



Measures taken by Krakow Municipality in terms of improvement of ambient air quality in Krakow



Why Krakow?

1. position – the city is situated in a river valley with limited possibility of ventilation
2. meteorological conditions
3. low-emission phenomenon – e.i. pollution resulting from the operation of local coal boilers and stoves, especially in autumn-winter season (according to the inventory data there are around 250.000 active coal stoves in this area, moreover in the area of 14 communes directly neighbouring Krakow, the approximate number of stoves is around 50.000 pieces)
4. constantly increasing communication emission volume – only in Krakow there are more than 500.000 cars registered, where older cars constitute approximately 92% of the whole population
5. industrial emission – created as a result of industry activity
6. alluvial emission – including this especially as a result of adverse winds – alluvial of pollution from the West and South-West (industrial areas of Śląsk and Czech Moravs) and areas directly neighbouring Krakow
7. secondary emission – created as a result of repeated drift of soil pollution (e.g. as a result of cars or winds movement)

Low/ local emission, emitter situated up to 40 meters/
coal stoves, boilers/

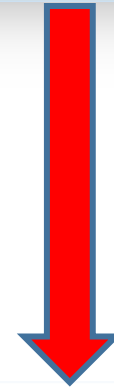
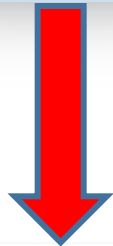
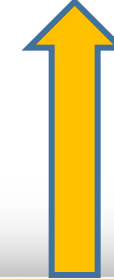
Communication emission

