



# Use of coal and wood in SCI- Polish Case

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## ***Scope of the presentation***

- Coal in EU and PL, its production and share in energy generation and mix, including SCI
- Wood burning in Europe and PL and its share in SCI
- Air pollution by PM generated by coal and wood in SCI
- State monitoring data at country and region levels
- Roots of pollution by SCIs
- Action to mitigate and restrict use of solid fuels in SCIs
- „Clean Air” Programme 2018-2019
- Conclusions

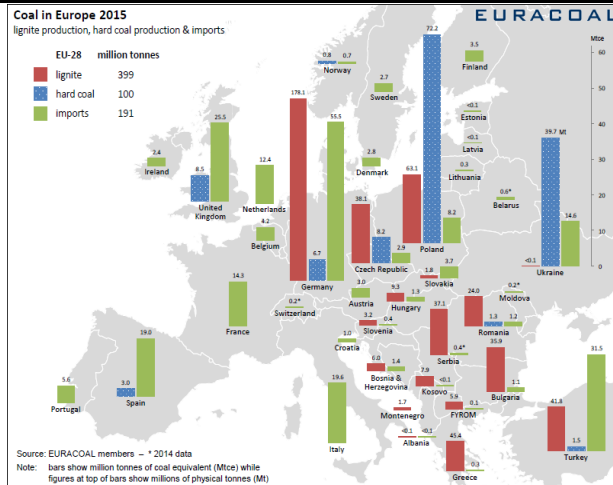
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## Production of coal in Europe



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## Use of coal and wood in Polish SCI for domestic heating

More than 40 % of houses on coal and more than 11 % on wood (1% renewable energy)

13 million tons of coal burnt annually, out of which 4 million tons of coal dust

26 million m3 of wood burnt out of 51,4 million m3 used (UNECE-2015)

Percentage of total national PM 2,5 emissions from coal and wood burning 50,8 % (73 th out of 144 th tons as total)

Percentage of total WWA emissions 87 % (135 Mg out of 155 as total), 66 % of PCDD/F [g i-TEQ] and more than 60 % of carbon monoxide emissions (data for 2013)

Residential heatng is a key



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## Air quality assessment in Poland – preliminary classification of zones for 2017 (www.gios.gov.pl)

PM10 – 2017

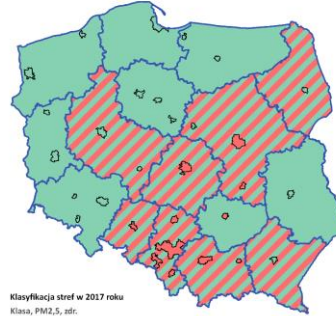
PM2,5 – 2017



**Klasyfikacja stref w 2017 roku**  
Klasa wg parametrów, PM10 - 24h, zdr.

- A
- C - aglomeracje i miasta
- C - pozostałe strefy

Granice stref - województw  
Granice stref - aglomeracji i miast  
Źródło danych: Państwowy Monitoring Środowiska  
Opracowanie: Instytut Ochrony Środowiska - Państwowy Instytut Badawczy



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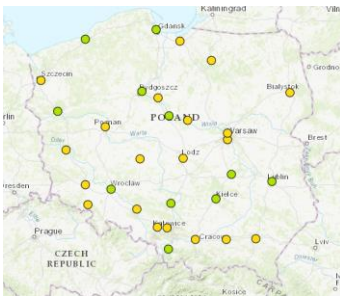
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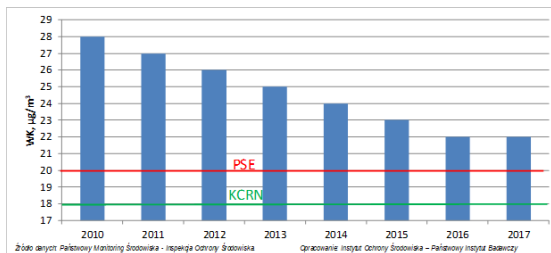


## Average Exposure Indicator PM2.5 (www.gios.gov.pl)

Map of sampling points measuring PM2.5



**1 station per one agglomeration (in Warsaw - 2 stations and Upper Silesia Agglomeration – 2 stations) and 1 station per a city >100,000 (32 stations)**



National average exposure indicator (2010-2017) [ $\mu\text{g}/\text{m}^3$ ] in relation to exposure concentration obligation (PSE= $20 \mu\text{g}/\text{m}^3$ ) and national exposure reduction target (KCRN= $18 \mu\text{g}/\text{m}^3$ )

