Council of the
European Union

Brussels, 27 March 2024
(OR. en)

8369/24
ADD 13

COH 20
SOC 243

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	27 March 2024
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2024) 79 final - PART 13/23
Subject:	COMMISSION STAFF WORKING DOCUMENT Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the 9th Cohesion Report

Delegations will find attached document SWD(2024) 79 final - PART 13/23.

Encl.: SWD(2024) 79 final - PART 13/23

EUROPEAN
COMMISSION

Brussels, 27.3.2024
SWD(2024) 79 final

PART 13/23

COMMISSION STAFF WORKING DOCUMENT
Accompanying the document

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

on the 9th Cohesion Report

{COM(2024) 149 final}

ground-mounted PV systems in Spain, Romania, France, Portugal and Italy (Map 4.5)[17]. The production of biomethane in EU-27 also increased significantly. According to the European Biogas Association it multiplied by 2 in the period 2018-2022 (3.4 bcm were produced in EU-27 in 2022). However, the estimated potential is much higher. The EU has set itself the objective of producing 35 bcm of biomethane by 2030 as part of its efforts to phase out its dependence from Russian fossil fuels.

The green energy transition and the associat- ed strengthening of the role of renewables offer unique opportunities for rural, less developed re- gions, as they can benefit from their natural re- sources and geographic position. Whereas most of the current energy production from renewa- bles is in the more developed regions, especially in their rural areas, most of the potential produc- tion is in the rural areas of less developed regions (Figure 4.4). Exploiting this potential could benefit economic cohesion in the EU. A recent study[18] used the data on untapped potential to simulate the impact of exploiting this on job creation and eco- nomic growth. Phasing out fossil fuels for energy generation while phasing in wind and solar ener- gy is projected to deliver more value-added (up to EUR 1 570 per head more) and more employment (up to 4.9 % more) in lagging, rural regions. Real-

ising this potential, however, necessitates facilitat- ing knowledge exchange, technical support, and in- vestment in renewable energy generation but also in distribution infrastructure, digitalisation and connectivity potential. It also requires factoring in the impacts on landscapes or biodiversity but also on rural communities. A number of EU-level initi- atives were taken to provide needed support and technical assistance to rural areas willing to create, among others things, rural energy communities, so that they also benefit from the green transition[19].

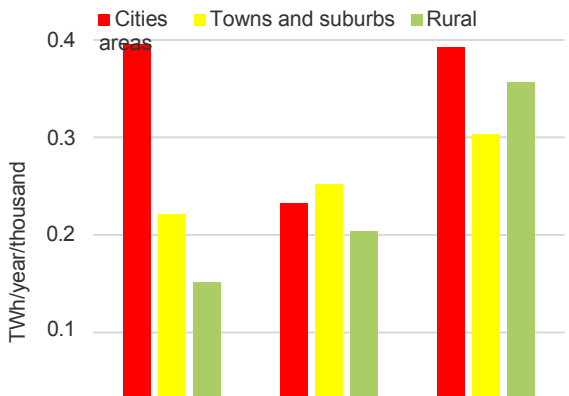
Green hydrogen is produced when renewable energy is used to produce hydrogen gas through electrolysis. In 2022, there were 143 renewable hydrogen projects in Europe, of which 97 in operation and 46 under construction. The projects currently under construction are projected to significantly outperform existing operational plants, with an anticipated average capacity of 26 MW—around 10 times higher than the current operational plant's average capacity. The RePowerEU ambition is to produce 10 Mtoe of renewable hydrogen in the EU and to import another 10 Mtoe from outside the EU.'

1.1 Healthy ecosystems as nature- based solutions to address climate change and biodiversity loss

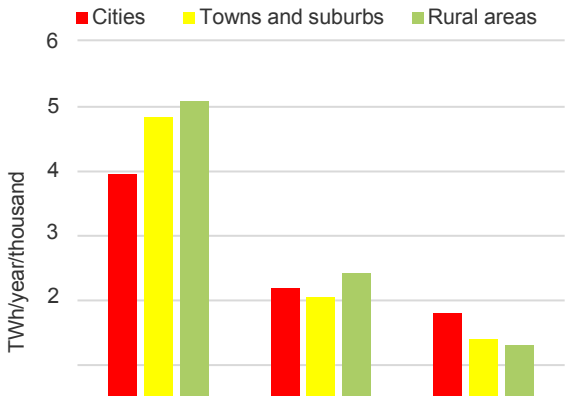
Natural ecosystems are essential in the fight against climate change. Reaching climate neutrality requires first and foremost reducing GHG emissions, but also depends on enhancing carbon removal, particularly for those sectors with hard-to-abate

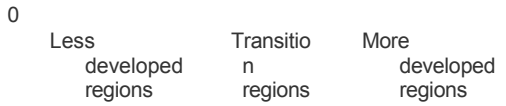
Figure 4.4 Current production and untapped potential from renewable energy by category of region and degree of urbanisation

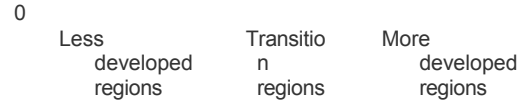
a) Current production from renewable energy, 2023



b) Untapped potential from renewable energy







Source: JRC.

