



# **Clean Air in Europe**

## **Challenges and support**

**1<sup>st</sup> EPPA Steering Committee Meeting**

Brussels, 25 June 2019

European Commission  
DG Environment, Clean Air

# Increased awareness of air quality urgencies

**BBC NEWS**

Home Video World UK Business Tech Science Magazine Entertainment & Arts Health More

**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 | 84



**M Pollutions** **Le Monde.fr**

PLANÈTE POLLUTIONS

**Nouveau pic de pollution à Paris**

Le Monde | 20.01.2016 à 08h26 • Mis à jour le 20.01.2016 à 10h29



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

**Städtische Zeitung**  
SZ.de Zeitung Magazin

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

5. Februar 2016, 18:48 Uhr Stickoxid-Emissionen

**Die Luft bleibt dreckig - mindestens bis 2030**

Feinstaub-Alarm  
Derzeit Umweltzone Stuttgart  
Busse/Bahnen nutzen

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

Analysen von Joachim Becker

**Wojna ze smogiem**

Wyborcza.biz / Wyborcza.biz / Ekologia / Odsyłać po ketchup

Dominika Wantuch 01.02.2016 01:00



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

**EL PAÍS**

ESPAÑA · Madrid

CONTAMINACIÓN

**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

ESTHER SÁNCHEZ | Madrid | 12 ENE 2016 - 21:27 CET

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

**the guardian**

home environment pollution climate change wildlife energy UK world all

**Pollution**

**London takes just one week to breach annual air pollution limits**

Parts of the capital have already breached EU hourly limits for nitrogen dioxide pollution which causes thousands of premature deaths each year

Adam Vaughan  
@adamvaughan\_uk  
Friday 8 January 2016 10:58 GMT

**LE SOIR**

Actu Sports Culture Économie Débats Blogs Images

13° min 9° -0.41% BEL 20 14/03 11:16

**La qualité de l'air belge est l'une des plus mauvaise d'Europe**

Belga  
Mis en ligne dimanche 31 janvier 2016, 23h25

Le problème principal est celui des particules fines. Les véhicules diesel sont pointés du doigt.



© Photo News

a Belgique est, juste derrière le Monténégro, le pays européen où la qualité

**DeMorgen**

Cult. Muziek Film, tv, expo Zine. Interview, foto, lifestyle

**Fijnstofconcentraties blijven hoog door gebrek aan wind**

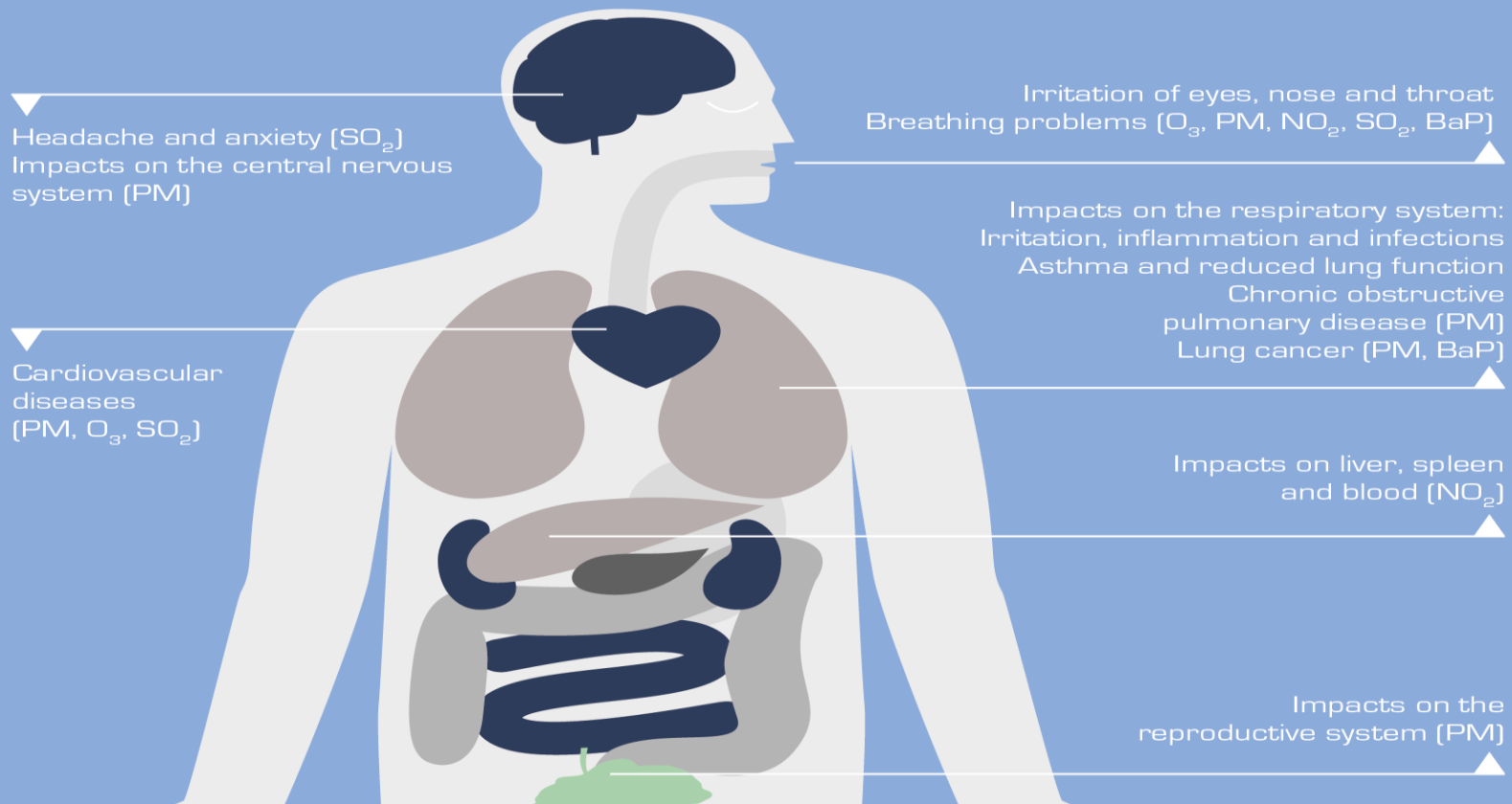
23-01-17, 14:19u - Bron: Belga



©Photo News

Ook maandag en de volgende dagen blijven de meteorologische omstandigheden van de aard dat de fijnstofconcentraties hoog

