

EU environment acquis and policy developments for emissions of air pollutants affecting shipping and ports

Transport Community – Multimodality in practice 14 December 2022

> European Commission Clean Air Unit



### Air pollution is high in the public interest

#### BBC O News Sport Weather Shop Earth Travel Capital More - Search Q.

NEWS

Science & Environment

#### Polluted air causes 5.5 million deaths a year new research says

By Jonathan Amos BBC Science Correspondent, Washington DC 13 February 2016 Science & Environment P 84



### **M Pollutions**

Nouveau pic de pollution à Paris



Le stationnement résidentiel est gratuit, mercredi 20 janvier à Paris, en raison d'un nouvel épisode de pollution atmosphérique. Airparif, l'association de

#### Süddeutsche Zeitung SZ.de Zeitung Magazi

5. Februar 2016, 18:48 Uhr Stickoxid-Emission Die Luft bleibt dreckig - mindestens bis 2030

Politik Wirtschaft Panorama Sport München Bayern Kultur Wissen Digital Chancen Reise Auto Still mehr... Q



Der Straßenverkehr ist hauptverantwortlich für die schlechte Luft in den Städten. Die 0 Industrie sieht in modernen Euro-6-Dieseln die Lösung. Doch die sind nicht immer so 0 sauber wie versprochen. 0

Analune von Joachim Becke

Dominika Wantuch 01.02.2016 01:00

Le Monde.fr Wojna ze smogiem wyborcza.biz



Najgorszej jakości węgiel i przestarzałe piece idą w odstawkę. Po Krakowie uchwał antysmogowych chcą władze Wrocławia i Legnicy, a marszałek Śląska przepisami antysmogowymi zamierza objąć ponad 160 gmin.



### ESPAÑA · Madrid

La capital vulnera por sexto año

seguido los límites de contaminación · El informe anual de Ecologistas en Acción concluye que en 2015 los niveles de

contaminación han sufrido un incremento notable • Las alertas por contaminación se vuelven cotidianas

• "Intentamos pasar muy poco tiempo al aire libre"



Archivado en: Manuela Carmena Contaminación atmosférica Madrid Comunidad de Madrid Contaminación Ayuntamientos Problemas ambientales Gobierno municipal



London takes just one week to breach annual air pollution limits

ts of the capital have already breached EU hourly limits for nitrogen dioxide pollution ure deaths each yea



Adam Vaughan vauohan uk day 8 January 2016 10.58 GM



kir pollution Choking on it

Vhile Paris focuses on climate change, air pollution kills 400,000 Europeans a year lec 5th 2015 | KRAKOW | From the print edition () Timekceper



Verkoop van wagens vergroent als gevolg van beleidsingreper

### Source(s): Various online and print media







### Effects of air pollution on health



Source: EEA 2019: Healthy environment, healthy lives: how the environment influences health and well-being in Europe

## The European Green Deal zero pollution actions



Increasing the EU's Climate ambition for 2030 and 2050

Supplying clean, affordable and secure energy

obilising industry for a clean and circular economy

Juilding and renovating in an energy/resource efficient way

Financing the transition

The EU as a global leader Transforming the EU's economy for a sustainable future

The

European

Green

Deal

And leave

No one behind

A zero pollution ambition for a toxic-free environment

> Preserving and restoring ecosystems and biodiversity

From 'Farm to Fork': a fair, healthy and environmentally friendly food system

Accelerating the shift to sustainable and smart mobility

Leave no one behind (Just Transition)

> A European Climate Pact

Chemicals Strategy for Sustainability

Zero Pollution Action Plan for Air, Water & Soil

### Many Green Deal actions already contribute to the Zero Pollution ambition

- Circular Economy
  - (e.g. microplastics)
- **Biodiversity and Farm to Fork** (e.g. nutrients, pestides)
- CAP (e.g. pesticides/fertilisers)
- Climate & Energy initiatives including Adaptation
- **Cancer Plan** (eg. air pollution)
- Mobility Strategy
- Renovation Wave & Bauhaus
- Industrial Strategy
- Pharmaceuticals Strategy
- Trade Policy Review & Mulitlateralism



# The zero pollution vision for 2050

"Air, water and soil pollution is reduced to **levels no longer considered harmful to health and natural ecosystems** and that **respect the boundaries our planet can cope with**,

thus creating a toxic-free environment."



