Methane emissions tracking - <u>energy.instrat.pl</u>

Evidence from Poland: Instrat's coal mining database

Michał Hetmański
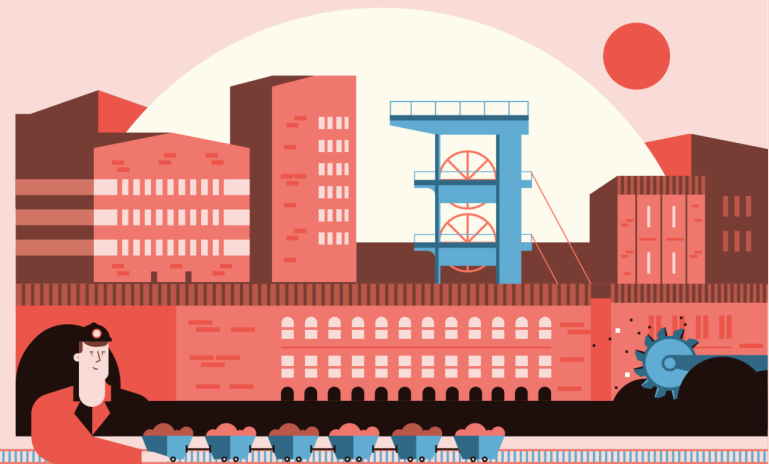
<u>michal.hetmanski@instrat.pl</u>
President of the Board - Instrat Foundation

@hetmanski_m
@energyinstratPL

AGENDA

- **Methane Action NOW** – EU Methane Legislation
- **Our project so far** - unit-level data on coal mines in Poland
- **Methane emissions**
- **Open (energy) data philosophy** – lessons from Poland
- **Data sources and data flow**
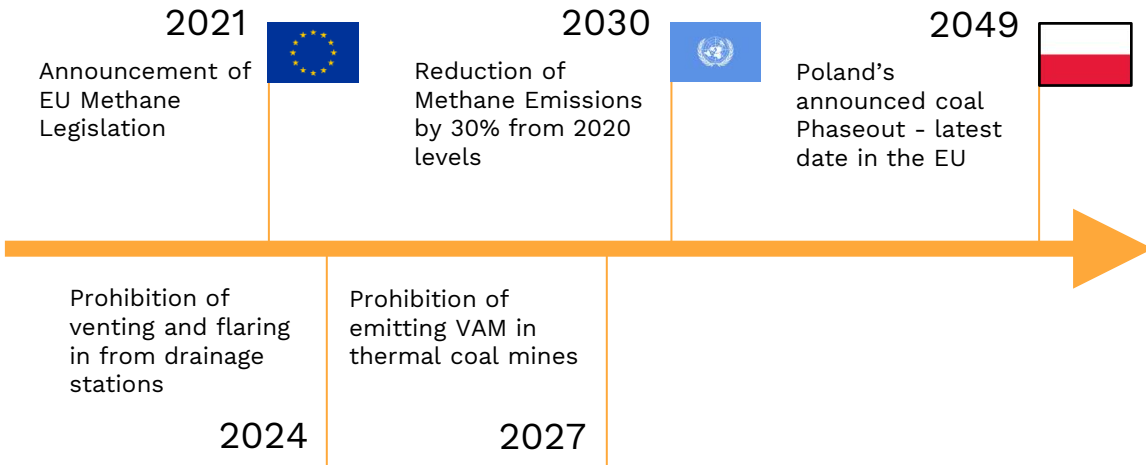- **Conclusions**

instrat

Methane Action Now
The roadmap ahead of us

Forthcoming EU legislation
- Set up **monitoring and mitigation** plan for **closed and abandoned** mines
- Prohibit venting and flaring from drainage stations **by 2024**
- Prohibit venting from thermal coal mines that cross a threshold **by 2027**
- Empower EU Commission to **regulate venting** from coking coal mines

Global Methane Pledge (COP26)
- 100 countries, representing 70% of global economy pledge to cut methane emissions by at least **30% from 2020 levels**

2021
Announcement of EU Methane Legislation

2030
Reduction of Methane Emissions by 30% from 2020 levels

2049
Poland's announced coal Phaseout - latest date in the EU

Prohibition of venting and flaring in from drainage stations

2024

Prohibition of emitting VAM in thermal coal mines

2027

#miningdata #datamining

energy.instrat.pl

Poland's coal mining data landscape
Project Overview

Motivations

- provide an **open access to crucial data -** key socio-economic, environmental and technical indicators on the **unit-level** (companies, mines)

- **Data vendor -** collect and visualise data from numerous sources, with low or no visibility so far (paywalls in public statistics)