14 Note that, because of the Russian invasion of Ukraine, the planned development of renewable energy installations in regions bordering Russia and Belarus can be postponed or cancelled. This is particularly relevant for onshore wind, since 21 % of the EU's technical potential is located in border regions, and to a lesser extent for solar (9 %) and hydropower (1 %). Overall, Latvia and Lithuania have the largest shares (over 50 %) of technical potential in border regions for solar and wind power, while in Finland it is over 60 % for hydro and wind power and in Estonia over 40 % for all three sources.

15 Többen et al. (2023).

16 Rural Energy Community Advisory Hub (https://rural-energy-community-hub.ec.europa.eu/index_en).

Box 4.2 The condition of European forests

EU forests absorb 10 % of all carbon dioxide emit- ted each year, meaning that forests are essential to achieving a net-zero economy. Healthy forests also help regions to be resilient to climate change. They regulate surface and groundwater flows and so mit- igate floods and droughts, or they help cool down cities and towns during heatwaves. But forests do much more than delivering climate services. They are important habitats for protected plant and animal species, they are a source of economic activity, and they provide people with opportunities for recreation. Keeping forests healthy, restoring them where they are degraded or planting new biodiverse forests in ar- eas where they have been cut down, therefore serves the twin goal of mitigating climate change and adapt- ing to it, while also helping to restore biodiversity.

An assessment of their health[1] shows that forests in the EU are productive and well connected to each other and to other natural areas. But forests have too low levels of organic carbon in their soil and too few threatened bird species in their trees. Forests in Mediterranean regions and in the Atlantic plain stretching from France to Denmark are worse off than others in the EU and need to be restored to a good condition. Forests in mountain regions, on the other hand, are often in the best condition (Map 4.6).

The development of regional accounts describing the condition of forests is useful for supporting Co- hesion Policy objectives, particularly the goal of a greener, low-carbon Europe. Protecting and restoring forests is still overlooked as a means of mitigating climate change and adapting to it. Under Cohesion Policy programmes for 2021–2027, investments of over EUR 22 billion are planned on action on biodi- versity, around EUR 16.8 billion of which is funded by the EU. The forest accounts can help Member States decide where to invest to restore degraded forest ecosystems.

1 Maes et al. (2023).

emissions. Healthy ecosystems, particularly nat- ural forests and wetlands, are carbon sinks. They sequester and store more carbon dioxide from the atmosphere than they emit. Moreover, through ecosystem services such as water retention or the cooling effect of trees and forests, ecosystems mit- igate the effects of climate change and extreme weather events. These ecosystem services are so important that over half of the world's total GDP is moderately or highly dependent on nature[20]. In the same way, 75 % of the bank loans in the eu- rozone is exposed to risks from nature loss[21]. Key sectors of the economy are particularly concerned, in particular construction, agriculture, food and bev- erages. In 2019, the economic value provided by a wider set of ecosystem services in the EU amount- ed to EUR 234 billion. This value is comparable to the gross value-added of agriculture and forestry combined[22]. Yet the biodiversity that underpins eco- systems, and the services they provide, remains under threat. Every six years, EU Member States report on the conservation status of habitats and species protected under the Birds and Habitats Di- rectives. The latest assessment covers the period between 2013 and 2018[23]. At EU level, only 15 % of the habitats assessed have good conservation status, while 81 % have poor or bad conservation status. Grasslands, dunes, and wetland habitats show strong trends towards deterioration, while the status of forests is improving the most. Mem- ber State reports show considerable variation in the conservation status of habitats within their borders (Figure 4.5). With the exception of Cyprus, Estonia, Greece and Romania, Member States report that under 40 % of the habitats assessed have good conservation status. The figure is lowest for Bel- gium and Denmark, which report that over 70 % of their habitats are in a bad conservation state.

17 World Economic Forum (2020).

18 European Central Bank (2023).

19 Vysna et al. (2021).

20 Conservation status of habitats: https://www.eea.europa.eu/ims/conservation-status-of-habitats-under.

Figure 4.5 Conservation status of habitats and species protected under the EU Habitats Directive for the period 2013- 2018

Source: European Environment Agency (EEA).

Only 27 % of species assessed are reported to have good conservation status, while for 63 % it is poor or very poor[24]. Only 6 % of all species show an improvement from the previous assessment. Reptiles and vascular plants have the largest pro- portion of species with good conservation status.

The reports show that the conservation status of species varies widely. Cyprus, Ireland, Estonia and Malta report the largest proportion (over 50 %) of species with good status. Animals account for al- most 80 % of species with improving status and plants for 20 %. Belgium, Denmark, Estonia and Luxembourg report the largest proportion (over 20 %) of species with an improvement relative to