**Major types of pollution emissions influencing
the quality of air in Krakow**

Secondary emission

Alluvial emission

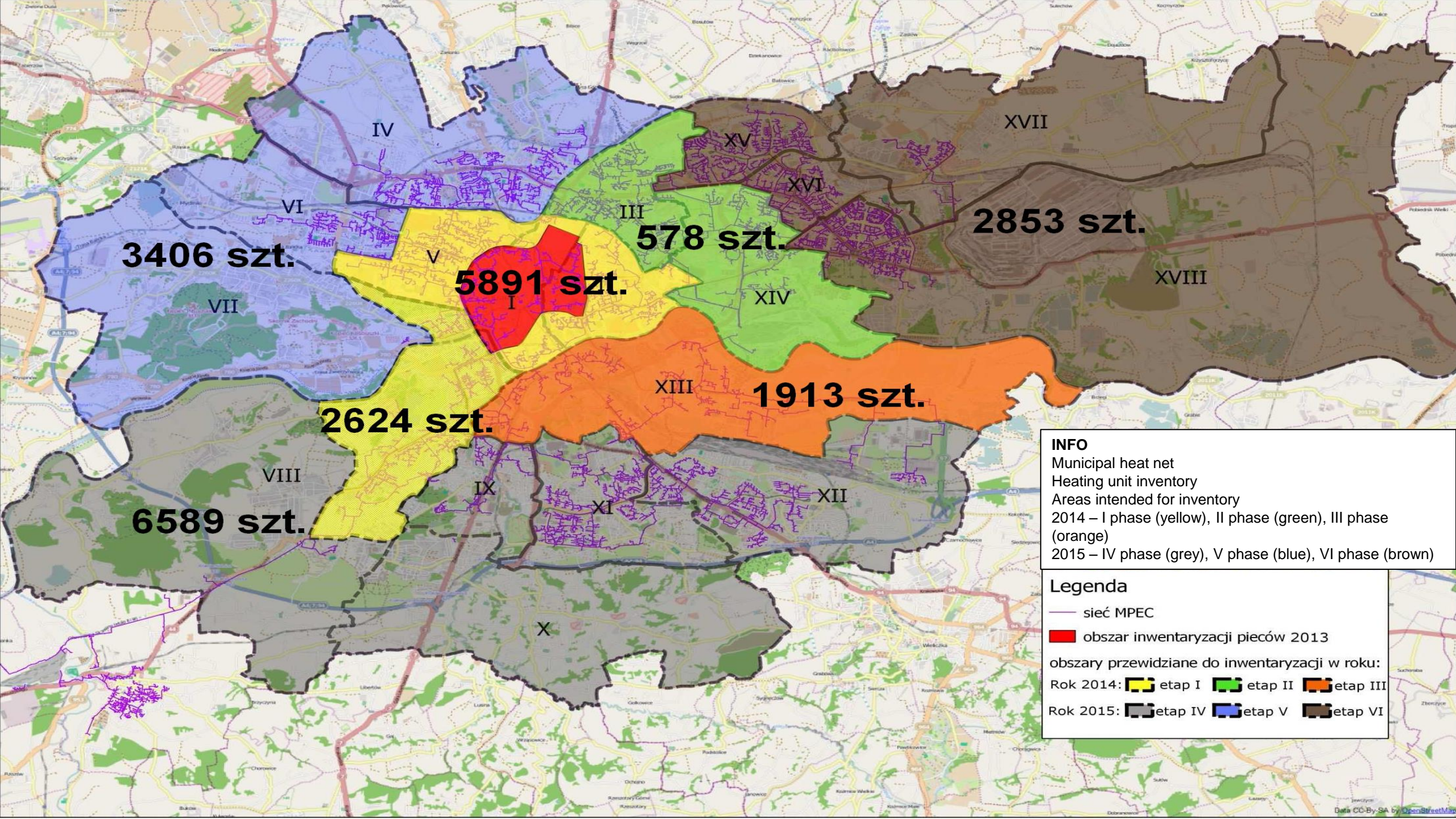
Industrial emission





The extent of GMK financial efforts in terms of measures related to improvement of air quality for 2014-2022

Investment and purchase tasks <i>/park&ride, trams and buses purchase, heating networks extension, thermomodernization/</i>	PONE Expenditure Plans <i>/2015-2018/</i>	Protective Programme expenditures plan <i>/2014-2022/ /for the poorest inhabitants of KRR/</i>	Informational and educational measures <i>/plan 2015/</i>
PLN 2,3 billion <i>/including external funds PLN 1,3 mld/</i>	PLN 220 million <i>/so far GMK has spent PLN 103 mln /</i>	PLN 17 million	PLN 500 thousand



INFO
 Municipal heat net
 Heating unit inventory
 Areas intended for inventory
 2014 – I phase (yellow), II phase (green), III phase (orange)
 2015 – IV phase (grey), V phase (blue), VI phase (brown)

Legenda
 — sieć MPEC
 ■ obszar inwentaryzacji pieców 2013
 obszary przewidziane do inwentaryzacji w roku:
 Rok 2014: ■ etap I ■ etap II ■ etap III
 Rok 2015: ■ etap IV ■ etap V ■ etap VI

3406 szt.

5891 szt.

578 szt.

2853 szt.

2624 szt.

1913 szt.

6589 szt.