# Air pollution affects human health & well-being



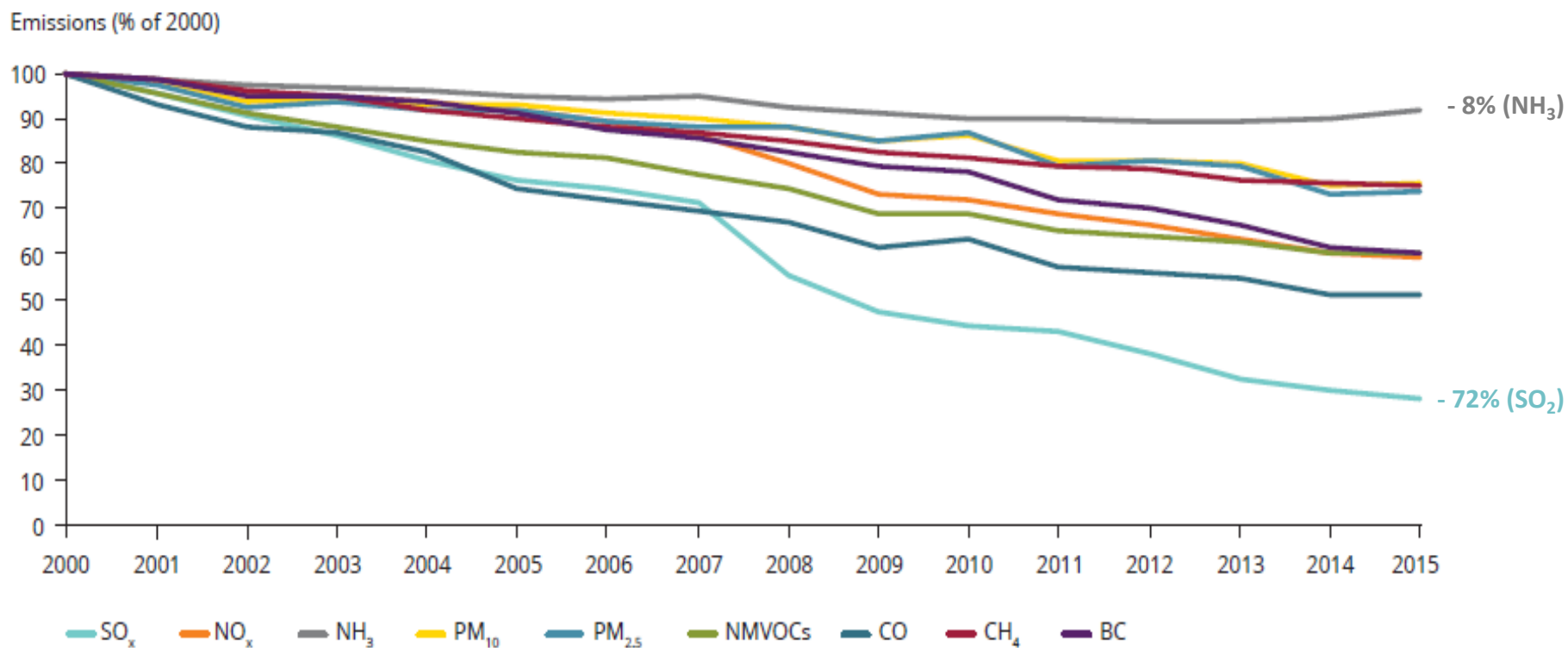
# Air pollution in Europe - Overview

Europe's **air quality is improving**; between 2000 and 2016 emissions of  $\text{NH}_3$  decreased by 9%, and of  $\text{SO}_2$  emission even by 76% ... **yet still** there are

