



# Air pollution caused by energy production

Created by:

Nojus Balčiūnas (LT), Serena Kulli (IT),

Nasrou Allah Jihane (IT), Mariya Pylypchuk (PT),

Yigit Odabasoglu (TR)



# Project “The Citizen of the Future Facing Climatic Change (COFFE\_E)”

2020-1-RO01-KA229-080194

LTTA in Panevėžys, Lithuania

3rd-9th October 2021



# Content:

- Key words, phrases
- Sources and causes of pollution
- Toxic pollutants emitted into the environment
- The effect on climate change
- How to reduce the amount of environment pollution?
- International agreements



# Key words, phrases

Fossil fuels – coal and natural gas.

Greenhouse effect – natural phenomenon on which the temperature of the earth's surface depends.

Methane – gas.

Sulfur dioxide –colorless gas.

Carbon Dioxide – acid oxide.

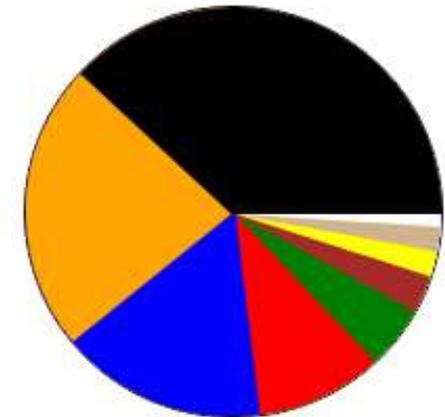
Carbon capture – a method to catch carbon oxide.

Permanent storage – a way to store something for a long time.

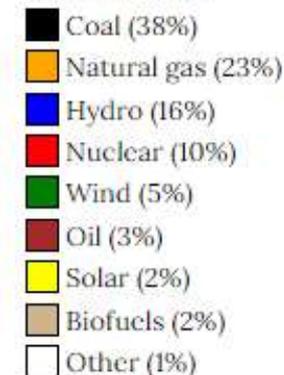


# Electricity production

The three major sources of energy for electricity generation are **fossil fuels** (coal, natural gas, and petroleum), nuclear energy, and renewable energy sources. Most electricity is generated with steam turbines using **fossil fuels**, nuclear power, biomass, geothermal, and solar thermal energy.



World electricity generation by source in 2018





# Fossil fuel power stations

A **fossil fuel power station** is a thermal power station which burns fossil fuel such as coal or natural gas to produce electricity. Fossil fuel power stations have machinery to convert the heat energy of combustion into mechanical energy, which then operates an electrical generator.



# Fossil fuel power station



*Bełchatów Power Station in Poland*

# Air pollution caused by oil and gas drilling

**Oil and gas drilling** is fast becoming one of the largest sources of air pollution, increasingly putting public health and welfare at serious risk. The oil and gas industry releases massive amounts of **methane**, a greenhouse gas that is 21 times more potent than **carbon dioxide**.



