

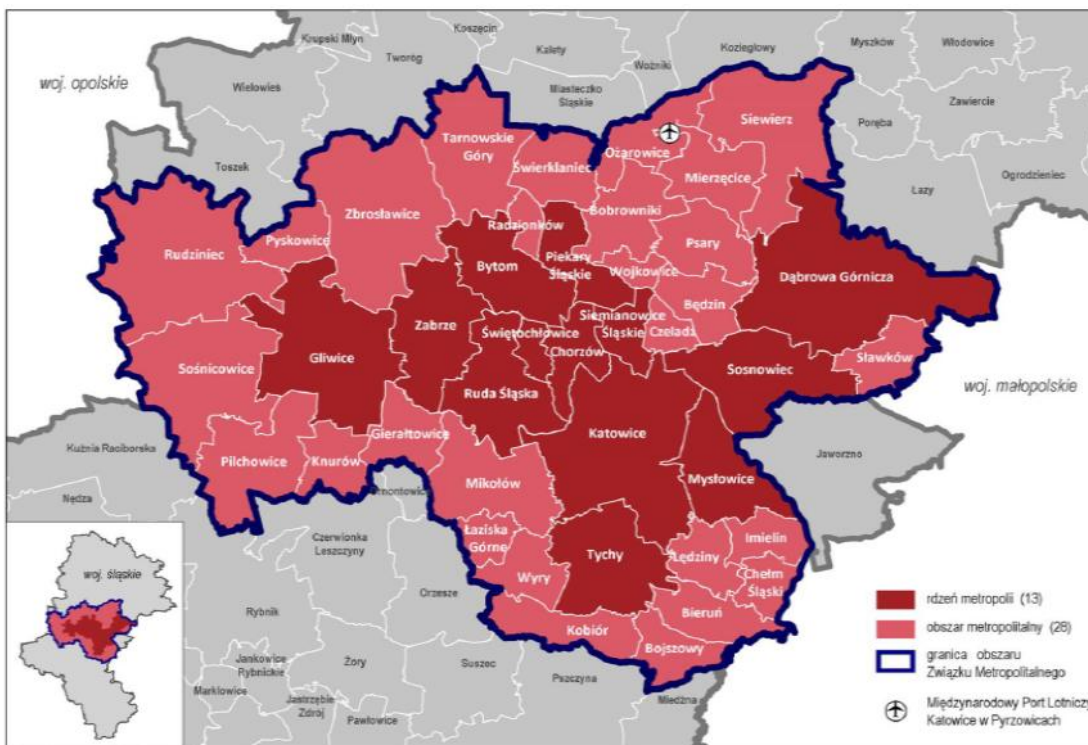
MITIGATION AND ADAPTATION ACTION PLAN, PILOT ACTIONS AND MONITORING PLAN TO VERIFY EFFECTIVENESS OF ACTIONS IN THE FUA OF KATOWICE



Introduction

Silesian Metropolis

Pursuant to the Regulation of the Council of Ministers of 26 June 2017 on establishing a metropolitan union under the name “Silesian Metropolis in the Silesian province”, the largest metropolitan area in the country was established. The Silesian Metropolis is composed of 41 communes that are towns with poviats rights): Bytom, Chorzów, Dąbrowa Górnicza, Gliwice, Katowice, Mysłowice, Piekary Śląskie, Ruda Śląska, Siemianowice Śląskie, Sosnowiec, Świętochłowice, Tychy and Zabrze, and communes with city rights: Będzin, Bieruń, Bobrowniki, Bojszowy, Chełm Śląski, Czeladź, Gierałtówice, Imielin, Knurów, Kobiór, Łędziny, Łaziska Górne, Mierzęcice, Mikołów, Ożarówice, Pilchowice, Psary, Pyskowice, Radzionków, Rudziniec, Siewierz, Sławków, Sośnicowice, Świerklaniec, Tarnowskie Góry, Wojkowice, Wry, Zbrośławice. The metropolis covers the area of over 2553 sq. km, accounting for 20.7% of the Silesian province area. It is inhabited by 2300 residents, constituting 49.9% of the inhabitants of the Silesian province. The urbanisation degree amounts to 93.8%.



In accordance with Article 12 of the Act on the metropolitan union in the Silesian province of 9 March 2017 (Polish Journal of Laws of 2017, 730), the metropolitan union performs the following public tasks:

- 1) developing spatial order;
- 2) ensuring social and economic development of the area of the metropolitan union;
- 3) planning, coordination, integration and development of public transport, including road and rail transport, as well as sustainable urban mobility;
- 4) metropolitan passenger transport;



- 5) cooperation in determining the layout of national and provincial roads in the area of the metropolitan union;
- 6) promotion of the metropolitan union and its area.

The union may also perform other tasks ordered by communes, concluding agreements from the commune or their unions and government administration bodies. In line with Article 14 of the Act, the union may appoint new entities for its efficient operation. The union will also carry out tasks going beyond one commune; it is appointed to solve supralocal problems.

