



Pan-European environmental assessment

Chapter III Environmental State and Trends

Air Pollution and Ozone Depletion

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Environmental state and trends: Air Pollution and Ozone Depletion

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Air pollution still has significant impacts on the health of the European population, particularly in urban areas

- Health impact of long-time exposure to air pollution in 41 European countries has been reduced in the period 2009-2018 for

NO_x : by 54 % to 55,000 premature deaths

PM_{2,5} : by 13 % to 417,000 premature deaths

but for

- O₃ : increased by 24 % to 20,600 premature deaths

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Environmental damage by air pollution:

- Disturbances of natural ecosystems and degradation of biodiversity
- Damage on vegetation and buildings

Economic cost of air pollution justifies expensive emission reduction measures in terms of economic dividends besides the health effects

Mitigation measures for emission reductions designed and implemented

Policy measures through successful international cooperation

- PRTR, Stockholm Convention on POPs, CLRTAP, Vienna Convention, (Montreal Protocol)
- Batumi Action for Cleaner Air (2016)

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Convention on Long Range Transboundary Air Pollution (51 Parties)

Protocols on Acidification, Heavy metals, POPs

Emissions of SO₂, CO, Pb have been significantly reduced

Emissions of NO_x, PM and NH₃ less reduced or increased in many areas

Air Quality in the pan-European region remains moderate and, in some areas, unhealthy for sensitive persons

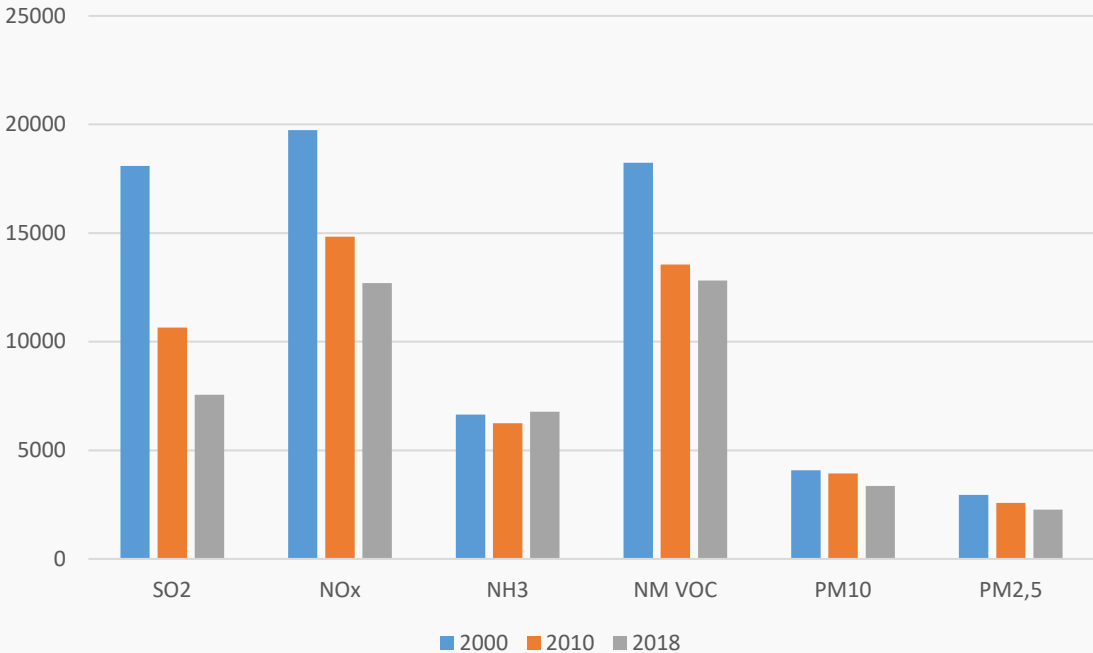
NO_x, PM and ground-level ozone most seriously influence human health at present even if current air quality standards are not exceeded

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Emission trends for the total EMEP area (Gg/y)



