

Methane emissions tracking - energy.instrat.pl

Evidence from Poland: Instrat's coal mining database



POWER MARKET, COAL & CLIMATE
DATA HUB FOR POLAND



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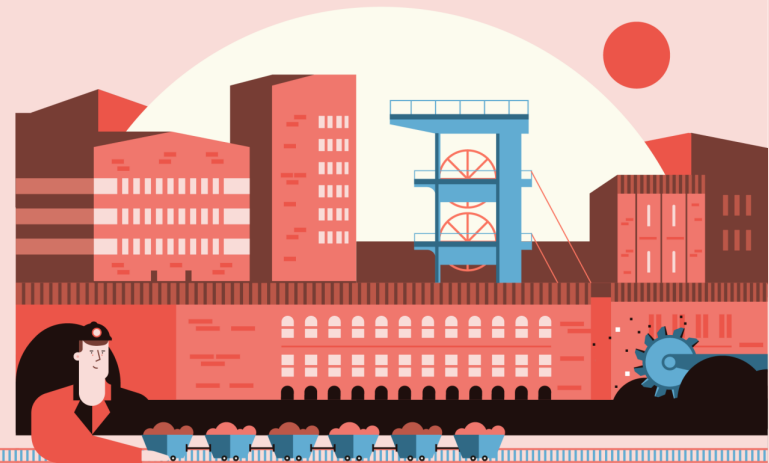


UNECE



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





Methane Action Now

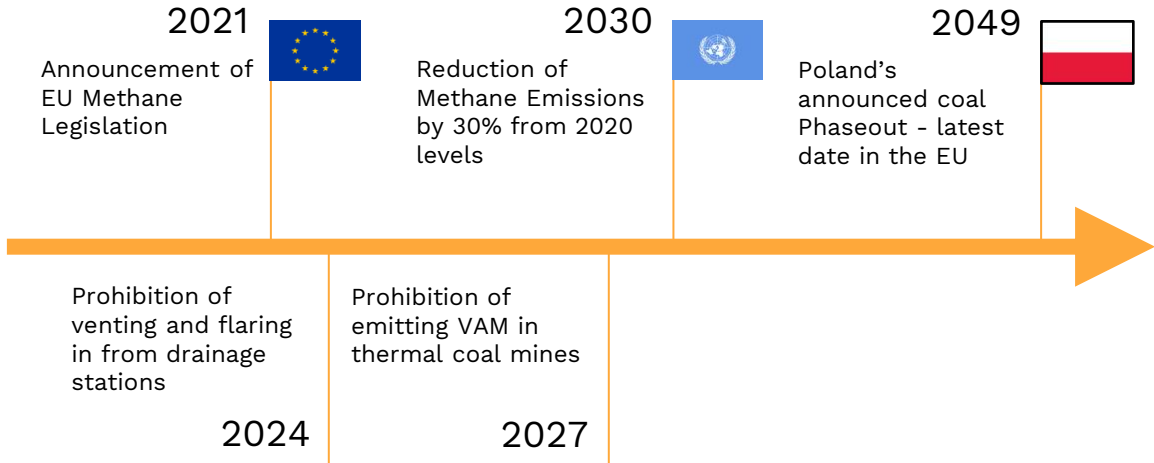
The roadmap ahead of us

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**





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 annually
- ✂ **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


