

# Lessons learned from building bottom-up open access database for Poland's coal mining sector

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Data Needs for Project Development, Carbon Markets, and Policy  
**Global Methane Forum, Geneva, 20.03.2024**

# Instrat's Coal Mining Database



Aggregates unit-level data for 68 coal deposits and 23 active coal mines, with regular updates since its launch in 2021



One-stop shop for **open data** on Poland's coal mining

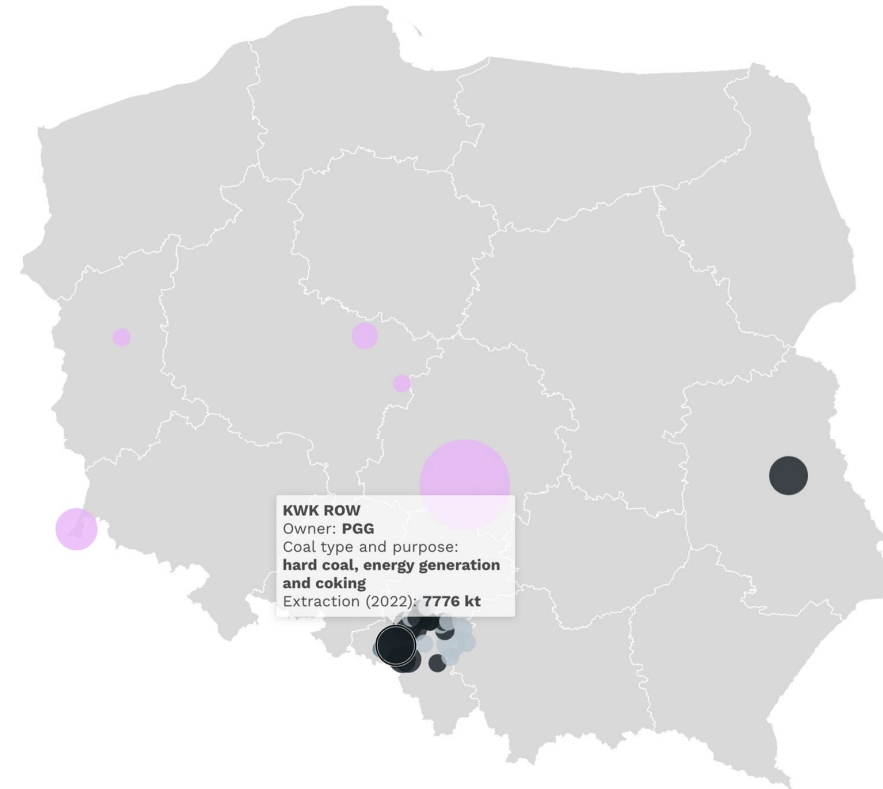


Foundation for **carbon pricing of methane emissions** - reform of environmental fees currently under development at Instrat

## Where, how much and what type of coal is extracted in Poland?

Map of lignite and hard coal mines in Poland. Circle size corresponds with the extraction in 2022.

● hard coal, energy generation ● hard coal, energy generation and coking ● hard coal, coking  
● lignite, energy generation



Source: Database of lignite and hard coal mines in Poland, Instrat, based on PIG and company reports  
Map presents mines owning deposits, on which the extraction exceeded 2 th. tonnes in any year since 2015, however the value of extraction is given only for 2022. The mines belonging to SRK do not extract coal

# Opening up data

Case study: Polish Geological Institute (PIG-PIB) unit-level data on production levels and methane emissions is **fragmented** and **hard to read or compare**

- Noncompliant with open access data standards
- Data presented for each coal deposit individually
- Aggregating the data and comparing with other sources presents a daunting task
- Hard to use by anyone except insiders

Start > [Złoza kopalni](#)

Wersja 3.23.0 zbudowana 2017-05-25 13:41  
Instytut Geologiczny - Państwowy Instytut Badawczy

Złoza | Mapa

Informacja o ruchu zasobów

Dane podstawowe złoza

Nr złoza WK 345 Nazwa Knurów

Kopalnia	Czy główna	Stan zagospodarowania	Kod	Podtyp kopalni	Pierwiastek
WĘGLE KAMIENNE	Tak	złoże zagospodarowane	501	Metan z zagospodarowanych złóż w...	
METAN POKŁADÓW WĘGLI (MPW)	Nie	złoże zagospodarowane			

Udokumentowane

Udokumentowane  
 Prognostyczne

Kategoria zasobów

Stan na dzień 31. 12. [ 2 022 ]

