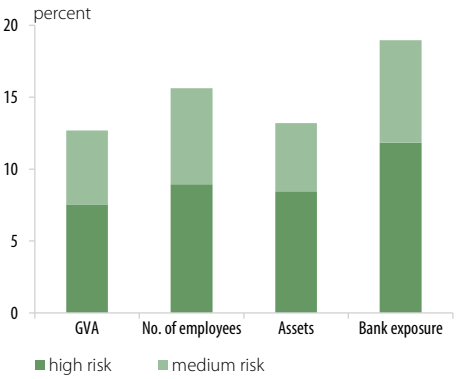
The main physical risks assessed for Romania refer to floods, drought and extreme heat. As regards floods, a number of 23 counties were assessed as being exposed to medium and high flood risk. Non-financial corporations in the sectors vulnerable to the risk of floods generated 12.7 percent of the gross value added (GVA) at aggregate level in 2023 and held 13.2 percent of total assets (Charts 2.1[3] and 2.2).

Chart 2.1. Flood risk and the share of gross value added (GVA) of firms operating in sectors exposed in total GVA of counties with medium and high risk levels



Source: Think Hazard, Ministry of Finance, NBR calculations

Chart 2.2. Importance in the economy of firms exposed to medium and high flood risk



Source: Ministry of Finance, NBR calculations

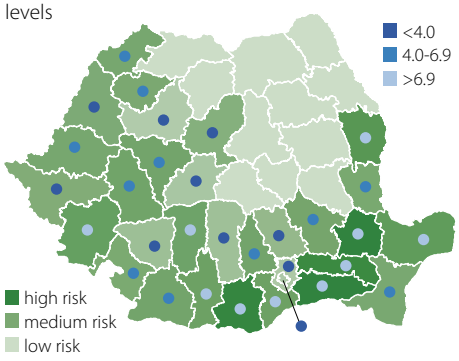
The bank exposure to local companies operating in sectors that might be affected by floods is on the rise as compared to 2023 (+3 percentage points to 19 percent).

Note: The analysis took into account the non-financial corporations operating in the following business sectors, considering that they may be affected by the flood risk: agriculture, manufacturing and services (for further information, see Annex 2).

Drought risk

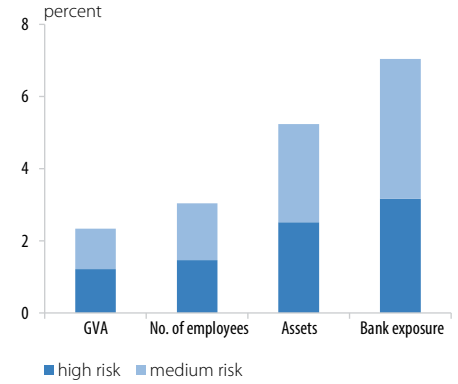
As regards drought, a number of 31 counties were assessed as being exposed to medium and high drought risk. In these counties, non-financial corporations in the sectors vulnerable to this risk generated 2.3 percent of the gross value added (GVA) at aggregate level in 2023 and held 5.2 percent of total assets (Charts 2.3 and 2.4).

Chart 2.3. Drought risk and the share of gross value added (GVA) of firms operating in sectors exposed in total GVA of counties with medium and high risk levels



Source: European Commission, Ministry of Finance, NBR calculations

Chart 2.4. Importance in the economy of firms exposed to medium and high drought risk



Source: Ministry of Finance, NBR calculations

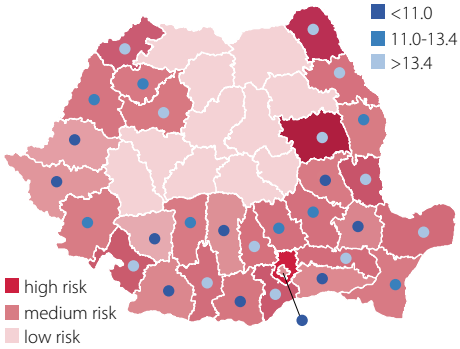
The bank exposure to local companies operating in sectors that might be affected by drought remains relatively moderate (7 percent), but on a rise in annual terms (+2 percentage points).

Note: The drought risk categories were differentiated by calculating the quartiles of SPEI (Standard Precipitation-Evapotranspiration Index)[10]. The analysis took into account the non-financial corporations operating in the following business sectors, considering that they may be affected by the drought risk: agriculture and utilities (for further information, see Annex 2).