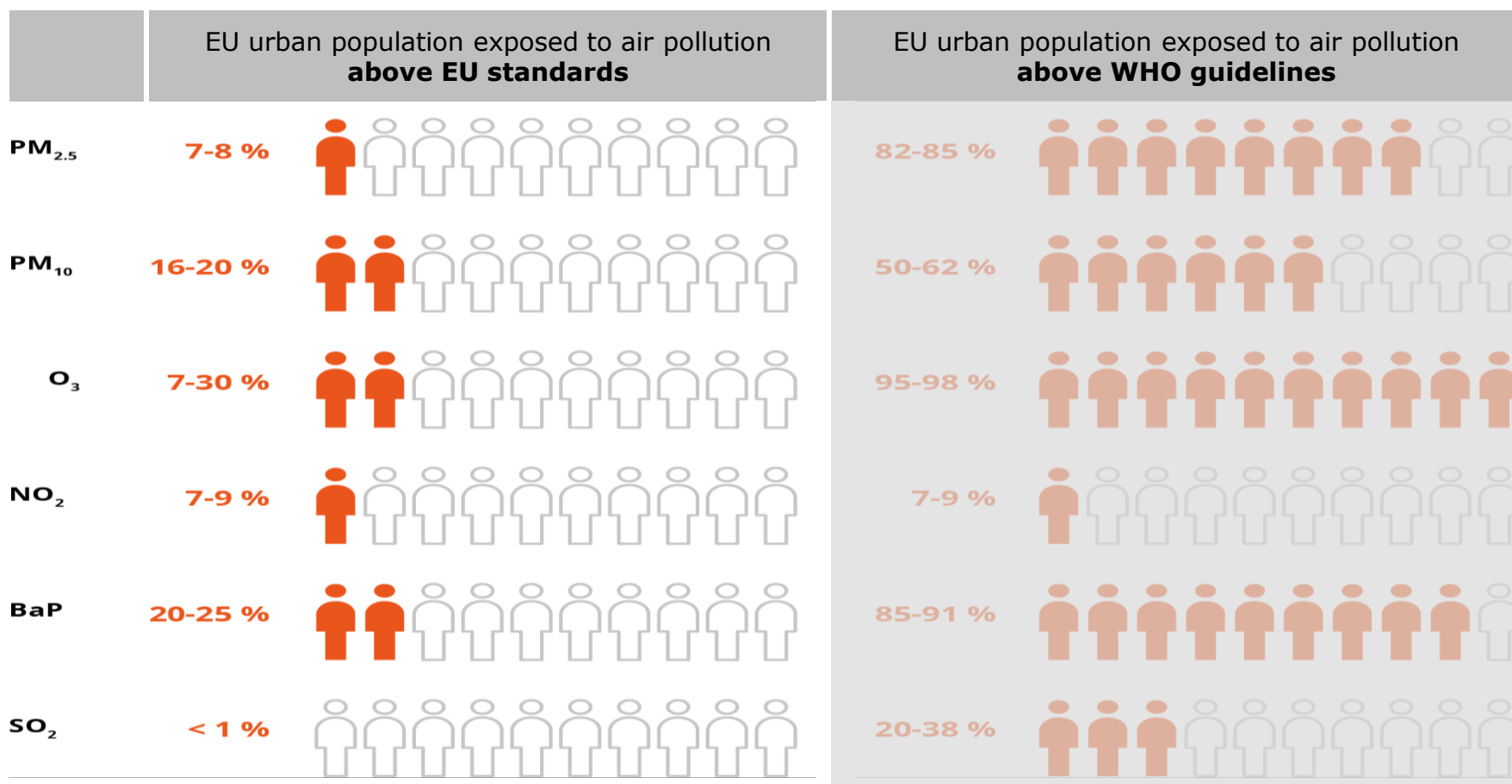
- Health impacts:**
- 391.000 premature deaths each year due to  $\text{PM}_{2.5}$
  - 69.000 premature deaths each year due to  $\text{NO}_2$
  - 16.400 premature deaths each year due to  $\text{O}_3$
  - 17% of all lung cancer deaths are due to air pollution
- Economic impacts:**
- More than € 24 billion per year in 'direct costs'
- Environmental impacts:**
- Eutrophication limits exceeded in 72% of ecosystem area in the EU, and in 78% of Natura2000 area

# National Emissions Ceilings Directive

Development in EU-28 emissions, 2000-2015 (as % of 2000 levels)