Geologiczne  Przemysłowe

Ruchy zasobów - Geologiczne

	Bilansowa		Pozabilansowa	
	A+B	C	A+B	C
Stan na początek roku	177,42	1 099,49	0,00	0,00
przyrost zasobów - razem	182,20	346,79		
przyrost z tyt. szczegółowego rozpozn.	182,20	346,79		
przyrost z tytułu przeliczenia zasobów				
ubytek zasobów - razem	188,67	341,82		
ubytek z tyt. szczegółowego rozpozn.	177,42	334,43		
ubytek z tytułu przeklasyfikowania				
wydobycie	11,25	7,39		
Stan na koniec roku	170,95	1 104,46	0,00	0,00

Jednostka miary (min m3)

Uwagi do przyrostów

Uwagi do ubytków

Przejdź do kopalni

Data for each deposit to be selected individually

Data for each year to be selected individually

No language options

Tables, not charts

No option for bulk download, just return to the main page

Source: PIG.

# Instrat's approach - take data from multiple official sources and present it in a more visual, readable way



Electrical system

Prices

Mining

Production and sales of hard coal

Employment in hard coal mining

Hard coal reserves

Price of Polish coal for electricity generation (PSCMI 1)

Price of Polish coal for heating (PSCMI 2)

Lignite and hard coal mines (database)

Emissions

Emissions of energy-intensive industries (database)

Lignite and hard coal mines (database)

Price of CO2 emission allowances EU ETS

Blog

More data

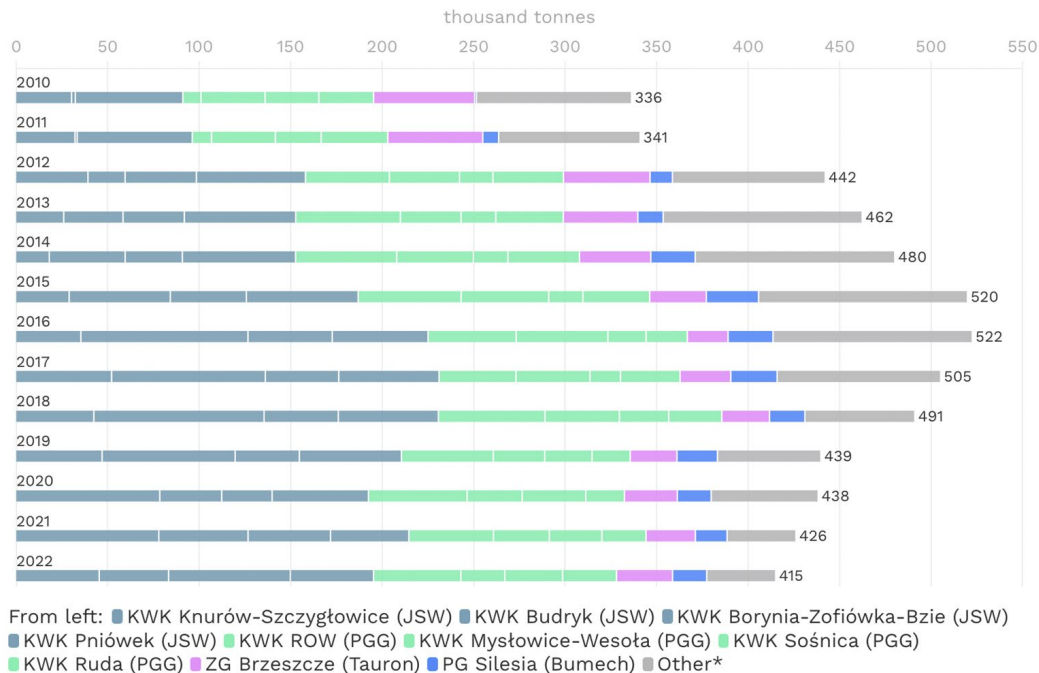
More charts



Source: energy.instrat.pl



Following years of an increase, methane emissions from Polish mines have been slowly decreasing since 2016. Despite that, they still remain very high on European scale. Methane emissions in hard coal mining from 10 most emission-intensive Polish mines + remaining between 2010-2022 (parent company in brackets, grouped according to colours)