- **Planning the just transition -** provide public sector and CSOs with proper knowledge on the coal mining sector

Challenges

- various reporting systems & standards

- **user-unfriendly** file extensions (PDFs)

- **paywalls** – public statistics with non-sensitive data worth thousands EUR annualy

- **inexistent ESG reporting** - low emphasis on environmental & climate impact, employment aspects, state aid monitoring

- **CMM and VAM emissions** not clearly distinguished in the E-PRTR database

#miningdata #datamining

energy.
instrat.pl

instrat

Poland's Coal Mining Industry

Key Takeaways

Employment
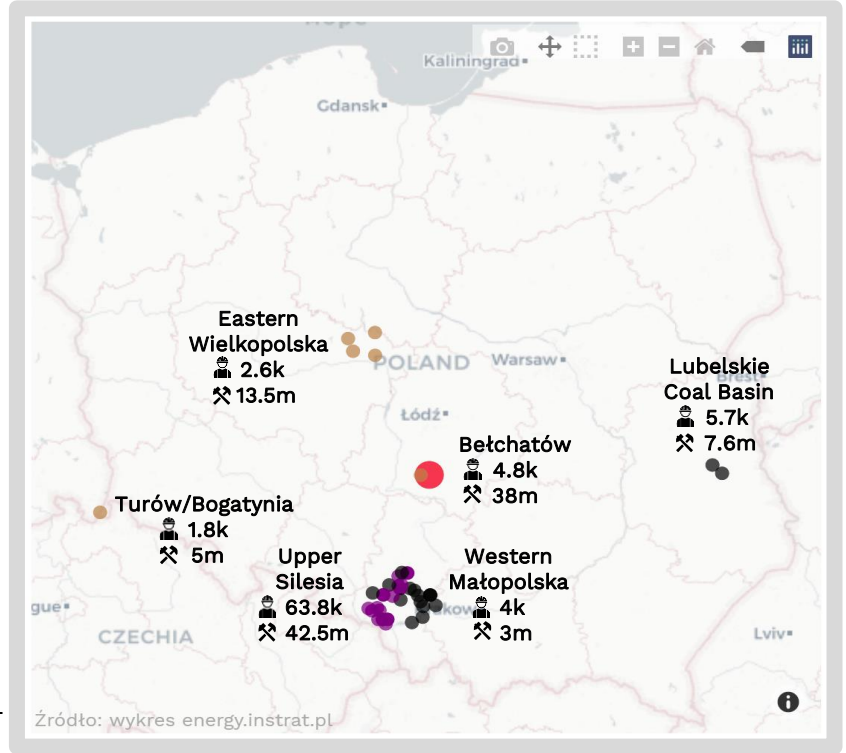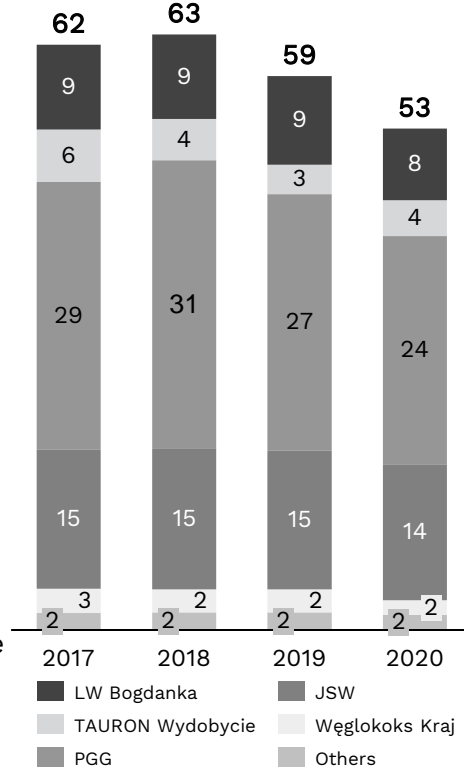
86.5k people employed in all coal mines incl.:

