

GIE workshop on the energy transition in the CEE region

Slovak republic

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Clean planet for All

Where we are:

- The Clean planet for All Communication acts as a vision to guide the debate on the EU's 2050 climate and energy goals
- It presents two pathways for the EU to achieve net-zero emissions by 2050 among its analysis of eight scenarios on greenhouse gas emission reductions for 2050.
- The eight scenarios fall under three categories: 80% reduction in GHG emissions by 2050 ('well below 2°C ambition'), 90% reduction in GHG emissions by 2050, net-zero GHG emissions by 2050 ('1.5°C ambition')

But In some countries there are issues which might lead to longer/shorter duration of some of the phases as well as different set of priorities at certain moments

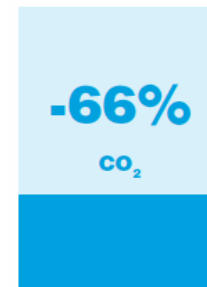
Slovak energy sector has one of the best emission profiles in EU from CO2 emission viewpoints

Problems are:

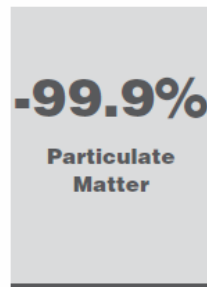
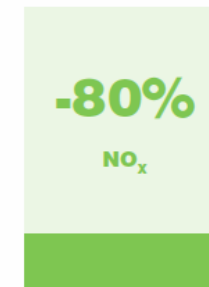
- Deeply poluted air
- Energy efficiency

Lets discuss in more detail

Natural gas power generation emits up to...

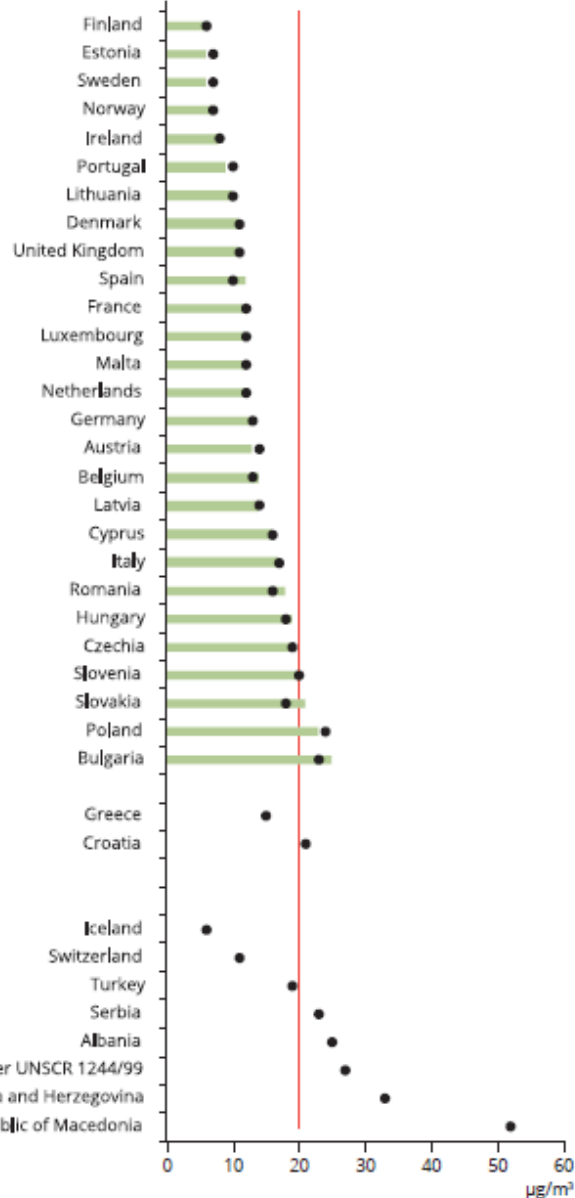


...less than coal.