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## Main causes of impact on air quality from SCI-low-emissions

### At policy level

- No alternatives to use coal e.g. organic chemistry, gasification..
- Insufficient gas and heat infrastructures
- Unwillingnes of government to introduce solid fuel standards for SCIs
- Eco-design Directive considered as voluntary agreement
- Lack of technical guidance for burning solid fuels in SCIs
- SCIs not yet subject to control
- Incentives rare and scarce

### At source level

- Only since October 2017 boilers entering the market in Małopolska region have to comply with emission class 5 EN 303-5-2012

### But poverty results in

- Keeping old boilers and stoves
- Using cheapest fuels; high-ash
- Often burning wastes
- Enjoying „freedom to burn”
- Lack of ecological education

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## What is going on in PL to improve the situation

- Civil anti-smog movement (1)
- Awarness raising campaign (2)
- „Clean Air” governmental programme (3)



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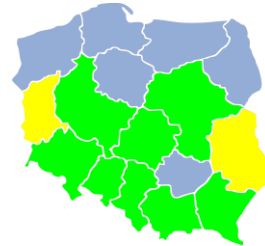


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## Anti-smog campaign (1)

- Anti-smog civil campaign started first in Malopolska Region (MR), including city of Cracow-Polish capital of smog
- 500.000 solid fuel boilers are used in MR
- Anti-smog resolution effective in January 2017
- In 2013-2017 more than 18.000 boilers and stoves were replaced in Cracow, about 10.000 still remain
- City of Krakow offered subsidies up to 100% in the past and now is offering up to 60 % (part of the social care system because of poverty)
- New solid fuel boilers or space heaters must comply with emission standards from Ecodesign Directive (emission class 5)
- Existing boilers and space heaters to be replaced by 2022
- Emission class 3 or 4 to be reached by 2026
- **8 regions follow Anti-smog campaign, particularly Silesia and 2 are preparing to join it**



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## Awareness raising campaign (2)

- We create atmosphere



- Energy-saving houses



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## „Clean Air” governmental programme (3)

- Set on 7 th of June 2018 by MoU signed between the Ministry of Environment and financing institutions National and Regional Funds of Environmental Protection and Water Economy and Bank of Environmental Protection (**extra funding from anti-smog fuel tax 0,025 euro/l since 1 January 2019**)
- Cost of the Programme 103 bilion złotych~250 milion euros scheduled for 2018-2019; 60 % as direct subsidy (40 % to 90 % of the project cost) and 40 % as low-percentage loans
- **Priority projects subject to finance**>improving energy efficiency of individual houses via better thermo-insulation (up to 3 milion houses)
- Other projects may include modernization of boilers and space heaters as well as electric heating
- Room to finance renewable energy (solar, photovoltaic and heat pumps)
- Beneficiaries>owners of houses up to 10.000 euro direct subsidy per house

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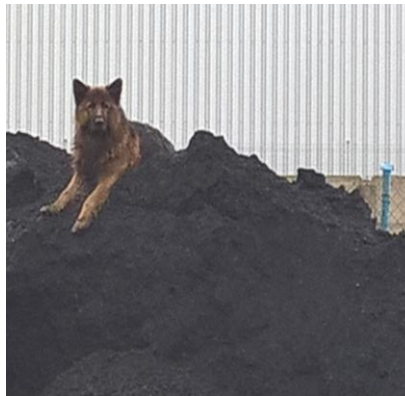
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## Conclusions (1)

### Needed Polish action plan

- Coal political fuel and cultural heritage, but SMOG appears in election campaign
- Quicker implementation of the Eco-design Directive 2009/125/EC targeting solid fuel boilers and local space heaters
- Slow penetration of the class 5 domestic boilers, mainly on pellet (**export**)
- Setting of emission standards for SCIs<1MW
- Quality requirements for solid fuels to be burnt in SCIs>licence to sell???
- Enforcement of conformity with product and environmental standards of SCIs by urban guards
- Voluntary commitment to modernize
- New monitoring devices e.g. drones
- Awarness raising and education...



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## Conclusions (2)

### *EFCA perspective*

- Use of coal and wood in SCIs only where no alternatives do exist e.g. lack of gas and heating infrastructure
- Extension of ban of coal on heavily polluted areas (IT, IRE and PL)
- Class 3 and 4 of emission to be met following the Ecodesign Directive after 2020 for solid fuel boilers and local space heaters
- Considering SCI Directive following MCP Directive including emission standards and best available technology
- Enforcement needed at community level based on new monitoring techniques

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