Extreme heat risk

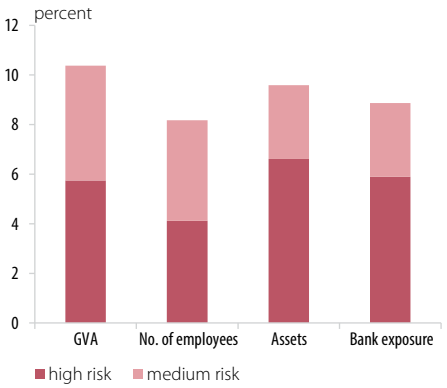
The analysis identified a number of 30 counties exposed to medium and high extreme heat risk. Non-financial corporations in the sectors vulnerable to the extreme heat risk make a significant contribution to the economy. At end-2023, these firms generated 10.4 percent of the gross value added (GVA) at aggregate level and held 9.5 percent of total assets (Charts 2.5 and 2.6).

Chart 2.5. Extreme heat risk and the share of gross value added (GVA) of firms operating in sectors exposed to total GVA of counties with medium and high risk levels



Source: World Bank, Ministry of Finance, NBR calculations

Chart 2.6. Importance in the economy of firms exposed to medium and high extreme heat risk



Source: Ministry of Finance, NBR calculations

The bank exposure to local companies operating in sectors that might be affected by the extreme heat risk is of approximately 9 percent of total exposures to companies.

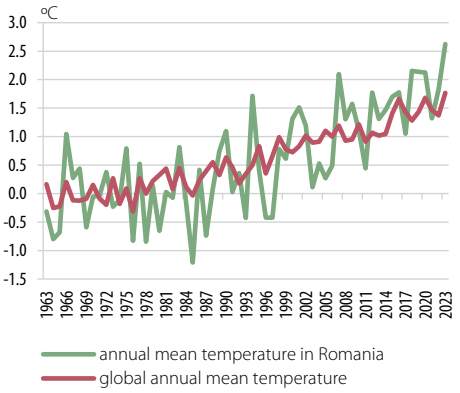
Note: The categories of extreme heat risk were designated by calculating the quartiles of the annual averages of the maximum monthly temperatures. The analysis took into account the non-financial corporations operating in the following business sectors, considering that they may be affected by the extreme heat risk: construction (for further information, see Annex 2).

Climate change indicators

The annual mean temperatures increased further in 2023 both globally and in Romania, standing higher by 1.7°C and 2.6°C respectively than the mean temperatures in the 1951-1980 period. In 2023, Romania recorded the hottest year ever, according to several measuring meteorological stations[4].

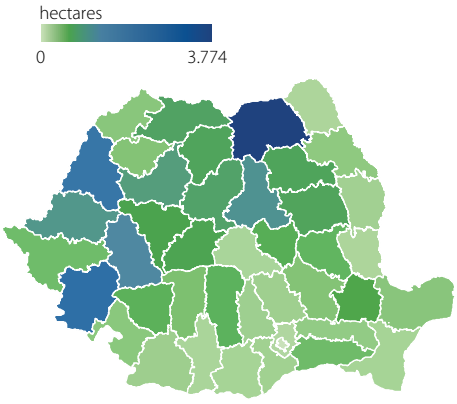
In 2023, Romania reported forest losses of 25.1 kilohectares at national level, due to deforestation, Suceava county being at the top of the list with the greatest loss, i.e. 15 percent (Charts 2.7 and 2.8).

Chart 2.7. Annual mean temperature (change from the 1951-1980 average)



Source: IMF

Chart 2.8. Net deforestation in 2023



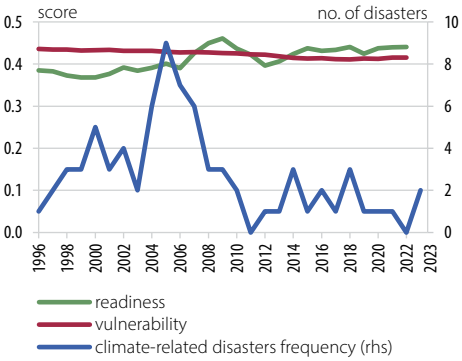
Source: Global Forest Watch

In the period from 2001 to 2023, deforestation totalled 433 kilohectares, with Romania ranking 68th globally in terms of forest losses.

Note: Data come from a collaboration between the University of Maryland, Google, United States Geological Survey and NASA, based on satellite images.

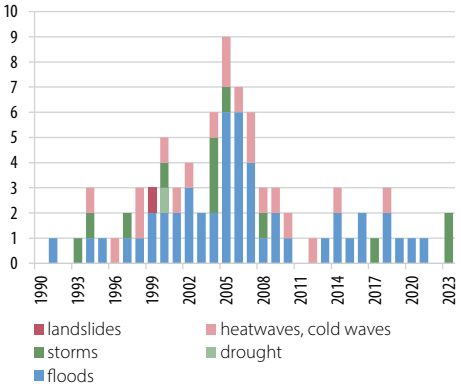
Romania's readiness, according to the ND-GAIN index devised by the University of Notre Dame, rose modestly in 2022 versus 2021, whereas the vulnerability indicator remained unchanged. According to international institutions, no climate-related disasters were recorded in Romania in 2022, in line with the methodology used, but year 2023 was marked by the intensification of weather events such as storms (Charts 2.9[5] and 2.10).