Poland's Coal Mining Industry


Key Takeaways


Employment

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

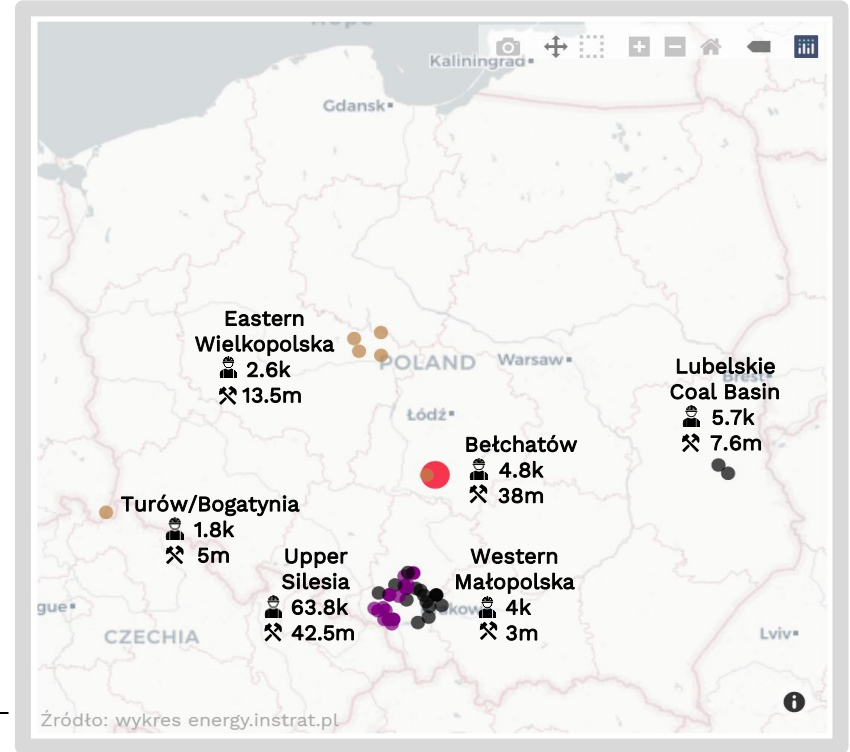
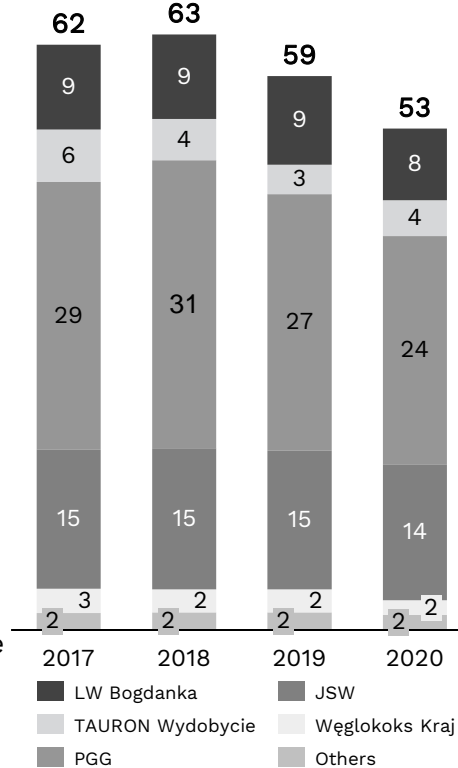
 **89%** at hard coal mining sites

 **11%** at lignite mining sites

 **38.3k** Polish Mining Group – largest employer

 **~1/5** miners work outside of the Upper Silesia

Hard coal production (Mt)



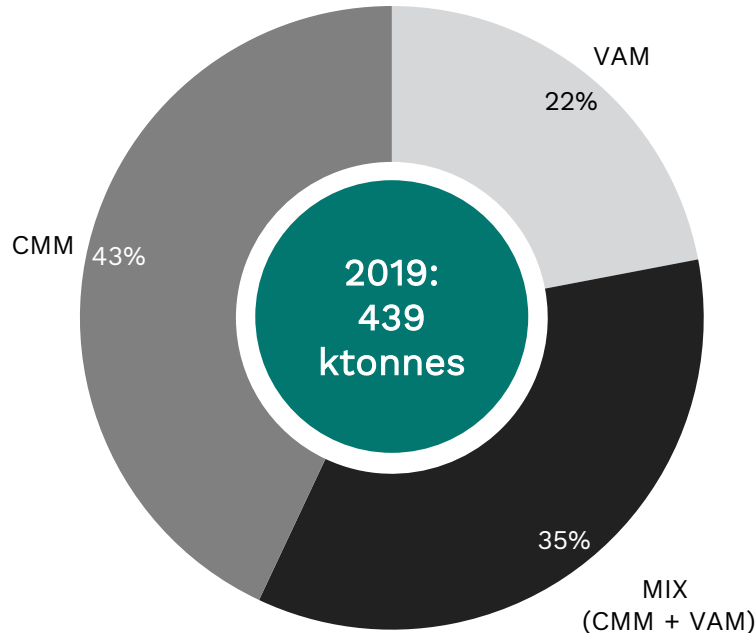
Source: energy.instrat.pl/coal_mining_map
 Methodology note: blog.energy.instrat.pl/en/mining-en
 Company data as of 2020