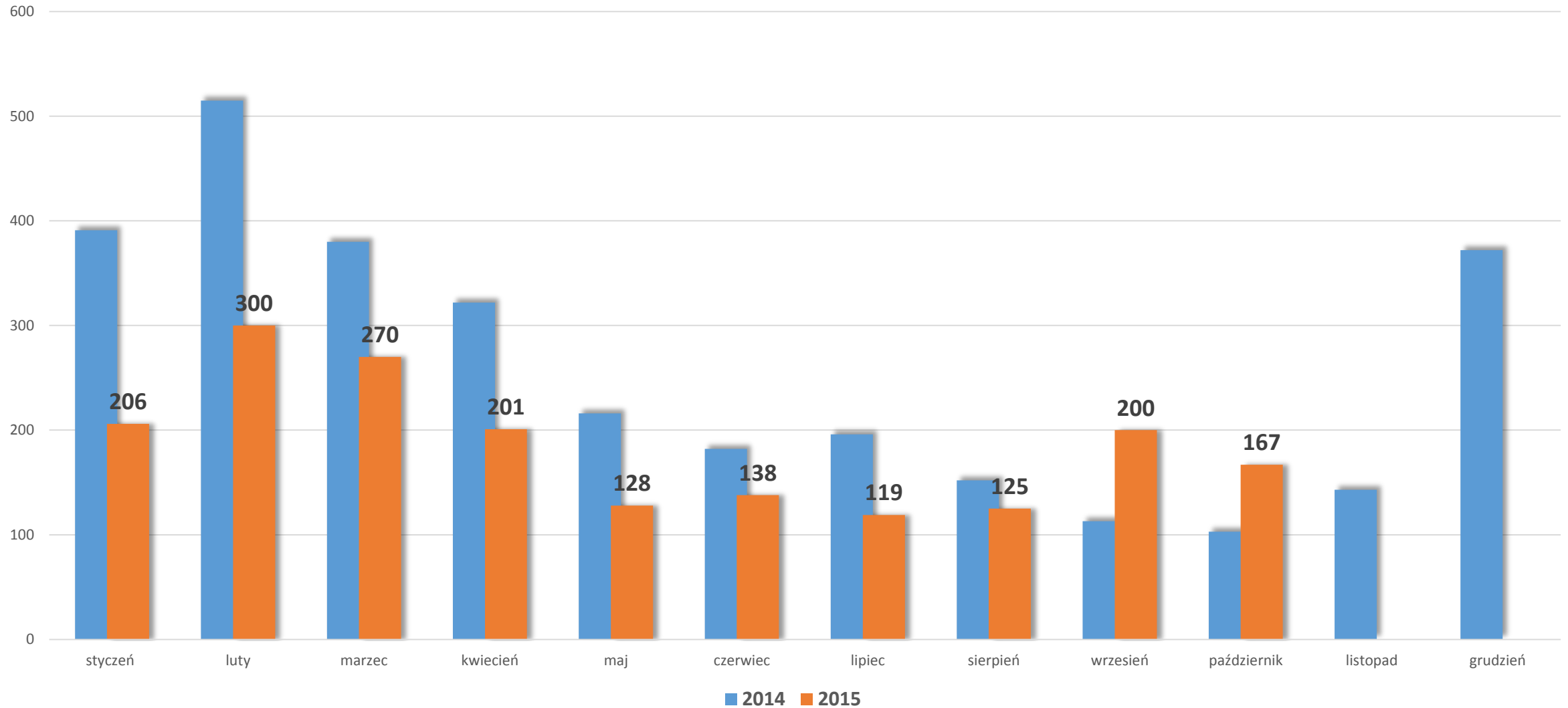


Low Emission Reduction Programme

LOW EMISSION REDUCTION PROGRAMME - The outcomes of the programme since its implementation until September this year are:

- liquidation of more than 24 thousand stoves and almost 2,8 thousand coal boilers
- installment of 867 OZE installations, with the use of e.g. solar energy
- Since 1995, PLN 103 mln have been spent (aprox. EUR 25 mln)
- Entire expenditure plan for 2015 is estimated for around PLN 50 mln (including external funds from KAWKA Programme and EU funds). Provisional expenditure plan expected in 2016 is estimated for around **PLN 100 mln**
- **in 2017 – more than PLN 70 mln**
- **in 2018 – more than PLN 50 mln**

Comparison of PONE application submission pace in relation to years and months





Organizational challenges

The number of units engaged in the implementation of measures related to air protection in the frameworks of GMK organizational structure

15+3

Need for continuous measures coordination!!!!



Local Protective Programme

LOCAL PROTECTIVE PROGRAMME - for people who have been charged with bigger heating costs related with the exchange of heating system based on solid fuel for one of ecological systems.

- According to the resolution of Krakow City Council the programme is implemented in 2013 – 2022 and its culminating budget is almost PLN 17 mln
- Ultimately in 2022 the commune is ready to support almost 3 thousand Cracovian families, who decide to liquidate the coal stoves



Local Protective Programme

Since 1 October 2015 the income criteria entitling for social benefits have increased (RM Ordinance 14. July 2015 concerning verified income criteria and social benefits)

One-person household +30 %
before: 2 439 zł net → **2 710 zł net** → **now: PLN 3 170**

Multi-person household (amount for a person): +69 %
before: 1 368 zł net → **2 052 zł net** → **now: PLN 2 313**

LPP increasing interest among residents of Krakow

Formula of Pollution Information System Operation

1. Scale of air evaluation according to the Air Quality Index

2. Range of information provided:

- 314 boards in the city
- 14 LCD panels (city centre)
- more than 200 trams and buses (BUS TV)



3. Data from urban background stations for hours: 8.00 am, 12.00, and 4.00 pm





Changes in the Environmental Legislation Act



Kraków, dnia 13. 08. 2015

WS-08.621.5.2015

Szanowny Pan
Andrzej Duda
Prezydent Rzeczypospolitej Polskiej

Nieka klanowmy Panie Prezydencie!