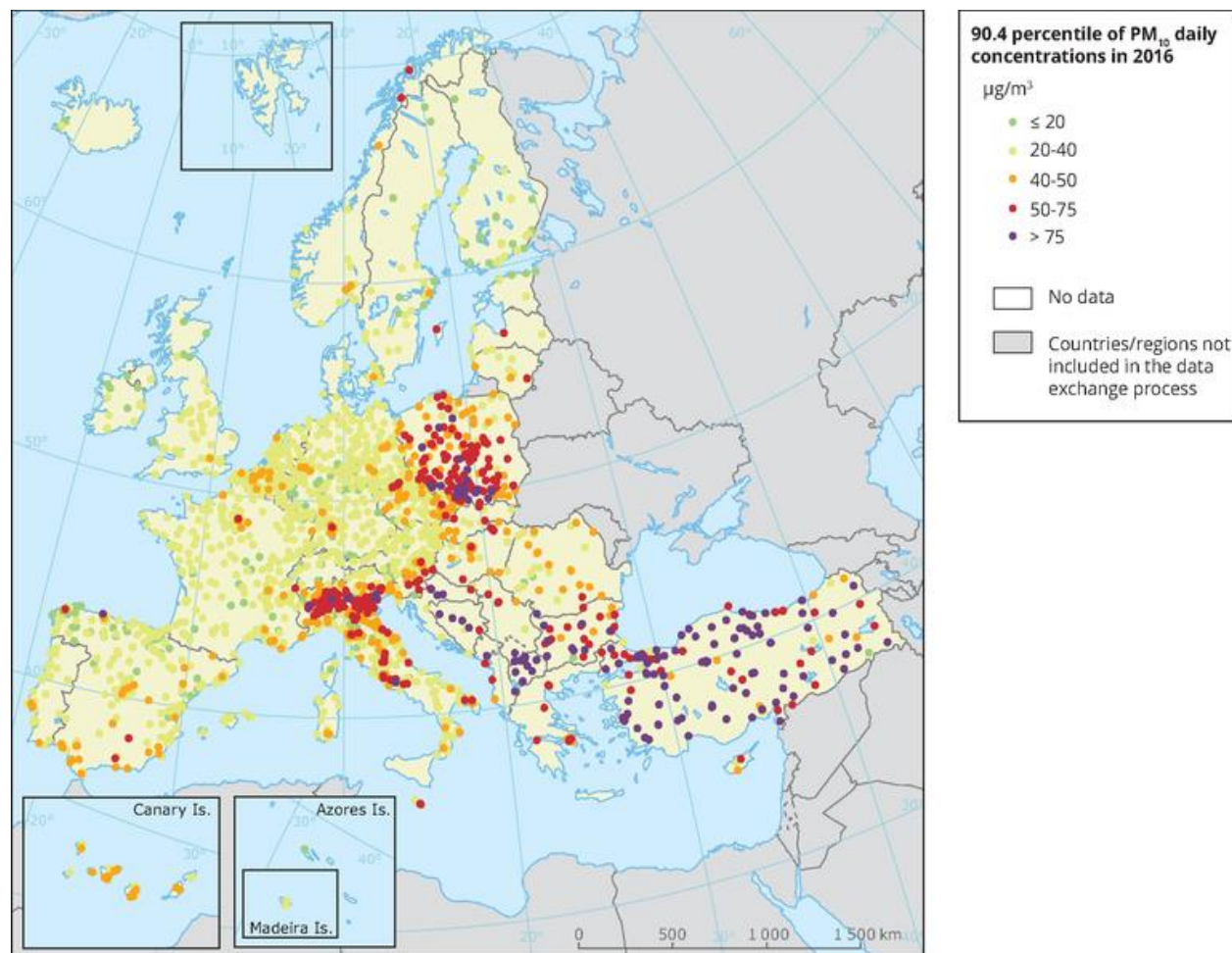


# Air pollution is a health challenge



## PM<sub>10</sub> (2016)

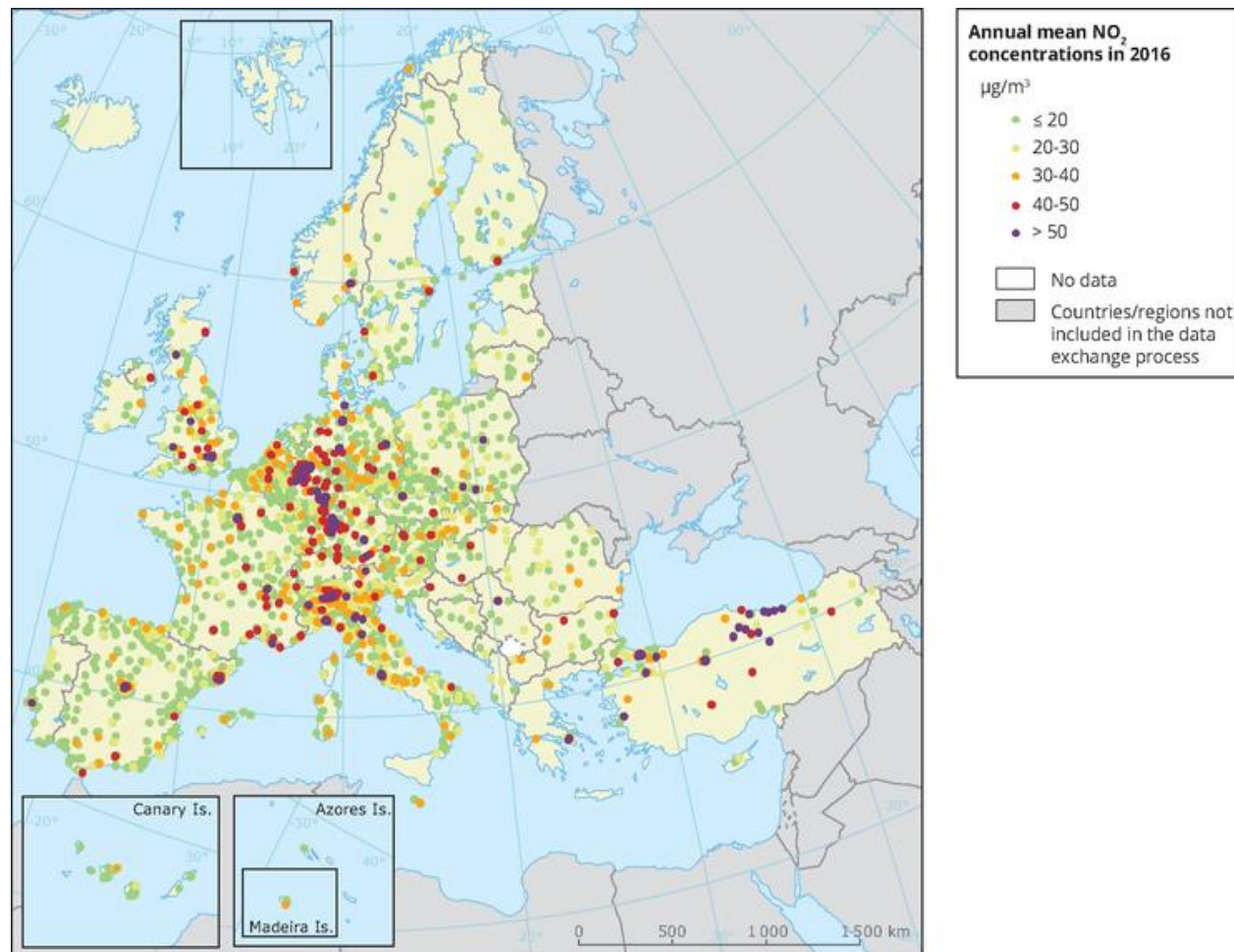
PM<sub>10</sub> exceedances  
are often linked to  
fuel combustion  
(i.e. energy,  
heating, transport)