Chart 2.9. Vulnerability and readiness indicators and climate-related disasters frequency in Romania



Source: IMF, University of Notre Dame, Université catholique de Louvain

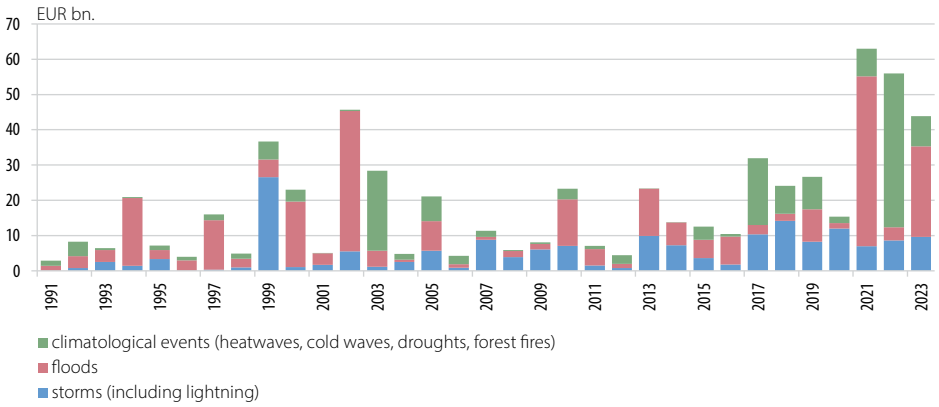
Chart 2.10. Number and type of climate-related disasters in Romania



Source: IMF, Climate Change Indicators Dashboard

The economic damage incurred by European Union countries amounted to EUR 43.9 billion in 2023, with floods being the most common natural disasters. From 1980 to 2023, Romania incurred economic losses totalling EUR 19.6 billion (EUR 82 thousand/km^2, as compared to the European average of EUR 193 thousand/km^2), of which only 1 percent were covered by insurance (Chart 2.11).

Chart 2.11. Economic damage caused by climate-related disasters in EU-27 member countries



Source: European Environment Agency

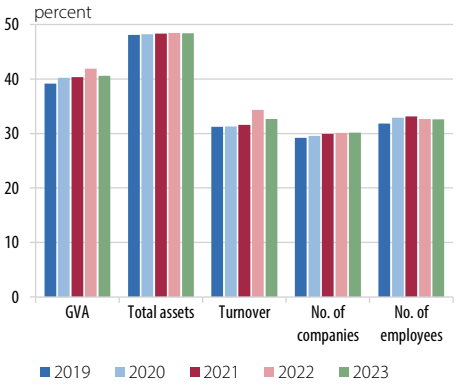
Wildfires in Romania were limited in 2023 as compared to 2022, when the number of wildfires and fire-burned areas reached a record high (162 thousand hectares). The damage from the 170 wildfires in 2023 affecting 554 hectares is estimated at EUR 169 thousand[4].

3. Transition risk

Relevance for the economy and economic and financial performance of brown companies

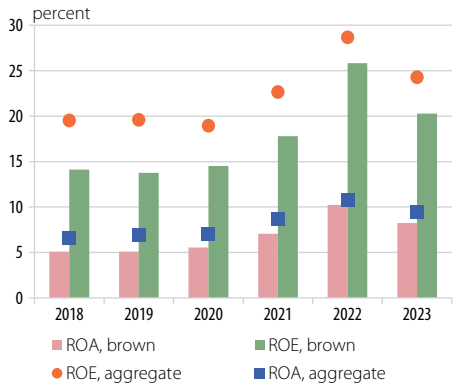
The non-financial corporations exposed to transition risk (brown companies)[6] are highly relevant for Romania's economy, similarly to the past few years. In 2023, these entities accounted for 48 percent of total assets and hired 32.6 percent of total employees in non-financial corporations. Moreover, they generated 40.6 percent of gross value added at aggregate level. The financial performance of brown companies worsened in 2023 compared to previous years, a picture seen at aggregate level as well. Nevertheless, profitability of brown companies remains below that associated with non-financial corporations as a whole (Charts 3.1 and 3.2).