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Air pollution in the pan European region has in general decreased in the period 2010-2018 in most countries; still air quality standards are exceeded, particularly in urban areas

Improvement of existing legislation is needed

The European Union and the Russian federation are developing roadmaps (Zero Pollution Action Plan, Clean Air Federal Project)

Global BreatheLife campaign calls on governments to achieve the WHO Air Quality Guidelines in 2030

Aim is to halve the number of air pollution related deaths by 2030

UN General Assembly has adopted Resolution 74/212 on the International Day of Clean Air for blue skies (September 2020)

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Indicator: Emission of pollutants in the atmospheric air

The Centre on Emission Inventories and Projections of the European Monitoring and Evaluation Programme Emission has received and evaluated inventories of 85% of the CLRTAP Parties in the EMEP domain.

In the period 2010-2018 emissions of the main pollutants into the atmospheric air have shown a major decoupling from economic growth

In many countries there is also an absolute decrease of emissions

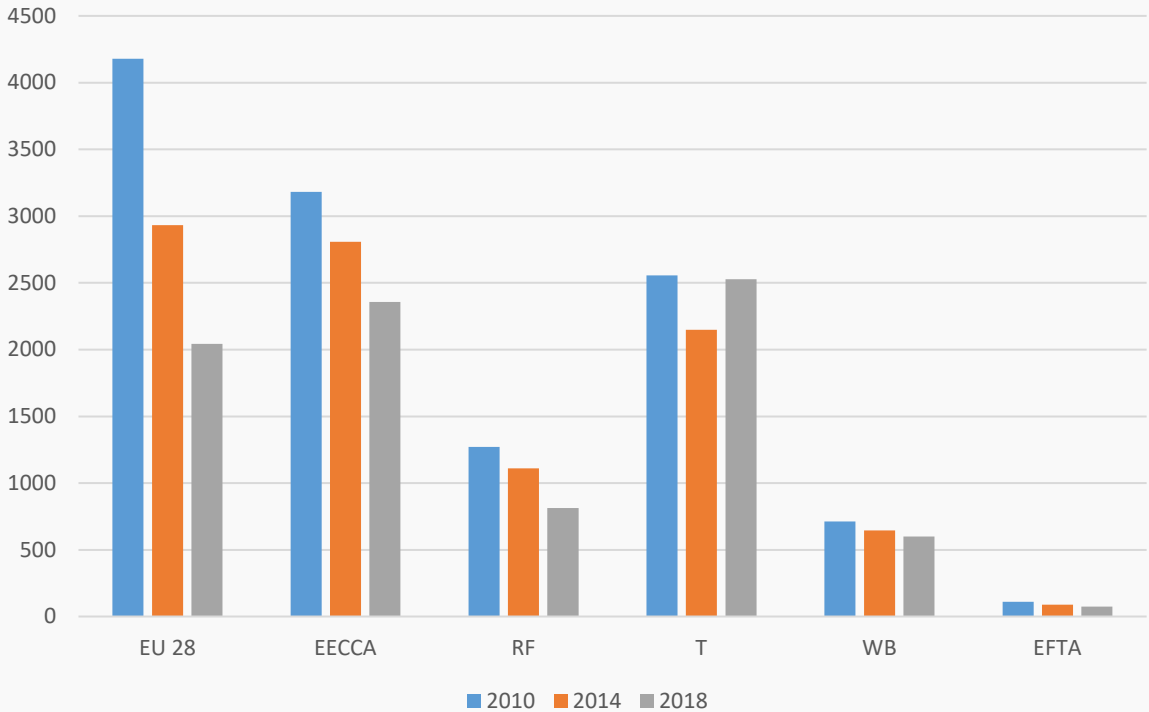
The quality of reported data differs between countries and the uncertainty of the data is in some cases relatively high; UN-ECE and CEIP organize training sessions to enhance the quality of monitoring and submitted data