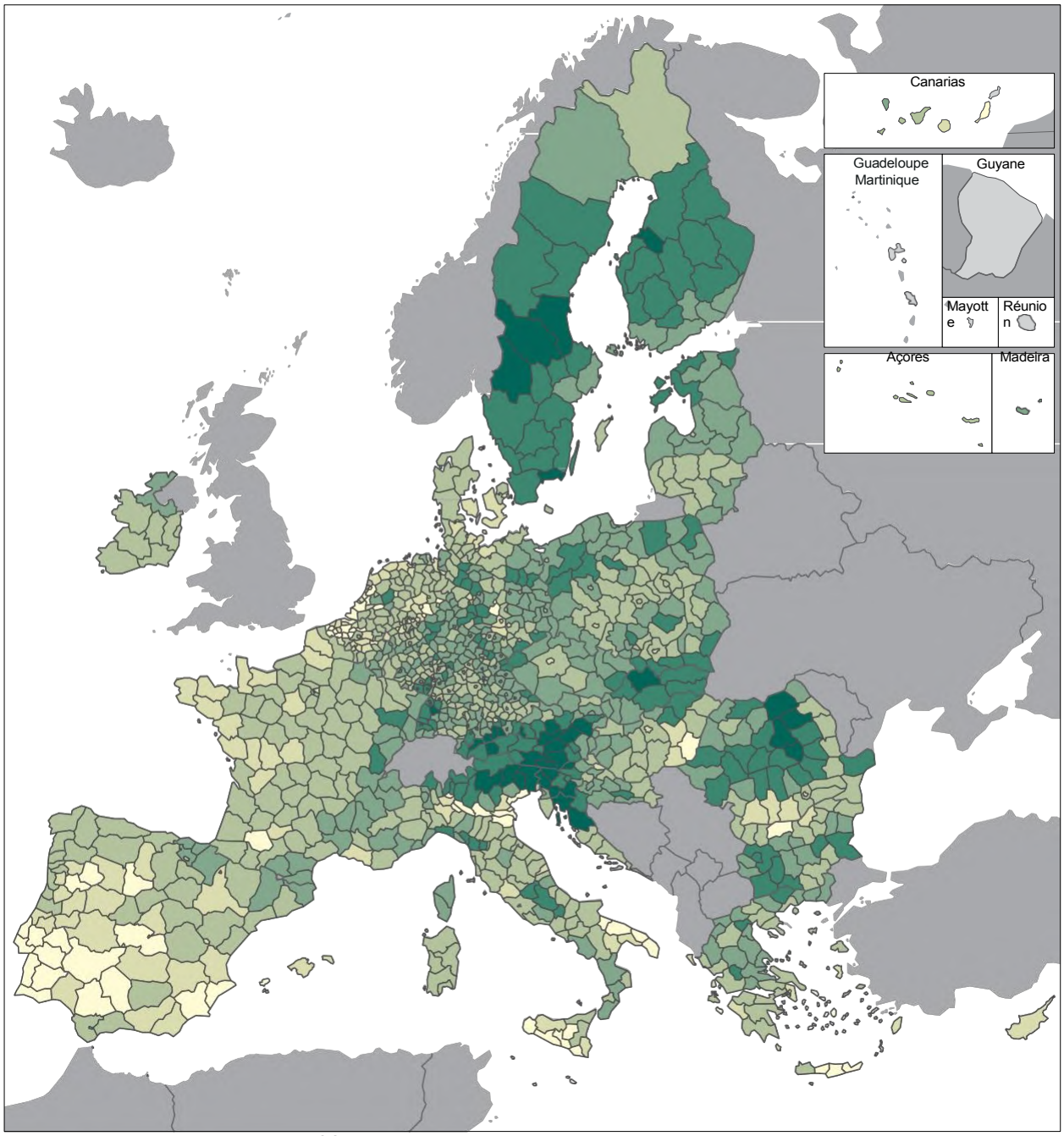
the previous assessment, while Cyprus is the only Member State not to report a single species for which the status had worsened, though for over 75 % of species the assessment is 'unknown'.

2. Environmental challenges for health and regional development

A large majority of people in the EU are concerned about the state of the environment[25]. The pollution of air, water and soil has a direct impact on people's health. Exposure to pollutants increases the likelihood of respiratory diseases and cardiovascular

21 Conservation status of species: https://www.eea.europa.eu/ims/conservation-status-of-species-under.

22 Eurostat (2020).



Map 4.6 Average condition of forests in NUTS 3 regions, 2018

Index

<= 0.45
0.45 – 0.50
0.50 – 0.60
0.60 – 0.65
0.65 – 0.70
> 0.70
no data

Forest condition is measured on a scale from 0 to 1, where 0 represents a degraded forest and 1 represents a reference condition based on primary or protected forests.
Source: DG REGIO, JRC and King Juan Carlos University of Madrid.

0 500 km

and other health issues. The uneven distribution of environmental pollution is one of the reasons for disparities in health outcomes across the EU, with more vulnerable or disadvantaged groups exposed to more health risks[26].

Part of the European Green Deal, the zero-pollution action plan, is aimed at creating a toxic-free envi- ronment by reducing air, water and soil pollution to levels not considered harmful to health and natural ecosystems. Legislation, including binding targets on pollutant emissions, remains essential to keeping pollutant concentrations below these levels.

EUR 100 billion is allocated under Cohesion Pol- icy for 2021–2027 to environmental action, to improving air quality, reducing noise, water man- agement, waste recycling and rehabilitation of industrial sites and contaminated land. Support is also provided to investment in clean technologies, and in the broad range of products, services, and processes that utilise renewable materials and energy sources, which are key to achieving a ze- ro-pollution society. In addition, a significant part of the budget is planned to go to investment in environmentally friendly production processes and the circular economy.