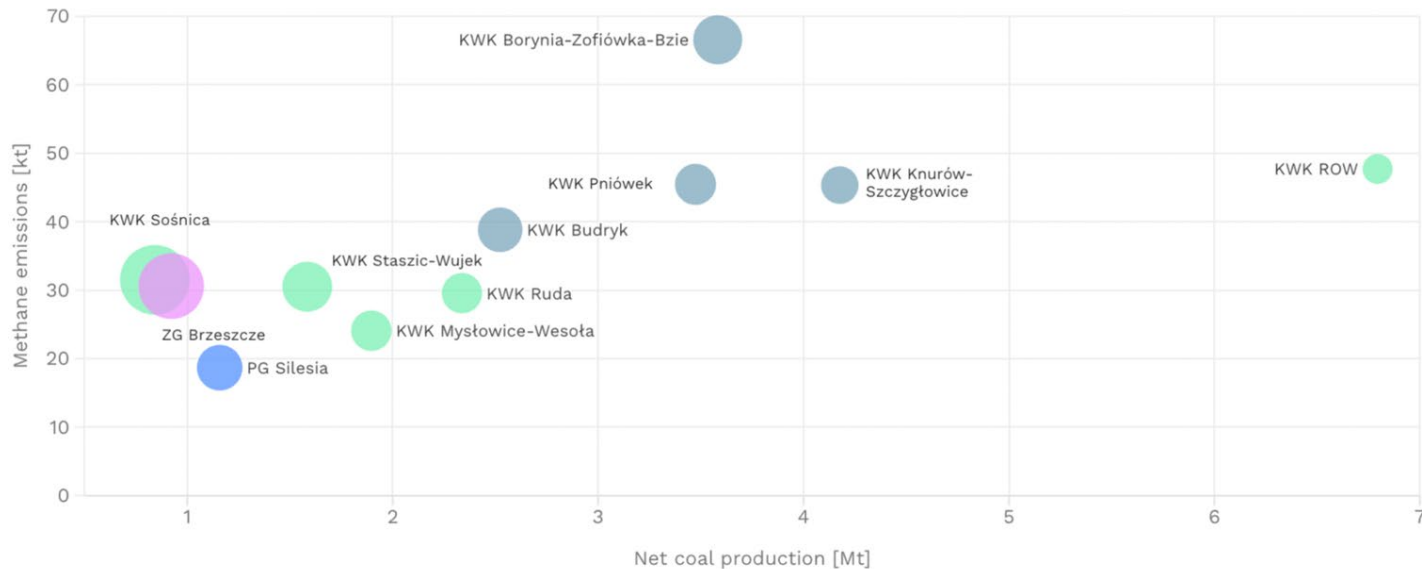
Source: Database of lignite and hard coal mines in Poland, Instrat, based on KOBiZE.

\*"Other" contains the difference between the 10 specified mines and the total emissions attributed to entities in the hard coal mining sector, according to KOBiZE. Mainly consisting of mines belonging to SRK

KWK Sośnica (PGG) and ZG Brzeszcze (Tauron/PKW) are the most methane-intensive mines, while KWK Borynia-Zofiówka-Bzie (JSW) emits the most methane out of all active hard coal mines in Poland

Circle size corresponds to methane intensity. 2022 data.

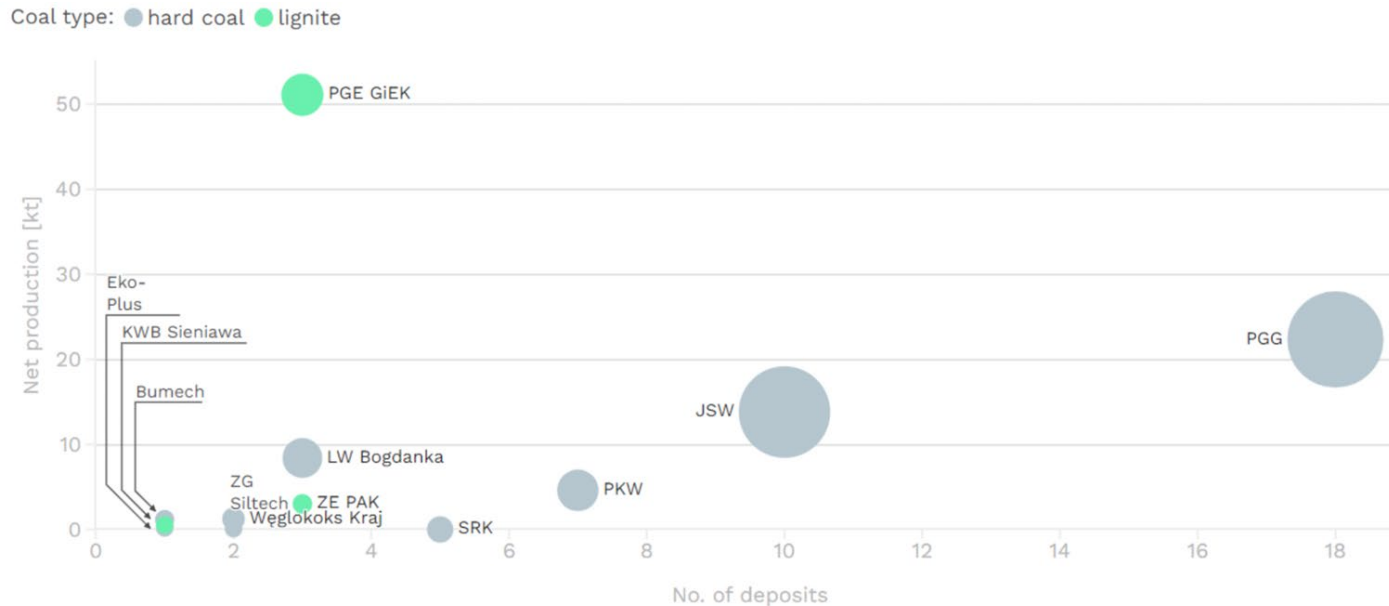
Mining company: ● JSW ● PGG ● PKW ● Bumech