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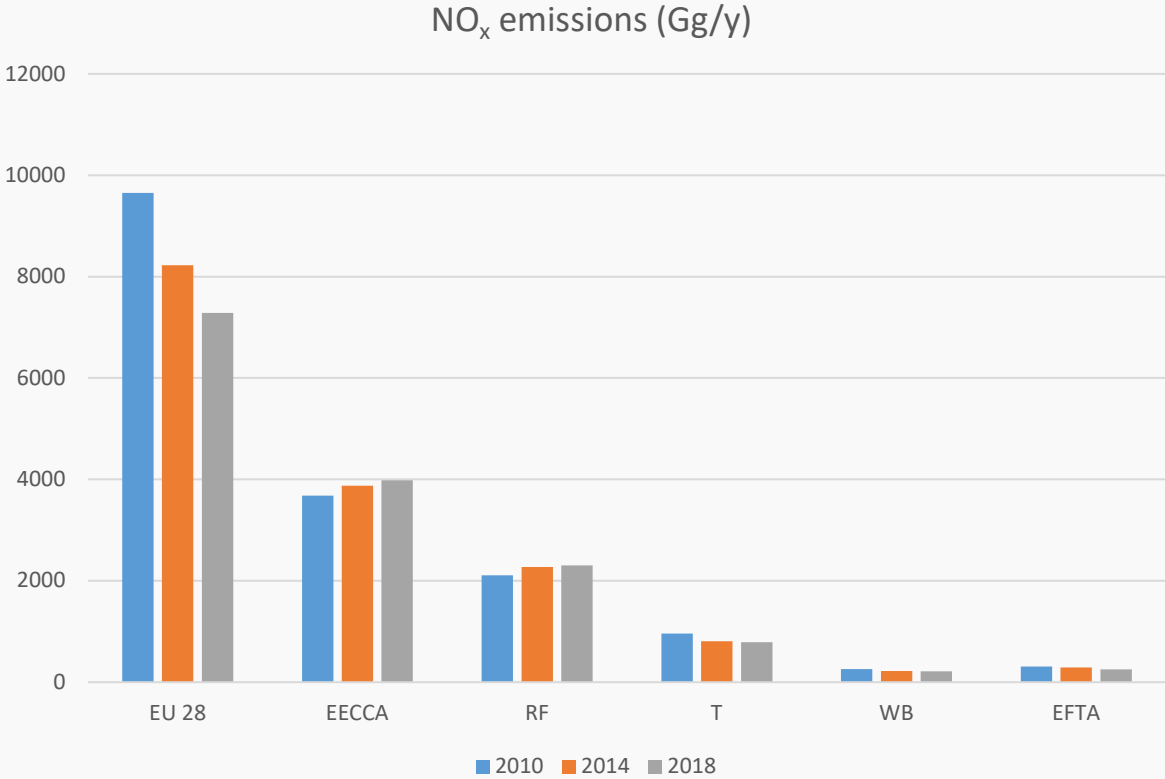


SO₂ emissions (Gg/y)



