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Experimental Mine „Barbara”

UPDATE ON CMM ACTIVITIES IN POLAND

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Sydney September 5th, 2012

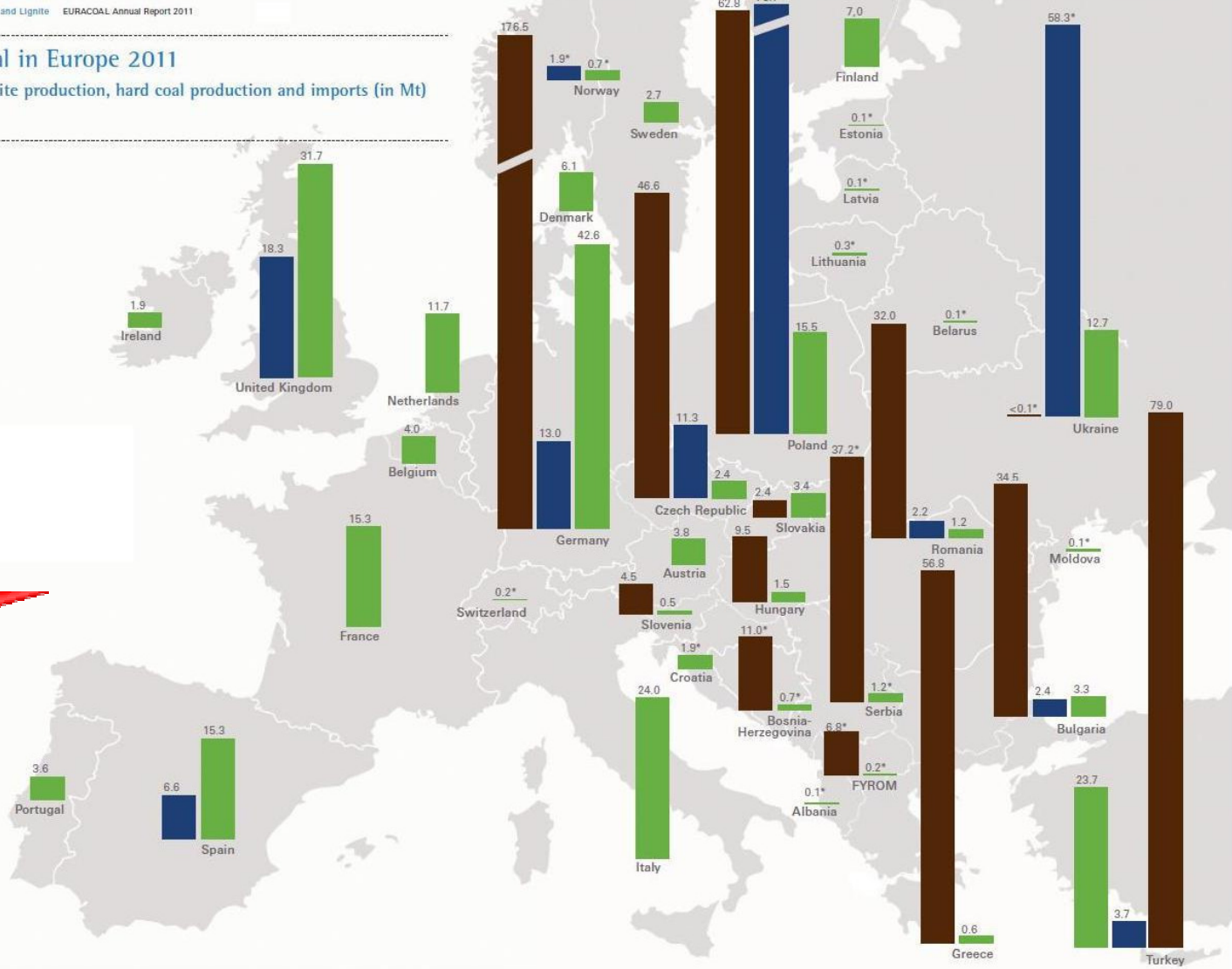
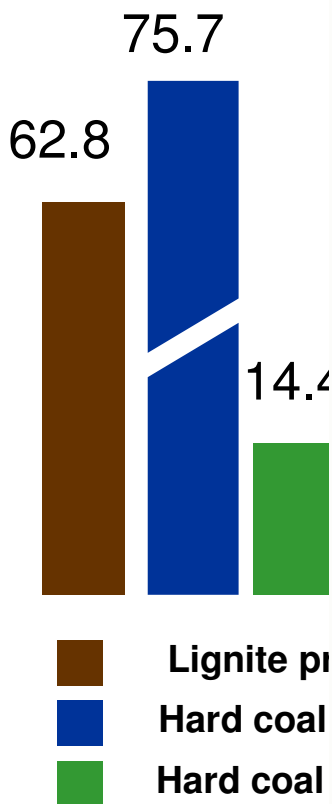


European Association for Coal and Lignite EURACOAL Annual Report 2011

Coal in Europe 2011

Lignite production, hard coal production and imports (in Mt)