The city of Katowice has powiat rights. It is located in southern Poland, in the Silesian province. It is located on Bytom and Katowice Plateau which is part of the Silesian Upland, in the Upper Silesia region. The following rivers flow through the city: Rawa and Kłodnica, and several smaller rivers. The city has a diversified landform. The highest elevation is located 352 m above sea level, and the lowest point lies at 266 m above sea level. As far as geology is concerned, Katowice is located in the Upper Silesian Coal Basin covering the entire Upper Silesian Industrial District and Rybnik Coal District.

It borders with the following communes:

- the city of Tychy,
- the city of Mysłowice,
- the city of Sosnowiec,
- the city of Siemianowice Śląskie,
- the city of Chorzów,
- the city of Czeladź,
- the city of Łędziny,
- the city of Mikołów,
- the city of Ruda Śląska.



Location of the city of Katowice in the Silesian province

The city of Katowice is the second largest city in terms of area in the Silesian province, covering area of 16.464 thousand sq. km. It is inhabited by 299,910 residents (Statistics Poland, 2017).

Basing on functional and spatial criteria, Katowice has been divided into 22 districts, which form 5 sets of districts: central, northern, western, eastern and southern.



Division of the city into districts Source: www.katowice.eu

| Item | Set of districts | District | Marking on the figure |
|------|------------------|---------------------------------|-----------------------|
| 1. | Central | Śródmieście | 1. |
| | | Osiedle Paderewskiego-Muchowiec | 4 |
| | | Koszutka | 12 |
| | | Bogucice | 13 |
| 2. | Northern | Załęże | 7 |
| | | Osiedle Witosa | 8 |
| | | Osiedle Tysiąclecia | 9 |
| | | Dąb | 10 |
| | | Wełnowiec - Józefowiec | 11 |
| 3. | Western | Załęska Hałda – Brynów | 2 |
| | | Brynów – Osiedle Zgrzebnioka | 5 |
| | | Ligota - Panewniki | 6 |
| 4. | Eastern | Zawodzie | 3 |
| | | Dąbrówka Mała | 14 |
| | | Szopienice - Burowiec | 15 |
| | | Janów - Nikiszowiec | 16 |
| | | Giszowiec | 17 |
| 5. | Southern | Murcki | 18 |



| | | |
|--|----------------------|----|
| | Piotrowice - Ochojec | 19 |
| | Zarzecze | 20 |
| | Kostuchna | 21 |
| | Podlesie | 22 |

Climatic conditions

The climate of the city of Katowice is rather oceanic than continental. The air mass coming is mostly of arctic and marine origin. The average annual temperature of Katowice is 8°C. The minimum average monthly temperature is noted in February and amounts to -2.4°C, while the maximum one is 17.8°C and is noted in July. Light winds, at speeds not exceeding 2 m/s, are typical of the region. West winds are predominant. Due to high dustiness in the city, cloud coverage is high and rainfall is elevated. Average annual rainfall amounts to 723 mm.

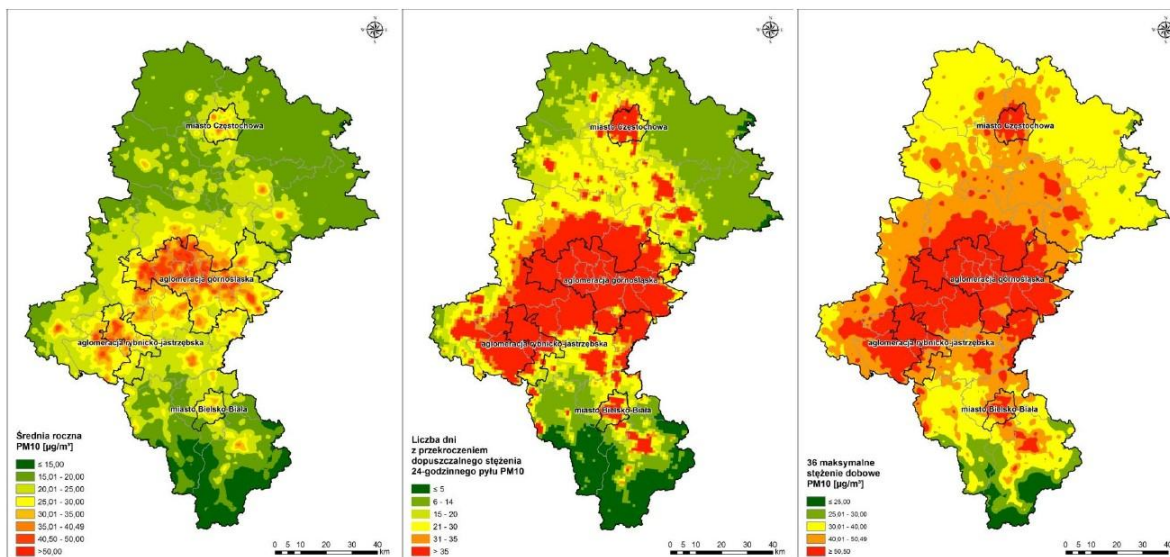
Air quality in the Upper Silesian agglomeration and the city of Katowice

