



SGH

Ferdinando Cirigliano
Gosia Glazek

Environmental pollution in CEE

Introduction

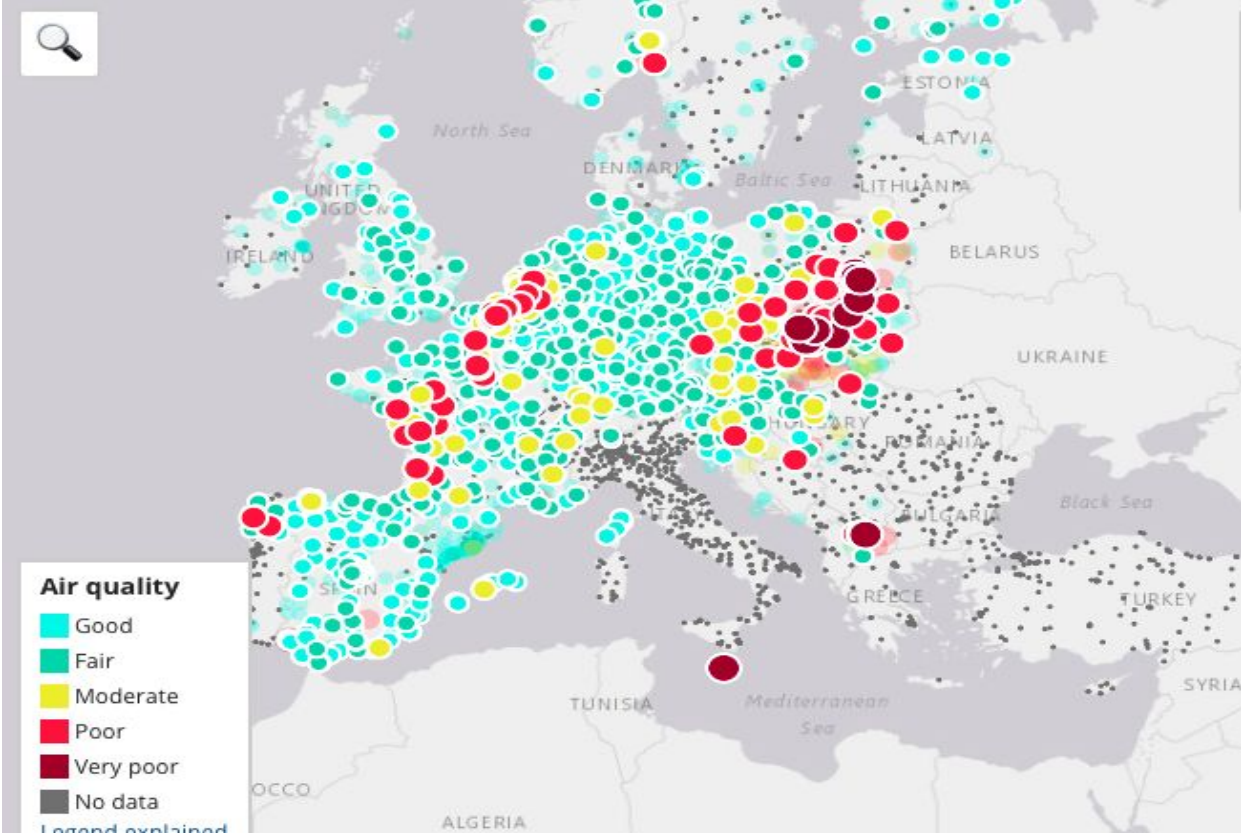
Pollution is causing damage to human health and ecosystems. Large parts of the population do not live in a healthy environment, according to current standards. To get on to a sustainable path, Europe will have to be ambitious and go beyond current legislation.

The European Environment Agency states that around 90% of the population in Europe is exposed to pollutants which are considered to be harmful, most of them are found in the air!