2.1 Air pollution across the EU causes persisting regional health inequalities

Despite progress made in the last decade on achiev- ing better air quality standards, air pollution remains a major cause of premature death and disease and is the single largest environmental health risk in Europe. Fine particles of under 2.5 mm diameter ($PM_{2.5}$) are particularly harmful to human health. In 2020, they are estimated to have caused 253 000 premature deaths and resulted in 2 582 563 years of life lost across the EU. The estimated impact is largest in regions where solid fuel burning caus- es high $PM_{2.5}$ levels, mainly in Bulgaria, Croatia, and regions in Poland, Slovakia, Hungary and Romania (Map 4.7), with the largest of all in the Polish regions of Miasto Kraków, Katowicki and Sosnowiecki and the Bulgarian region of Vidin, where years of life lost are 2 000 or more per 100 000 inhabitants. The smallest is in Scandinavian regions, where $PM_{2.5}$ levels are low. LIFE[27] strategic integrated projects for better governance, and for supporting the development and implementation of air quality plans in combination with Cohesion funding, delivered promising results in various European hotspots such as the Po basin in Italy, the south of Poland (Ma- lopolska, Silesia), Slovakia, Bulgaria and Hungary.

Air quality also varies according to the extent of urbanisation. Concentration of fine particulate matter and nitrogen dioxide is consistently higher in cities than in rural areas (Figure 4.6). The main source of fine particulate matter is the heating of buildings, which in 2020 was responsible for 58 % of emissions in the EU, while nitrogen dioxide is mainly caused by road transport, which accounted for 37 % of emissions[28]. Some 96 % of the urban population was exposed to levels of fine particu- late matter above the latest guideline set by the World Health Organisation (WHO) (five milligrams per cubic metre). They were also exposed to levels of nitrogen dioxide exceeding the WHO guideline (10 milligrams per cubic metre).

The COVID-19 pandemic clearly demonstrated the impact of traffic on air quality in cities[29]. In 2020, concentrations of nitrogen dioxide fell sharply as a direct result of reductions in road transport caused by the restrictions imposed. Average concentra- tions over the year fell by up to 25 % in major cities in France, Italy and Spain, and during the first lockdown, in April 2020, concentrations at moni- toring stations fell by up to 70 %.

Further reductions in emissions of air pollutants are needed to lower their concentration in the at- mosphere. The EU's climate agenda, particularly the transition to non-emitting renewable energy sources, higher energy-efficiency and less-pollut- ing combustion fuels, is aimed at achieving this.

23 EEA (2018).

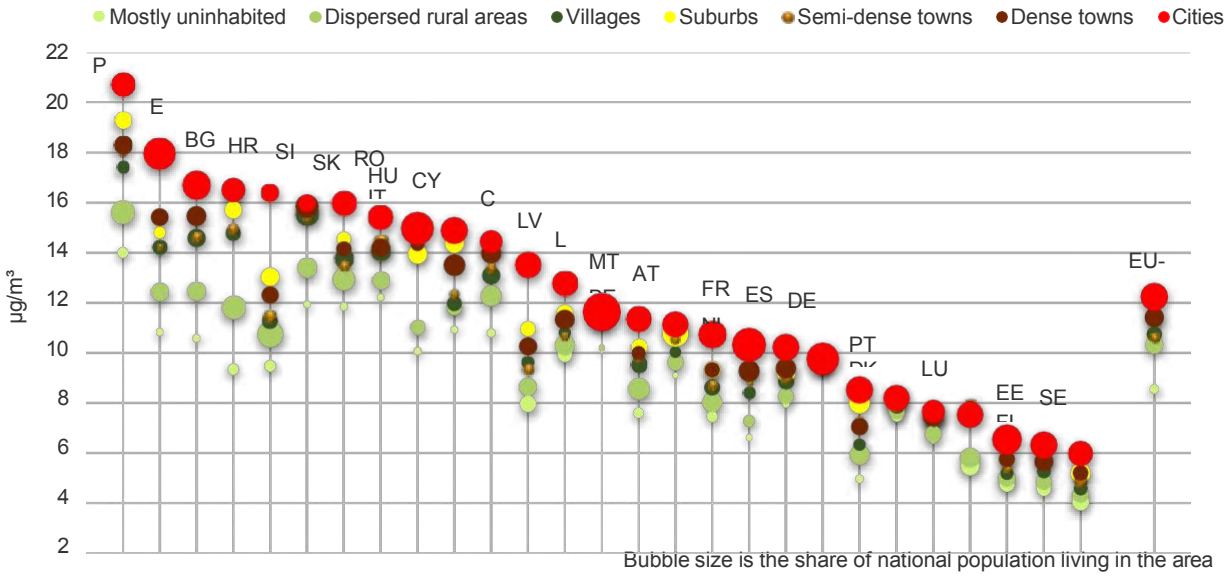
24 L'instrument financier pour l'environnement.

25 https://www.eea.europa.eu/publications/air-quality-in-europe-2022/sources-and-emissions-of-air-