Chart 3.1. Economic relevance indicators of brown companies



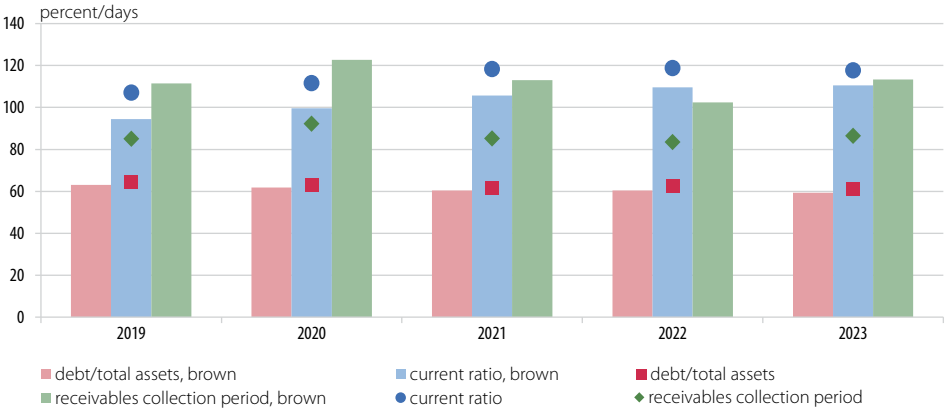
Source: Ministry of Finance, NBR calculations

Chart 3.2. Financial performance indicators of brown companies



Source: Ministry of Finance, NBR calculations

Chart 3.3. Financial soundness indicators of brown companies



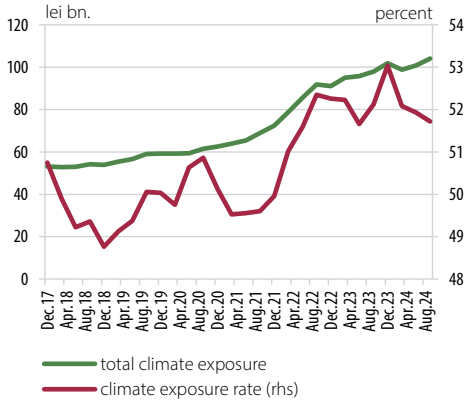
Source: Ministry of Finance, NBR calculations

The indebtedness level of brown companies as a share of debt in total assets dropped 1 percentage point as against 2022 to 59 percent. The current ratio improved marginally, up 1 percentage point to 110.5 percent, i.e. below the level recorded at aggregate level (117.7 percent). At the same time, the receivables collection period increased to 113 days (+11 days versus 2022), 31 days more than the value of this indicator for the non-financial corporations as a whole (Chart 3.3).

Lending to brown companies and the carbon footprint of loans

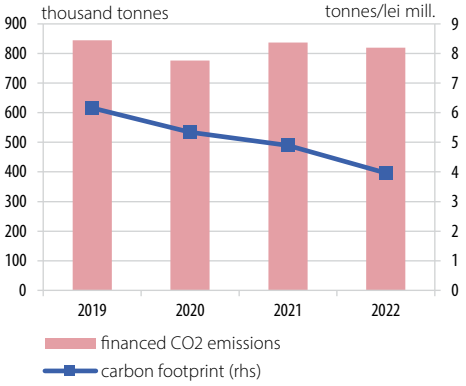
Banks' exposure to brown companies continued to increase between September 2023 and September 2024, at a moderate pace, relatively close to that seen at aggregate level. Specifically, at end-September 2024, exposure to these entities reached lei 104.5 billion (up 6.2 percent from September 2023) and accounted for 51.7 percent of total loans to non-financial corporations. Relative to the entire portfolio, the share of these exposures is 0.4 percentage points lower than that recorded in the same year-ago month. In 2022, the CO2 emissions financed by banks remained virtually flat compared to 2021 (approximately 820 thousand tonnes of CO2), but given that the value of the corporate portfolio increased, its carbon footprint slightly decreased from 4.9 tonnes/million lei in 2021 to 4 tonnes/million lei in 2022 (Charts 3.4 and 3.5[7]).

Chart 3.4. Bank exposure to brown companies



Source: NBR

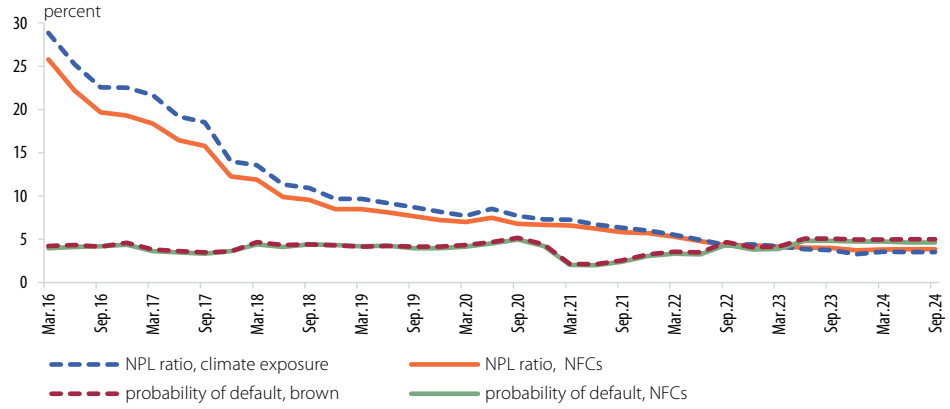
Chart 3.5. Financed CO2 emissions and carbon footprint



Source: NBR, Eurostat, NBR calculations

The NPL ratio of loans to brown companies ran at 3.5 percent in September 2024 (down 0.2 percentage points from the same year-earlier period), further below the aggregate value of 3.8 percent. Conversely, the probability of default of brown companies stood 0.4 percentage points higher than the aggregate figure for September 2024 (Chart 3.6).