89% at hard coal mining sites

11% at lignite mining sites

38.3k Polish Mining Group – largest employer

~⅕ miners work outside of the Upper Silesia
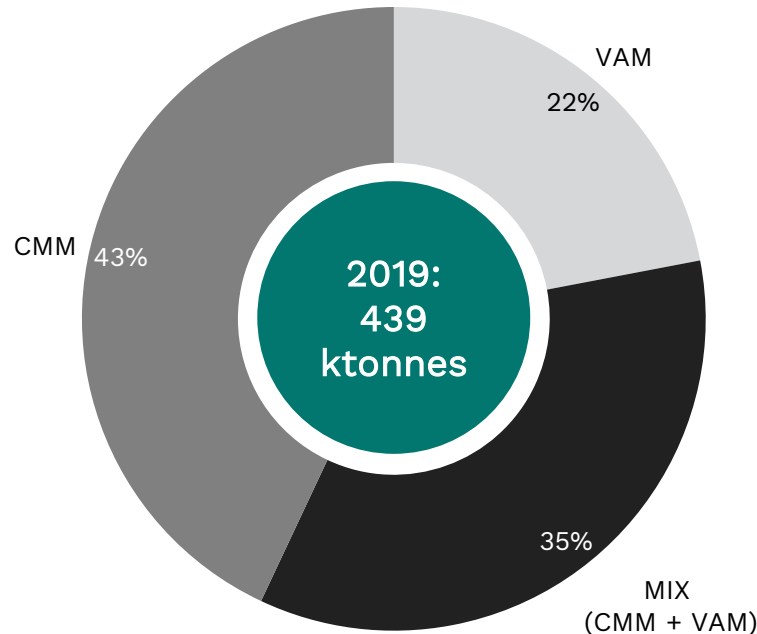
Hard coal production (Mt)

	2017	2018	2019	2020
LW Bogdanka	9	9	9	8
TAURON Wydobycie	6	4	3	4
JSW	29	31	27	24
PGG	15	15	15	14
Węglokoks Kraj	3	2	2	2
Others	2	2	2	2
Total	**62**	**63**	**59**	**53**

Legend:
- ■ LW Bogdanka
- ■ TAURON Wydobycie
- ■ PGG
- ■ JSW
- ■ Węglokoks Kraj
- ■ Others

Eastern Wielkopolska
2.6k
13.5m

Lubelskie Coal Basin
5.7k
7.6m

Bełchatów
4.8k
38m

Turów/Bogatynia
1.8k
5m

Upper Silesia
63.8k
42.5m

Western Małopolska
4k
3m

Źródło: wykres energy.instrat.pl

Source: energy.instrat.pl/coal_mining_map
Methodology note: blog.energy.instrat.pl/en/mining-en
Company data as of 2020

energy.instrat.pl

5

Data unreflective of the reality

Need to improve reporting and ensure comparability across reporting standards

Methane emissions by type (2019)

- VAM 22%
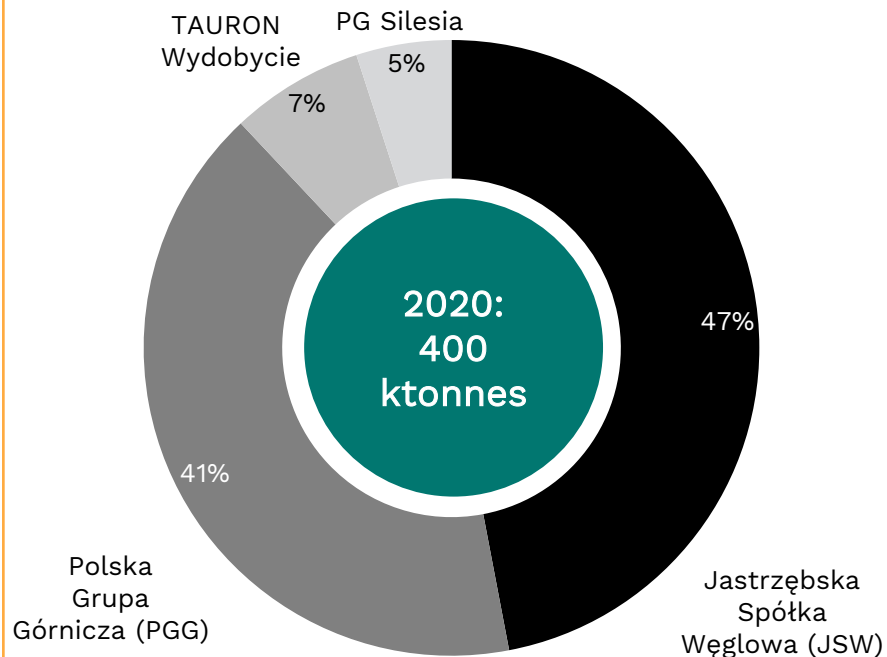- CMM 43%
- MIX (CMM + VAM) 35%

2019: 439 ktonnes

Key Insights from E-PRTR (KOBIZE)

- ⚒ JSW accounts for the largest share of methane emissions in Poland

- ⚒ According to KOBIZE data **CMM** constituted **majority** of all methane emitted in 2019

- ⚒ **Closed mines** accounted for **only 6%** of all methane emissions in 2019

- ⚒ **Data shows a blurred picture**

- ⚒ We cannot distinguish **coking coal from thermal coal extraction** in most of the mines