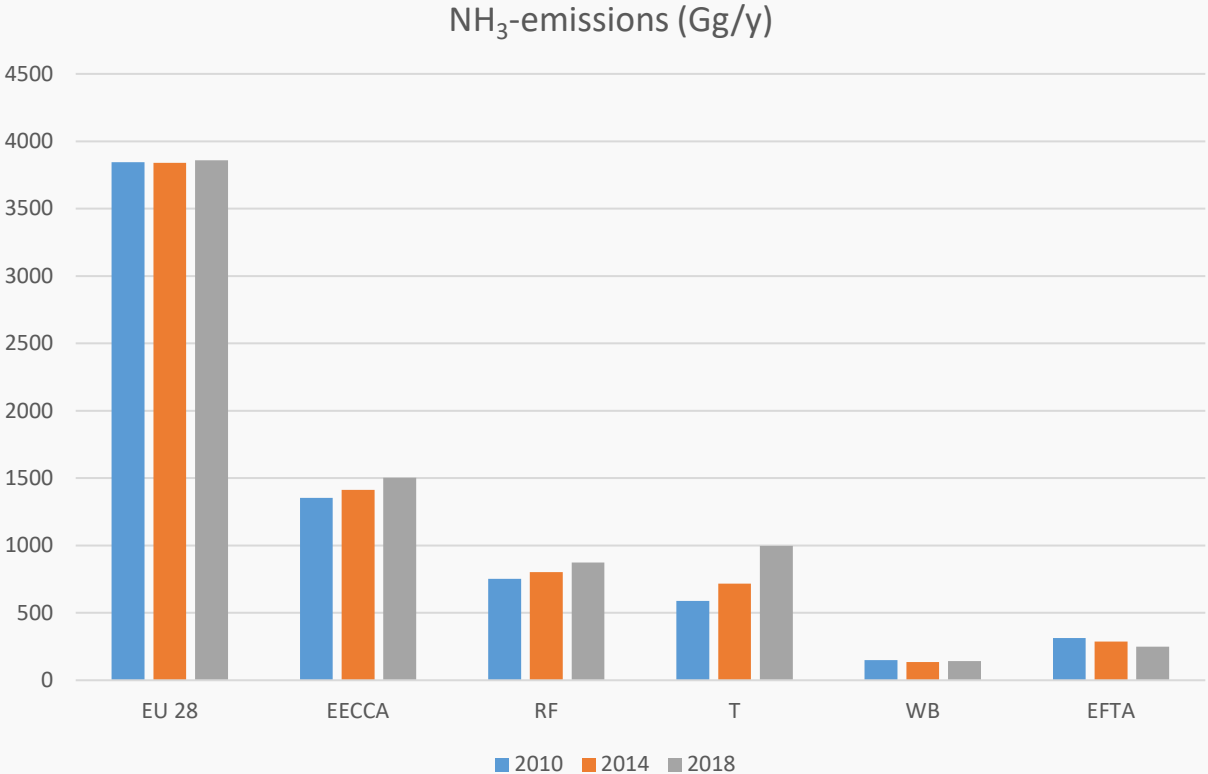
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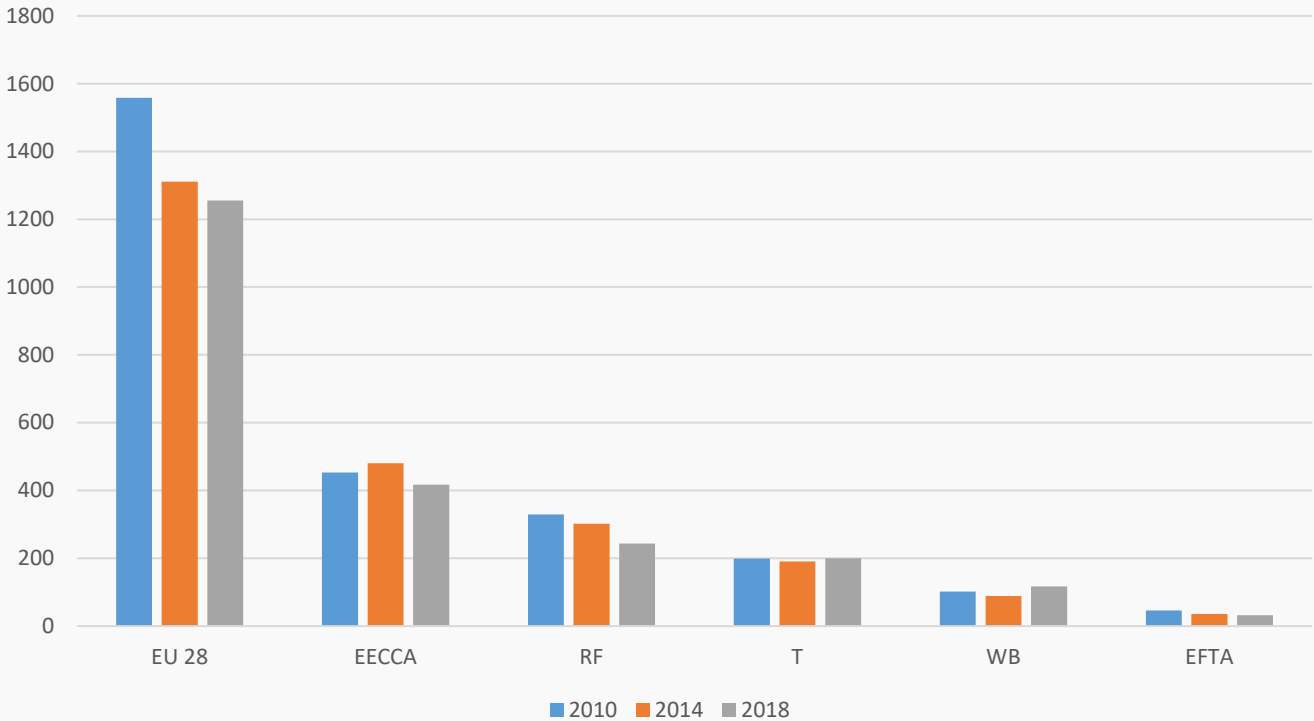