Air pollution situation is very bad

Figure 3.4 Average Exposure Indicator In 2016 and exposure concentration obligation

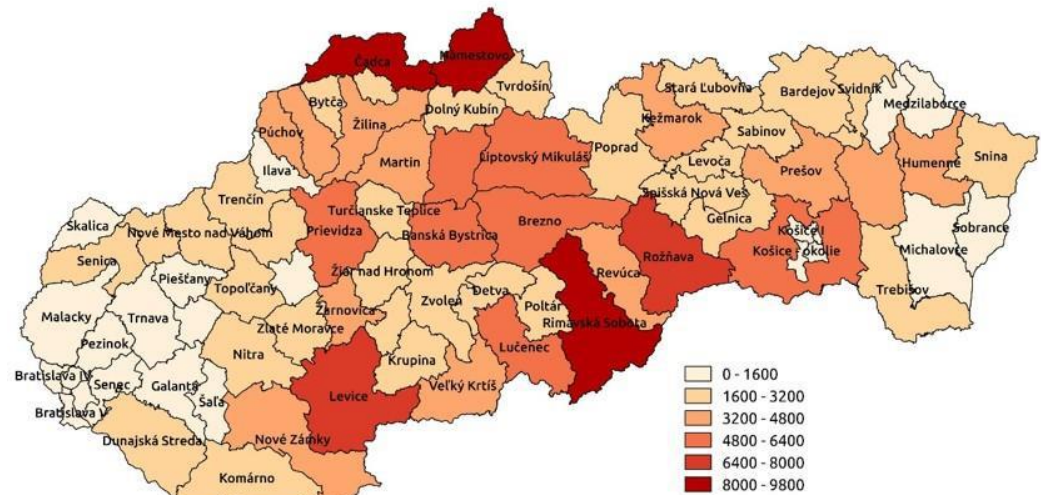


Particulate matter PM_{2,5} in air decreases average statistical lifetime in EU by min. 8 months

Official research shows 4520/y premature deaths in Slovakia due to bad air control/regulation (overall above 300 ths premature deaths in EU).

Cause of the problem:

Number of flats in houses with solid fuel heating (counties)