Data unreflective of the reality

Need to improve reporting and ensure comparability across reporting standards

Methane emissions by type (2019)

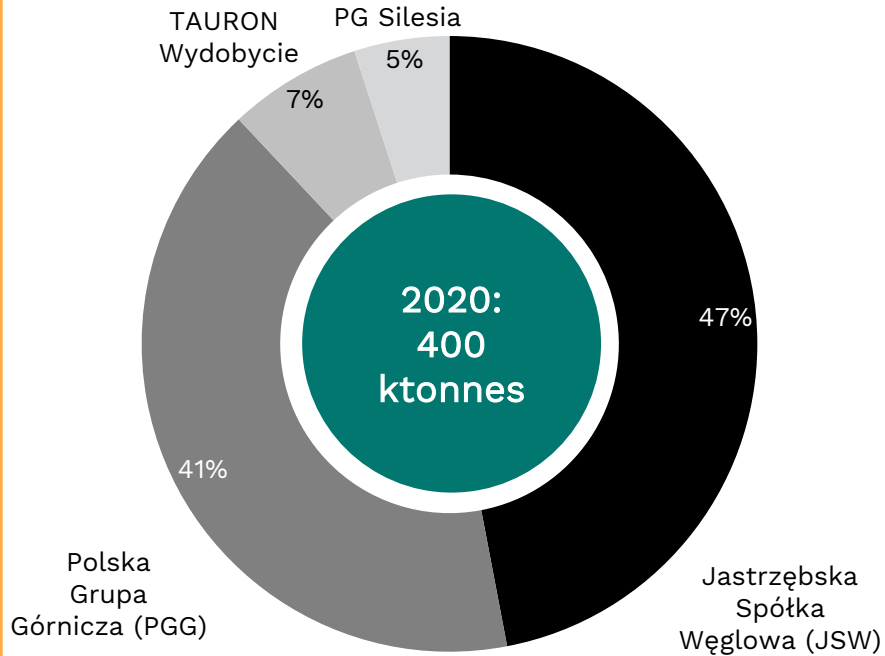


Key Insights from E-PRTR (KOBIZE)

- ✦ 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

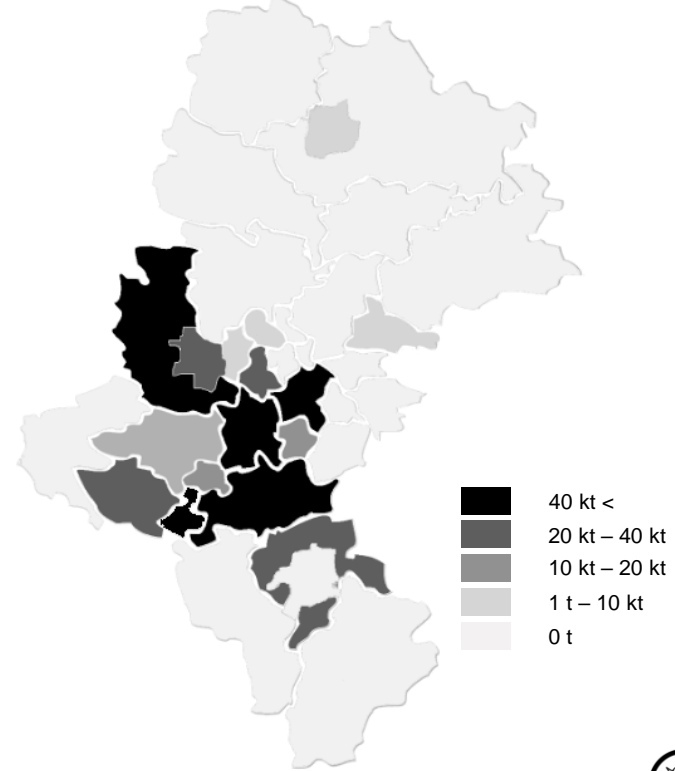
Source: E-PRTR (KOBIZE)
Graph shows approximate CMM and VAM shares according to company reporting to E-PRTR (KOBIZE)