Chart 3.6. Probability of default and NPL ratio



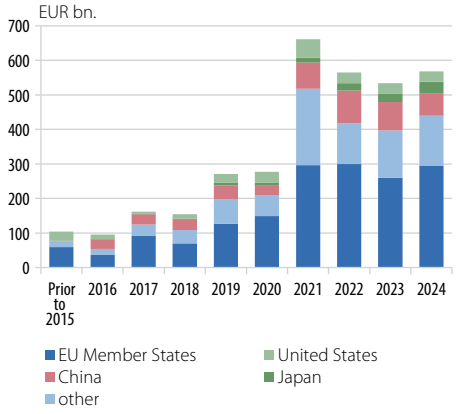
Source: NBR

4. Green finance

Green bonds

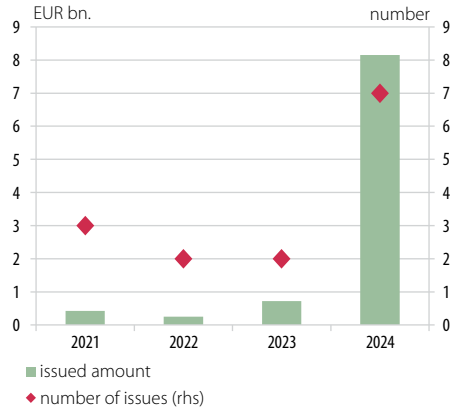
Having followed a downward trend 2022 through 2023, the global green bond issuance moved slightly higher in 2024 to reach EUR 568 billion at end-November 2024, up 6.5 percent from the volume recorded for 2023 as a whole. EU Member States further hold the largest share of all green bonds issued worldwide (52 percent), followed by China (11 percent), Japan (6 percent) and the United States (5 percent), while the rest of the world accounts for 25 percent of total (Charts 4.1 and 4.2).

Chart 4.1. Global green bond issuance



Source: Refinitiv Datastream

Chart 4.2. Green bond issuance in Romania



Source: Refinitiv Datastream

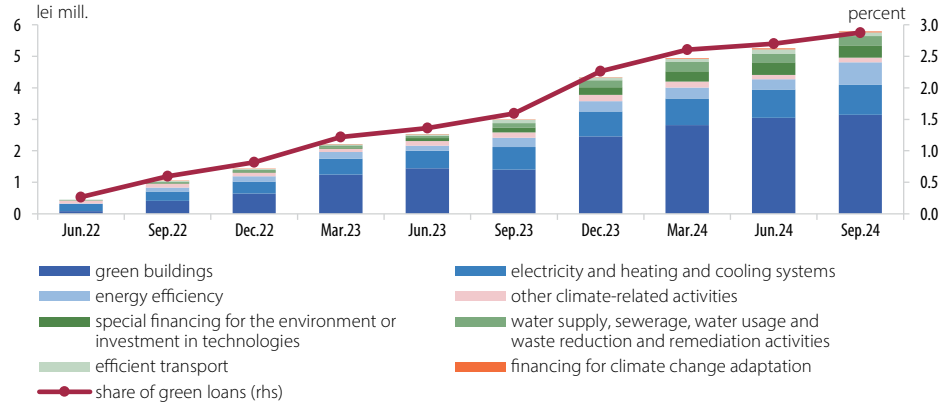
In Romania, seven green bond issues were recorded in the course of 2024, on a par with those launched until the turn of this year. In 2024, the total of green bond issuance in Romania was carried out by the Romanian government, tantamount to EUR 8.1 billion.

Note: Data available at end-November 2024.

Green loans

Non-financial corporations' appetite for green loans continued to grow throughout 2024, reaching lei 5.7 billion at end-September 2024, or 2.9 percent of the stock of bank loans to non-financial corporations (Chart 4.3).