Source: E-PRTR (KOBIZE)
Graph shows approximate CMM and VAM shares
according to company reporting to E-PRTR (KOBIZE)

energy.instrat.pl
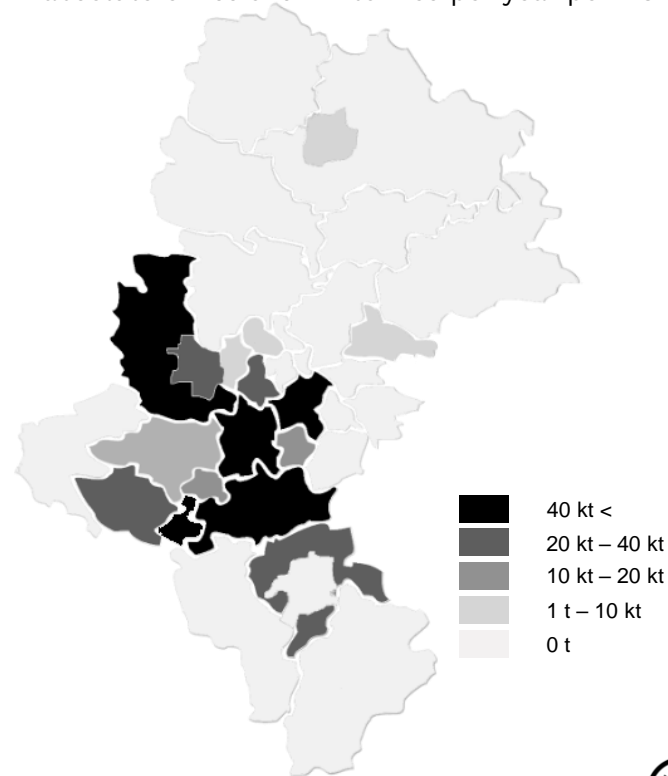
Methane emissions from operating mines (2020)
share of emissions by companies

- TAURON Wydobycie: 7%
- PG Silesia: 5%
- 2020: 400 ktonnes
- Jastrzębska Spółka Węglowa (JSW): 47%
- Polska Grupa Górnicza (PGG): 41%

Source: KOBIZE
Graph pictures active mines only

Methane emissions in Upper Silesia (2020)
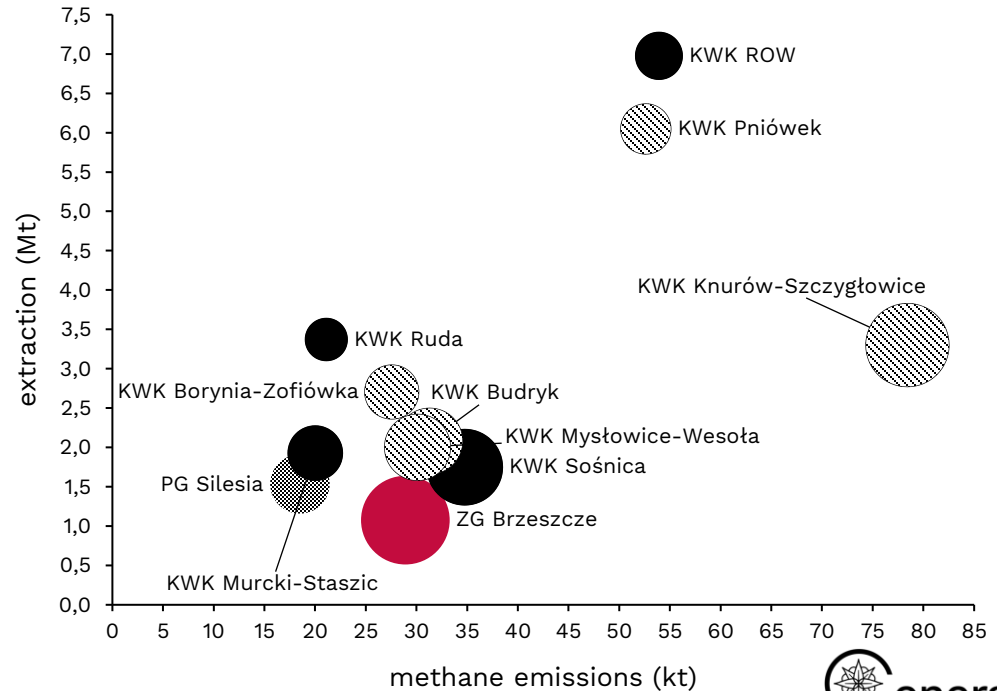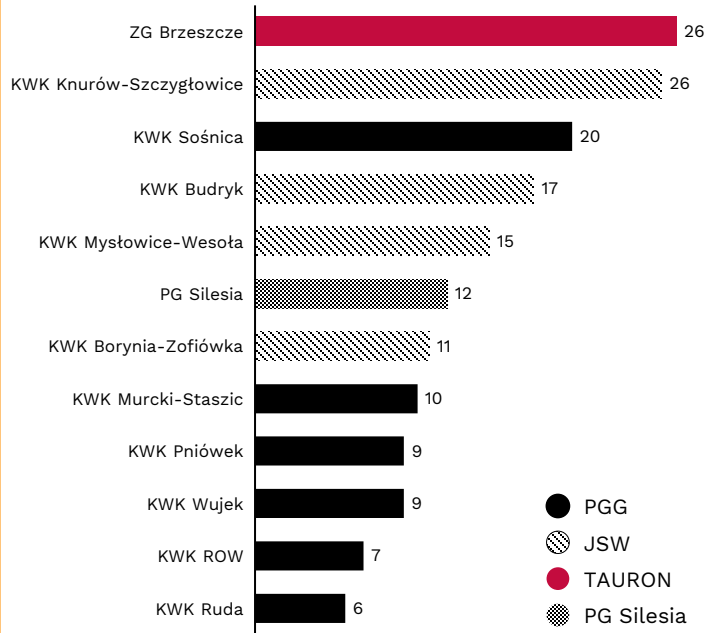### absolute emissions in ktonnes per year per NUTS-4 unit