Methane emissions from operating mines (2020) share of emissions by companies



Source: KOBIZE
Graph pictures active mines only

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



Source: GUS
Absolute emissions in tonnes per year

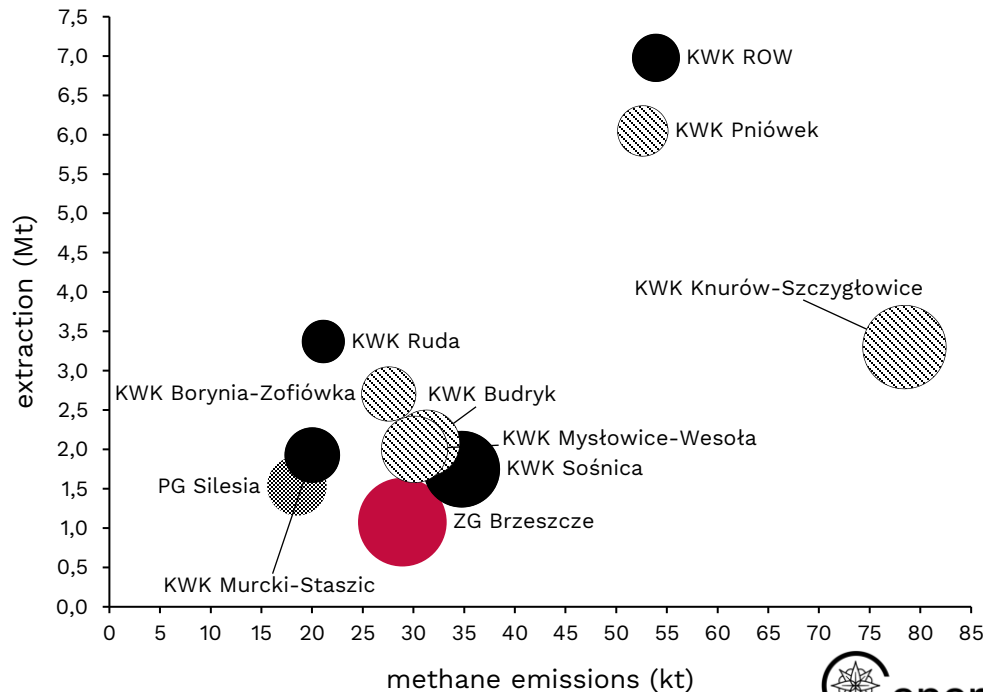
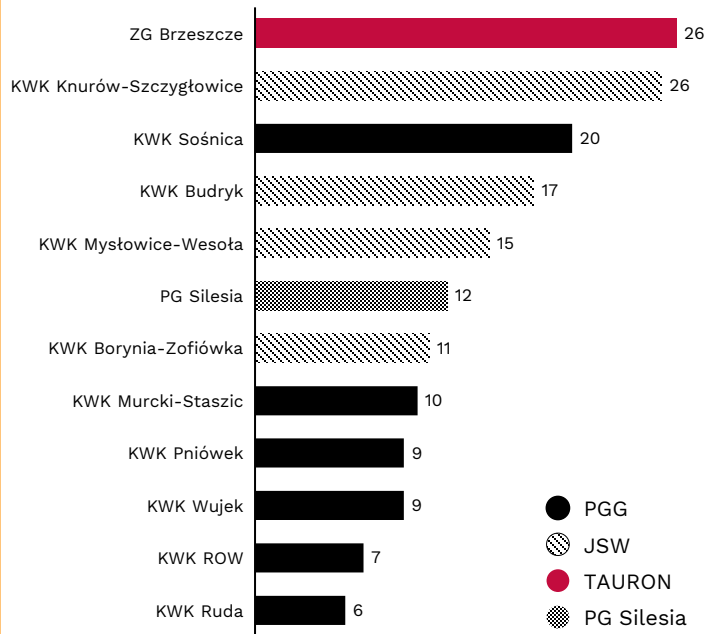


Relative emissions from operating coal mines (2020)

