



XXXII SCHOOL OF UNDERGROUND MINING
*Coal Mine Methane in Poland - current status and anticipated consequences
of the proposed EU regulation on methane emissions reduction*
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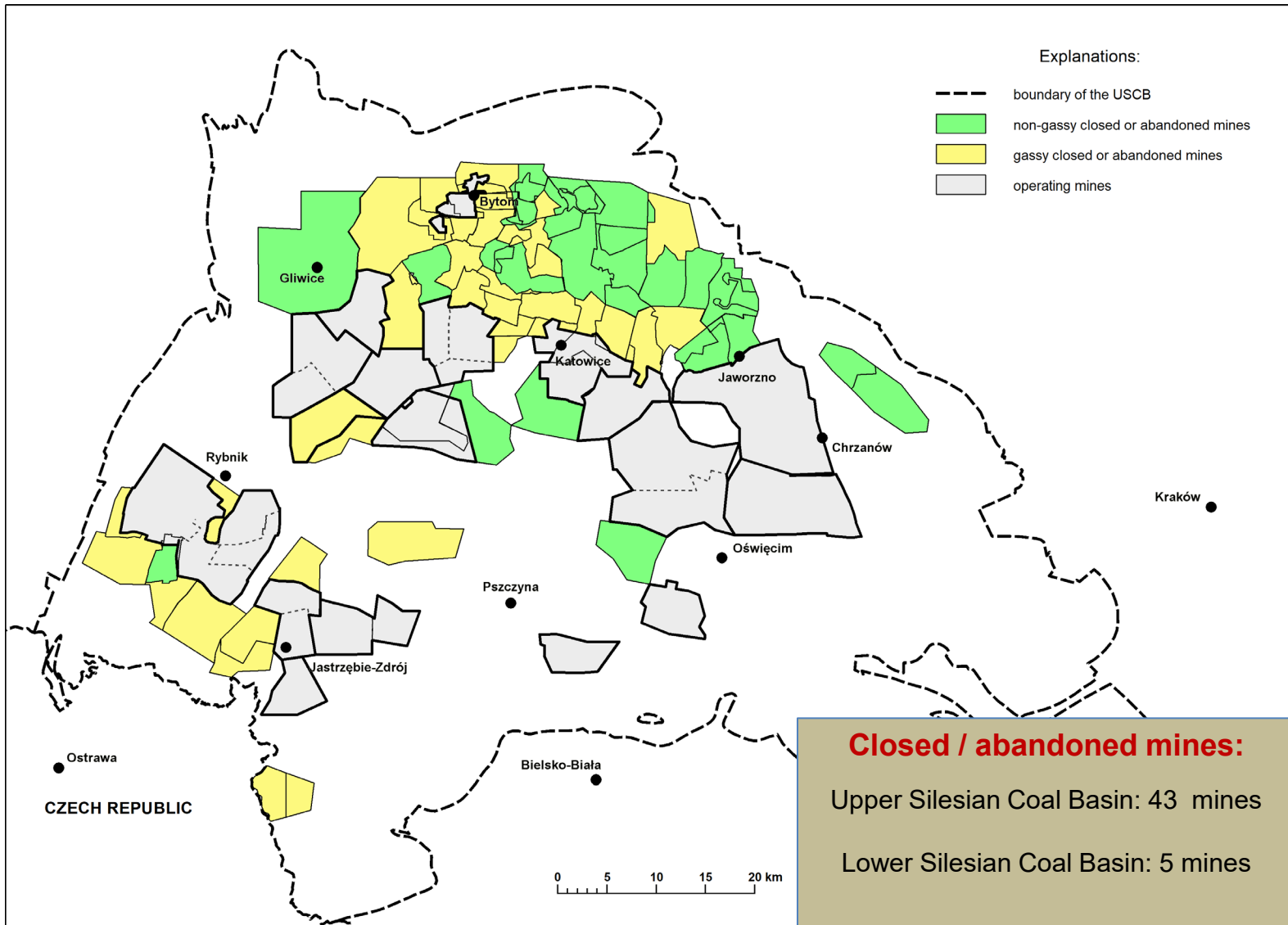
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**New EU regulations concerning closed and abandoned
mines in Poland**



Closed and abandoned mines in the Upper Silesian Coal Basin



Approximately half of closed and abandoned mines were non-gassy !!!



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Scope of the Regulation in relation to closed and abandoned mines

It is applicable to the following methane emission sources (from **all closed and abandoned underground coal mines where coal production has been discontinued within the last 50 years**):

- 1) all shafts which continue emitting methane;
- 2) **coal mining equipment**, use of which has been discontinued;
- 3) other well-defined point emission sources, including:
 - a) all shafts utilised by the mine when operating;
 - b) unused vent pipes;
 - c) unused gas drainage wells;
 - d) other recorded potential point emission sources.

”coal mining equipment in closed or abandoned coal mines”

means:

any equipment that remains linked to the methane-bearing strata.

Most important Regulation requirements regarding methane emissions from closed and abandoned mines

1. **Up to 1 year:** Member States shall set up and make publicly available an inventory of all closed and abandoned coal mines, which also applies to **non-gassy mines**.
2. **Up to 2 years:** measuring equipment shall be installed, followed by routine measurements, on all potential emission sources in closed and abandoned coal mines, where methane emissions were found to exceed 0.5 tons of methane per year [ca. 2 m³/d or 0.085 m³/h].
3. **On the basis of the inventory**, Member States develop and implement a mitigation plan to address methane emissions from closed and abandoned underground coal mines, which is submitted to the competent authorities **within 3 years** (from the entry into force of the Regulation).
4. **From 1 January 2030**, venting and flaring of methane from closed or abandoned mines shall be prohibited, unless utilisation or mitigation is not technically feasible or risks endangering environmental or human safety. In such a situation, mine operators or Member States shall demonstrate the necessity to opt for venting or flaring instead of utilisation or mitigation.