- 40 kt <
- 20 kt – 40 kt
- 10 kt – 20 kt
- 1 t – 10 kt
- 0 t

Source: GUS
Absolute emissions in tonnes per year

energy.instrat.pl

Relative emissions from operating coal mines (2020)

The most methane emitting per ktonne of coal is TAURON's ZG Brzeszcze

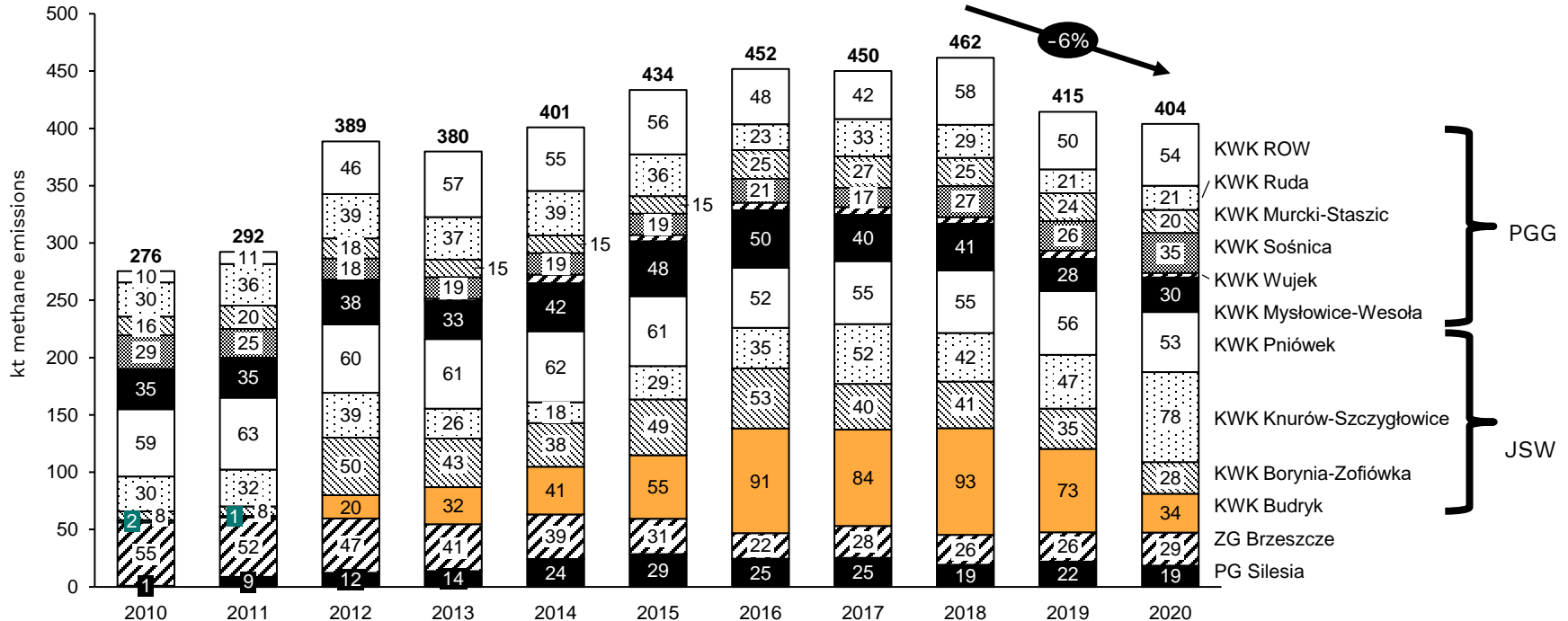### Relative emissions ranking
(t methane emissions / kt coal extraction)