# NO<sub>2</sub> (2016)

**NO<sub>2</sub> exceedances**  
are often linked to  
traffic, in more than  
130 cities in EU.





# EU Clean Air Policy Framework (1)



## Air Quality Directives

Maximum concentrations of air polluting substances

## CONCENTRATIONS

## EMISSIONS



## National Emission Ceilings Directive

National emission totals ( $\text{SO}_2$ ,  $\text{NO}_x$ , VOC,  $\text{PM}_{2.5}$ ,  $\text{NH}_3$ )

## Source-specific emission standards

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

# EU Clean Air Policy Framework (2)

## The **international** context

- **UN ECE Convention on Long-Range Transboundary Air Pollution (CLRTAP)** and its Protocols (e.g. Gothenburg Protocol for 2010 and 2020)

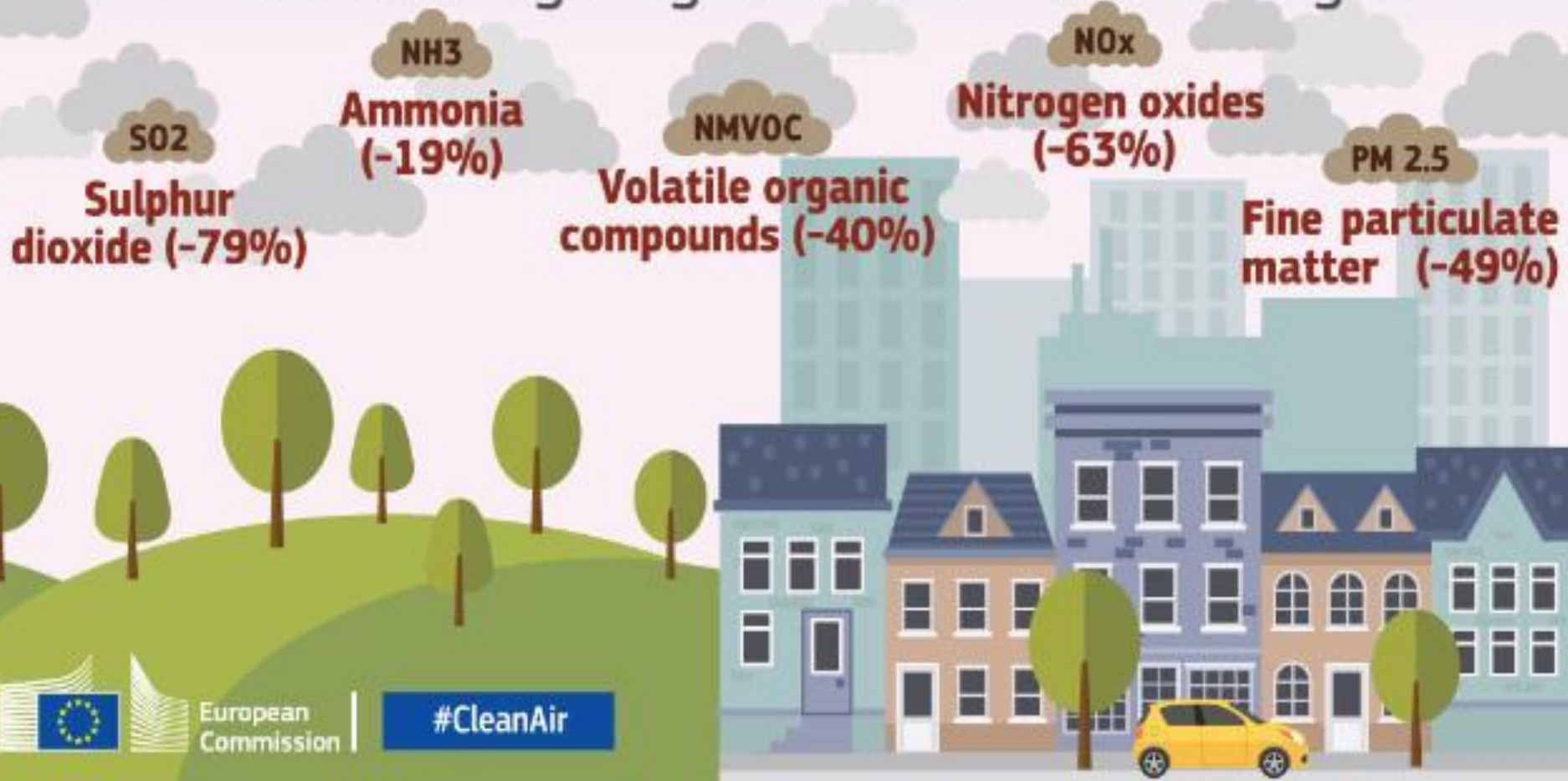
## The main **European Union** air policy instruments

- **Ambient Air Quality Directives (AAQD)**: Maximum concentrations to be attained across the EU (SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, benzene, lead, CO, O<sub>3</sub>, arsenic, cadmium, nickel, PM<sub>2.5</sub> and BaP) (fitness check; SHM 15 January 2019)
- **National Emission Ceilings Directive (NECD)**: National emission inventories and caps to limit transboundary pollution (SO<sub>2</sub>, NO<sub>x</sub>, NMVOC, PM<sub>2.5</sub> and NH<sub>3</sub>)
- **Source-specific performance standards**: Euro and fuel standards, Industrial Emissions Directive, Medium Combustion Plants Directive, Ecodesign standards, etc.

## The main **Member States** air policy instruments

- Air Quality Plans & Programmes (AAQD), National Air Pollution Control Programmes (by April 2019, NECD)
- National Emission Inventories, Projections, and Measures (NECD)
- Fiscal measures, urban mobility measure, ...

