

## POLAND

Submission of an example/good practice of strategies, policies and measures employed to implement obligations under the 1988 Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes - **Air Protection Programme (APP) for the Warsaw Agglomeration**

<p><b>Country:</b></p> <p><b>POLAND</b></p>	<p><b>Pollutant(s):</b></p> <p><i>Please indicate the pollutant(s), emissions of which are being controlled</i></p> <p>Nitrogen oxides (NO<sub>x</sub>), particulate matter (PM<sub>10</sub>)</p>
<p><b>Protocol(s):</b></p> <p><i>Please indicate the name of the protocol(s) to the Convention, obligations under which are being fulfilled</i></p> <p>The 1988 Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes and partly the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone</p>	<p><b>Sector:</b></p> <p><i>Please indicate the sector (e.g. agriculture, industry, urban planning, environment, etc.), or sectors (if several) for which the strategy, policy or measure has been mainly designed</i></p> <p>Road transport, spatial planning, spatial development</p>
<p><b>Type of strategy, policy or measure and the level of implementation:</b></p> <p><i>Please identify the type of strategy, policy or measure – economic e.g. incentive or disincentive (taxes, funds, subsidies, prices or caps/ceilings, payments, rebates, etc); voluntary (agreements, programmes, contracts), regulatory (legislation), or other measures (educational, informational, other)</i></p> <p><i>Please state at which level (municipal, regional, sub-national, national) the policy, strategy or measure is targeted or implemented</i></p> <p><b>Air Protection Programmes (APPs)</b> for zones with exceeded permissible concentrations of certain air pollutants – programmes of action employ various methods aiming to improve the quality of air (regulatory, economic and educational measures).</p> <p>The measures included in APPs for the Warsaw Agglomeration zone are implemented at municipal level.</p>	<p><b>Method used for the current analysis:</b></p> <p><i>Please identify the method used for collecting information and the analysis made</i></p> <p>Case study analysis based on APPs, reports and measurement data as well as modelling results.</p>
<p><b>What is the main objective of the strategy, policy or measure? When has it been implemented/or will be implemented?</b></p> <p><i>Please describe briefly what the measure attempts to achieve or what has been the result of its implementation. Please also describe since when it is being employed or for when its implementation is foreseen. Please explain whether implementation is/was immediate or gradual. [150 words max]</i></p>	

The main goal of APPs is to improve the quality of air in identified zones with exceeded concentrations of air pollutants in order to achieve air quality standards required by law. Each APP includes a plan of short/long term actions with specific activities to solve problems in individual zones. Since the zones with exceeded NO<sub>x</sub> are located in cities mainly due to emissions from road transport, the actions and measures planned are directed to reduce those emissions.

In 2012 exceeded levels for NO<sub>2</sub> were recorded in 6 out of 46 zones throughout the country. Warsaw Agglomeration is an example of a zone in which exceeded permissible NO<sub>2</sub> and PM<sub>10</sub> levels have been observed since some time. The APP for Warsaw was adopted in 2013 [1] and updated in 2017 [2] with short-term measures to avoid exceedances of permissible NO<sub>2</sub> and PM<sub>10</sub> emission levels. The APP's gradual implementation is to be completed in 2024.

**Background and driving forces:**

*Please explain briefly why this strategy, policy or measure was implemented; mention the driving forces for its introduction e.g. policy development, legislation (EU, national), action plans, voluntary, incentive, or other [150 words max]*

Air quality in many regions of Poland, especially in cities, is unsatisfactory. Emissions from transport, large point sources and the residential sector have the greatest effect on air quality. Information on air pollution in different zones is available on a website of the Chief Inspectorate for Environmental Protection [3].

The Act - Environmental Protection Law [4] introduced, *inter alia*, the air quality assessment and management system. The air quality assessment, conducted annually by 30 April for the previous year within the State Monitoring System is aimed to distinguish zones [3] that require remediation measures due to exceeded air quality standards.

For zones with exceedances, voivodship management boards elaborate and agree on Air Protection Programmes which are adopted in the form of resolutions by Voivodship Regional Councils (local self-governmental authorities). APPs must comply with the provisions of the relevant regulation of the Minister of the Environment [5].

**Description of the strategy, policy or measure:**

*Please explain briefly how the strategy, policy or measure works and why it has been chosen compared to other policies/measures. Please also explain how its implementation is being monitored. [200 words max]*

Many solutions are planned under the APP [1,2] that should contribute to the reduction of car traffic, incl.:

- the development of bike routes system and bicycle infrastructure, as well as pedestrian infrastructure,
- the development of public transport systems with preferential fee policy promoting the use of public transportation means,
- the development of an Integrated Traffic Management System,
- organisation of “park and ride” system, paid parking zones and no entry or limited entry zones for cars.