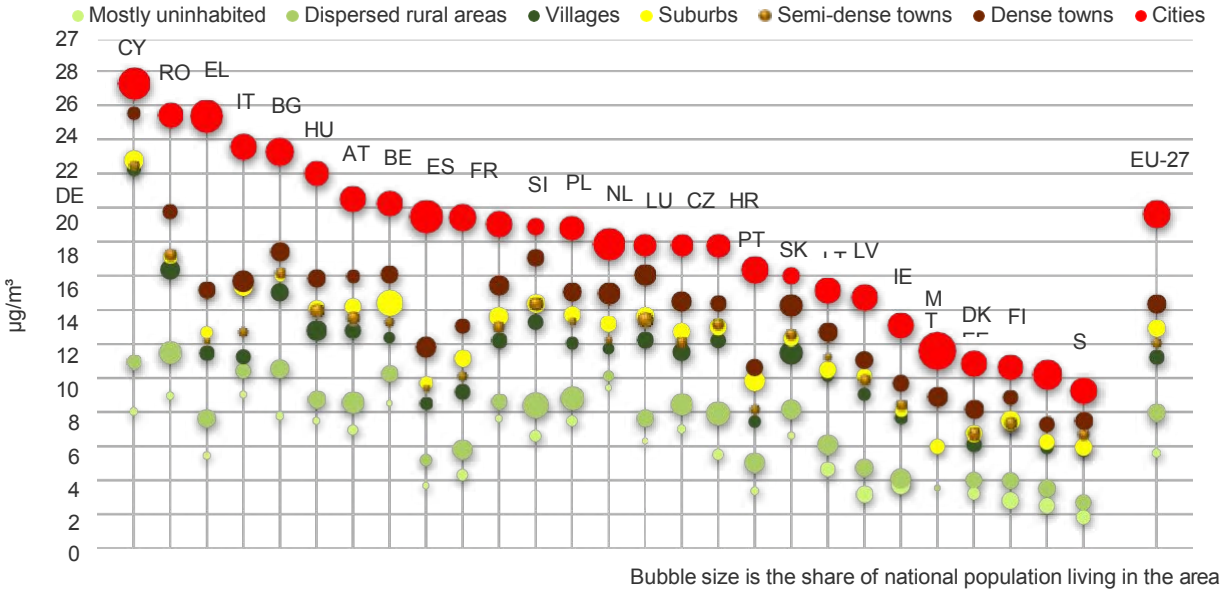
26 https://www.nature.com/articles/s41598-021-04277-6; https://www.lifeprepair.eu/index.php/actions/air-quality-and-emission-evalua- tion/?lang=en#toggle-id-14.

Figure 4.6 Concentration of fine particulate matter ($PM_{2.5}$, upper panel) and nitrogen dioxide (NO_2, lower panel) by country and by refined degree of urbanisation, 2021

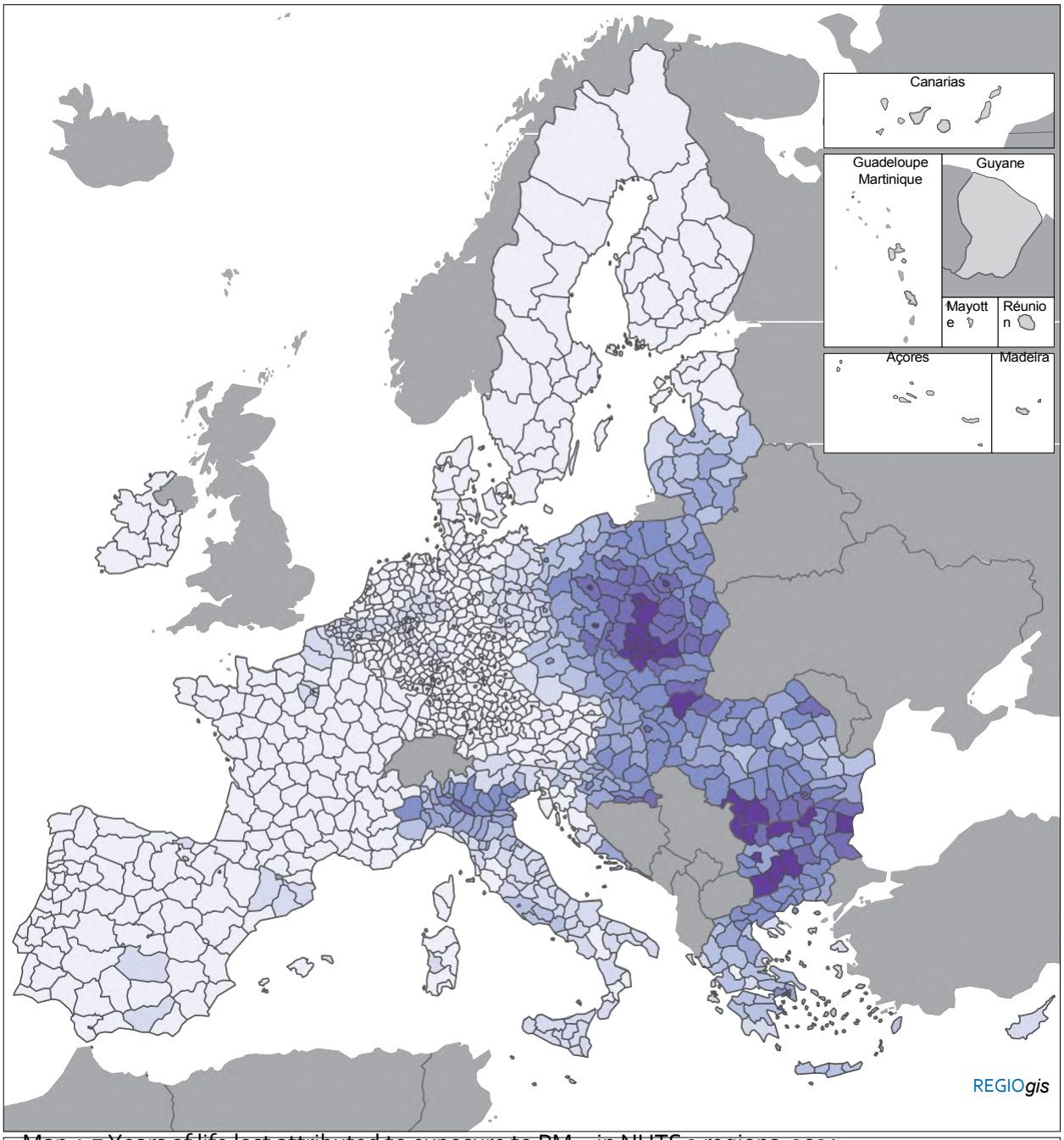
a) Concentration of fine airborne particulate matter ($PM_{2.5}$) by refined degree of urbanisation