Source: Database of lignite and hard coal mines in Poland, Instrat, based on KOBIZE, PIG and company reports.

Company overview: PGG exploits the most coal deposits in Poland and employs the most people, whereas PGE GiEK produces the most coal (lignite). In other corner - the private Eko-Plus

Coal net production (in thousand tonnes, kt) and number of deposits belonging to indicated companies. Circle size corresponds to employment. Data for 2022.



Source: Database of lignite and hard coal mines in Poland, Instrat, based on annual reports of companies and PIG

# Coal mining in need?

Challenges for the new government



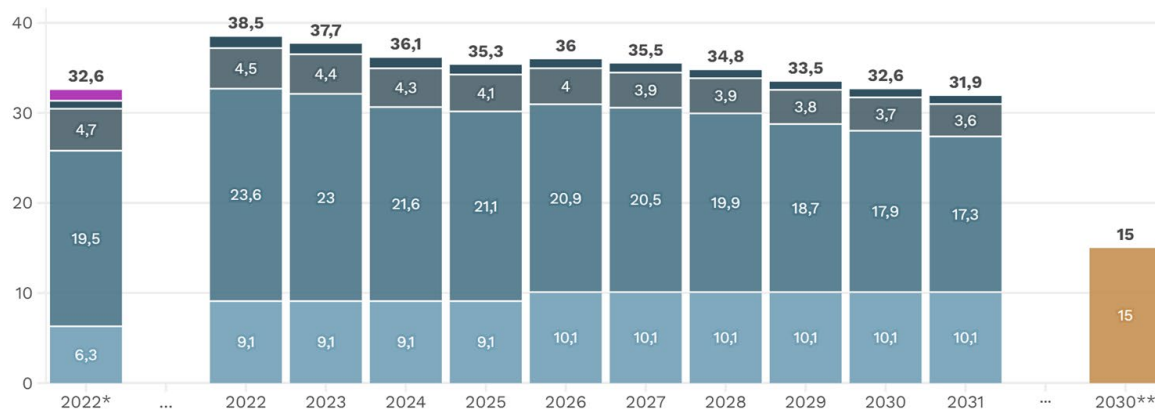
**Executive summary**  
 Instrat Policy Note 05/2023  
 Michał Hetmański  
 Warsaw, December 2023

## The new government's strong lead over the hard coal mining sector is key to ensure that production plans follow shrinking demand

Hard coal mining sector output of thermal coal, incl. of the companies under the state aid scheme for mining output reduction (plan for 2022-2031, version as of December 2021); benchmarked with historical output (2022\*) and **Instrat demand estimates** (2030\*\*), in million tons.

Mining company: ■ LW Bogdanka ■ Polska Grupa Górnicza ■ Tauron Wydobycie ■ Węglokoks Kraj ■ PG Silesia

million tons



\* Data as of 2022 based on the Polish Geological Institute (PIG).

\*\* Estimated demand for thermal coal for the following sectors (electricity generation by systemic and industrial power plants, CHPs, individual heating and agriculture), based on Instrat's energy modelling from December 2023 ("Poland nearing net-zero. Modelling decarbonisation pathways for the Polish energy sector and economy up to 2040" – Scenario 1. RES + nuclear).

Scope of the analysis does not include historical output and production plans of coking coal producers (JSW) and Eko-Plus and ZG Siltech.

Production plans for 2022-2031 is based on values from the state aid scheme plan established by the Ministry of State Assets (version as of December 2021) and Strategy of LW Bogdanka (as of May 2023) and does not include PG Silesia data (no such public information).

Source: Instrat's own representation based on data from Ministry of State Assets (version as of December 2021).





# THANK YOU

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## Lessons learned from building bottom-up open access database for Poland's coal mining sector

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## Coal mining database

An energy.instrat.pl product  
→ [LINK](#)



## Instrat Policy Paper:

Searching for the source.  
Methane emissions in  
Polish hard coal mining  
and reporting systems  
→ [LINK](#)