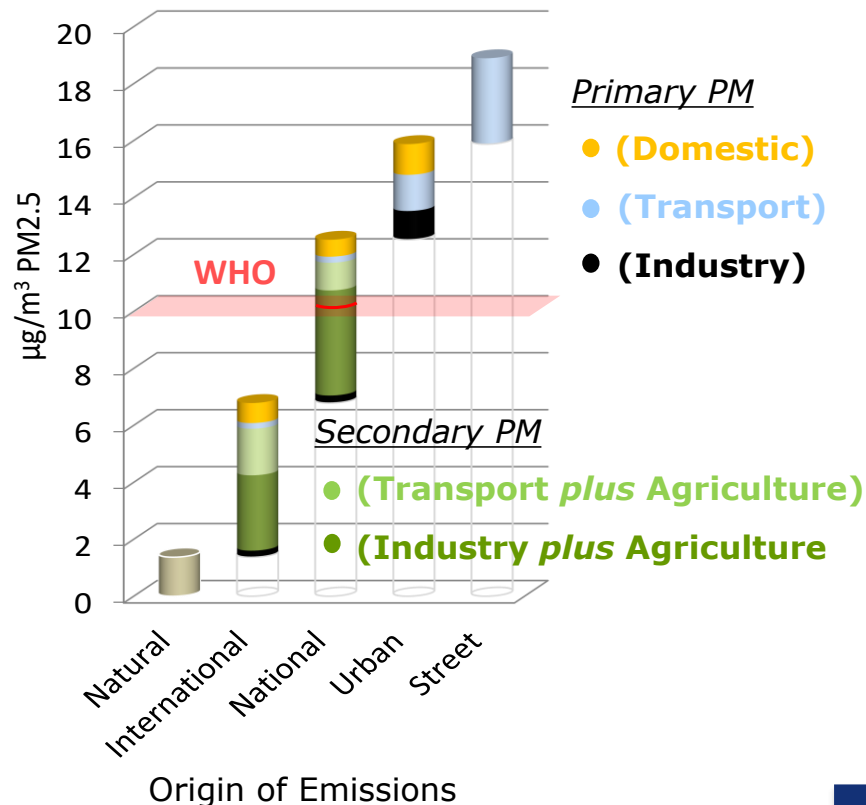
# Pollutants covered by EU National Emission Ceilings legislation and 2030 targets



# Who and what causes air pollution?

## Particulate Matter (PM<sub>2.5</sub>)

e.g. Germany, 2009 -



## Sulphur dioxide (SO<sub>2</sub>)

- Energy sector, Transport, ...

## Nitrogen oxides (NO<sub>x</sub>)

- Transport, Energy, Industry, ...

## Ammonia (NH<sub>3</sub>)

- Agriculture (Livestock & Fertilizers), ...

## Volatile Organic Compounds (VOC)

- Solvents, Paints, Transport, ...

## Methane (CH<sub>4</sub>)

- Agriculture, Waste, Energy, ...

## Source-specific performance standards

- Ecodesign and Energy Label standards** address emissions from smaller heating installations up to 1 MW and reduce electricity consumption in households,
- Medium Combustion Plants Directive** addresses installations at 1-50 MW, setting fuel-specific emission limit values (focus on SO<sub>2</sub>, NO<sub>x</sub> and PM), ...
- Industrial Emissions Directive**, Industrial Emissions Performance Standards, BATs and BREFs, ...
- Road transport** including type approval standards, ensuring real driving emission Euro 6 standards (with conformity factor of 2.1 from 2019, '1.5' from 2021), ...
- Non-Road Mobile Machinery** (NRMM Directive) type approval standards
- Fuel quality standards** (e.g. sulphur in liquid fuels) to reduce shipping emissions ...

# Improving air quality in cities

The Ambient Air Quality Directive requires Member States / Regions / Cities to have air quality plans to **keep exceedance as short as possible**

- General information and details on measuring stations
- Nature and assessment of pollution (incl. trends)
- Techniques used for air quality assessments
- Origin of pollution (incl. source apportionment)
- Details of measures and estimate of improvement of air quality planned, and the expected time required.





# Improving air quality in cities

Some **good practices** for cleaner air in cities (there are many more):



Reliable, affordable and clean **public transport** such as electric buses and trams and new Euro VI or retrofitted buses



**Traffic restrictions** such as low-emission zones, reduced speed limits and congestion charges



Extensive and safe **cycling networks**, abundant bike-parking facilities with easy access to public transport



**City or district heating**, using heat from existing industry or renewable energy sources



More **energy-efficient buildings**



Promoting substitution of old, dirty **stoves and oilers** with clean models, and banning **dirty fuels** for household heating/cooking

## Improving air quality

Synergies with **energy** policies ... e.g. by promoting of renewable energy, and by reducing use of coal by replacing it with cleaner fuels;

Synergies with **agriculture** policies ... e.g. by focusing on better livestock and manure management practices, and using low-emission fertilisers;

Synergies with **transport** policies ... e.g. by reducing emissions from vehicles, by setting fuel quality standards, by encouraging sustainable mobility options;

Synergies with **urban** policies ... e.g. by investing in cleaner transport options, and traffic access conditions that encourage use of low emission vehicles.

## EU air quality funding opportunities

- **Cohesion policy** (i.e. Regional Development Fund + Cohesion Fund)
  - specific allocations for air quality; € 1.8 billion is available for 2014-2020
  - in addition, further indirect contributions can benefit air quality, e.g. from low-carbon economy (€ 45 billion), environmental protection and resource efficiency (€ 63 billion) and network infrastructure (€ 58 billion) budgets
- **Connecting Europe Facility** offers a further € 29 billion for indirect benefits, e.g. IWT, railways, intermodality, clean fuel infrastructure
- **LIFE funding** offers a further € 300 million, including for LIFE Integrated Projects (e.g. for air quality plans), LIFE pilot/demonstration projects or LIFE preparatory projects (e.g. air quality sensors)
- **EFSI funding** offers a total of € 500 billion, of which 30% have a possible air quality link (e.g. investing in energy and transport, or social infrastructure); in addition **Horizon 2020** indirectly benefits emissions reduction and air quality.