Measures that reduce air emissions include introduction of:

- new low-emission fuels and technologies, especially in the public transport sector,
- bans or limitations regarding fuel-fired installations meeting the provisions of the “anti-smog resolution” (low-emission heating household and commercial appliances; connections to district heating and gas systems; thermal insulation; the use of renewable energy sources).

The supporting measures relate to:

- environmental education (promotion of low-emission heating sources, benefits of connecting to the centralised heating networks, thermal insulation; promotion of proper social habits; campaigns/educational programmes),
- spatial/urban planning (provision of air exchange corridors),
- nature (increased urban green areas).

The Management Board of the Mazovia Voivodship is responsible for monitoring the implementation of APP. The President of Warsaw and the institutions involved provide implementation progress reports related to the tasks assigned to them.

**Costs, Funding and Revenue allocation:**

*Please state how much the implementation of the measure costs including its monitoring and how it is funded (national budget, industry, taxes, etc.) If the measure is creating revenue, please also explain how this revenue is being allocated and collected. [200 words max]*

Local self-governmental authorities are responsible for preparing APPs and their implementation monitoring. The National Fund for Environmental Protection and Water Management (NFOSiGW) and its regional funds (WFOSiGW) provide financial support for the development of the programmes and their implementation. The NFOSiGW's budget for APPs for the period of 2009-2016 was 1.5 million EUR.

Funds for implementation of specific actions/measures included in APPs come from various sources, depending on the type of measure. Financing may derive from own funds of the local self-governmental units, funds from institutions involved in implementation of particular actions/measures, private funds, donations/loans from the NFOSiGW/WFOSiGW [6], and also funds gained from the EU, target funds, bank loans and other external sources.

The costs for the implementation of the APP for the Warsaw Agglomeration [1] w 2015 were estimated at 217.4 million EUR [7], out of which, e.g.:

- the development and building of the bicycle infrastructure: 0.8 million EUR/year,
- the "park and ride" system in the suburbs: 1 600 EUR/one parking place (ground level car park), 8 100 EUR/one parking place (multi-storey car park) and 27 900 EUR/one parking place (underground car park),
- environmental educational programme: 70 000 EUR.

Some of the measures planned are costless or undertaken under obligatory own tasks.

**Effect and impacts on air pollution abatement:**

*Please explain briefly the effect of the policy, strategy or measure and how it has impacted the abatement of air pollution. If impacts are known, please quantify, if possible. Please highlight also other effects of the implementation of the measure e.g. with regard to compliance, the acceptance of the measure or its transposition (e.g. from a voluntary to a regulatory or another type of measure). [150 words max]*

Currently, there are only 4 zones countrywide with exceedances recorded for NO<sub>2</sub> (6 zones in 2012).

In case of the Warsaw Agglomeration, it is expected that in 2024 the number of exceedances of permissible concentration of NO<sub>2</sub> (1h average) and the annual average concentration of NO<sub>2</sub> in ambient air will be reduced in both identified areas of the Warsaw zone (Table 1 - see Additional comments). Undertaken measures will also result in the reduction of PM<sub>10</sub> concentrations. Furthermore, it is estimated that between 2015-2024 emissions will be reduced by 183.5 Mg for NO<sub>2</sub> and 745.2 Mg for PM<sub>10</sub> [2].

According to available data [8-9] in 2012-2017 both areas with exceedances of permissible levels of concentrations for NO<sub>2</sub> (annual average) as well as for PM<sub>10</sub> (24h and annual average) decreased. At the same time the number of inhabitants of the areas at risk was reduced (Table 2 - see Additional comments).

**References/Further information:** *Please provide most relevant sources for information such as references for web links, books, other resources.*