As a result of air quality assessment carried by the Provincial Inspectorate for Environmental Protection in Katowice in 2015, the Upper Silesian agglomeration was classified to class C. Thus it is obliged to develop the air quality protection programme due to:

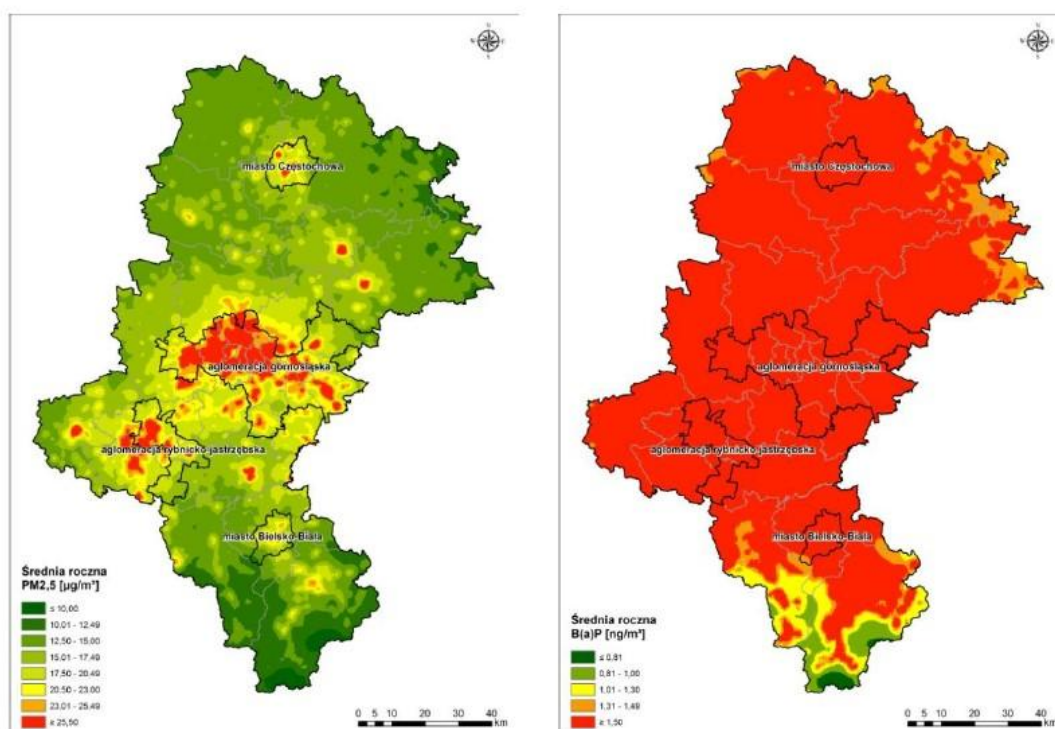
- exceeding annual permissible concentration and acceptable frequency in which permissible 24-hour concentration of particulate matter PM10 is exceeded;
- exceeding annual permissible concentration of particulate matter PM2.5;
- exceeding target annual concentration of benzo(a)pyrene;
- exceeding acceptable frequency in which target 8-hour level of ozone is exceeded;
- exceeding acceptable frequency in which the long-term target level concentration of ozone is exceeded;
- exceeding the permissible annual concentration of nitrogen dioxide.

As indicated above, the Upper Silesian agglomeration has been included under “Air quality protection programme for the Silesian province aimed at achieving permitted levels of substances in the air and exposure concentration obligation” adopted by Resolution No. V/47/5/2017 of the Silesian Province Assembly.

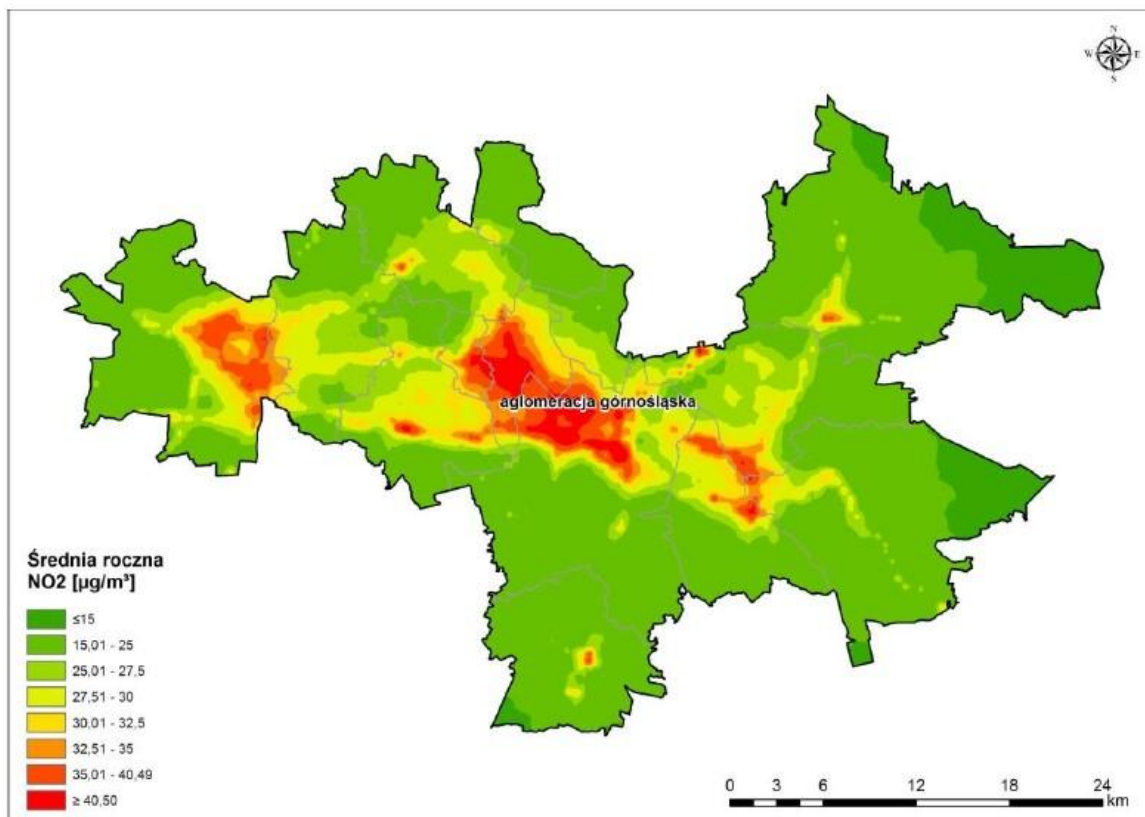
The following figures show the quality of air in Katowice in the Upper Silesian agglomeration. The figures are from the aforesaid document.