W związku z procedowaną przez Parlament RP zmianą zapisów art. 96 Prawo Ochrony Środowiska dotyczącą m. in. określania przez sejmiki województw rodzajów i jakości paliw dopuszczonych do stosowania oraz minimalnych wymagań technicznych dla urządzeń do spalania paliw, zwracam się do Pana Prezydenta z propozycją wsparcia merytorycznego Kancelarii Prezydenta RP w powyższym zakresie.

Jako krakowianinowi, któremu zapewne bliski i znany jest ten obszar tematyczny, pragnę przypomnieć, że Gmina Miejska Kraków w sposób szczególny została dotknięta problemem złej jakości powietrza. Jednocześnie, w skali kraju, nasze miasto jest niekwestionowanym liderem zmian w tym zakresie. Nadmieniam, iż do tej pory realizowany od 2012 roku Program Ograniczania Niskiej Emisji przyniósł skutek w postaci wymiany ponad 6 tys. starych pieców węglowych i kotłowni na nowoczesne, proekologiczne systemy grzewcze. Łącznie w tym czasie wydatkowano kwoty na poziomie \$2 mln PLN, a w samym 2016 roku planujemy ponieść na ten cel nakłady na poziomie zbliżonym do 100 mln PLN.

Aby przedstawić Panu Prezydentowi skalę problemu związanego ze zjawiskiem emisji lokalnej, ograniczając się wyłącznie do Krakowa i gmin bezpośrednio z nim graniczących, wchodzących w skład Stowarzyszenia Metropolii Krakowskiej, informuję, że szacunkowa liczba zinwentaryzowanych dotychczas pieców i kotłowni opalanych węglem na tym obszarze wynosi ok. 75 tys. sztuk. Jednocześnie, opierając się na danych Europejskiej Agencji Ochrony Środowiska, należy zauważyć, że problem złej jakości powietrza dotyczy nie tylko Krakowa. Wśród 10 najbardziej zanieczyszczonych miast na terenie Unii Europejskiej aż 6 z nich to miasta polskie.

Dlatego też, bez rozwiązań o charakterze systemowym, do których zalicza się możliwość wprowadzania minimów jakościowych węgla i kotłów węglowych użytkowanych w sektorze komunalnym, żadna aglomeracja miejska ani tym bardziej gminy miejsko-wiejskie i wiejskie, w obrębie których występują trudności lub całkowity brak dostępu do sieci ciepłowniczych i gazowych, nie będą miały możliwości skutecznego ograniczenia poziomu zanieczyszczeń powietrza.

Z uwagi na powyższe, składam na ręce Pana Prezydenta propozycję podjęcia współpracy pomiędzy Kancelarią Prezydenta RP a Urzędem Miasta Krakowa, w celu możliwie szerokiego nakreślenia problemów związanych z ochroną powietrza w Polsce (w szczególności w Krakowie) oraz przedstawienia argumentów, które, mam nadzieję, pozwolą Panu Prezydentowi podjąć pozytywną decyzję w zakresie proponowanych zmian art. 96 Prawo Ochrony Środowiska.

W imieniu Gminy Miejskiej Kraków, deklaruje wolę przekazania zgromadzonych doświadczeń związanych z poprawą stanu powietrza w naszej aglomeracji.

Głęboko wierzę, że ta kwestia, tak ważna dla wielu Polaków, będzie również przedmiotem szczególnej troski Pana Prezydenta.

Łukasz Majchrowski

PREZYSTENT MIASTA KRAKOWA

Łukasz Majchrowski

Changes in the Environmental Legislation Act

Andrzej Duda

President of the Republic of Poland

Dear Mister President,

According to the amendment to the article 96 of the Environment Legislation, considered by the Parliament, concerning inter alia setting out by province assemblies types and quality of fuel allowed for usage and minimum technical requirements for fuel combustion facilities, I would like to offer you substantial support for the Chancellery of the President of the Republic of Poland in the abovementioned terms.

As a Cracovian, who has a special bond with this thematic area, I would like to remind you that the Municipality of Cracow has been especially affected by the bad air quality problem. At the same time our city is an unquestionable national level leader when it comes to introducing changes in this area. I would like to mention that the Low Emission Reduction Programme which has been implemented since 2012 has brought an effect of exchanging 6 thousand old coal stoves and boilers for modern, ecological heating systems. In this time the amount of around PLN 82 million has been spent, and only in 2016 we are planning to spend around PLN 100 million for this purpose.