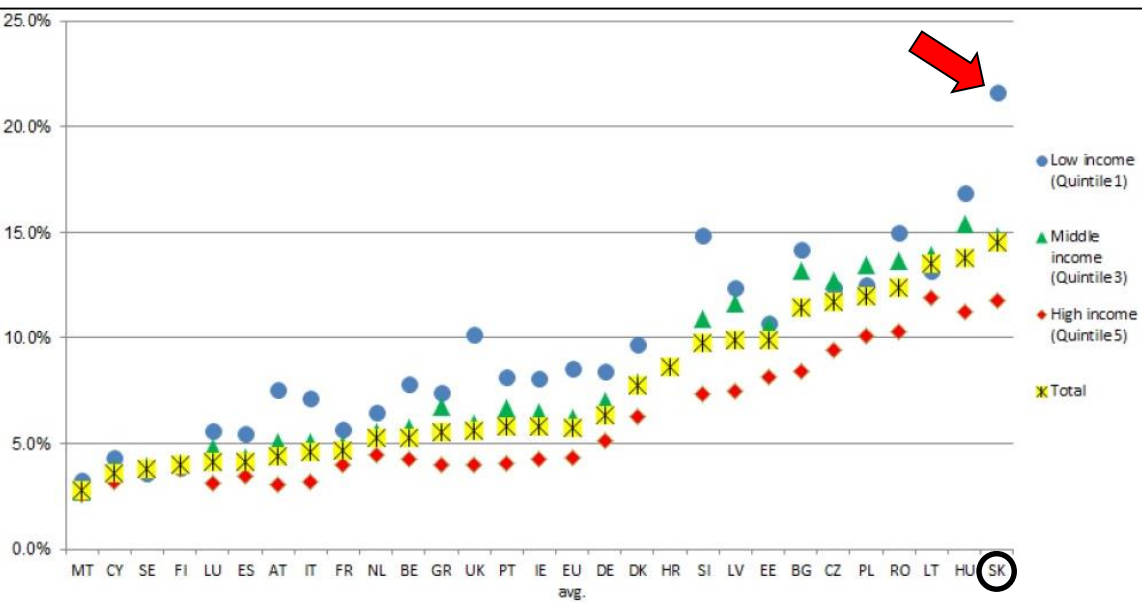


Reason – Energy poverty

- The costs of energy for citizens in Slovakia represent up to 15% of total household costs, for low income households nearly 22%.
- Big ratio of polluting energy carriers is used (tires, glued wood, plastics, old furniture etc.).



- Plus ruining forests – rapid decrease, leads to uncontrollable and often illegal wood production from forests



Share of household energy costs as per categories of income (2014)
 (source: Európska komisia (COM(2016) 769 final))

Natural gas is a preferred tool how to eliminate this challenge

Natural gas heating



100% houses heats by natural gas

| For 1 year | Natural gas |
|--|------------------------|
| Number of houses | 408 |
| Houses with gas | 326 |
| Village consumption (2 088 m ³ / 1 house) | 680 688 m ³ |
| Produced Fixed deteriorating particles (FDP) | 230 kg |

Heating wood + natural gas*



80% heats by wood, gas for heating water in summer
20% houses heats by gas

| Number of houses | Gas | Wood |
|---|------------------------|-----------------|
| Number of houses | 408 | |
| Houses with gas | 326 | |
| Village consumption | 299 210 m ³ | 1 100 000 kg |
| Produced Fixed deteriorating particles | 100 kg | 1 160 kg |

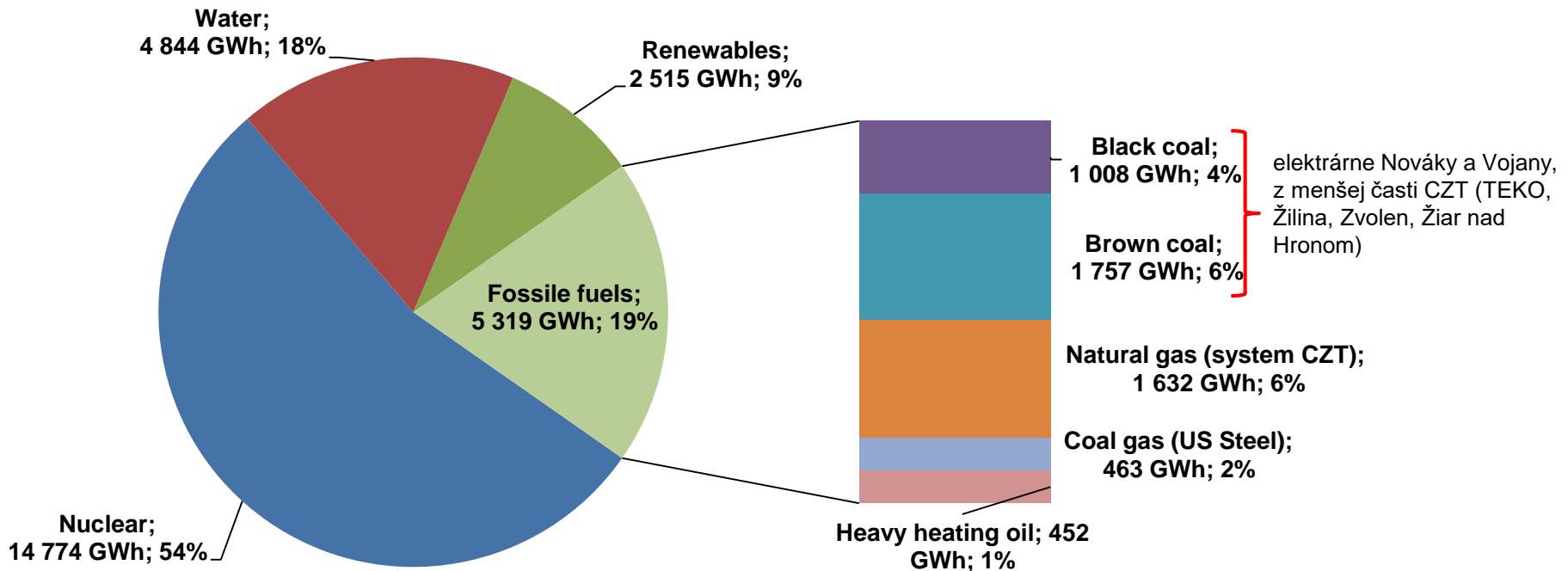
- 7 such dirty villages produces amount of fixed particles like big city **power plant**