Mine	Value
ZG Brzeszcze	26
KWK Knurów-Szczygłowice	26
KWK Sośnica	20
KWK Budryk	17
KWK Mysłowice-Wesoła	15
PG Silesia	12
KWK Borynia-Zofiówka	11
KWK Murcki-Staszic	10
KWK Pniówek	9
KWK Wujek	9
KWK ROW	7
KWK Ruda	6

Legend:
- ● PGG
- ◌ JSW
- ● TAURON
- ▦ PG Silesia

Scatter plot — extraction (Mt) vs methane emissions (kt):
- KWK ROW
- KWK Pniówek
- KWK Knurów-Szczygłowice
- KWK Ruda
- KWK Borynia-Zofiówka
- KWK Budryk
- KWK Mysłowice-Wesoła
- KWK Sośnica
- PG Silesia
- ZG Brzeszcze
- KWK Murcki-Staszic

extraction (Mt)

methane emissions (kt)

Source: energy.instrat.pl/coal_mining_map
Methodology note: blog.energy.instrat.pl/en/mining-en
KOBIZE and company data as of 2020
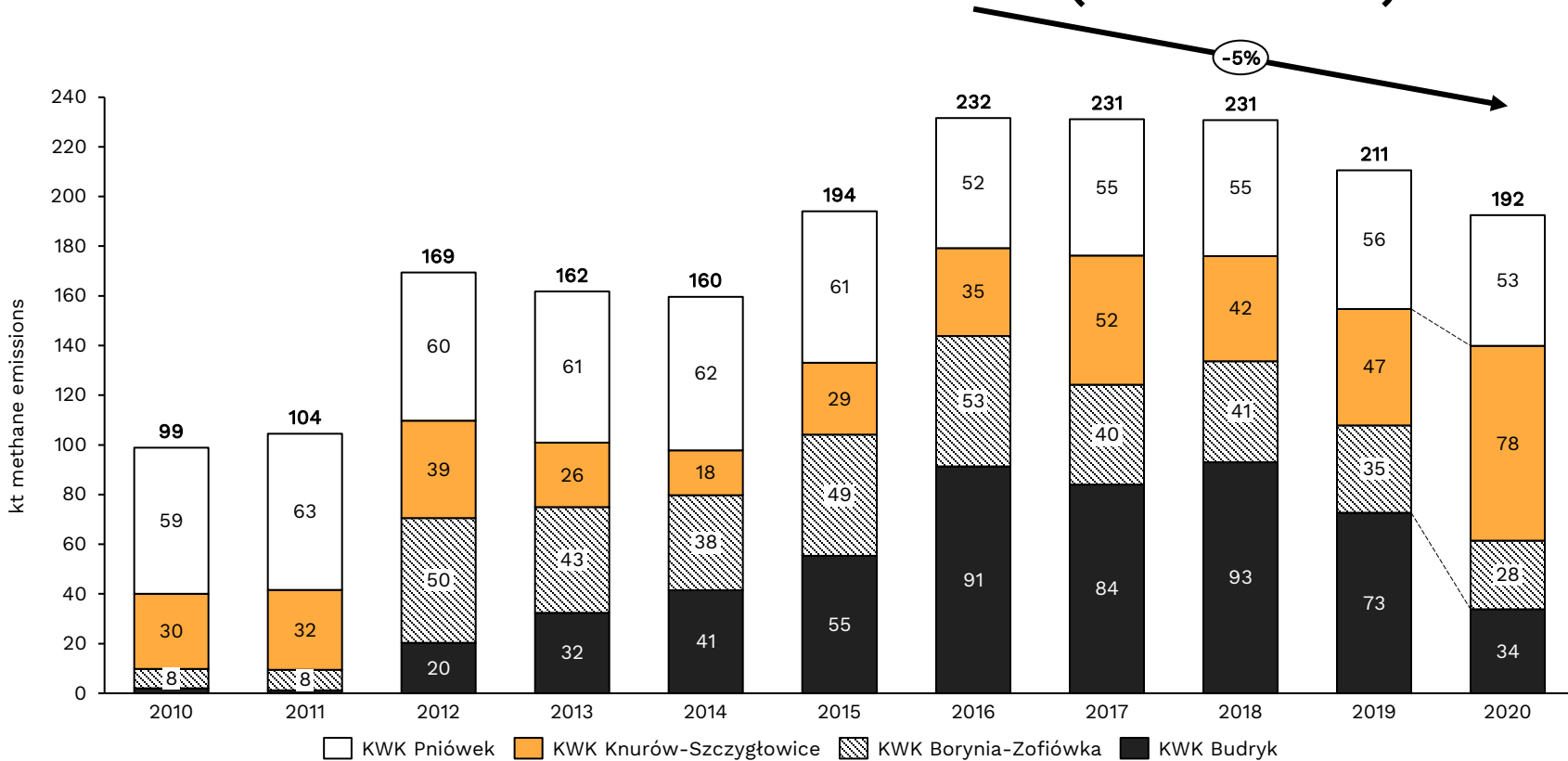
Methane emissions from operating coal mines (2020)