In order to present the extent of the problem related to the phenomenon of local emission, speaking only about Cracow and directly neighbouring communes included in the Cracow Metropolis Association, I would like to inform that the estimated number of coal stoves and boilers so far listed in this area is around 75 thousand pieces. At the same time, in compliance with the European Environment Agency data, we should take notice of the fact that the problem of bad air quality concerns not only Cracow. Among ten most polluted cities in the European Union as many as 6 of them are Polish cities.

That is why without system solutions, which include the possibility of introducing quality minimums of coal and coal boilers used in communal sector no urban agglomeration, much less urban-rural and rural communes, where there is limited access to heating and gas networks will have no possibility of effective reduction of air pollution level.

In view of the abovementioned, I am offering you, Mr. President, cooperation between the Chancellery of the President of the Republic of Poland and Cracow City Authority in order to determine problems related to environment protection in Poland (especially in Cracow) as soon as possible and to set out arguments which, hopefully, will let you make a positive decision in terms of proposed amendments to the 96 article of the Environment Legislation.

On behalf of the Cracow Municipality, I declare the willingness to share the experiences related to the improvement of air quality in our agglomeration.

I have a strong belief that this issue, important to so many Poles, will be your special concern as well.



What in 2016 ?

1. Support for informational and educational activities inside and outside the area of GMK

cooperation with communes in the frameworks of SMK and presidential cities in Małopolska

2. PONE- budget: aprox. PLN100 mln (own funds, KAWKA, ZIT RPO),

Changes planned: non-cash settlements, costs refunding

3. LPO- estimates and forecast:

in 2015: PLN 222 thousand/170 families, in 2016: minimum of PLN 450

thousand/340 families

4. Investment and purchase activities - bus stock, public transport, measures taken in order to decrease the traffic in the areas