# EU air quality compliance gaps

**Compliance gap** persists – see COM (2018)330 for details.

Regarding **NO<sub>2</sub>**: 17 Member States with exceedances (2017); 13 Member States are facing infringement actions.

*>>> Decision to refer Germany, France, United Kingdom to the Court of Justice*

Regarding **PM<sub>10</sub>**: 15 Member States with exceedances (2017); 15 Member States are facing infringement actions; two cases have been decided by the Court.

*>>> Decision to also refer Italy, Hungary, Romania to the Court of Justice*

Regarding **SO<sub>2</sub>**: 2 Member States with exceedances; 1 infringement ongoing.

# EU air quality implementation support

## Environmental Implementation Review

- Country specific analysis, and targeted EIR dialogues
- Additional tools and funds to improve Peer-2-Peer exchange



## Clean Air Dialogues & Clean Air Forum

- So far, dialogues with 7 Member States: IE, LU, HU, SK, ES, CZ, IT
- First Forum in Nov 2017 (measures in cities, by agriculture, 'clean tech')
- Second Forum in Nov 2019

## Bringing together Member States, regions and cities

- EU Urban Agenda to facilitate cooperation
- Urban Innovative Actions



## Fitness Check – Ambient Air Quality Directives

- Purpose:** Evidence-based analysis of whether EU actions are fit for purpose, and identify excessive regulatory burdens, overlaps, gaps, inconsistencies and/or obsolete measures
- Scope:** EU Ambient Air Quality Directives, i.e. 2008/50/EC and 2004/107/EC
- Focus:** A fitness checks is a retrospective exercise: period 2008 to 2018
- Criteria:** Relevance, Coherence, Effectiveness, Efficiency, EU Value Added
- Goal:** To inform further reflections on whether the EU Ambient Air Quality Directives provide the appropriate legislative framework - and identify learning points to guide future action



# Tools to improve implementation: Dialogue and exchanges

## The Clean Air Forum

- First CAF in November 2017, Paris
- Second CAF in November 2019, Bratislava
- High-level event for exchanges and discussion
- Focus areas 2019: air quality and energy; air quality and agriculture; and clean air funding mechanisms

[https://ec.europa.eu/info/events/eu-clean-air-forum-2019-nov-28\\_en](https://ec.europa.eu/info/events/eu-clean-air-forum-2019-nov-28_en)



**CLEAN AIR FORUM**  
28 and 29 November 2019  
Bratislava, Slovakia

# Tools to improve implementation: Dialogue and exchanges

## Clean Air Dialogues

- To help Member States mobilise all sectors and levels of governance (+ NGOs), promoting synergies and encouraging broad commitments for support
- To date, seven Dialogues completed: IE, LU, HU, SK, ES, CZ and IT
- Always on the initiative and invitation by the Member State

[http://ec.europa.eu/environment/air/clean\\_air/dialogue.htm](http://ec.europa.eu/environment/air/clean_air/dialogue.htm)

# Tools to improve implementation: Dialogue and exchanges

## Peer-to-peer workshops and study visits (EIR/TAIEX)

- Exchanges between Member State experts
- Expert Missions, Study Visits, Workshops

[http://ec.europa.eu/environment/eir/p2p/index\\_en.htm](http://ec.europa.eu/environment/eir/p2p/index_en.htm)



## Funding: IPA 2014-2020

ISO3	EURO (M)	ENV/ CLIMA	ENER	TRANS	AGRI	CBC (i.a.)
ALB	649.4	68.0 (AQ)		56.0	92.0	IT, EL
BIH	552.1	114.2 (AQ)		41.7	(99.4)	HR
KOS	645.5		100.0		79.7	
MNE	270.5	37.5		32.1	52.4	HR, IT
MKD	664.2	112.9		112.9	106.3	BG, EL
SRB	1,500	160.0 (AQ)	125.0	175.0	210.0	BG, HR, HU, RO
TUR	4,454	644.6	93.5	442.8	912.2	BG

## Funding: IPA CBC

### Air Quality related topics in CBCs 2014-2020

- Sustainable tourism
- Environment-protecting the environment and promoting climate change adaptation and mitigation, risk prevention and management
- Environmental protection, risk management and the shift towards the low carbon strategy
- Environment-sustainable energy and energy efficiency
- Promotion of the environment, sustainable transport and public infrastructure
- Sustainable mobility and accessibility

All these can be linked with AQ Plans (AAQD), NAPCPs (NECD); some also with noise plans, SUMP, NECPs,

# **Funding: transnational programmes**

## **Air Quality related topics in EUSAIR (Adriatic-Ionian) 2014-2020**



- <https://www.adrioninterreg.eu/index.php/projects/list-of-approved-projects/>
- Projects include sustainable transport, last mile delivery, multimodality, waterway transport; all can be easily linked with AQPs and NAPCPs,



# **Funding: transnational programmes**

## **Air Quality related topics in EUSDR**

### **(Danube Region) 2014-2020**



- <http://www.interreg-danube.eu/approved-projects>
- Projects include smart buildings, urban transport, promoting walking and cycling; all can be easily linked with AQPs and NAPCPs,