Given COP26 methane pledge compliance, Poland should reduce its methane emissions to the 2010 level – 282 kt by 2030

Source: energy.instrat.pl/coal_mining_map
KOBIZE data; Slide includes ammendment to the legend compared to the originally presented version.

9

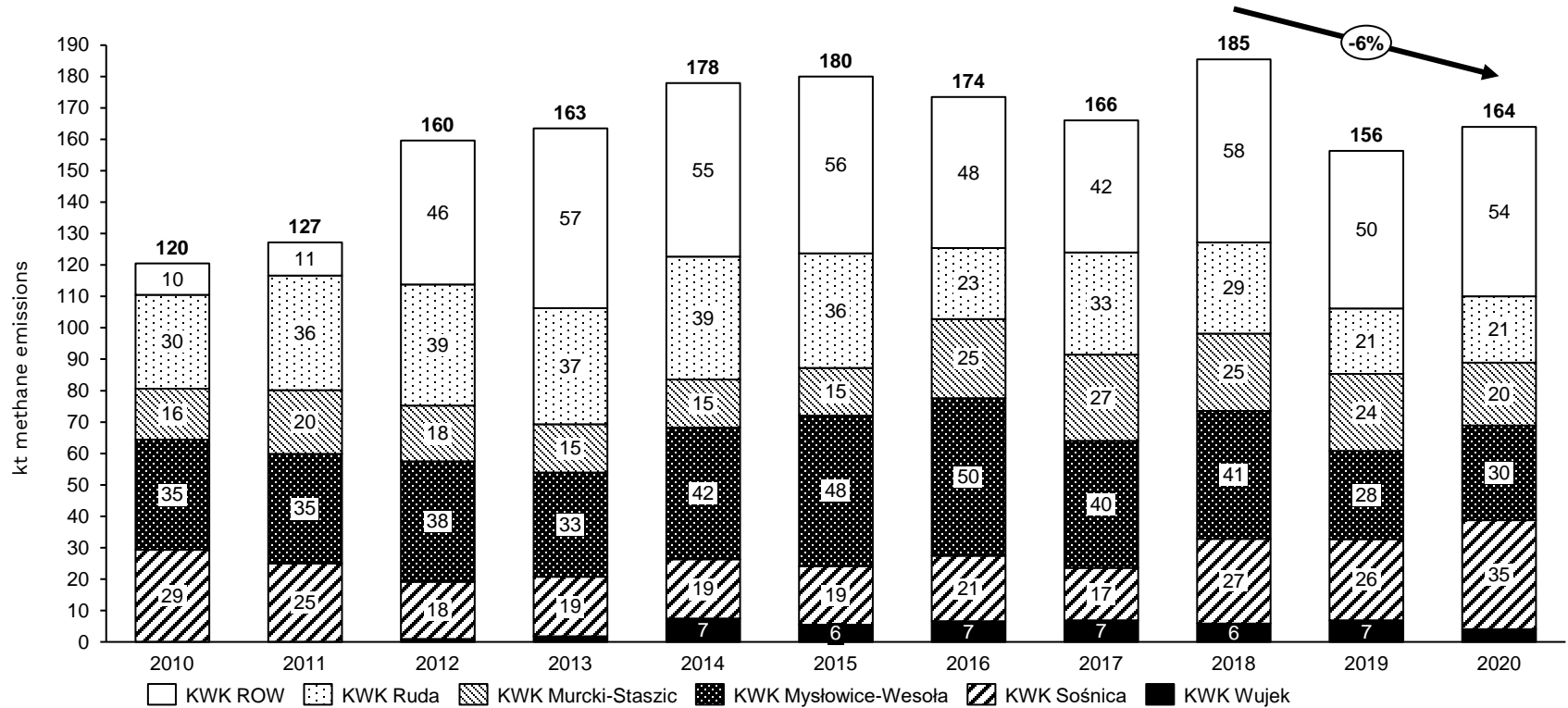# Methane emissions from PGG mines (2010-2020)

Source: energy.instrat.pl/coal_mining_map
KOBIZE data; Slide includes ammendment to the legend compared to the originally presented version.