1. Resolution No. 186/13 of the Mazovia Voivodship (regional level) Council of 27 November 2013 on air protection programme for the Warsaw Agglomeration zone in which permissible concentrations of PM<sub>10</sub> and NO<sub>2</sub> have been exceeded (Official Journal of the Mazovia Voivodship of 2013, item 13011)
2. Resolution No. 96/17 of the Mazovia Voivodship Council of 20 June 2017 amending resolution on air protection programme for the Warsaw Agglomeration zone in which permissible concentrations of PM<sub>10</sub> and NO<sub>2</sub> have been exceeded (Official Journal of the Mazovia Voivodship of 2017, item 5963)
3. Chief Inspectorate for Environmental Protection website: describing air quality in zones <http://powietrze.gios.gov.pl/pjp/current> (Polish version) and Air Pollution <http://powietrze.gios.gov.pl/pjp/home?lang=en> (English version)
4. Act of 27 April 2001 - Environmental Protection Law (consolidated text: Polish Official Journal of Laws 2018, item 799, as amended) (in Polish)
5. Regulation of the Minister of the Environment of 11 September 2012 on air protection programmes and short term action plans (Polish Official Journal of Laws, 2012, item 1028) (in Polish)
6. Official website of the Voivodship Fund for Environmental Protection and Water Management in Warsaw - clean air programme [http://www.wfosigw.pl/strona-glowna/program\\_czyste\\_powietrze](http://www.wfosigw.pl/strona-glowna/program_czyste_powietrze) (in Polish)
7. Information from the Marshal Office of the Mazovia Voivodship
8. Annual air quality assessment for the Mazovia Voivodship. Report for 2017. WIOS, Warsaw 2018 (in Polish)
9. Annual air quality assessment for the Mazovia Voivodship. Report for 2012. WIOS, Warsaw 2013 (in Polish).
10. Regulation No. 67 of the Mazovia Voivode of 24 December 2007 on air protection programme for the Warsaw Agglomeration zone (Official Journal of the Mazovia Voivodship of 2007 No. 269, item 9320) (in Polish)
11. Environmental Protection Programme 2017-2020 with a perspective until 2023 (annex to resolution No. XXXVIII/973/2016 of the Council of Warsaw of 15 December 2016 (in Polish)
12. Resolution No. 162/17 of the Mazovia Voivodship Council of 24 October 2017 on the introduction of restrictions and prohibitions for the operation of fuel-fired installations over the area of the Mazovia Voivodship (Official Journal of the Mazovia Voivodship of 2017, item 9600)
13. Regulation of the Minister of the Environment of 24 August 2012 on the levels of certain substances in ambient air (Polish Official Journal of Laws, 2012, item 1031) (in Polish)

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**Additional comments:** Please include any additional information you may wish to provide here.

The first Air Protection Programme for the Warsaw Agglomeration zone covering particulate matter PM10 and nitrogen dioxide was approved in 2007 by a regulation of the Mazowiecki Voivode [10]. In 2013 it was necessary to harmonize it with the requirements of amended national legislation due to the transposition of the provisions of Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (CAFÉ) into the Polish Act – Environmental Protection Law.

Supplementary detailed information for section: “Effect and impacts on air pollution abatement”:

Table 1. Expected improvement of air quality (NO<sub>2</sub>) as a result of implementation of the APP for Warsaw Agglomeration [1]

Areas in the Warsaw zone	Number of exceedances in 2011	Projected number of exceedances following implementation of APP in 2024	Concentration of NO <sub>2</sub> (1h average) in 2011	Projected concentration of NO <sub>2</sub> (1h average) in 2024	Concentration of NO <sub>2</sub> (annual average) in 2011	Projected concentration of NO <sub>2</sub> (annual average) in 2024
			[µg/m <sup>3</sup> ]			
Area I	15*	9*	163.1**	100.7**	47.5***	31.6***
Area II	18*	11*	164.0**	99.3**	47.5***	28.2***

According to the Polish legislation in force [13]:

\* permissible number of exceedances: 18 (annually)

\*\* permissible hourly average concentration: 200 µg/m<sup>3</sup>

\*\*\* permissible annual average concentration: 40 µg/m<sup>3</sup>

Table 2. Area with exceedances and its number of inhabitants in the Warsaw Agglomeration zone (with an area of 517 km<sup>2</sup>) [8-9]

Year	Area with exceedances [km <sup>2</sup> ] and its share in the zone's area (%)			Zone's population [1000]	Population in the areas with exceedances [1000] and its share in the zone's population (%)		
	NO <sub>2</sub> (yr)	PM <sub>10</sub> (24h)	PM <sub>10</sub> (yr)		NO <sub>2</sub> (yr)	PM <sub>10</sub> (24h)	PM <sub>10</sub> (yr)
2012	23 (4%)	443 (86%)	82 (16%)	1708.5	76.2 (4%)	1610.1 (94%)	452.8 (27%)
2017	8 (1.6%)	306 (59%)	15 (2.9%)	1715.6	47.6 (2.8%)	1640.7 (95.6%)	90.4 (5.3%)

Costs were calculated for the “Costs, Funding and Revenue allocation” section as follows: Average Exchange Rate of 1 April 2019: 1 EUR = 4.3 PLN.