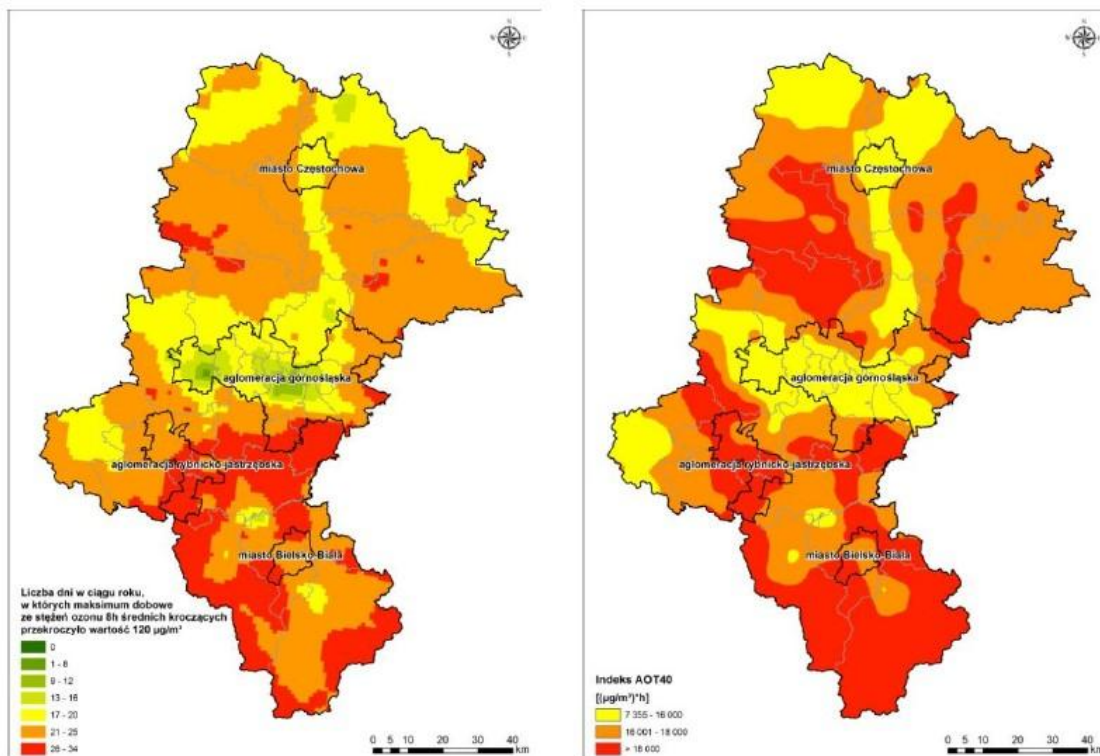
Spatial distribution of average annual concentrations, number of days in which permissible daily concentration was exceeded and 36th maximum daily concentration of PM10 in the Silesian province in the base year 2015.



Spatial distribution of average annual concentrations of PM2.5 and benzo(a)pyrene in the Silesian province in the base year 2015.



Spatial distribution of average annual concentrations of nitrogen dioxide in the Silesian province in the base year 2015.



Spatial distribution of criterion values for ozone in terms of human protection and plant protection in the area of the Silesian province in the base year 2015.