What in 2016 ? continued

5. Launching new monitoring stations (2+1) and dust separator

Discussions with AGH concerning scientific research measurement use are ongoing

Dust analyser no1 – Mistrzejowicka / Piasta Kołodzieja

Dust analyser no2 – Bronowice

Mobile station – Rynek Podgórski

6. Support of research programmes implemented by AGH and PK

- Determining dust sources in KRK

- Records of low emission effects liquidation

- including the influence of alluvial emission in KRK

7. Further condensation of the exhaust fumes quality control network inside KRK

8. Upgrading ITD with special facilities enabling ITD exhaust fumes measurement in cars

with DIESEL engines – budget aprox. PLN 400 thousand **/settlement stage/**

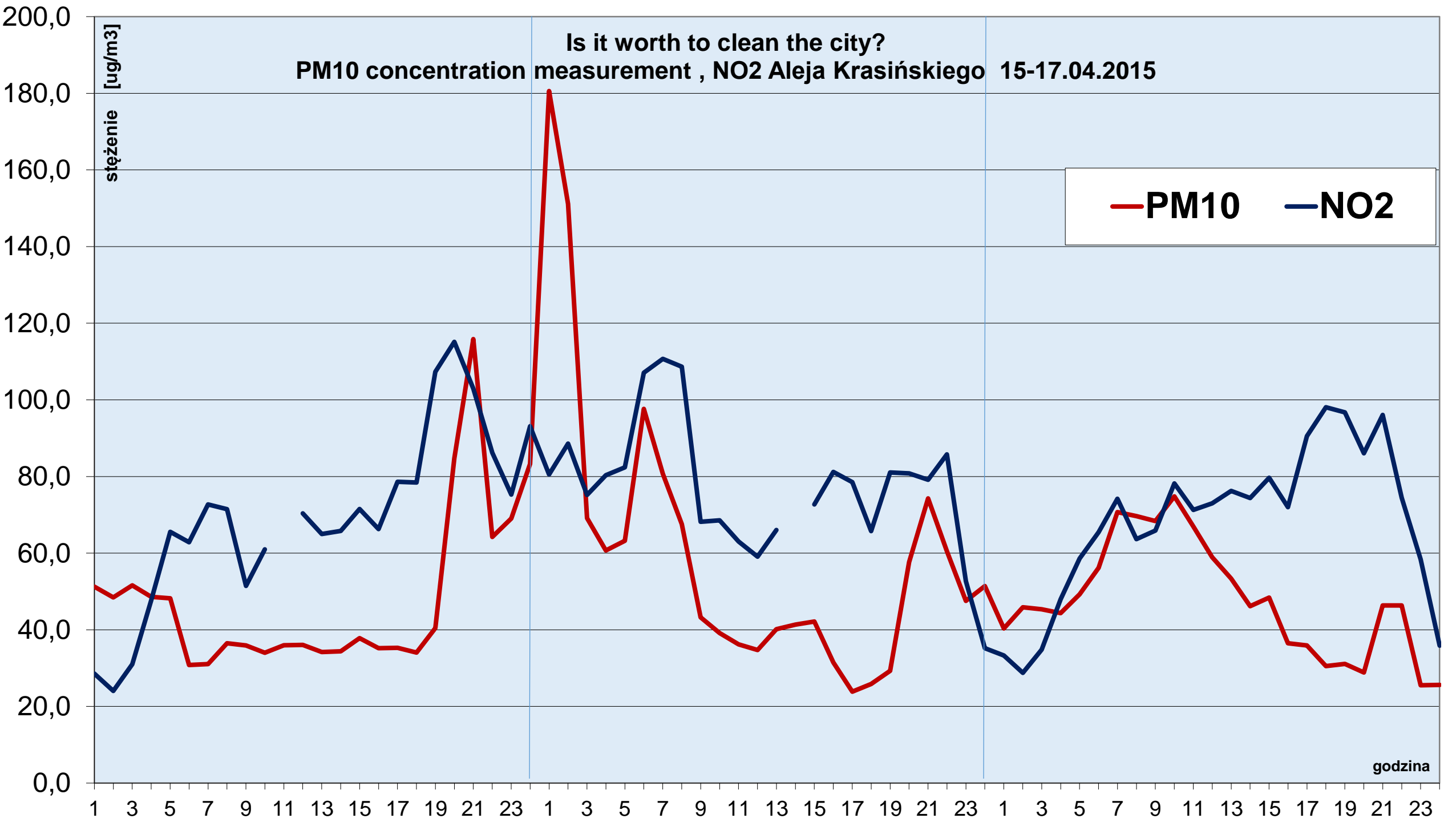


What in 2016 ? continued

9. In terms of ZIT PRO and POIŚ: P&R investments/PLN 82 million budget/low-emission modern vehicles stock for public transport purchase/PLN 182 million budget, 180 buses/

10. Bicycle lanes development- 61 mln budget-40km/

11. Projects complementary to ZIT: 4 tram lines construction/PLN 664mln trams purchase /PLN 267 mln , 44 pieces/



Krakow IS NOT A SOLITARY ISLAND...

- October 2015 - „**Presidential Cities Agreement**” related to experiences sharing by presidential cities from Małopolska, has been signed.
- **permanent cooperation with JST spokesmen representing Krakow Functional Area** - why is it important?

Coal stoves stocktaking inside Stow. Metropolia Krakowska

MUNICIPALITY	Stoves and coal boilers combine	Stoves number	Coal boilers number	Gas boilers number	Oil boilers number	Heat pumps number	Number of buildings equipped with other means of heating
Wieliczka	7 079	953	6126	5906	0	19	856
Skawina	5 825	25	5800	1684	0	0	549
Niepołomice	4 170	402	3768	3101	7	7	294
Zabierzów	4 161	235	3926	3001	49	29	683
Czernichów	3 727	559	3168	440	104	52	97
Liszki	3 627	466	3161	1545	19	10	57
Zielonki	2 724	58	2666	3188	0	0	174
Kocmyrzów-Luborzyca	2 694	243	2451	1310	0	0	115
Mogilany	2 083	159	1924	1530	7	53	68
Wielka Wieś	2 050	119	1931	1379	7	22	194
Biskupice	1 971	127	1844	622	6	6	109
Świątniki Górne	1 764	254	1510	972	0	7	35
Michałowice	1 739	107	1632	1228	8	8	99
Igołomia-Wawrzeńczyce	1 516	166	1350	406	6	6	48
RAZEM	45 130	3873	41257	26312	213	212	3378

Data for Krakow: **aprox. 24.000 stoves**

Data for KrOF: **aprox. 45.000 stoves**



Thank you for attention