Index

- **Introduction**
- **Regulations**
- **Economic valuation of environmental damage**
- **Challenges**
- **References**

European Air Quality Index





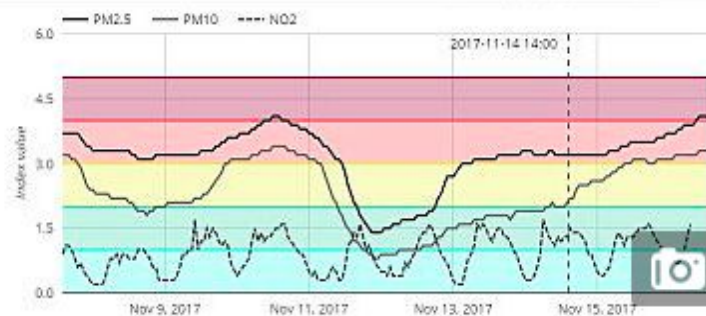
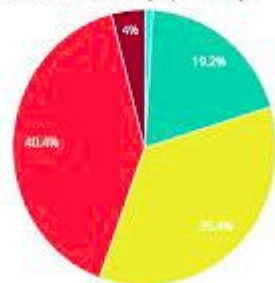
Warszawa
Air Quality Index **Poor (due to PM2.5)**
Date: 2017-11-14 14:00 UTC+0

Warszawa-Komunikacyjna (PL0140A)
Country: Poland
Classification: Traffic
Area: Urban

Pollutant	Concentration (µg/m ³)
PM2.5	29.6
PM10	36.4
NO2	55.1

[Country fact sheet Poland](#)

Accumulated number of days - past 100 days



Air quality in Poland

Warsaw, Poland's capital, has experienced 'poor' quality of air. According to a recent report, road transport, agriculture, power plants, industry and households are the biggest emitters of air pollutants in Europe.

Some of the areas of Europe with the lowest air quality include parts of Eastern Europe, such as Poland. Air pollution remains the single largest environmental cause of premature death in urban Europe, with PM2.5 particles alone linked to 420,000 early deaths in 41 European countries in 2014.