Air quality in Katowice

There are two automatic measuring stations operating within the framework of the State Environmental Monitoring in the city of Katowice. The table below shows parameters that are measured at these stations.

| Meteorological parameters measured at a given station | |
|--|--|
| Station at Kossutha 6 St. | Station near A4 motorway, Górnośląska/Plebiscytowa St. |
| atmospheric pressure, wind direction, wind flow velocity, temperature, relative humidity, concentrations of air pollutants: - nitrogen oxide and dioxide, nitrogen oxides, - ozone, - particulate matter PM10, PM2.5 - sulphur dioxide, | Atmospheric pressure concentrations of air pollutants: - carbon monoxide, - nitrogen, - nitrogen dioxide, - sulphur, - nitrogen oxides, - PM10 and PM2.5, - benzene. |



| | |
|--|--|
| <p>- substances in PM10: arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(a)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene, cadmium, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, nickel, lead.</p> | |
|--|--|

Mitigation Policy and actions

Long-term actions (aimed at permanent reduction of pollution) for Katowice

Activities undertaken in this area include:

- Subsidies for low-emission heat sources;

Subsidies up to PLN 10,000, not more than 80% of eligible costs (the amount depends on the source, since 2016 the amount was increased and is currently one of the highest in the country) for natural persons, housing communities, legal persons and entrepreneurs for replacing old heating sources and RES (in the years 2011-2017, there were 2,664 heating sources replaced with subsidies in the amount of nearly PLN 17.69 million as well as 677 installations using RES, mounted with subsidies in the amount of nearly PLN 3.66 million). In 2018, there were 1,476 applications for replacement of sources. In the previous year, the implementation of the task was subsidised, for the first time, from the funds of the Regional Fund for Environmental Protection and Water Management in Katowice.

Level: *City*

Action: financial support

Outcome: decreased amount of old heating installations, increased energy efficiency

- Inspections carried out by the City Guard;

If there is a suspicion of waste incineration (in the years 2011-2015 – 3.3 thousand inspections, in 2016 alone – 3.4 thousand inspections, and in 2017 nearly 3 thousand inspections). It should be emphasised that the inspection activities are accompanied by information activities about city subsidies for the replacement of heating sources and proper burning to help the residents solve the problem of excessive smoke emission. The guards hand out leaflets on air protection and the principles of proper waste management.

Level: *City*

Action: inspections

Outcome: decreased amount of old heating installations, decreased amount of waste burning

- Air quality monitoring “AWAIR”;

As part of an international project “AWAIR”, the city of Katowice, together with partners from other European cities, received a subsidy for the task from the “INTERREG CENTRAL EUROPE” programme. The current CAP will be updated, supplemented and equipped with task



implementation and monitoring procedures. The planned activities include: implementation of the pilot task, which consists in installing air pollution sensors in selected locations (nurseries, pre-schools, orphanages, social welfare homes), followed by a multimedia presentation of the results on a specially created internet platform and in individual unit locations (127 air sensors and 153 multimedia screens). It will be the largest number of sensors owned by any of the cities in the country (0.77 sensor per sq. km). The cost of the project is over EUR 290 thousand.

Level: *City*

Action: Investment

Outcome: Increased awareness about air quality, increased effectiveness in inspections

- Specialised office;

In 2013 the *Office for Energy Management* was established as part of the Katowice City Council (Department of Environmental Development). It is a specialised unit advising in energy industry and air protection for departments of the Katowice City Council, organisational units of the city of Katowice, and for the residents. From 1st of February it became independent office.

Level: *City*

Action: organization

Outcome: specialised department with qualified specialist in air protection, and energy efficiency

- Purchase of low-emission transport fleet units;

Purchase of 100 buses for PLN 100 million municipal transportation company [*Przedsiębiorstwo Komunikacji Miejskiej*] in Katowice.

Level: *City and FUA*

Action: Investment

Outcome: New transport fleet, lower emission from transport.

- Reduction of car traffic;

Introduction of a limited tonnage zone in the city centre of Katowice as well as “Speed limit 30” – limited speed zones in the city centre and in selected district areas.

Level: *City*

Action: Investment, law restrictions

Outcome: lower emission from transport in certain parts of the city

Long-term actions – building retrofit in Katowice

- Thermal upgrading of public buildings (KTW009, KTW011);



The task entered into LEEP envisaged thermal upgrading for 45 public buildings under *Integrated Territorial Investments* (approx. PLN 100 million). Some of the planned investment projects have already been commenced.

Level: *City*

Action: Investment

Outcome: lower emission from heating in public buildings

- Providing heat distribution network in selected areas (KTW019);

Pilot project under which heat distribution network will be provided to multiple dwellings in the Ligota district, for the amount of PLN 1.7 million with the use of EU funds.

Level: *City*

Action: Investment

Outcome: lower emission from heating in certain part of the city

Accompanying measures (having indirect impact on reducing the problem of low emission)

- Energy management system (KTW001);

Purchase and implementation of the *“Energy and Environment Management System in the city of Katowice”* which replaced the one introduced in 2011. *“Online energy monitoring and management system”*. This is the *“energy accounting”* system (invoices for utilities) that is available to any administrator on a web browser. The implemented system is easier to use and guarantees more options. At present, 365 facilities have been submitted to the system. They are operated by 190 administrators.