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

Relative emissions ranking

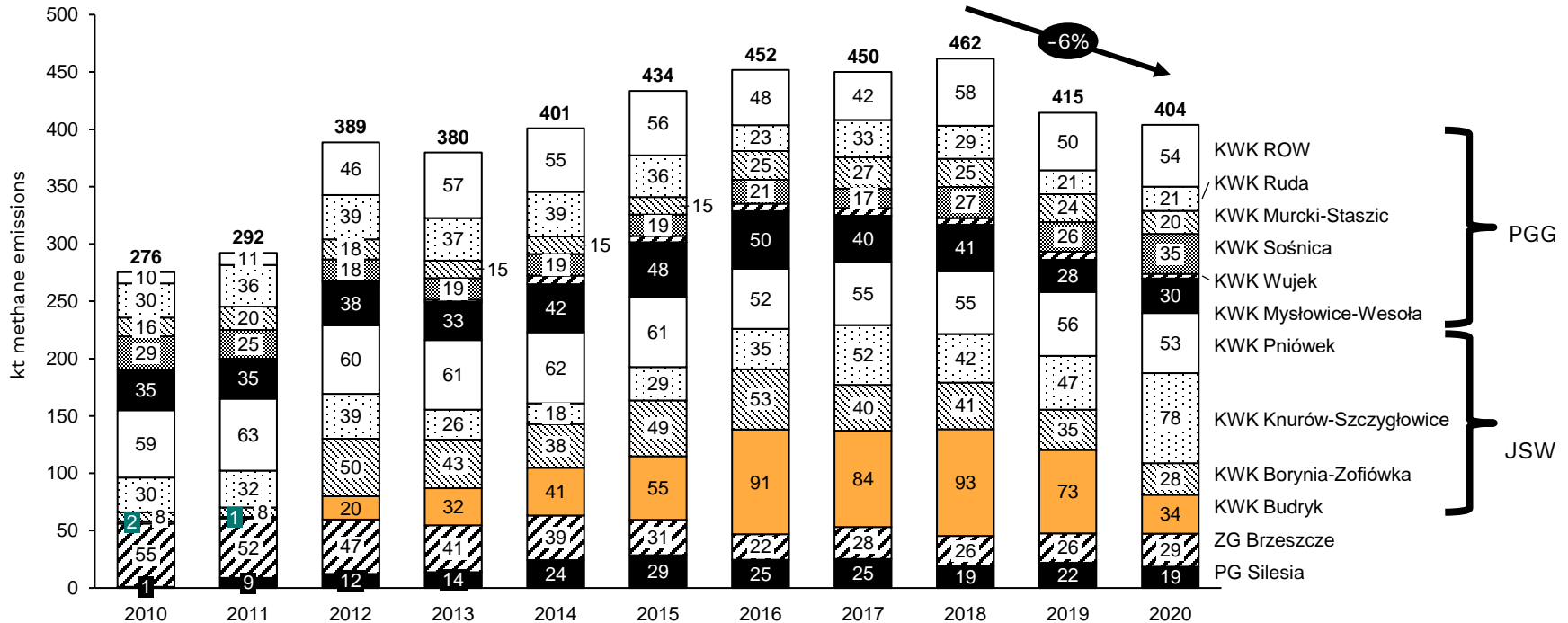
(t methane emissions / kt coal extraction)



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)