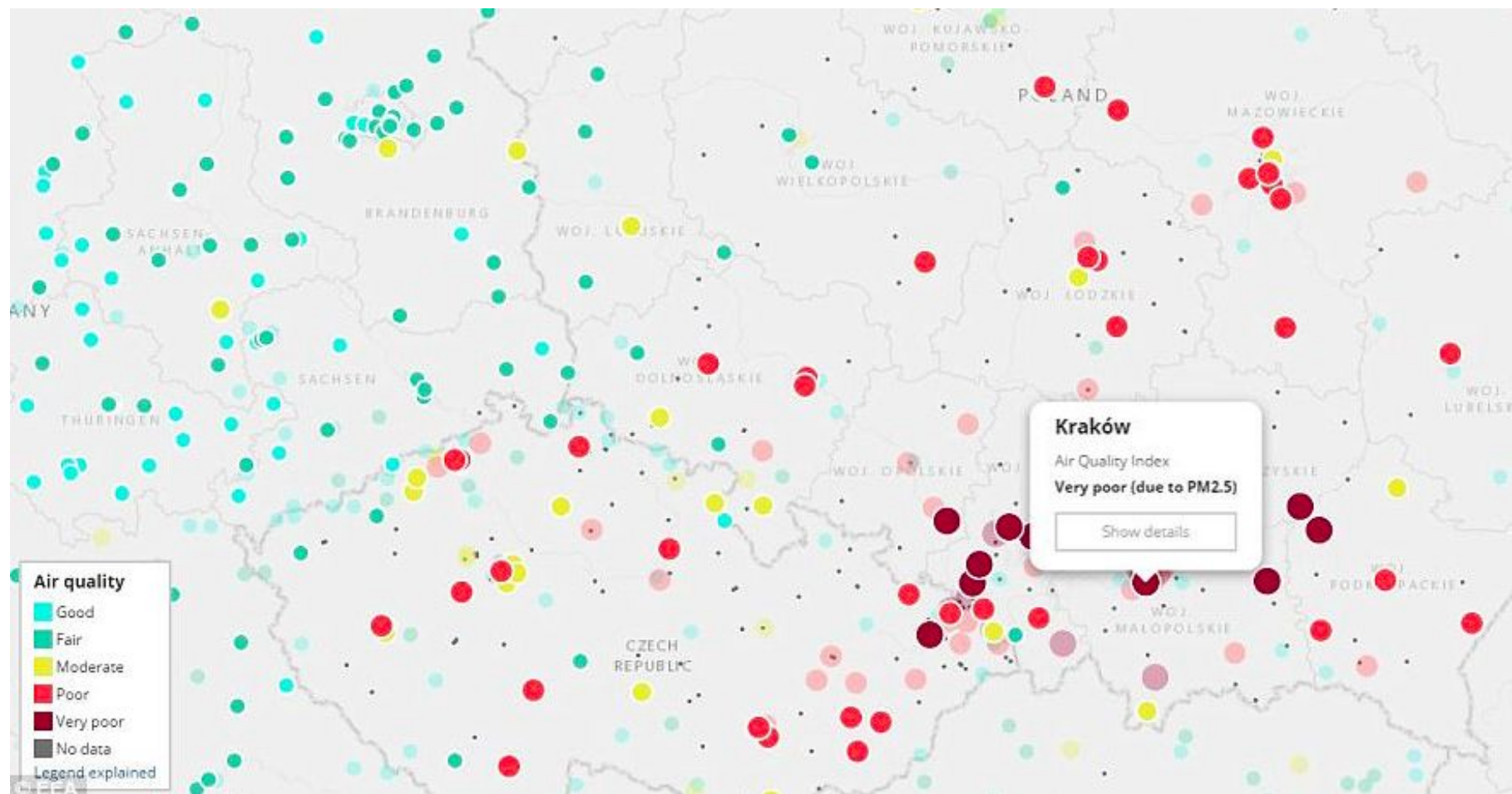