Level: *City*

Action: Investment

Outcome: Better energy management, lower heating costs and lower emission from heating, lower energy consumption

- Energy and water carriers monitoring system (KTW003);

Purchase and implementation of the *“Energy and water carriers monitoring system along with the redevelopment of heating power sources as well as time and weather compensation in selected facilities in the city of Katowice”*, being an extension of the existing energy monitoring system for buildings that has been in existence since 2012. Originally it included 5 facilities and afterwards 22 facilities (in the last two heating seasons the system generated over PLN 700 thousand in savings). As part of the implementation, relevant monitoring and control systems have been designed in all buildings planned to undergo thermal upgrading in the coming years. At the beginning of this year, an inventory is planned to determine the total cost of implementation and maintenance of such system for all other buildings.



Level: *City*

Action: Investment

Outcome: Better energy management, lower heating costs and lower emission from heating, lower energy consumption

- Urban lighting (KTW014-15);

Upgrading of worn LED road lighting infrastructure (1,600 lightning points) and development of hybrid space lighting (41 lightning points).

Level: *City*

Action: Investment

Outcome: lower energy consumption

- Interchange junctions (KTW034);

Construction the “*Integrated System of Interchanges for Katowice*” (48 items).

Level: *City and FUA*

Action: Investment

Outcome: lower traffic junction, lower emission from transport

Educational measures (aimed at raising residents’ awareness)

The city attaches great importance to education:

- Organization of special events for residents;

The city of Katowice organizes two large outdoor events every year (“*Energy Days of the City of Katowice*” and “*Family Picnic in the Forest – ECO-AWARENESS*”), the main goal of which is to provide environmental education, among others in the field of air protection and which attract thousands of visitors every year. During these events we (mostly but not only) hand over a number of gadgets and leaflets related to air protection to the residents, necessary to implement our measures.

Level: *City and FUA*

Action: Education

Outcome: Increased awareness about air quality

- Educational projects for the youngest residents;

In pre-schools and all kinds of schools in Katowice, regular program activities as well as projects and dedicated educational activities related to air protection are implemented – particular attention should be paid to the school prevention team of the Katowice City Guard.

Level: *City and FUA*

Action: Education



Outcome: Increased awareness about air quality

- Meetings with residents;

One of the last educational undertakings involved a cycle of 24 meetings with residents the slogan “*How to heat the flat in a sustainable way?*” organized in October 2016 and February and March 2017 by municipal office in Katowice. Representatives of the City Guard, Association of Masters in Chimney Services of the Silesian province and heat engineering enterprises were invited participate. They concerned the possibility of co-financing the exchange of heat sources and ways to reduce the emission of air pollution without replacing the heat source (and thus without incurring high costs) by learning the correct ways of firing up and using solid fuel heating devices.

Level: *City and FUA*

Action: Education

Outcome: Increased awareness about air quality

- Training sessions;

In December 2016, during training sessions on energy management for the administrators of all municipal facilities, the participants were delivered a presentation about CAP, air quality standards and sources of information about its condition in Katowice, along with recommendations for the ongoing review of the Air Quality Index and reacting to its values before introduction of CAP (this applies in particular to limiting children’s activities outside institutions). Probably this was the first such a large training session in Poland. The next training session was conducted in November 2017.

Level: *City and FUA*

Action: Education

Outcome: Increased awareness about air quality, improved skills in reaction during SAPE’s and implementing PDK instruction

- Website;

Maintenance and updating (from 2009) of the education and information portal “*Energy and Environment in Katowice*”. This is one of the few thematic portals run by local government units that among others focuses on air protection.

Level: *City and FUA*

Action: Education

Outcome: Increased awareness about air quality

- “*Energy efficiency information centre*”;

The initiative was launched during 4th Katowice Energy Days on 22nd of September. It was opened by Mayor of Katowice himself and with a local media participation. It’s the first of its



kind in Poland, is an info point and knowledge hub that residents can visit to learn more about energy saving, how to replace heating systems, installing renewable sources of energy and proecological education. In MCE there is also possibility to visit small exhibition created by artists with cooperation and support of city hall office workers. The center provides also informations about urban support schemes. The one of the biggest programs is city support system containing subsidies for replacing old heating systems. The program is worth over 250 mln PLN, and will last up to 2027. The other program is focused on modernization of heating system and renovation of public buildings. This program contains renovation of 44 public buildings (schools, preschools, nurseries) until 2021 and estimated costs of it are over 100 mln PLN. The center also creates a physical space in the city where events, exhibitions and workshops that are relevant for Katowice's sustainable energy initiatives can take place. The center is located in the city center next to City Hall of Katowice, so The Municipal Energy Center also enables citizens to meet directly with experienced energy consultants that can provide expert advice tailored to individual needs and context. The meetings are organized frequently two times per month. The information's about the meetings are spreading using social medias, city hall newspaper, and engaged councilmans.

Level: *City and FUA*

Action: Education and Investment

Outcome: Increased awareness about air quality

Cooperation

Representatives of the Katowice City Council are involved in supralocal activities, including:

- An international project for monitoring the implementation of LEEP;

Together with the Central Mining Institute and other partners, we carry out the international project "MOLOC". The aim of the project is to develop a model system for assessing and monitoring projects related to the implementation of LEEP and to develop procedures for the optimal implementation of KTW003 task in Katowice.