## 2030 targets complementing SDGs



## EU clean air policy



### SETTING OBJECTIVES FOR GOOD AIR QUALITY

### **Ambient Air Quality (AAQ) Directives**

Maximum concentrations of air polluting substances (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> + 8 more)

### REDUCING EMISSIONS OF POLLUTANTS



National Emission reduction Commitments Directive National emission totals (SO<sub>2</sub>, NO<sub>x</sub>, NMVOC, PM<sub>2.5</sub>, NH<sub>3</sub>) Source-specific emission standards

- IED Directive
- MCP Directive
- Eco-design Directive
- Energy efficiency
- Euro and fuel standards

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# Pollutants covered by the NEC Directive and EU wide 2030 Emission Reduction Commitments





## **NEC Directive: key implementation steps**

- 2016: Entry into force of the Directive
- 2018: Transposition deadline
- 2018: First Clean Air Outlook
- 2019: First NAPCPs to be submitted
- 2020: First Commission report on NEC implementation
- 2021: Second Clean Air Outlook report

2022: First compliance check of inventories against Emission reduction Commitments

- 2024: Second NEC implementation report
- 2025: Review of the NEC Directive



### Emission trend (2005 – 2019) – Main Pollutants / GPD, as % of 2005 levels





## Percentage emission reductions against 2019 levels required to meet 2020 and 2030 emission reduction commitments

			2020					2030		
Country Na	NH3	NMVOC	NOx	PM2.5	SO2	NH3	NMVOC	NOx	PM2.5	SO2
Austria	•	~	~	~	<ul> <li>Image: A second s</li></ul>	•	~	•	•	<ul> <li>Image: A set of the set of the</li></ul>
Belgium	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	<ul> <li>Image: A second s</li></ul>	~	•	~	<ul> <li>Image: A second s</li></ul>
Bulgaria	~	•	~	•	<ul> <li>Image: A second s</li></ul>	<ul> <li>Image: A second s</li></ul>	•	•	•	<ul> <li>Image: A second s</li></ul>
Croatia	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	<ul> <li>Image: A second s</li></ul>
Cyprus	<ul> <li>Image: A second s</li></ul>	~	•	~	•	<ul> <li>Image: A second s</li></ul>	•	•	•	•
Czechia	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Denmark	•	~	~	~	<ul> <li>Image: A second s</li></ul>	•	~	•	•	<ul> <li>Image: A second s</li></ul>
Estonia	•	~	~	~	<ul> <li>Image: A second s</li></ul>	•	~	~	~	<ul> <li>Image: A second s</li></ul>
EU28	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Finland	•	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	~	<ul> <li>Image: A second s</li></ul>
France	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	~	•	•	<ul> <li>Image: A second s</li></ul>
Germany	•	~	•	~	<ul> <li>Image: A second s</li></ul>	•	~	•	•	•
Greece	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	<ul> <li>Image: A second s</li></ul>	•	•	•	•
Hungary	•	~	~	•	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Ireland	•	•	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	<ul> <li>Image: A second s</li></ul>
Italy	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	<ul> <li>Image: A second s</li></ul>
Latvia	•	~	•	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	<ul> <li>Image: A second s</li></ul>
Lithuania	•	•	•	~	<ul> <li>Image: A second s</li></ul>	•	•	•	~	•
Luxembourg	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	~	<ul> <li>Image: A second s</li></ul>
Malta	<ul> <li>Image: A second s</li></ul>	•	~	~	<ul> <li>Image: A second s</li></ul>	<ul> <li>Image: A second s</li></ul>	•	•	•	<ul> <li>Image: A second s</li></ul>
Netherlands	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	~	•	~	<ul> <li>Image: A second s</li></ul>
Poland	<ul> <li>Image: A second s</li></ul>	•	•	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Portugal	<ul> <li>Image: A second s</li></ul>	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Romania	<ul> <li>Image: A second s</li></ul>	~	•	•	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Slovakia	•	~	~	~	<ul> <li>Image: A second s</li></ul>	•	~	•	~	•
Slovenia	~	~	~	~	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Spain	•	~	~	•	<ul> <li>Image: A second s</li></ul>	•	•	•	•	•
Sweden	•	~	•	~	~	•	~	•	~	~

Current emission levels below the emission reduction commitmentEmission reduction needed by less than 10 % from current levelsEmission reduction needed by 10 % to 30 % from current levelsEmission reduction needed by 30 % to 50 % from current levelsEmission reduction needed by more than 50 % from current levels



 $\checkmark$ 



# Interactions Air Pollution / Climate Change mitigation: many synergies...

More ambitious clean air and climate measures increase the net benefits to society

Air pollution control measures are less costly and more efficient when introduced in conjunction with climate change mitigation measures

Examples of synergetic measures: increase the share of wind of solar; improve the energy performance of buildings; promote clean transport; reduce methane emissions.