b) Concentration of NO_2 by refined degree of urbanisation



Note: Countries ranked by the value of cities. A concentration of 1 µg/m³ means that one cubic metre of air contains one microgram of pollutant. Source: EEA and DG REGIO calculations.



Map 4.7 Years of life lost attributed to exposure to $PM_{2.5}$ in NUTS 3 regions, 2021

Years of life per 100 000 inhabitants

<= 400
400 – 600
600 – 800
800 – 1000
1000 – 1250
1250 – 1500
> 1500
no data

EU-27 = 584
Source: EEA.

0 500 km

Box 4.3 Regional disparities associated with air pollution in Europe

Figure 4.7 compares the average exposure to air pollution from fine particulate matter of those liv- ing in the poorest regions in the EU with that in the richest ones.

Despite improving trends in air pollution in both the richest and the poorest regions of the EU over the 2007–2020 period, inequalities remained with lev-

els of $PM_{2.5}$ concentrations consistently higher by

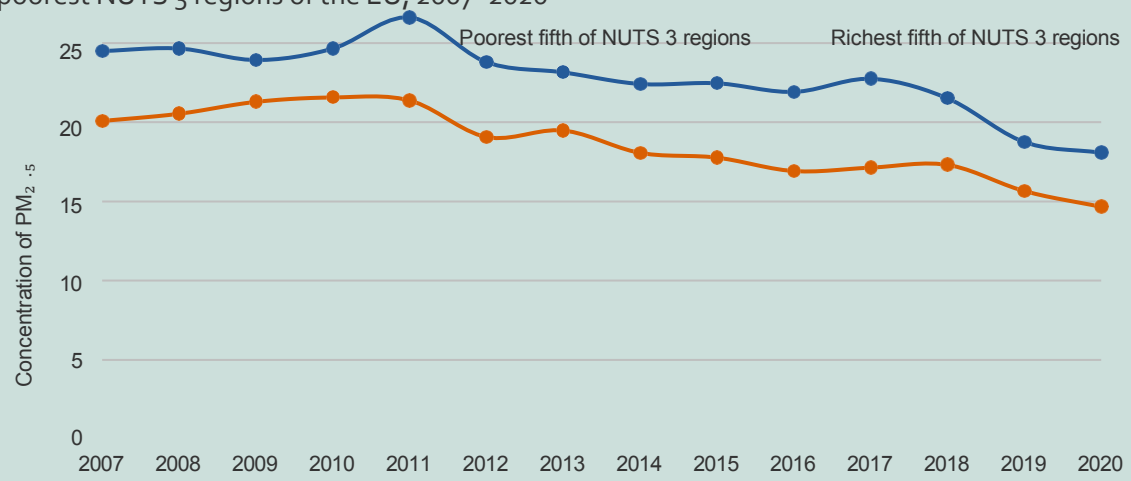
around one third in the poorest regions. This lack of progress in reducing air pollution exposure dispari- ties seems to indicate that we are not progressing in reducing this important type of environmental inequality.

Between 2007 and 2020, air quality, measured as population-weighted concentrations of $PM_{2.5}$, im- proved in both the least disadvantaged (i.e. richest) and the most disadvantaged (i.e. poorest) quintiles of the EU-27's NUTS 3 regions. However, regions in the richest quintile had lower $PM_{2.5}$ levels to begin with (around 15 µg/m³ in 2007) than those in the

poorest quintile (19.5 µg/m³ in 2007).

Energy poverty in the poorest regions can cause the burning of low-quality coal, wood and even waste to heat homes. This results in high emissions of pollut- ants, which often not only affect outdoor air quality but also degrade indoor air quality and consequently harm human health.

Figure 4.7 Population weighted concentrations of fine particulate matter in the richest and poorest NUTS 3 regions of the EU, 2007–2020



Note: The chart shows population-weighted concentrations of PM2.5 in the 20 % of NUTS 3 regions in the EU with the lowest GDP per head (in purchasing power standards – PPS – terms) along with those in the 20 % with the highest GDP per head. Source: EEA.

