Energy transformation of PGG S.A.

- Coal phase-out plans until 2049
- Methane capture and management
- Mining waste management
- Revitalization of post-mining areas
Prognosed coal production and methane emissions in PGG S.A. until 2049

- Hard coal mining [mln tonnes]
- Methane emissions [thousand tonnes]

Coal production in PGG S.A. shows a decreasing trend from 2024 to 2049. Methane emissions, however, do not align with this trend, indicating a possible discrepancy or additional factors at play. The graph highlights the importance of monitoring both coal production and associated emissions to assess environmental impacts and sustainability efforts in the coal sector.
Methane capture, management and emission in PGG mines

- **203 kilotonnes (63%)**
- **128 kilotonnes (63%)**
- **75 kilotonnes (37%)**
- **41,4 kilotonnes (55,3%)**
- **17 CHP engines S 30,0 MWₑ i 30,0 MWₜ**
- **2 air compressors, gas engine driven**

**Technological blowing**

**Mining**

**CMM Methane**

**VAM Methane**

**Drainage pumps station**

**atmosphere**
CMM methane capture and management

Current

- Efficiency of methane drainage: 37%

Target

- Efficiency of methane drainage: 48%

Current

- 30 MW_E + 30 MW_T

Target

- 2025: 44 MW_E + 44 MW_T
  - 2027: 50 MW_E + 50 MW_T

8 own CHP engines +9

New CHP engines under construction up to 2027

CHP - Combustion turbine, or reciprocating engine, with heat recovery unit

MW_E – electrical energy
MW_T – heat energy
**DD-MET – directional drilling for methane drainage (RFCS funded)**

**Grant no. 847338 - DD-MET - RFCS-2018**

**Target:**
An alternative, more effective and economical method of methane drainage from longwalls or methane capture from goafs.

**Effect:**
Increasing mine safety and productivity, reducing emissions of methane to the atmosphere and reducing the costs of hazard prevention.
AMM methane capture and management

- AMM Methane capture will need to be introduced after mine closures following the coal phase-out plans.
- The capturing and management of this kind of methane will use new and existing demethanation stations and available CHP engines.
- The project needs **EU funding** in order to adapt and prepare underground mining sites.
- It is estimated that the AMM methane concentrations will oscillate around 20%.
- AMM management and usage will provide electrical and heat energy.

€ 40 billion is needed to transform PGG with new activities that build on value chains in coal regions.
Technology of post-mining waste disposal in soil-forming materials and fertilizing products (RFCS Big-ticket proposal)

- Post-mining waste exposes the environment and people living in their vicinity to threats related to groundwater pollution, dust and fires.
- Only 2.2% of post-mining waste is managed in a way other than storage

The implemented project is aimed at the management of rock waste from coal mining, and in particular its usage in producing soil-forming materials and fertilizers enriched with organic substance from sewage sludge.
MINRESCUE Project (RFCS funded)

Advanced physical and chemical characterization of Coal Mining Waste Geomaterials (CMWGs) and their treatment – Grant no. 899518 – MINRESCUE - RFCS-2019

a) LW Bogdanka
b) PGG Mine Jankowice
c) PGG Mine Chwałowice
d) PGG Mine Marcel
e) PGG Mine Piast
f) PGG Mine Staszic
MINRESCUE - Tests performed on CMWGs

- Size composition with determination of the diameter: D10, D50, D90
- specific gravity,
- initial water content,
- optimum water content,
- dry and bulk densities,
- petrographic composition,
- ash content,
- density analysis,
- sulphur content, caloric, moisture, coal content.

**MINRESCUE** project provides innovative solutions for recycling of CMWGs and their application in construction industry

Other RFCS Projects:
ROCCS – Carbon dioxide storage in European coal seams (pilot stage)
REECOL – Ecological rehabilitation and long term monitoring of post mining areas (starts July)
Thank you!

EURACOAL aisbl
Rue Belliard 40
1040 Brussels
Belgium

euracoal@euracoal.eu
www.euracoal.eu