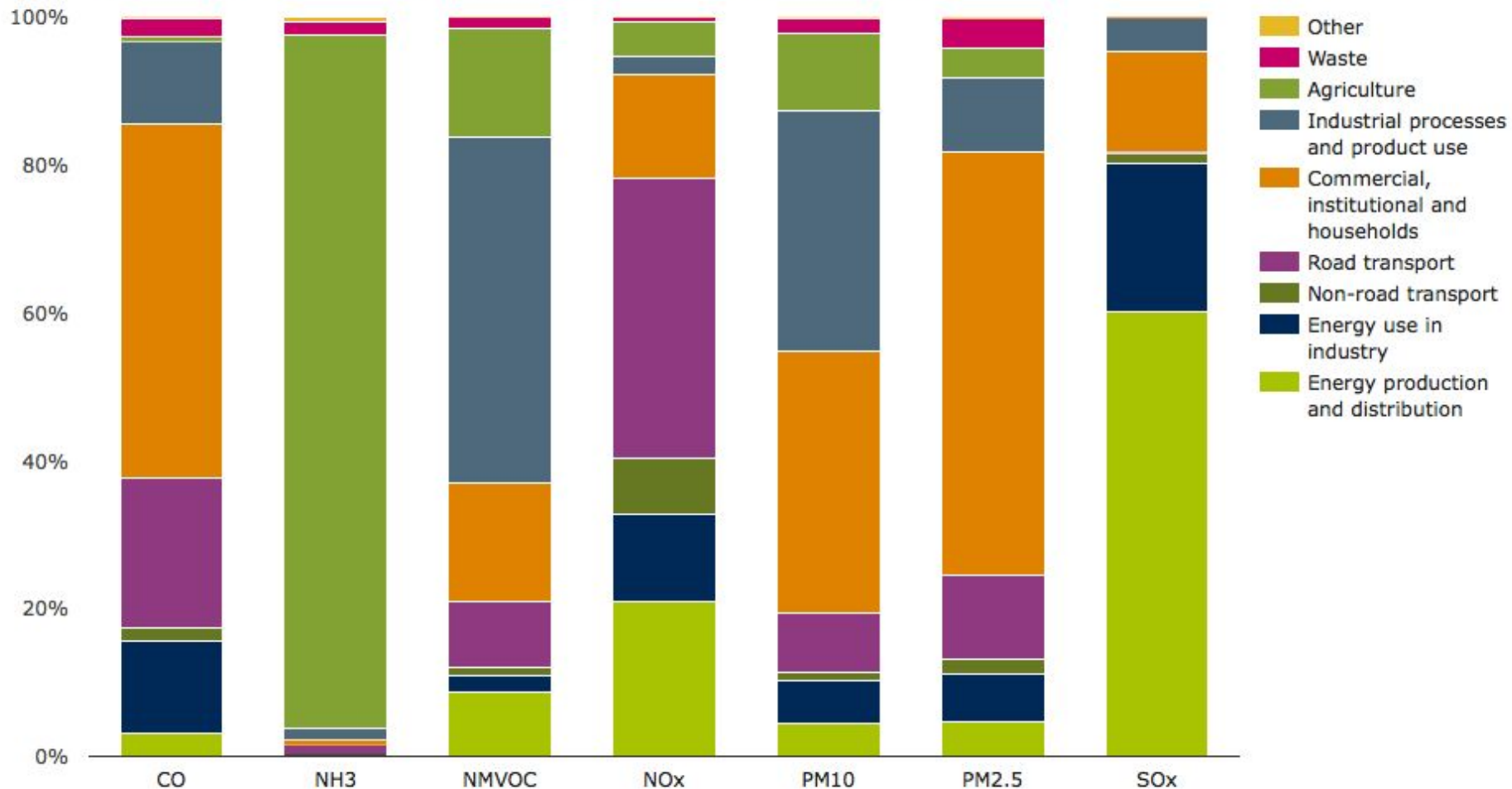