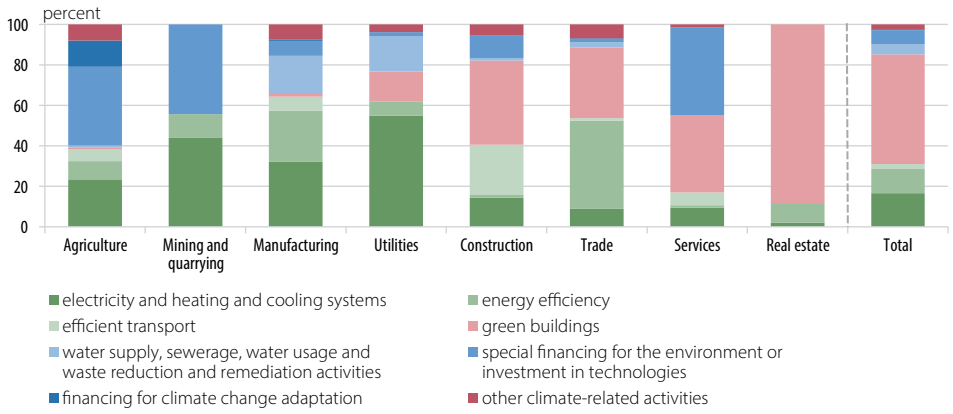
Chart 4.3. Green bank loans by purpose



Source: NBR

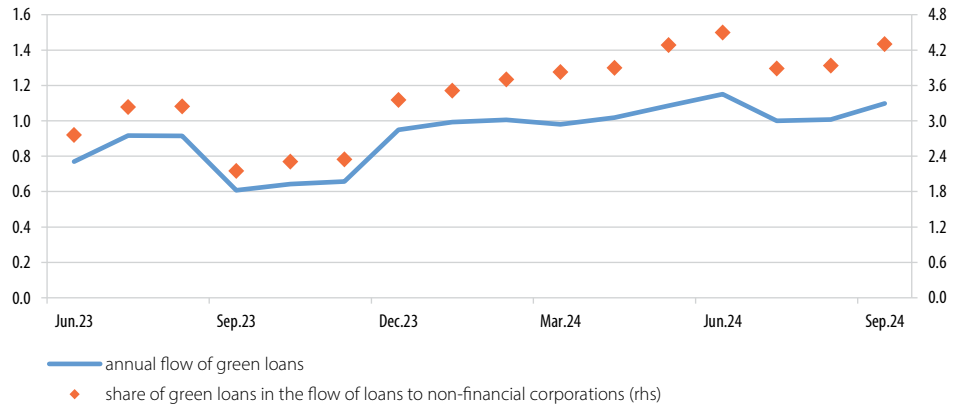
In addition, green loans accounted for 4.3 percent of the annual flow of loans to non-financial corporations. The main purpose of green loans is green buildings: 54 percent of total. From a sectoral perspective, most green loans went to real estate (50 percent of total), ahead of utilities and manufacturing (18 percent and 10 percent respectively). As for households, green loans reached approximately lei 10 billion in September 2024 (up 50 percent from September 2023) and accounted for 5.7 percent of the banks' portfolio of loans to this segment (Charts 4.4 and 4.5).

Chart 4.4. Green bank loans by purpose and sector, 2024 Q3



Source: NBR

Chart 4.5. Flow of green bank loans



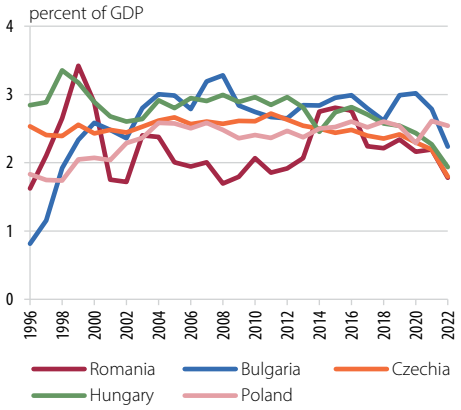
Source: NBR

5. Government policies

Government taxes and expenditure on environmental protection

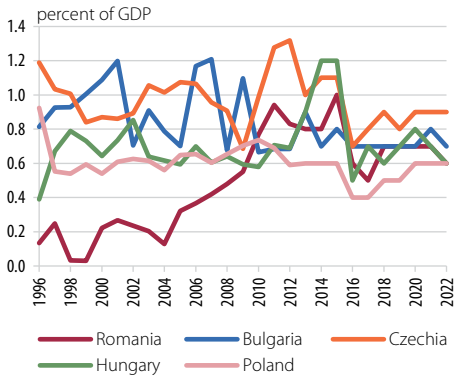
Romania recorded the lowest environmental protection taxes in the region in 2022, similar to previous years. Specifically, in 2022 these taxes amounted to 1.8 percent of GDP, slightly below the regional average of 2.1 percent of GDP. Government expenditure on environmental protection accounted for 0.6 percent of GDP in the same year, in line with the other countries in the region (Charts 5.1[8] and 5.2).