Open (energy) data philosophy

Why do we need transparency about methane?

- **Monitoring actions** taken by companies to decrease methane emissions

- **ESG reporting –** coal industry's social license to operate

- **Just transition planning** - inclusion of local communities

- **Measurable and ambitious** climate policy targets

- **Entrusted and bulletproof baseline data** for climate and energy modelling

- **New ambitious goals** – transparency in delivery of targets

OPEN LETTER TO OPEN ACCESS TO ENERGY & COAL DATA IN POLAND

energy. instrat.pl

wysokie(N)apiecie.pl

#miningdata #datamining

energy. instrat.pl

Sources and data flow

Key institutions

National Geological Institute (PIG-PIB)

Annual Report
MIDAS database

extraction, reserves etc.
per deposit and company

KOBiZE – National Centre for Emissions Management

National Emissions Database
E-PRTR / UNFCC reporting

annual emissions to air
from ETS & non-ETS sector
per emiter and company

Industrial Development Agency (ARP) – Katowice
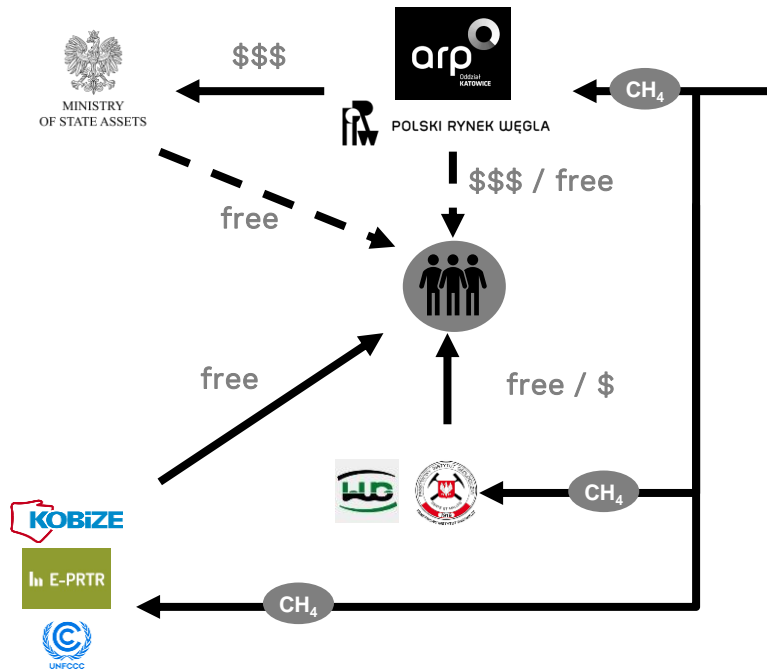
Public Statistics &
Industry monitoring

key monthly, quarterly & annual
reporting on financial, socio-
economic and environmental
(methane, water) aspects of
industry

Others:
Public Aid Data Sharing System (Office of Competition and Consumer Protection)
Concession Database (Ministry of Climate); company annual reports & press releases

energy.
instrat.pl

How does the data flow?

Data value chain and institutional roles in Poland's coal mining data landscape

Company Przedsiębiorstwo górnicze	Mine Kopalnia	Unit: Movement / Open-Pit Jednostka organizacyjna: Ruch / Odkrywka
e.g.	e.g.	e.g.
• JSW	• KWK Knurów-Szczygłowice	• Ruch Knurów
• PGG	• KWK ROW	• Ruch Jankowice
• TAURON Wydobycie	• ZG Brzeszcze	• ---
• etc.	• etc.	• etc.

instrat

Conclusions

A look ahead

Messages

✥ **Need for ambition** about methane action – COP26 Methane Pledge and -30% target

✥ **Inconsistent data** between reporting standards and findings from academic research based on company data

✥ **Monitoring on unit-level** (company) data needed to make the industry limit its environmental impact

Challenges

✥ **Abandoned coal mines** remain undocumented

✥ **Inexistent ESG reporting** - low emphasis on environmental & climate impact, employment aspects, state aid monitoring

✥ **CMM and VAM emissions** not clearly distinguished in E-PRTR database

Contact & team

Michał Hetmański
Project Leader

Jan Balcerowski
Lead Analyst

Jakub Bryksy
Junior Analyst

Contact us:

coal@instrat.pl
michal.hetmanski@instrat.pl

WE'RE HIRING
www.instrat.pl/jobs-2022

@hetmanski_m
@energyinstratPL

#miningdata #datamining

instrat

energy.
instrat.pl