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PM_{2,5} emissions (Gg/y)



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Indicator: Ambient Air Quality in urban areas

In the pan-European area trends in air quality are reported in ambient concentration levels of specific pollutants by EU countries according to the EU Ambient Air Quality Directives (hourly, daily and annual averages)

In 2017 the European Commission and the European Environmental Agency have launched the European Air Quality Index based on five key pollutants to indicate the short- term air quality situation at each of more than 2000 monitoring stations in Europe (on-line)

In EECCA countries emission trends are reported in ambient concentration trends for specific pollutants or by different Air Pollution Indices that represent both short term air pollution and the chronic impact on public health and the environment (on- line)

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SO₂ concentrations show the largest decrease in the pan-European region, (70-85 %) in the last 20 years

NO_x and PM concentrations decreased generally 25-35 % and 30-50 % but in many urban centres the air quality standards are still exceeded

Seasonal high peaks of PM concentrations occur in areas where wood and coal is used for residential heating in winter periods.

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Air pollution monitoring has significantly improved in the last decade by improved equipment and monitoring strategies, but there are still quantitative and qualitative gaps

The EMEP Monitoring Strategy (2020-2029) comprises the most recent monitoring obligations under EMEP

Since 2015 the Copernicus Atmosphere Monitoring Service (CAMS) provides continuous satellite data and information on the atmospheric composition

WHO air quality guidelines on air pollution concentration standards are generally more stringent than the politically agreed EU standards

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Indicator: Consumption of ozone depleting substances

Worldwide the emission of ozone depleting substances (ODS) has been reduced with 98 % compared to 1990 levels.

Evaluation of the (EU Ozone) Regulation 1005/2009/EC by the European Commission states that the EU fully complies with the core obligations under the Montreal protocol

In the Russian Federation, EECCA countries and Turkey, CFC consumption has been completely phased out in the period 2000-2010. The HCFC consumption will be phased out before 2030 and the Kigali Amendment (phasing out of HFCs) will be implemented according to the reduction rules of the amendment

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Key Messages:

The EU intends to adopt an action plan: “Towards a zero-pollution ambition for air, water and soil” in 2021

The Russian Federation implements the Clean Air Federal Project

In the EEA report “Air Quality in Europe-2020” the reductions of health impacts from long-time exposure on air pollutants by recent emission reductions are presented.

Montreal Protocol implementation: the phasing out of hydrochlorofluorocarbons present as coolant in refrigerators and air conditioning systems has not yet been completed, especially in developing countries

In the pan-European region there are still monitoring gaps, especially in the measurement and analysis of fine particulate matter

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Recommendations:

Strategies and measures to achieve the air quality targets of the European Unions Zero-pollution action plan should be shared with the non-EU countries in the region

To achieve target 3.9 of the Sustainable Development Goals additional technical and organizational measures must e developed and applied

To accelerate the phasing out of HCFCs and to prevent their replacement by HFCs in developing countries, adequate replenishment of the Multilateral Fund for the implementation of the Montreal protocol is of great importance

The public availability of monitoring data should be further developed in the pan-European region, while investment is needed to fill monitoring gaps