Chart 5.1. Environmental taxes, regional comparisons



Source: OECD

Chart 5.2. Government expenditure on environmental protection, regional comparisons

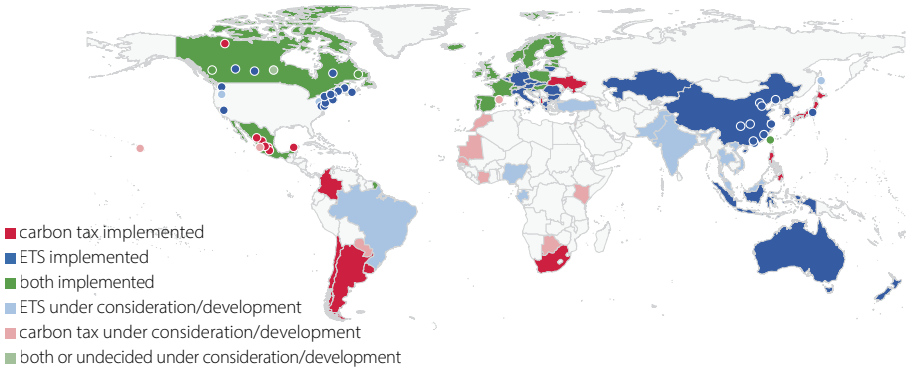


Source: IMF, Eurostat

Carbon pricing in Europe and worldwide

Globally, carbon pricing initiatives that were implemented or scheduled for implementation have remained on an upward trend this year, too. Their number has reached 75, spanning 50 jurisdictions and 39 subnational jurisdictions, but they cover only 12.8 gigatonnes of CO2 emissions, accounting for about 24 percent of total emissions worldwide (Chart 5.3).

Chart 5.3. Carbon pricing policies worldwide

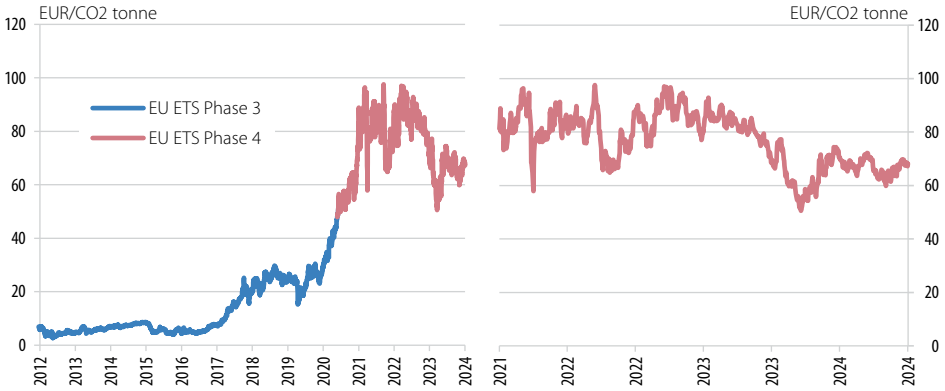


Note: Data for November 2024 Carbon Pricing Dashboard | Up-to-date overview of carbon pricing initiatives (worldbank.org); ETS = Emissions Trading System

Source: World Bank

At the EU level, compared to the previous edition of the *Dashboard,* the price of allowances within the Emissions Trading System (ETS) declined in the first part of 2024, reaching a two-year low in February 2024 (EUR 51.8 per tonne of CO2). Subsequently, ETS prices have embarked on an upward trend for some time, then stabilising around EUR 65-70 per tonne of CO2 (Chart 5.4).

Chart 5.4. EU ETS prices



Source: Refinitiv Datastream

Endnotes

1 *Network for Greening the Financial System (NGFS)*, the macroeconomic model NiGEM 2022 Phase IV

2 According to the NiGEM GCAM v1.22 model developed by the NGFS. The model combining the transition risk with the chronic physical risk was used.

The orderly "Below 2°C" scenario gives a 67 percent chance of limiting global warming to below 2°C by 2100.

The orderly "Net Zero 2050" scenario foresees reaching global net zero CO2 emissions around 2050.

The disorderly "Delayed Transition" scenario assumes a "fossil recovery" over the next 10 years, with no new climate policies being introduced until 2030. Subsequently, it is assumed that countries with a clear commitment to a specific climate-neutral target will meet their objective on regional fragmentation – regionally differentiated CO2 allowance prices will align with the global price around 2070, in order to keep the 67 percent chance of limiting global warming to below 2°C by 2100.

The disorderly "Net Zero" scenario envisages the median temperature to be brought below 1.5°C in 2100 after a limited temporary overshoot. Furthermore, policy pressure and mitigation efforts are unevenly distributed across sectors, with stronger mitigation actions taking place in the transportation and buildings sectors to reflect more consumer-oriented measures.

The "Fragmented World" scenario assumes divergent and delayed climate policies globally, leading to high transition risks in some countries and elevated physical risks worldwide as a result of an inefficient transition at aggregate level.

3 The ranges for the share of gross value added (GVA) of firms in the sectors exposed in total GVA of counties with medium and high risk levels were determined based on the calculation of the 33rd and 66th percentiles.