Level: *City*

Action: Analysis

Outcome: Creating new plan for more effective actions to deal with air pollution

- "Memorandum of the Statutory City of Ostrava and the City of Katowice regarding the common interest in improving air quality at the Polish-Czech border";

Cooperation consists in exchanging experience aimed at improving air quality.

The city of Katowice is also member of international associations and organisations (Eurocities, International Association of Educational Cities [IAEC] and International Council for Local Environmental Initiatives [ICLEI]).



Level: *City and FUA*

Action: Analysis

Outcome: Creating new plan for more effective actions to deal with air pollution, sharing a good practises

- Local government and central policy projects;

The city of Katowice also takes an active part in shaping the central and local energy and ecological policy. The Major of the City is a member of the *Joint Government and Local Government Commission*. Representatives of the city of Katowice participate in meetings of the *Local Energy Policy Committee* and the *Ecology Commission* attached to the *Silesian Union of Communities and Poviats*, the *Team for Air Protection and Climate Change Adaptation* established as part of the *Upper Silesian Metropolitan Union* and the *Commission for the Protection of Landscape and Environment* at the *Polish Metropolitan Union* acting on behalf of the *Central Subregion*.

Level: *FUA*

Action: lobby

Outcome: Creating plans and policies among FUA for more effective actions to deal with air pollution

Implementation of the provisions of the “anti-smog resolution”

A representative of the City Council was a member of the *Working Team on Low Emission Limitation* established at the Marshal’s Office which carried out work related to the adoption of the so-called “*anti-smog resolution for the Silesian province*” (its draft was approved by the Silesian Province Board on 12 January year, while on 7 April the resolution, the second in Poland, was unanimously adopted during the session held by the Silesian Province Assembly). According to its provisions, it is prohibited to use brown coal, slurry and flotoconcentrates and moist wood from 1 September 2017. The resolution sets forth also an obligation to use certified heat sources that meet Class 5 emission standards (*N-EN 303-5:2012*) in the new central heating installations and sources that meet the minimum levels of seasonal energy efficiency and emission standards for seasonal space heating in relation to the ecodesign requirements in installations used for other purposes (*Commission Regulation [EU] 2015/1185 of 24 April 2015*) confirmed by relevant provisions in the manuals for installers and users. In addition, depending on the age of the source and type of installation, it imposes an obligation to replace central heating or at least adapt other installations in a timely manner.

Regulations also apply to local government units, hence it is necessary to revise strategy implemented by the city:

- Helping the needy ones;

As part of the activities of the Municipal Social Welfare Centre in Katowice, the poorest residents of the city are granted aid in the form of targeted benefits for current rent payments, for filling gas cylinders, for current charges for energy carriers, for buying fuel. In addition, the



poorest residents of the city who do not have central heating, usable warm water or gas heating are entitled to a lump sum for the purchase of fuel. Approx. 6,850 families benefit from this aid every year. Furthermore, in line with the *Energy Law* over 35 thousand energy allowances for electricity bills are awarded in the city of Katowice.

The policy of granting social welfare benefits in the part concerning the amount of aid for the purchase of fuel has been amended due to restrictions in the use of fuels resulting from the “*anti-smog resolution*”. This amount has been increased from PLN 450.00 to PLN 900.00 to enable the purchase of permitted fuel. It was estimated that in 2017 approx. 1,500 families should have received benefits and this would result in increasing expenditures of the Social Welfare Centre for this goal by over PLN 460 thousand (in 2018 and by PLN 525 thousand in subsequent years). Persons to whom the aid is granted must sign a declaration obliging them to purchase permitted fuel; they will be informed about possible inspections carried out by employees of the Social Welfare Centre or City Guard, and will receive educational materials related to the “*resolution*”. The amount of housing allowances will also increase if the lump sum currently granted for the purchase of fuel does not cover expenses incurred on this account.

At the moment, it is also proposed to provide assistance to approx. 50 persons whose income does not exceed 200% of the income criterion specified in the *Act on social assistance* (i.e. PLN 1268.00 for a person running a household alone or PLN 1028.00 per family member and for whom one of the reasons listed in Article 7 of the aforesaid act is identified, i.e. poverty, unemployment, disability, long-term or severe disease, need to protect motherhood or multi-child family) and who will replace old coal boilers/stoves in 2018 using a subsidy granted by the city of Katowice. In such cases the Social Welfare Centre provides for the possibility of paying a one-off allowance of up to PLN 2,000 (no more than the own contribution required). This means that in some cases it would be possible to finance the replacement of the heating system completely from the funds of the city of Katowice.

Level: *City*

Action: lobby

Outcome: decreased amount of old heating installations, decreased amount of waste burning

- Revision of the “*Low emission reduction*” programme;

The so-called “*Reduction of low emission in the city of Katowice*” programme has been continued from January 2018. Its assumptions have been verified and agreed upon in the context of the “*anti-smog resolution*” and budget capacity of the city of Katowice. It is estimated that even 19 thousand property owners and tenants may benefit from the subsidy for replacement of the building heating system provided by the city of Katowice by the end of 2027. The total cost of this task is estimated at nearly PLN 235 million (including the subsidy in amount of PLN 176 million). In the draft budget of the city of Katowice for 2018 it was planned to spend PLN 16.5 million for this purpose.