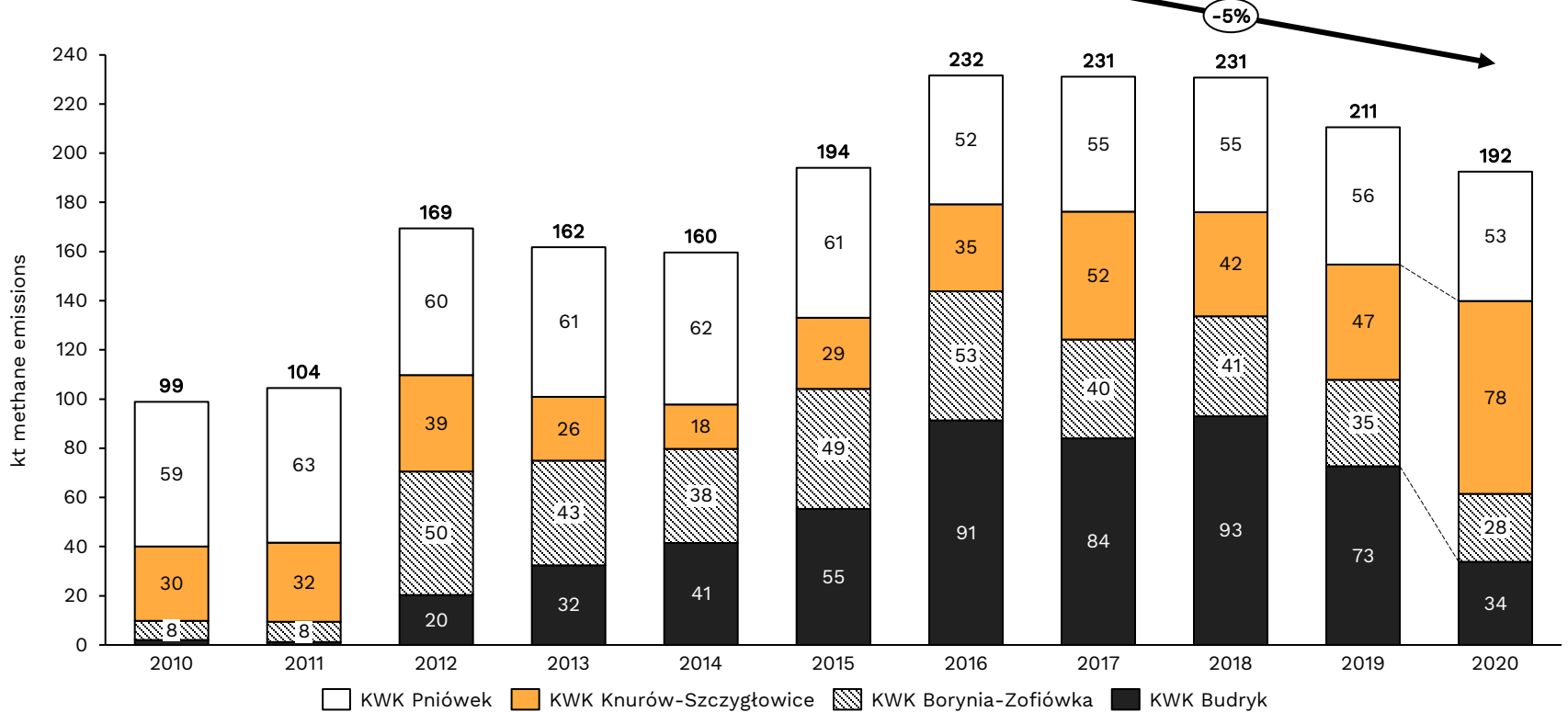
Given COP26 methane pledge compliance, Poland should reduce its methane emissions to the 2010 level - 282 kt by 2030



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



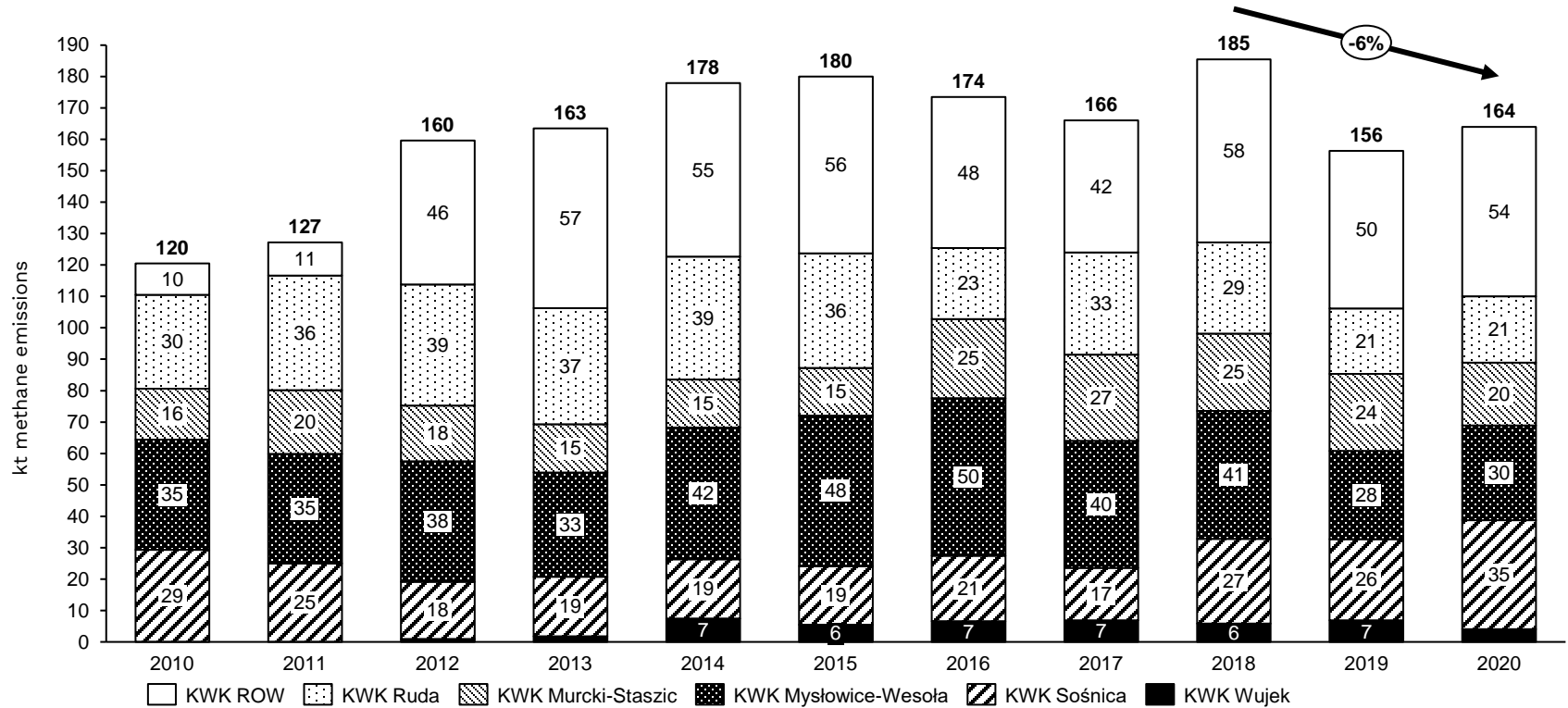
Methane emissions from JSW mines (2010-2020)