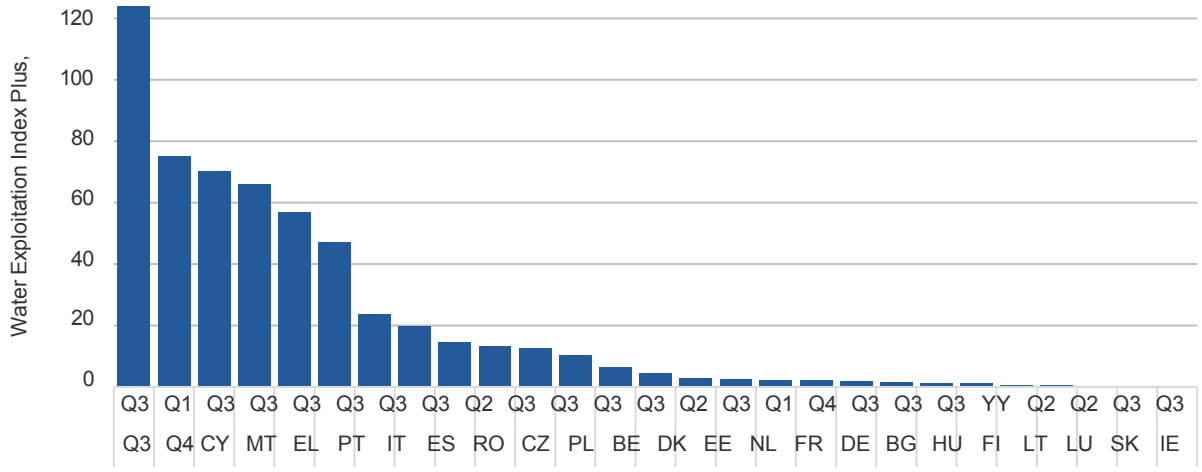
2.2 Access to clean and safe water

Clean and safe water is an essential resource and Cohesion Policy contributes to ensuring the availa- bility and security of water, through water-purifi- cation plants and distribution networks, especial- ly in areas where the population has no access to adequate water provision. Cohesion Policy helps regions that are facing problems of water man- agement, water quality treatment and flood pre-

vention. It promotes a circular approach to water, in particular in water-stressed regions. Water scarci- ty[30] affected 29 % of the EU in at least one season in 2019. In general, it is more common in southern Europe, where around 30 % of the population live in areas with permanent water stress and up to 70 % of the population live in areas with seasonal water stress during the summer. Countries where water shortages were seasonally most acute were Cyprus (where water consumption exceeded renewable

30 Water scarcity means that the water exploitation index plus (WEI+), which is a measure of water consumption as a percentage of renewable freshwater resources available, is above 20 %.

Figure 4.8 The quarters when water was most scarce in EU Member States, 2019



Note: Based on the three-month period in 2019 when the Water Exploitation Index Plus (WEI+) was at its maximum. Source: EEA.

water availability), Malta, Greece, Portugal, Italy and Spain (Figure 4.8). Water abstraction for ag- riculture, public water supply and tourism imposes the most pressure on fresh water[31]. However, wa- ter scarcity is not limited to southern Europe. It ex- tends to river basins across the EU, particularly in western Europe, where water shortages are caused primarily by high population density in urban areas, combined with high levels of abstraction for public water supply, energy and industry.

Pollution of fresh water by nutrients declined in the EU over the period 2000–2010, but remained unchanged up to 2019 (the last year for which data are available)[32]. This is largely because of dis- charges of nutrients from agricultural land, which have remained high. The lack of improvement in water quality across the EU is also evident from country reports produced under the Water Frame- work Directive, which show that only 40 % of sur- face water has a good ecological status.

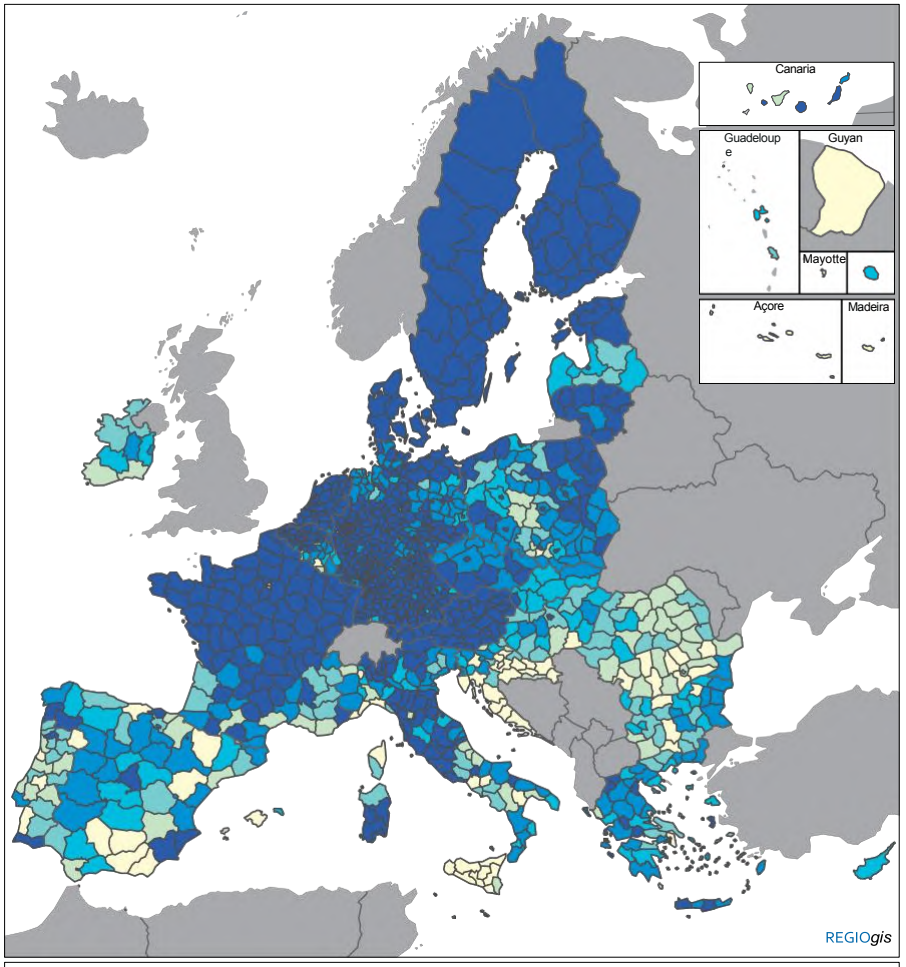
To remedy this, full implementation of the Cohe- sion Policy investments and the management and mitigation measures specified in the EU's water legislation are needed. This means further reduc- tion of pollutant emissions that reach water bod- ies, improving the capacity of ecosystems such as wetlands to retain pollutants and purify water, and eliminating differences in the implementation of the Urban Wastewater Treatment Directive. In the EU, 93.5 % of urban wastewater receives sec- ondary treatment and 85 % more stringent treat- ment. More investment in wastewater treatment along with reforms, good governance and suffi- cient administrative capacity remain necessary in many regions across the EU to avoid, in particular, overflows of sewage during periods of heavy rain (Map 4.8).