# Sources and causes of pollution

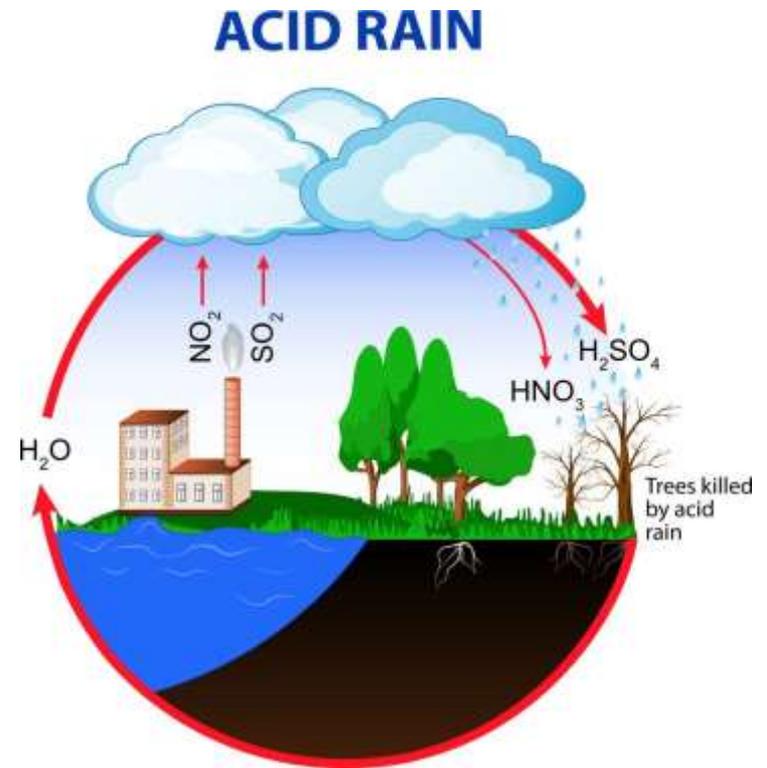
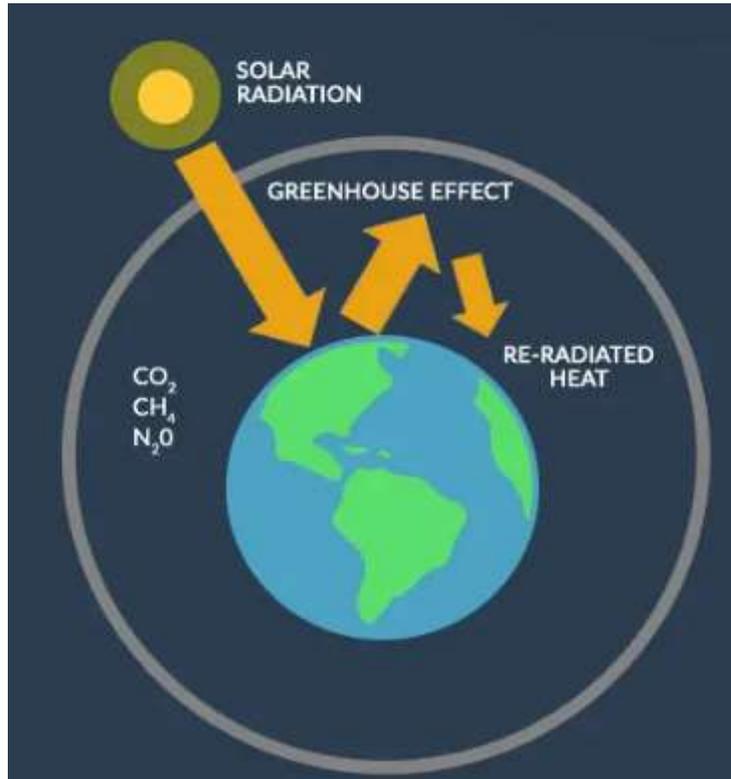
Coal-fired power stations emit a substantial amount of carbon dioxide, a greenhouse gas responsible for global warming, as well as **sulphur dioxide**, an acid gas which affects human health and vegetation. Power plant emissions have far-reaching effects and can cause long-range air pollution.





# Toxic pollutants emitted into the environment and their effect on climate change

Several principal emissions result from coal combustion: **sulfur dioxide**, which contributes to acid rain and respiratory illnesses. **Nitrogen oxide**, which contributes to smog and respiratory illnesses. **Particulates** which contribute to smog, haze and respiratory illnesses and lung diseases.



# How to reduce the amount of environment pollution?

One method is **carbon capture**, which separates **carbon dioxide** from emission sources and recovers it in a concentrated stream. The **carbon dioxide** can then be injected underground for **permanent storage**, or sequestration. **Reusing and recycling** can also reduce the environment pollution.





# International agreements

- Paris
- Kyoto Protocol
- Montreal Protocol





# Conclusion

What we can do is use less polluting energy such as the use of means of transport which emit polluting gases and the energy of companies.

***Only one Earth***