## Funding and best practice (1)

### LIFE Integrated Projects for air

- To help implement, evaluate and improve Air Quality Plans or a National Air Pollution Control Programme, while leveraging other funds (generally Structural Funds)
- To date, five IPs for air have been awarded: PL, IT, HU, BG, SK
- Around €16 M, €10 M from LIFE (60%); leveraged up to €1 bn
- Includes i.a. high resolution monitoring and modelling, ecomanagers, coal transition, biomass, transport, agriculture, awareness and governance
- Dissemination component: HU, SK -> UA; Western Balkan? Link with TAIEX?
- Links i.a. <https://powietrze.malopolska.pl/en/life-project/> ;  
<http://www.lifeprepare.eu/?lang=en> ; [http://europa.eu/rapid/press-release\\_MEMO-19-1190\\_en.htm](http://europa.eu/rapid/press-release_MEMO-19-1190_en.htm)

## **Funding and best practice (2)**

### **LIFE Traditional Projects for air: Environment and Resource Efficiency (1)**

- Pilot, demonstration or best practice (not R&D)
- Generally around €2-4 M, up to 55% from EU
- Interesting examples, inspiration, best practice, contacts, conferences
- Conditional participation for third countries

## Funding and best practice (3)

### LIFE Traditional Projects for air: Environment and Resource Efficiency (2)

- Priority topics:
  - Air quality improvement and emission reduction of particulate matter (PM) in areas with high use of solid fuel like biomass, coal, and peat for domestic heating;
  - Sustainable road transport mobility aiming at emissions of air pollutants, the reduction of which is essential for helping meet air quality standards;
  - Sustainable aviation and Non Road Mobile Machinery (NRMM) mobility aiming at reducing emissions, notably from existing NRMM ;
  - Reduction of ammonia, methane and PM emissions from agriculture in support of the implementation of the upgraded UNECE Code of Good Practice for reducing emissions from agriculture;
  - Application of pollution prevention and abatement techniques referred to in the Industrial Emissions Directive as emerging techniques;
  - Implementation of integrated urban policies and regulatory approaches for sustainable planning and design and/or for supporting innovative technical solutions,

## Funding and best practice (4)

### LIFE Traditional Projects for air: Environmental Governance and Information (GIE) (1)

- Generally around €1,5-3 M, up to 55% from EU
- Interesting examples, inspiration, best practice, contacts, conferences
- Conditional participation for third countries
- Links: <https://ec.europa.eu/easme/en/life> ;

## Funding and best practice (5)

### LIFE Traditional Projects for air: GIE (2)

- Priority topics:
  - Raising awareness on environmental problems, EU environmental policies, tools and/or legislation among the relevant target audiences, e.g. air quality in urban areas and its health effects;
  - Improving the capacity and quality of public administration in relation to plans, programmes, analyses, reviews and assessments and/or to permits, derogations, and other decisions on specific activities, e.g. air quality plans and national air pollution control programmes, including measuring and modelling, as well as the establishment and/or improvement of emission inventories;
  - Supporting environmental compliance assurance by developing and implementing or implementing existing cross-border, national or regional risk-based strategies to promote, check and enforce compliance, e.g. regarding point and mobile sources of air pollution;
  - Development and use of innovative tools and actions to promote, monitor and enforce compliance;
  - Improving the handling by public authorities of environmental complaints and submissions from the public;
  - Promoting access to justice in environmental matters and/or mediation, e.g. for protecting people's health and well-being via the requirements of EU air, water and waste instruments



## Funding and best practice (6)

### Some examples of projects

- <https://www.clean-heat.eu/en/home.html>
- <http://www.cleanair-europe.org/en/downloads/>
- <http://atmosys.eu/faces/index.jsp>
- <http://www.operatool.eu/html/eng/index.html>
  
- <https://publications.europa.eu/en/publication-detail/-/publication/ef2717d3-e7b3-41cf-ab3b-d0b18c41e961> ;  
<http://ec.europa.eu/environment/life/project/Projects/index.cfm>

## Funding and best practice (7)

### LIFE Preparatory Projects and EP Pilot Projects

- Specific calls
- Around €1-2 M
- Interesting examples, inspiration, best practice, contacts, conferences
- Examples LIFE PP:
  - VEG-GAP: <http://lifeveggap.eu/>
  - VAQUUMS: <https://vaquums.eu/>
- Examples EPPP:
  - Waste combustion for domestic heating in HU and RO
  - The use of sensors in the urban environment

## Funding and best practice (8)

### Urban Innovative Action

- <https://www.uia-initiative.eu/en>
- The third Call for Proposals ran from 15/12/17 until 30/03/18. It was dedicated to four topics: Air quality, Adaptation to Climate change, Housing, and Jobs and skills in the local economy,
- Air quality again to be included in the fifth Call for Proposals:  
<https://www.uia-initiative.eu/en/call-proposals/5th-call-proposals>
- CLAIRO - Clear AIR and Climate Adaptation in Ostrava and other cities:  
<https://www.uia-initiative.eu/en/uia-cities/ostrava>
- HOPE - Healthy Outdoor Premises for Everyone  
<https://www.uia-initiative.eu/en/uia-cities/helsinki>

## Some concluding reflections

COM(2018)330 emphasizes urgent need to improve air quality through **full implementation** of air quality standards – for now, compliance gaps remain.

With the on-going Fitness Check we are seeking to understand what works well, and what could work better: **whether the Directives are fit for purpose**.

Reducing air pollution effectively requires **close cooperation** between different societal actors and across governance levels (EU, national, regional, local).

The European Commission will continue to **support Member States and neighbouring countries** – such as via the Clean Air Dialogues, or via funding opportunities, best practice and advice options.

## Feedback/questions

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**Thank you!**