4 *Forest Fires in Europe, Middle East and North Africa 2023*, Publications Office of the European Union, Luxembourg, 2024, doi:10.2760/8027062, JRC139704

5 Readiness is one of the two components of the ND-GAIN index devised by the University of Notre Dame. It illustrates the availability and ease with which a country can make investments to adapt to the new conditions, due to a safe and efficient business environment. It comprises three essential components, i.e. economic readiness, social readiness and governance readiness. A higher value shows a better situation. Vulnerability is the other dimension of adaptation included in the ND-GAIN index and focuses on the society's propensity to be adversely affected by climate hazards. This aims to gauge a country's exposure, sensitivity and adaptive capacity to climate change. It measures the country's vulnerability in terms of six life-supporting sectors: food, water, health, ecosystem service, human habitat and infrastructure. A higher value shows a weaker situation.

The climate-related disasters frequency shows the number of climate disasters (drought, heatwaves, cold waves, floods, landslides, storms and wildfires) on an annual basis.

6 Brown companies were identified based on the Methodology for identifying climate-relevant economic sectors presented in the Report issued by the NCMO Working Group on supporting green finance (http://www.cnsmro.ro/res/ups/Summary-Report-NCMO-green-finance.pdf). Thus, the analysis takes into account all the companies whose main activity is classified under the NACE codes in the NACE divisions shown in Annex 1.

7 Scope 1 emissions are available at NACE group level and were allocated at firm level using the share of the individual turnover in that of the economic sector; data available up to the year 2022. Financed emissions are the sum of individual exposures adjusted for emission intensity at company level.

The aggregate carbon footprint was calculated as the share of financed emissions in total bank exposures to non-financial corporations.

8 Environmental taxes include charges levied on energy (including fuels), transport (except fuels), pollution and resources.

9 https://www.oecd.org/greengrowth/green-growth-indicators/

10 World Bank, Climate Change Knowledge Portal

Annexes

1. Climate-relevant sectors

NACE division	Name
01	Crop and animal production, hunting and related service activities
05-09	Mining and quarrying
10-12	Manufacture of food products; manufacture of beverages; manufacture of tobacco products
17	Manufacture of paper and paper products
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
35	Electricity, gas, steam and air conditioning supply
37-39	Sewerage, waste management and remediation activities
49	Land transport and transport via pipelines
41-43	Construction
51	Air transport
68	Real estate activities

2. Sectoral breakdown by NACE division depending on physical risk categories

	Flood risk
01	Crop and animal production, hunting and related service activities
02	Forestry and logging
03	Fishing and aquaculture
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture of rubber and plastic products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31	Manufacture of furniture
32	Other manufacturing n.e.c.
33	Repair and installation of machinery and equipment
49	Land transport and transport via pipelines
52	Warehousing and support activities for transportation
53	Postal and courier activities
	Drought risk
01	Crop and animal production, hunting and related service activities
02	Forestry and logging
03	Fishing and aquaculture
36	Water collection, treatment and supply
	Extreme heat risk
41	Construction of buildings
42	Civil engineering
43	Specialised construction activities

3. Climate finance activities

Climate change mitigation activities	**Renewable energy:** • Production of energy from clean sources (solar, wind, geothermal energy, biomass, etc.) • Improvement of transport and distribution mechanisms • Investment in the development of storage systems **Energy efficiency:** • Improvement of industrial facilities or their replacement with new ones • Investment in residential/commercial/public property, vehicles (car fleet improvement or renewal) • Lighting, heating systems, insulation (included in the energy efficiency) **Waste and wastewater reduction** **Transport:** • Change in urban transport mode (also via measures to support the non-motorised transport) • Management measures to reduce the greenhouse gas emissions (parking lots, carless areas, etc.) • Interurban railway transport as an alternative to road/air transport • Infrastructure for low-carbon, efficient transport **Green buildings** – financing to comply with/meet a number of standards applicable to green buildings such as: • IFC certification for Excellence in Design for Greater Efficiencies (EDGE) • Local green building certification system • Leadership in Energy and Environmental Design (LEED) certification issued by the US Green Building Council • BRE certification for the environmental assessment method (BREEAM) defined by the Building Research • Bronze, silver or gold issued by the German Sustainable Building Council (DGNB) • RoGBC certification or other types of certifications **Special environmental financing** or technological investments (according to EBRD) • Products or equipment • Low-carbon technologies, including R&D (e.g., smart irrigation systems) • Reduction of non-energy GHG emissions: fugitive emissions, carbon capture and storage, lower emissions from industrial processes
Climate change adaptation – reduce vulnerabilities to the effects of climate change and increase the capacity to adjust to the new environment	Agriculture (e.g., investments for adapting to the new meteorological conditions and extreme climatological events with the help of irrigation, desiccation and drainage, prevent soil erosion and restore soil quality, prevent desertification, conduct research to cut water waste or GHG emissions, extend the ecologically certified areas, agri-environment measures (afforestation, forest covers, eco-conditionality, biomass certification, etc.).