Chart — Emissions of the main air pollutants by sector group in the EEA-33



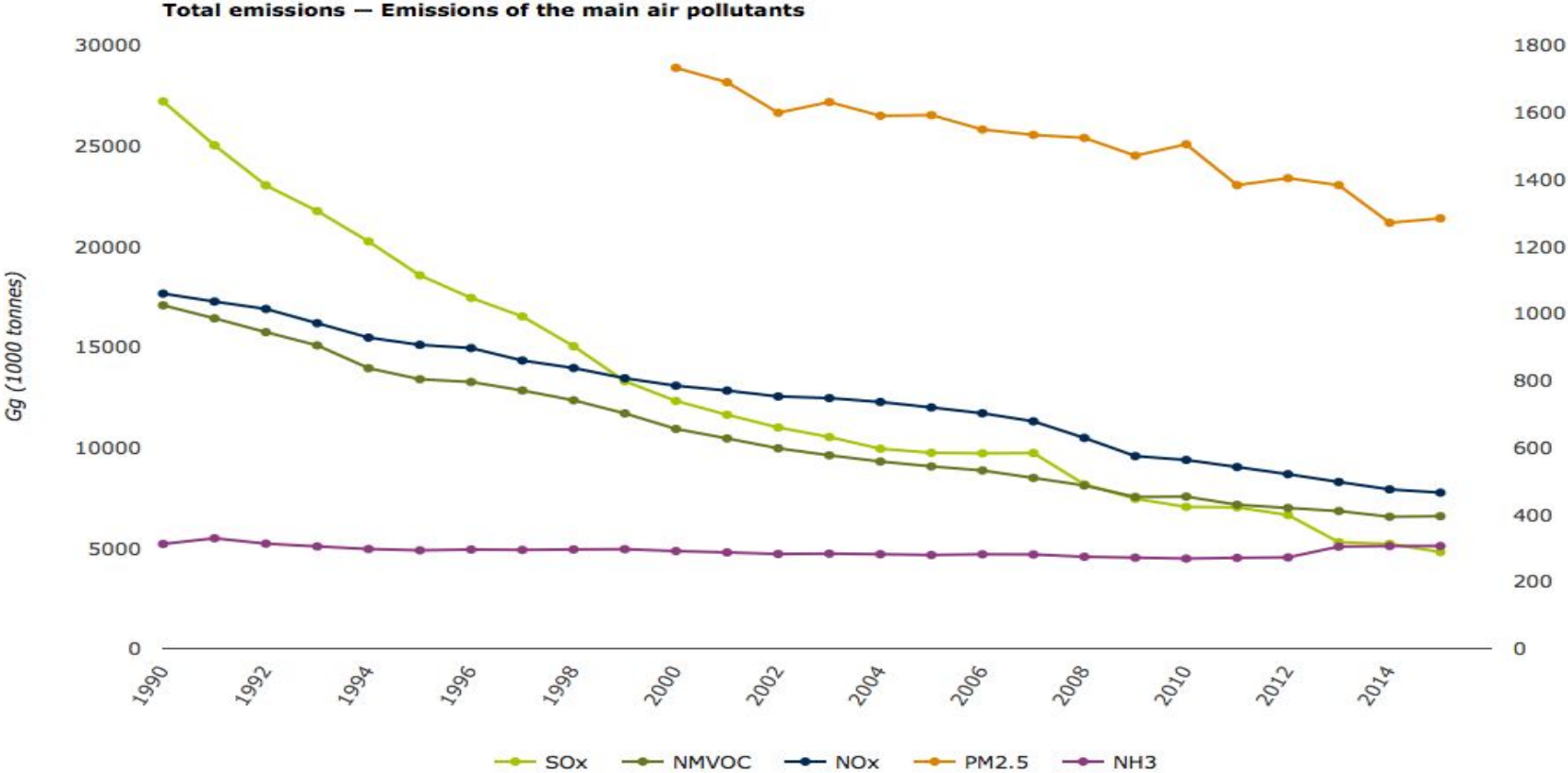
Regulations

Within the European Union, the Seventh Environment Action Program (7EAP) aims to achieve levels of air quality that do not result in an acceptable impact on, and risks to, human health and the environment. The EU acts at many levels through pollution, through national, regional authorities and non-government organizations and through research. EU policies aim at reducing exposure to air pollution and emissions.

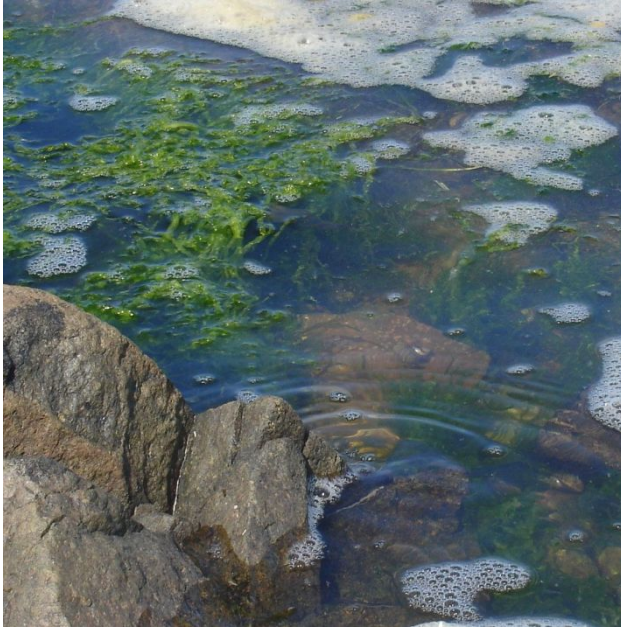
EEA member countries	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria													
Belgium													
Bulgaria													
Croatia													
Cyprus													
Czech Republic													
Denmark													
Estonia													
Finland										*			
France													
Germany													
Greece													
Hungary													
Ireland													
Italy													
Latvia													
Lithuania													
Luxembourg													
Malta													
Netherlands												*	
Poland													
Portugal											*		
Romania												*	
Slovakia													
Slovenia													
Spain													
Sweden													
United Kingdom													
Iceland													
Liechtenstein													
Norway													
Switzerland													
Turkey													

	No policy
	National adaptation strategy (NAS) in place
	National adaptation strategy (NAS) and national and/or sectoral adaptation plans (NAP/SAP) in place
*	National Adaptation Strategy (NAS) updated

What progress is being made to reduce emissions from the air pollutants across Europe?



Economic valuation of environmental damage



Though controversial, there are some ways of assessing environmental damage. A famous approach is the **resource equivalency analysis (REA)**. Its fundamental philosophy is trying to **equate** the size or value of the **environmental damage** to the size or value of the **environmental benefits** generated through remediation projects.

Here are some methods REA include...