Level: *City*

Action: lobby

Outcome: Creating plans and policies in City for more effective actions to deal with air pollution

- Increasing the responsibilities of the City Guard;

Taking into account that the act has entered into force the City Guard in Katowice carried out an inspection of all fuel depots in our city. Furthermore, on 23 August 2017 city guards from the municipal division were trained in the provisions of the resolution and the possibility of their execution organised by the Marshal's Office.

Level: *City*

Action: lobby

Outcome: Increased responsibilities and capabilities of Municipal Guard during inspections

- Replacement of boilers and thermal upgrading in urban residential buildings;

According to the resolution, Municipal Housing Department intensifies its activities and plans to change the heating method in residential units located in the city of Katowice. We own 2.7 thousand residential units in 539 buildings heated with coal. The resources of the Municipal Housing Department consist of 83% of buildings constructed before 1945, 24% of which are over 100 year old. It is impossible only to replace heat sources in them. They have to undergo thermal upgrading or be demolished if the first solution is unprofitable. By 2021, 45 buildings are planned to be renovated. The cost of this investment will amount to nearly PLN 51.5 million. Further 70 buildings are to be renovated in the years 2022-2025. There will still be 424 buildings, which are not covered by any plan (the plan would have to cover approx. 55 per year; compared with 12 residential buildings that underwent thermal upgrading in 2010-2016). The estimated cost of elimination of coal heating in these premises, including upgrading of central heating installations, replacement of heat sources, thermal upgrading and basic renovation of the building, was estimated at PLN 291 million. To this amount it is necessary to add PLN 225 million for renovation of 8 State Treasury buildings and 215 buildings placed under temporary administration (in addition to regulating legal conditions, permission for tasks related to replacement of the heating system should be requested), PLN 39 million for renovation of 2,158 municipal premises in housing communities and PLN 2.5 million for 13 public buildings. The city may need even PLN 1 billion for thermal upgrading, including demolition costs.

Level: *City*

Action: lobby, financial aid

Outcome: decreased amount of old heating installations, increased energy efficiency



Other measures

- Strategy for adaptation to climate change;

Since 2014 we have been cooperating with the *Institute for Sustainable Development Foundation*, the Capital City of Warsaw, the *Union of Polish Metropolises* and *Verband Region Stuttgart* in “Development of adaptation strategies for metropolitan city climate change with the use of a climate map and social participation” (*ADAPTCITY*). The cooperation will result in reducing negative effects of climate change on the Warsaw ecosystem and to start adaptation activities in other metropolises in Poland.

- Urban plan for adaptation to climate change;

With the support of the state budget and the European Union, together with 44 other cities under the aegis of the Ministry of the Environment, the city of Katowice takes part in development of the “*Urban plans for adaptation to climate change*”. In connection with the project, the city will receive for the first time comprehensive documents identifying threats resulting from climate change and presenting comprehensive solutions. As a consequence, safety will increase, a rapid response system will be developed, quality of life will improve and awareness of climate change will increase.

Adaptation actions

Short-term actions (undertaken when emission standards are exceeded) for Katowice

Short term measures are related to the *Short-term Action Plan (SAP)*; one of only a few in the country), which depending on air quality introduces relevant SAP levels in the city and obliges subordinate units to undertake information and operating actions assigned to given level. Current CAP is linked to guidelines provided for in the “*Air quality protection programme for the Silesian province*” and *Regulation of the Minister of Environment concerning levels of certain substances in the air of 24 August 2012* (Polish Journal of Laws of 2012, item 1031). In case of PM10 it distinguishes between exceeded permissible concentration ($50 \mu\text{g}/\text{m}^3$), notification that alarm level could be exceeded (when the public should be informed, $200 \mu\text{g}/\text{m}^3$) and exceeded alarm level ($300 \mu\text{g}/\text{m}^3$).

The goal of the information activities is to notify as many residents as possible of air quality. The list of activities includes notification through the following information channels:

- on the part of the city;
- Facebook profile;
- website <http://katowice.energiaisrodowisko.pl>; announcements placed in public buildings;
- SMS in KISS;
- announcements displayed on BOM screens;
- announcements displayed on log-in screens for employees of the City Council;



- preparation of information for local media.

In turn, the goal of operating activities is to temporarily reduce emissions. The list of activities includes the following activities:

- Mayor of the City requesting the Municipal Police and the Road Transport Inspectorate to increase control of exhaust gases in vehicles moving in Katowice and vehicles leaving construction sites, building depots, mines and fuel depots;
- Mayor of the City requesting the Poviát Inspectorate for Construction Supervision to increase control of construction sites as far as reduction of dust emissions from construction works and stored bulk materials is concerned;
- Major of the City calling citizens for help in an immediate reduction of the pollution level, by means of informed decisions (e.g. refraining from using fireplaces).