## **Interactions Air Pollution / Climate change mitigation: ... but also some trade-offs**

EEA, Renewable energy in Europe 2019 - recent growth and knock-on effects => additional consumption of renewable energy in EU in 2017 (compared to a hypothetical situation where it would have stayed at its 2005 level) led to:

- 6% decrease of SO<sub>2</sub>
- > 1% decrease of NOx
- 13% increase of PM<sub>2.5</sub>
- > 4% increase of NMVOC emissions
- => role of bioenergy

## EU clean air policy



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Source-specific

emission standards

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- MCP Directive
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# Source-specific legislation: the example of the Industrial Emissions Directive (IED)

### IED regulates around **52 000** of the largest industrial installations



Supports a **high level of protection** of human health and the environment as a whole



Release of **air pollutants** by industry (based on E-PRTR: Europe-wide register providing environmental data)

Of the EU's overall pollutant emissions (by mass), IED installations account for around: 20% of emissions to air, 20% of emissions to water and 40% of GHG emissions.

## Strong links with other EGD policies



## Industrial Emissions (E-PRTR Regulation)

- Establishes a database with data on the annual mass emissions of pollutants, covering mostly IED installations
- E-PRTR Regulation (EC) 166/2006, transposes the Kyiv Protocol
- Aims to **inform and involve the public** in environmental decision-making

"The E-PRTR is a crucial tool for the public and key stakeholders to access emission data and to find out about pollution in their area

- Covers 33 countries: EU27 + Iceland, Liechtenstein, Norway, Serbia, Switzerland and UK
- Annual reporting data available as of 2007 (first published in 2009)



https://industry.eea.europa.eu/



## IED/E-PRTR revision: key shortcomings

Based on the IED/E-PRTR evaluations and the EGD mandate, there are five high-level problems

## 1. Insufficiently effective legislation

- Excessive flexibilities
- Conditions not uniformly applied and enforced
- Imperfect information on emissions

## 2. Ineffective promotion of innovation

 Backwards looking, rigid and slow regulatory processes

## 4. Limited contribution to decarbonisation

 Design and implementation have not prioritised GHG emissions

## 5. Sectoral scope coverage is too limited

• Fails to capture a significant stream of emissions

3. Insufficient contribution to resource efficiency and less toxic production

- Lack of clarity of the relevant IED provisions
- Weak status of the relevant parts of BAT conclusions



## Policy options for revising IED & E-PRTR

Policy option 5 Widen the scope

polluting mineral extraction activities

To ensure that all significant sources of emissions of agro-industrial installations are addressed



### b. Watch Mechanism

Organises monitoring of emerging concerns related to emissions from agro-industrial installations and inclusion of relevant activities within the scope of the legislation

Including, for example:



Upstream oil and gas production



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## Ambient air quality directives

- Directives 2004/107/ECC and 2008/50/EC => control of ambient concentrations of air pollution in the EU
- Fitness check: SWD(2019) 427
- Revision: As part of the European Green Deal, the EU is revising its air quality standards, to align them more closely with the recommendations of the World Health Organization, also building on the lessons learnt from the 2019 evaluation ('fitness check'): => public consultation until 16 December: <u>Air quality - revision of EU rules (europa.eu)</u>
- Latest WHO Air Quality Guidelines: <u>New WHO Global Air Quality Guidelines</u> aim to save millions of lives from air pollution



## EU clean air policy works ... but ...

EU urban population exposed to air pollution above **EU standards from 2000 to 2018** 

EU urban population exposed to air pollution above EU standards and 2005 WHO guidelines in 2018 / 2019



Source(s): EEA Europe's air quality status 2021 & https://www.eea.europa.eu/data-and-maps/daviz/percentage-of-urban-population-in-13

## Percentage of the urban population in the EU-27 exposed to key air pollutants at levels above EU standards and 2021 WHO guidelines.



Source: https://www.eea.europa.eu/themes/air/health-impacts-of-air-pollution

European Commission

# More details on the Fitness Check of the AAQ Directives

In 2019, an evidence-based, retrospective evaluation offered a number of lessons learnt:

- Air quality remains a major health and environmental concern;
- Air quality standards have been instrumental, and **partially effective**, to reduce pollution;
- Current EU standards are less ambitious than scientific advice;
- Limit values have been more effective than other types of air quality standards;
- Legal enforcement action by European Commission, and civil society, works (with some caveats);
- Scope to further harmonise monitoring, modelling, and air quality plans;
- Not all reported data equally useful, **e-reporting** allows for further efficiency.