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



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





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 emitter and company



POLSKI RYNEK WĘGLA

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

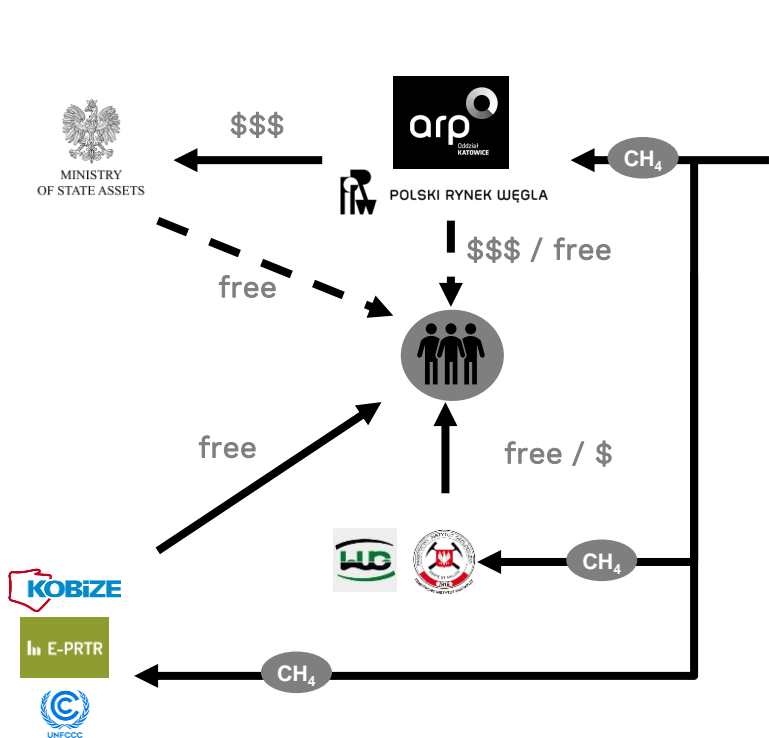
Others:

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



How does the data flow?

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



Company Przedsiębiorstwo górnice	Mine Kopalnia	Unit: Movement / Open-Pit Jednostka organizacyjna: Ruch / Odkrywka
e.g.	e.g.	e.g.
<ul style="list-style-type: none"> • JSW • PGG • TAURON Wydobycie • etc. 	<ul style="list-style-type: none"> • KWK Knurów- Szczygłowice • KWK ROW • ZG Brzeszcze • etc. 	<ul style="list-style-type: none"> • Ruch Knurów • Ruch Jankowice • --- • etc.



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



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