The Clean planet study further indicates that In 2030 every household shall bear the cost of +570 EUR in comparison to 2015 (in 2013 prices). Average wage in Slovakia is presently around c. 600 EUR net.

Structure of energy sector from CO2 emission viewpoint

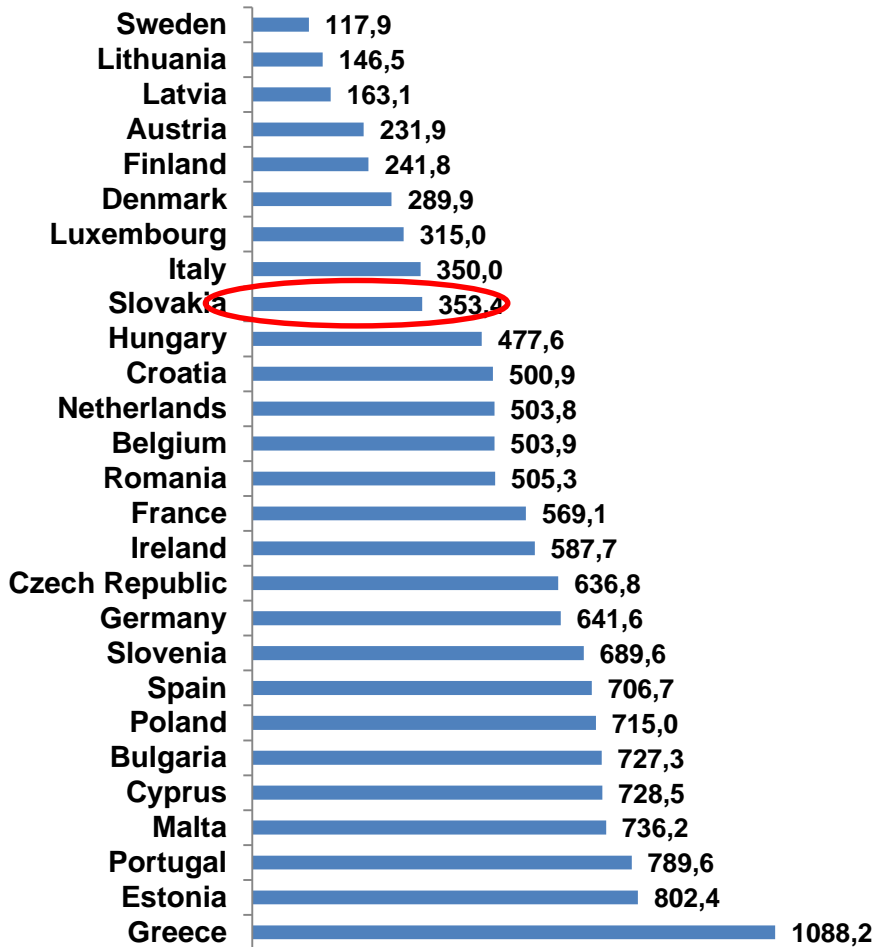
Replacing coal is the straight-forward direction

Production of energy 2016 by sources



CO₂ intensity of production of electricity and heat

- Fight against gas does not bring too much
- But collateral damages are big



- g CO₂/kWh
- Source: EEA