∡	Policy Context Problems		Drivers	Consequences	Interventions	
Ф	Current	Health outcome shortcomings	Exceedances above health guidelines and negative health impacts persist	Elevated concentration levels of air pollutants Environment & Economic Social	Policy Area 1	
	AAQDs	EU Standards are not fully aligned with scientific advice	Lack of flexibility to adapt to evolving science' and new recommendations	Health Effects Effects Effects Effects Effects those s to data tend to	'EU standards	
О U	Fitness Check	AQ Implementation shortcomings	Insufficient penalties and compensation linked to exceedances	of measures t lities and so be more nega be more negation uffering from p uffering from p uffering from p uffering from p g underutilise of society, est g days, and cro g day		
Logi	European Green Deal	AQ Governance shortcomings	Air quality plans and measures have often proven ineffective Local air quality is impacted by emission outside control	o address air polluti cial sustainability, tively affected by air n groups (children, pre-existing condition pre-existing condition of meet EU air qual ansport sector, energal ansport sector, energal imated at over EUR polosses, plus EUR polosses, plus EUR polosses, plus EUR s, eutrophication lir in 73% of Natura20 00.000 premature	Policy Area 2 'legislative frame'	
	Zero	Air quality plans do not always address all sources effectively	Some measures may seem disproportionate, ineffective	on on <b>empl</b> as groups pollution (ir pregnant w ns) are more <b>:U's interna</b> al, especially al, espector, ar al, espector, ar al, espector, ar al, espector, ar al, espector, ar al, espector, ar be al, on the espector al, pollution		
Ventio	Pollution / Climate Neutrality	AQ Monitoring shortcomings Flexibilities may sometimes impact the comparability of data	Monitoring rules offering flexibility are 'stretched' in instances Modelling ability has improved, allows for much more details	of lower economic st ncl. regional difference) susceptible to air pollu susceptible to air pollu susceptible to air pollu for clean air technolog for clean air technolog for clean air technolog for clean air technolog to clean air technolog for clean air technolog for clean air technolog for clean air technolog for clean air technolog the susceptible to air pollu ture are associated nispheric methane nispheric methane hotspots (& COVID)	Policy Area 3	
Iter	Recovery	AQ Information shortcomings	Concerns about health impacts have increased, not addressed	Synergies with other EU policies, and in particular with the goals of the (upcoming) EU Zero Pollution Action Plan	modelling and plans'	
	plan	about poor air quality and its impacts	Public information is not always available, and not harmonised	Administrative burden of air quality management, in particular as relates to air quality assessment regimes		



## **Policy developments (1)**

- -Not only attention for propulsion of vessels, also for effects and risks of cargo
- -Degassing (reception facilities, port tariffs, information exchange, ...):
  - CDNI
  - IMO
  - Green Ports
  - EMSA
  - NAIADES III
  - LIFE PLP?



## **Policy developments (2)**

-Inland Waterway Transport:

- NAIADES III, Council Conclusions (EGD, ZPAP)
- LIFE CLINSH, Horizon Prominent (www.clinsh.eu)
- Horizon Platina3 (www.platina3.eu)

-Maritime shipping:

- EMSA
- ECAs (SOx, NOx, PM, NMVOC/CH4)
- LIFE MEDECA
- Ship Source Pollution Directive review
- IMO



## **Policy developments (3)**

General topics:

- -Alternative fuels (H2, LNG, electric; NH3, methanol, ....) with infrastructure
- -OPS, preferably with Renewable Energy
- -Energy efficiency (EPBD, use of industrial waste heat/heating networks, ...)
- -Non Road Mobile Machinery
- -Non-combustion emissions (e.g. railway traffic)
- -Enforcement



### **Recommendations (1)**

-Make sure intermodality is integrated in or linked with:

- Sustainable Urban Mobility Plans (SUMPs)
- Local and regional Air Quality Plans and Noise Plans
- National Air Pollution Control Programmes
- National Energy and Climate Plans
- Also consider any Circular Economy and Biodiversity aspects
- -Involve stakeholders (administrations, industry, logistics, citizens, NGOs, ....)
- -Look for synergies, try to quantify benefits, respect DNSH, avoid silo thinking.



### **Recommendations (2)**

- -Do not reinvent the wheel: there is a lot of knowledge and experience available. Use networks, associations, databases of EU projects (LIFE, Horizon, REGIO (incl. Interreg), CEF, InvestEU, ...).
- -Cross-border cooperation will facilitate EU funding.
- -Even if your country is not eligible for a funding programme, you can try to liaise with EU projects, as generally they have a dissemination or replication obligation. EU agencies or DGs can facilitate this if necessary.



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## Thank you