Resource-to-resource method

This method **refers to remediation which tries to match the actual lost resources with new ones**. Therefore it is important to discern which organisms are lost to a particular impact and which are gained by a particular remediation.



Service-to-service method



This method focuses on “**natural resource services**”- functions performed by a natural resource for the benefit of the ecosystem or the public. Hence, **physical size of the remediation could be more or less than the physical size of damage.**

For example: if one parcel of wetlands is lost due to a development project, then adequate substitute wetlands that offer society equal services to the lost wetland’s services must be sought.

Value-to-cost method

This approach can be applied to situations that are not well-suited for the previous ones. The value-to-cost method involves **estimating the value of environmental damage and selecting remediation options that have a monetary equivalent to this value.**



Environmental pollution challenges

- population health effects,
- exposome and epigenetic effects;
- environmental disease prevention strategies;
- policy implications.

Population health effects

Lungs



Suppresses normal lung growth in children. Accelerates lung function decline or an ageing lung in adults and a known cause of lung cancer. Also linked to onset of asthma.

Pancreas



Linked to onset of type 2 diabetes in adults.

Heart

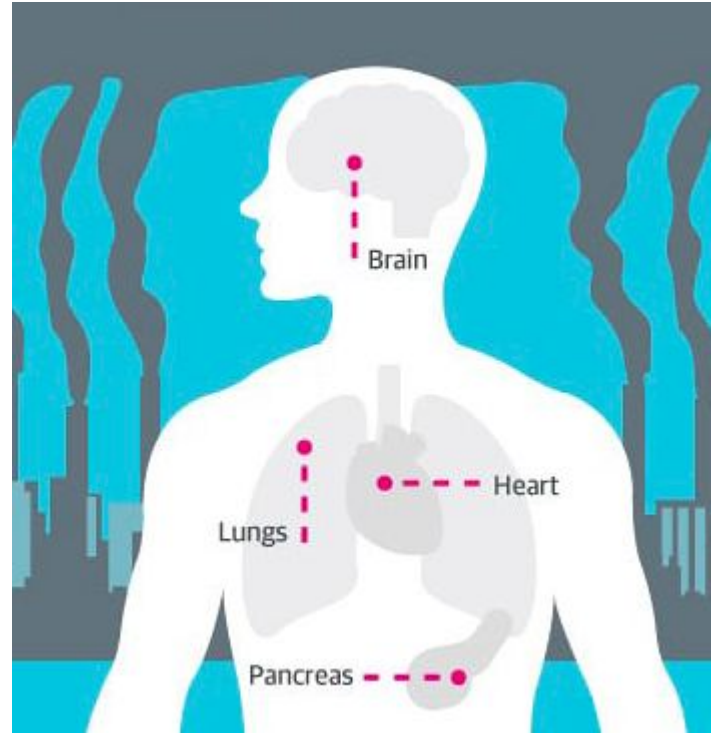


Linked to the development of cardiovascular diseases, such as a stroke and heart disease, including atherosclerosis (furring of the arteries). Can also exacerbate existing conditions.

Brain



Exposure of pregnant women found to affect fetal brain growth. Also impacts mental and physical development in children and cognition in adults.



Exposome and epigenetic effects

Pollution from traffic and industry is leading to the **premature death of more than three million people a year**. Globally, that's **more than malaria and HIV/ AIDS combined!**

Pollutants including nitrogen dioxide and particulate matter from road traffic and sulphur dioxide, from the burning of fossil fuels, have been linked to suppressed lung growth in children, asthma, heart disease and the onset of type 2 diabetes. The exposure of pregnant women to air pollution has also been found to affect fetal brain growth.

Environmental disease prevention strategies

- Use of public transport or bicycle in order to decrease emissions;
- Use of solar panels (green buildings);
- Decreasing speed limit to 30 km/h in order to encourage public transport or cycling;
- Use of electric vehicles.



Policy implications

- Sustaining green energy sources;
- Taxes benefits for green energy sources;
- Pollution taxes/ prohibition of polluting activities;
- Tradable pollution permits;
- Education of farmers and communities;
- Taxes on the use of fossil fuels.



EU-Budget fund 2014-2020: new money, old ideas!

