The National Fund: Actions for better air quality

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Warsaw, 4.02.2020
Agenda

1. Smog in Poland and health
2. About the National Fund and Clean Air Program
3. Educational Anti-Smog Network
Smog in Poland and health
What pollutes the air?

- combustion of solid fuels in household stoves and boilers (so-called point emission)
- combustion of liquid fuels in car engines (so-called linear emission)
- combustion of solid fuels in power companies and industry (so-called high emission)
- industrial processes
- secondary emission of dust pollutants from outdoor surfaces, e.g. roads, pavements, sports fields and dusting surfaces
Low-stack and high-stack emissions

**High-stack emission:** harmful combustion products are discharged into the atmosphere by an emitter over 40 m high.

**Low-stack emission:** harmful combustion products are discharged into the atmosphere by an emitter less than 40 m high.
Definition of smog

smoke + fog

Unnatural atmospheric phenomenon caused by human activity and adverse natural atmospheric phenomena.

It is formed by the accumulation of a significant amount of pollution (automotive, industry) in a certain area (e.g. in a city) due to certain weather condition.
Sources of low-stack emissions

1. Inefficient fuel combustion – old boilers

2. Combustion of low quality fuel - cheap fuel/cheap and dirty coal, as well as dry wood) or waste (garbage)
Smog in Polish cities

- PM 10
- PM 2.5
- NO2

Human hair: 50-70 μm (microns) in diameter
PM2.5: Combustion particles, organic compounds, metals, etc. < 2.5 μm (microns) in diameter
PM10: Dust, pollen, mold, etc. < 10 μm (microns) in diameter

Fine beach sand: 90 μm (microns) in diameter

Image courtesy of the U.S. EPA
Air pollution is an invisible killer

EU urban population exposed to harmful levels of air pollutant concentrations in 2014-2016

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EU limit/target values</th>
<th>WHO guidelines</th>
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</thead>
<tbody>
<tr>
<td>PM₁₀</td>
<td>6.8 %</td>
<td>74-85 %</td>
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<tr>
<td>PM₁₅</td>
<td>13.19 %</td>
<td>42-52 %</td>
</tr>
<tr>
<td>O₃</td>
<td>7.30 %</td>
<td>95-98 %</td>
</tr>
<tr>
<td>NO₂</td>
<td>7.8 %</td>
<td>7.8 %</td>
</tr>
<tr>
<td>BeP</td>
<td>20-24 %</td>
<td>85-90 %</td>
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<tr>
<td>SO₂</td>
<td>&lt; 1 %</td>
<td>21-38 %</td>
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Smog and health in Poland

Crucial challenge

- Due to diseases caused by polluted air approximately 45,000 people die every year, which is over 7 times higher than that of passive smoking.

- Report on external health costs of the emission of air pollutants from the municipal and housing sector:
  
  - 19,000 premature deaths in Poland in 2016
  - 440,000 years of life lost during one year
  - 30 billion EUR – external health costs
How do we know if the air is polluted - how is air quality tested?
Air pollution in Europe
About the National Fund and the Clean Air Program
System of financing environmental protection in Poland
The National Fund for Environmental Protection and Water Management

MISSION

Effective and efficient support of environmental activities, with particular reference to activities absorbing foreign resources operated by the National Fund.

1. Established in 1989
2. State agency
3. 700 staff (>250 engineers)
4. Unique solution

Almost 31 years of experience in financing environmental & energy projects
SHOW ME THE MONEY!
Clean Air Program

EUR 25 bln!

2018-2029

Grant

Loan

Household income

4 mln households
Priorities for the National Fund’s activity

1. Adaptation to climate changes
2. Biodiversity
3. Geology, mining, circular economy including waste management
4. Air protection
5. Water protection
Examples of projects
Program *My electricity* for instalment of photovoltaic panels
PEEWIT wastewater treatment plant in Warsaw
Protection of land ecosystems, soil, water ecosystems and fauna in the Roztoczański National Park
Ecological education program *Adopt the river*
Securing and strengthening the rock mass in the historic chamber in the Salt Mine Wieliczka.
Seal house at the Marine Station in Hel
<table>
<thead>
<tr>
<th></th>
<th>Plans and Perspectives 2021-2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low-carbon economy (eco-mobility, clean air).</td>
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<tr>
<td>2</td>
<td>Adaptation to climate change, risk management and disaster resilience.</td>
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<td>3</td>
<td>Circular economy.</td>
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<tr>
<td>4</td>
<td>Energy transformation (energy efficiency, RES, smart grids and systems).</td>
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<tr>
<td>5</td>
<td>Sustainable water management.</td>
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<tr>
<td>6</td>
<td>Biodiversity and environmental education.</td>
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</table>
Educational Anti-Smog Network (ESA)
Information about the project

For whom?

Students
Schools
Teachers
Parents
others

How does it work?
https://esa.nask.pl/
Measurements in the ESA network

1) PM2.5 concentration outside the school
2) PM10 concentration outside the school
3) air temperature outside the school
4) air pressure outside the school
5) humidity outside the school
6) PM2.5 concentration inside the school (optional)
7) PM10 concentration inside the school (optional)

PM = particulate matter = dust
Activities within the project

1) Workshops for teachers in schools
2) Educational materials
3) Workshops for children and teenagers
Educational materials

1) For students with information about smog
2) For parents
3) For inhabitants/local partners
Join the ESA Program!
Thank you

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