Continued efforts to improve water quality extend to bathing water as well. Water recreation is an important outdoor activity for many Europeans and hotter weather as a result of global warming is likely to increase the demand for safe water to bathe in, particularly in cities during the summer. Maintaining and increasing the number of places to bathe might, therefore, become an essential component of a climate adaptation strategy.

Of 21 551 bathing water sites in the EU in 2022, 85 % were assessed as being of excellent quality. In 20 regions, mainly in Austria, Greece and Cy- prus, all sites were of excellent quality (Map 4.9).

31 EEA (2023b).

32 Maes et al. (2020).

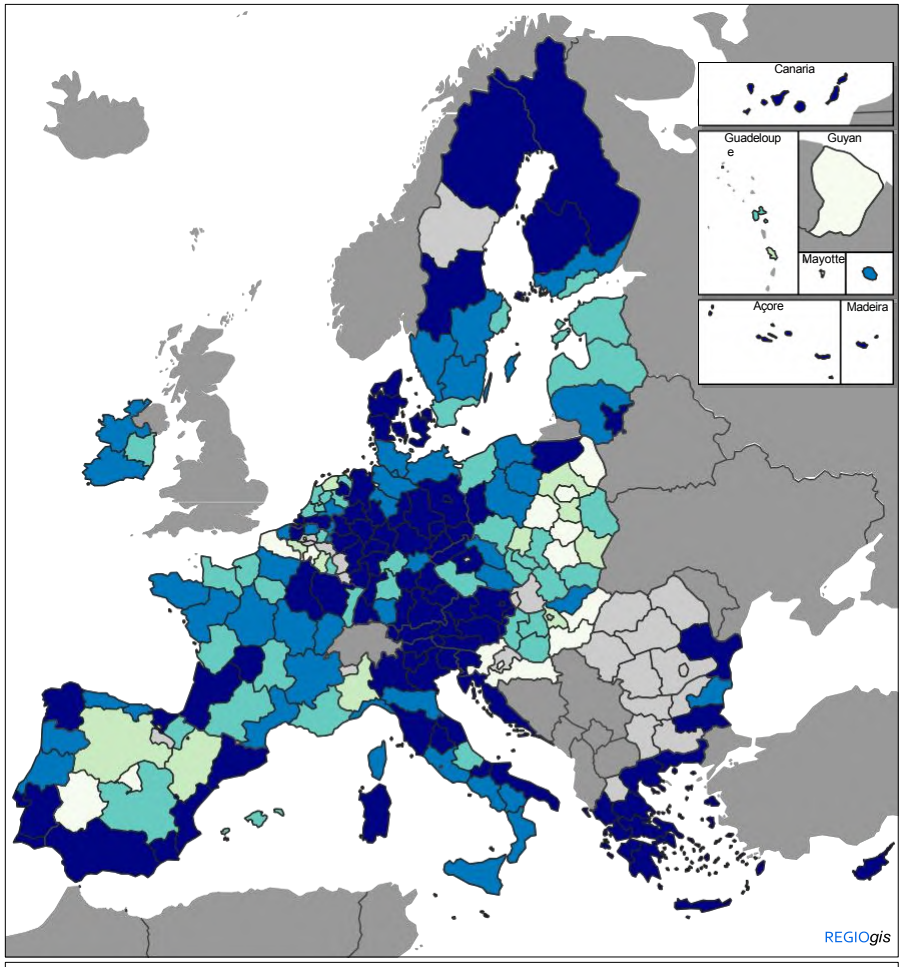


Map 4.8 Urban wastewater receiving more stringent treatment in NUTS 3 regions, 2020

% of generated load
- < 30
- 30 – 50
- 50 – 75
- 75 – 85
- 85 – 95
- >= 95
- no data

EU-27 = 85.5
Source: DG REGIO based on EEA

0 500 km



Map 4.9 Bathing water quality in NUTS 2 regions, 2022

% of stations with excellent quality
- <= 40.0
- 40.1 – 60.0
- 60.1 – 80.0
- 80.1 – 90.0
- > 90.0
- no data

Sampling stations with excellent quality score, in
with at least five stations.
Source: DG REGIO based on EEA

0 500 km