Does this mean a complete ban on venting from coal mines being in the process of decommissioning?

Definitions relevant to emissions from closed and abandoned mines

- ✓ **”Closed coal mine”** means a coal mine where coal production has ceased and is not expected to occur in the future, which is closed pursuant to the applicable licensing requirements or other regulations and for which an operator, owner or licensee has still an active permit.
- ✓ **”Operating coal mine”** means a coal mine where the majority of its revenue comes from the work of extracting coal, and where at least one of the following conditions apply:
 - a) mine development is underway;
 - b) coal has been produced within the last 90 days;
 - c) **mine ventilation fans are operative.**
- ✓ **”Abandoned coal mine”** means a coal mine where coal production has ceased but for which an operator, owner or licensee cannot be identified as subject to the obligations under an active permit, or that has not been closed in a regulated manner.
- ✓ **In Poland**, a closed mine while in the process of decommissioning is operated by the Mine Restructuring Company and there is a **need to maintain ventilation** for a certain time (e.g. a few years). If we classify it as ”a closed mine” (as it seems to meet the definition), the only way to continue ventilation (after 1 January 2030) is to **demonstrate the necessity to opt for venting instead of utilisation or mitigation to the competent authorities** in accordance with Art. 26, par. 2 of the Regulation.

The inventory of closed and abandoned coal mines

1. The inventory is set up and make publicly available by Member States **within 12 months**.
2. The inventory must include at least the following information:
 - a) name and address of the operator, owner or licensee, where applicable;
 - b) map showing borders of the mine;
 - c) schemes of mine workings and their status;
 - d) **results of source level direct measurement or quantification** at all potential point emission sources.

Challenges:

1. A significant number of abandoned mines (**43 in USCB and 5 in LSCB**) most of which were decommissioned at least 20 years ago.
2. Availability of reports and data is problematic.
3. Frequent changes in the boundaries and mining areas of these mines, as well as changes in the names of the entities operating the mines (including aggregation of mines, multi-operatorship, etc.).
4. Measurements of each individual potential emission source, including non-gassy mines, will be a considerable burden for the Polish government.



Requirements concerning methane emission measurements for the inventory of closed and abandoned mines

1. Source level direct measurements or quantifications shall be performed on the following point emission sources:
 - a) all shafts utilized by the mine when operating;
 - b) unused vent pipes;
 - c) unused gas drainage wells;
 - d) other recorded potential point emission sources.

2. Measurements must be performed in accordance with the following principles:
 - a) measurements must be performed **at atmospheric pressure** allowing for potential methane leak to be detected, and according to **the appropriate scientific standards**;
 - b) measurements must be performed using an equipment capable of estimating yearly methane emissions at **the level of at least 0,5 tonnes or above** from such source;
 - c) measurements must be accompanied by some additional information (date, atmospheric pressure and measurement equipment details).

Routine measurements of methane emissions for closed and abandoned mines

1. Measuring equipment shall perform **source-level direct measurements or quantifications at least on an hourly basis**, in accordance with specifications yet to be established, and of sufficient quality to allow for a representative estimation of yearly methane emissions for **all elements which were found to emit methane**. **Publicly available European and international standards** may be used until an appropriate methodology is established.
2. If the observed annual methane release of an element is **below 1 tonne of methane for six consecutive years in the case of flooded mines or twelve consecutive years in the case of dry mines**, no further monitoring and reporting shall be taken for that specific element.
3. **Reports containing estimates of source-level methane emissions** shall be submitted to the competent authorities within **26 months** of the entry into force of the Regulation, and thereafter by **31 May each year**. The reports shall be certified with a statement of verification by the verifier.
4. **Mine operators** are responsible for the methane emission measurement requirements in the case of **closed mines**, and **Member States** in the case of **abandoned mines**.

Methane emission mitigation plan to address methane emissions from closed and abandoned underground coal mines

The mitigation plan must include at least the following information, where data is available or can be acquired:

1. list of all point emission sources;
2. technical feasibility of mitigation of methane emissions site level, based on point emission sources;
3. timeline of mitigation of methane emissions at each site;
4. assessment of the efficiency of projects for collection of abandoned mine methane, where implemented.



Summary – major challenges for the Polish government

1. The regulation is applicable to all closed and abandoned mines (the Lower and Upper Silesian Basin) of **which half were non-gassy** while operating in the Upper Silesian Basin.
2. Setting up an inventory of all closed and abandoned coal mines will be **a difficult task to perform** and there are no obvious candidates for its execution (Polish Geological Survey?).
3. Installation of appropriate measurement equipment and performing regular measurements with required accuracy for all potential emission sources **will be costly and will last at least 6 or 12 years** depending on the mine status (flooded or dry).
4. The Polish government is responsible for the methane emission measurement requirements for all mines except for mines in the process of decommissioning where the Mines Restructuring Company is responsible (if the definition of "closed mine" stated in the Regulation is applicable in such situation).



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Thank you for your attention



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