A comprehensive analysis of draft government spending plans for the allocation of EU budget money shows that Central and Eastern European countries are planning to use unacceptable amounts of their **€350 billion allocation on dirty energy projects, polluting forms of transport and incinerators!**

GRAPH 1: TOTAL ALLOCATIONS IN 8 CEE COUNTRIES REGIONAL DEVELOPMENT AND COHESION FUND, 2014-2020, EUR MILLION

TRANSPORT

44,905

31%

PRODUCTION AND CONSUMPTION

30,015

21%

ENVIRONMENT

16,780

11%

ENERGY INFRASTRUCTURE

11,056

8%

EDUCATION

10,708

7%

EMPLOYMENT

8,448

6%

OTHER

6,581

5%

INFORMATION AND COMMUNICATION TECHNOLOGY

6,236

4%

SOCIAL INFRASTRUCTURE

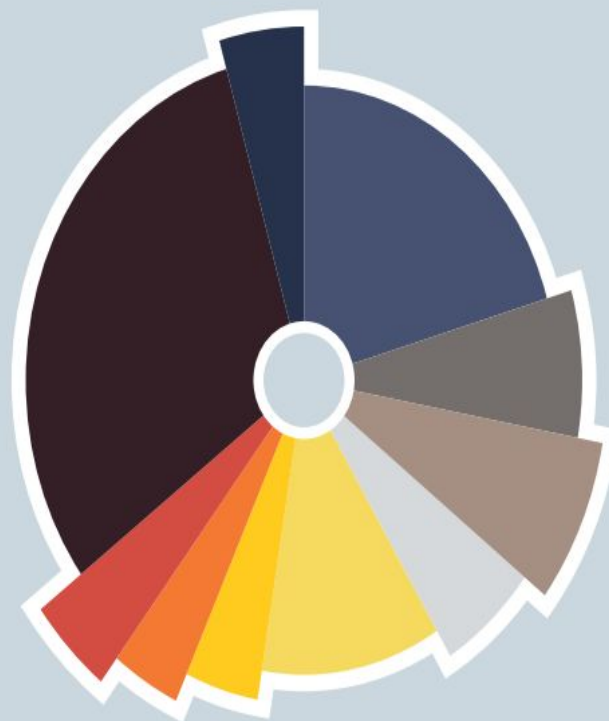
6,140

4%

SOCIAL INCLUSION

5,348

4%



And in Poland?

GRAPH 11: ALLOCATIONS BY TYPE IN THE TRANSPORT SECTOR, 2014-2020, EUR MILLION



ROAD

14,864

● 57%

RAIL

6,736

● 26%

LOW-CARBON
URBAN

3,925

● 15%

MULTI-MODAL

543

● 2%

Conclusions

The path to development outlined by Member States in Central and Eastern Europe is business-as-usual. Investments focus on big infrastructure projects, like in the transport and waste sectors, with countries allocating millions to roads and incinerators all while ignoring the environmental risks and challenges associated with these types of projects. In this way, many of the countries are at risk of being unable to catalyse the shift to a low-carbon, resource-efficient economy that will allow them to meet Europe's 2020 targets signed through the Paris Agreement.

COP 24

The city of Katowice (in Southern Poland) has been announced as the venue for the 2018 UN Climate Change Conference, or “COP 24”.

Better managing, conserving and expanding of forests is going to play a crucial role in meeting the objectives of the Paris Agreement, that’s why the Government of Poland is already scientifically monitoring how forests absorb carbon in Toruń.



References

<https://www.eea.europa.eu/themes/air/intro>

<http://www.dailymail.co.uk/sciencetech/article-5089161/Interactive-map-reveals-pollutant-levels-Europe.html>

https://www.eea.europa.eu/data-and-maps/daviz/share-of-eea-33-emissions-3#tab-chart_1

<https://www.theguardian.com/sustainable-business/2016/jul/05/how-air-pollution-affects-your-health-infographic>

<https://bankwatch.org/wp-content/uploads/2014/12/newmoney-oldideas.pdf>

Question

Time



Questions:

- 1) Which is one of the most polluted cities in Poland?
- 2) What is the most effective method to reduce pollution?

Thank you for the attention!