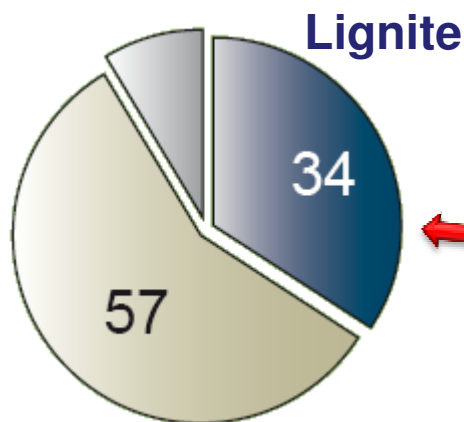
POLAND





SOURCE: EURACOAL

POLAND

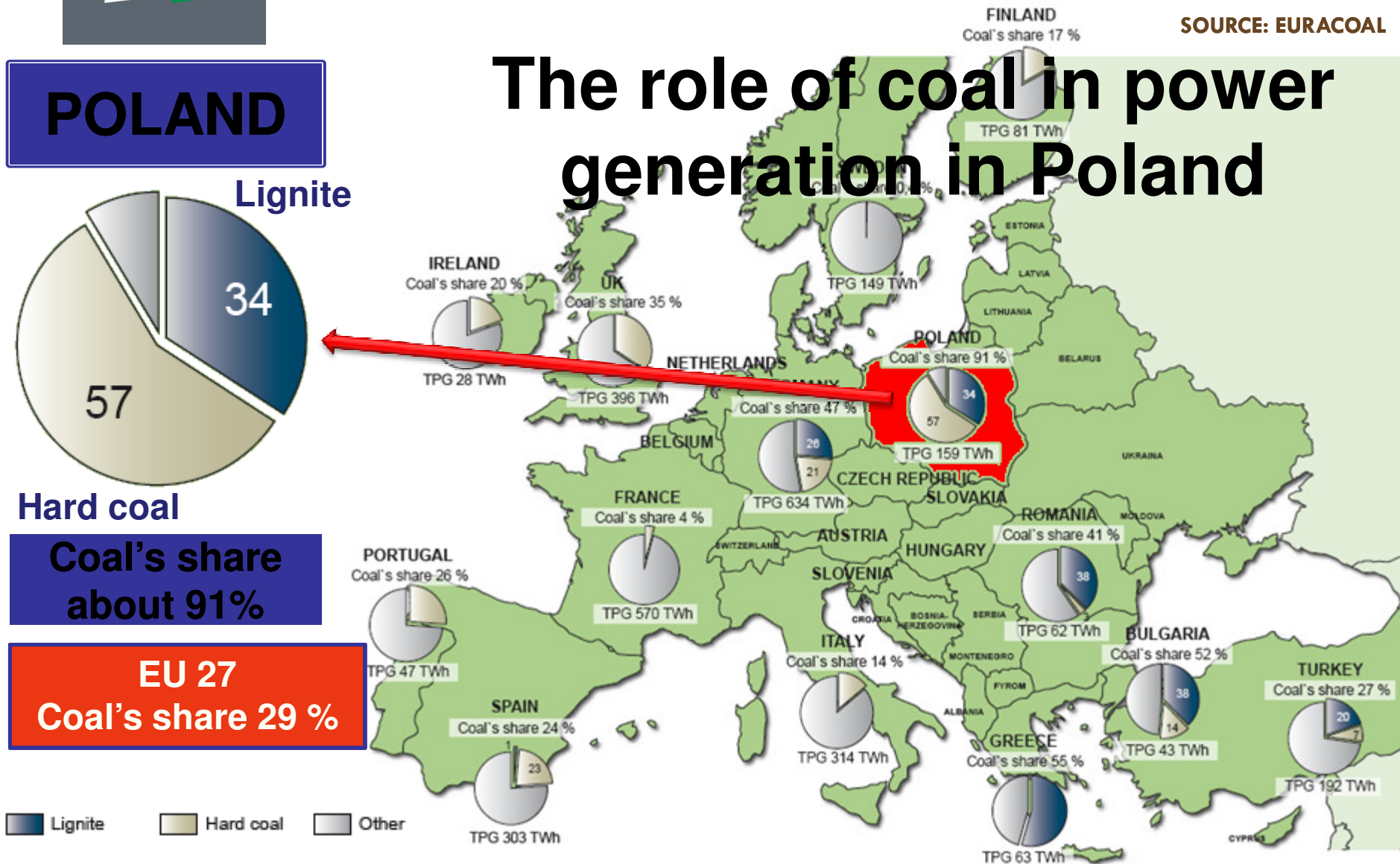


Hard coal

Coal's share about 91%

EU 27 Coal's share 29 %

The role of coal in power generation in Poland



Legend: Lignite (dark blue), Hard coal (tan), Other (grey)



Location of major Polish hard coal basins

2010 DATA

- ❖ RESOURCES:
67 900 Mt
- ❖ BALANCED RESOURCES:
43 201 Mt
- ❖ COMERCIAL RESOURCES:
4 338 Mt

2010 DATA

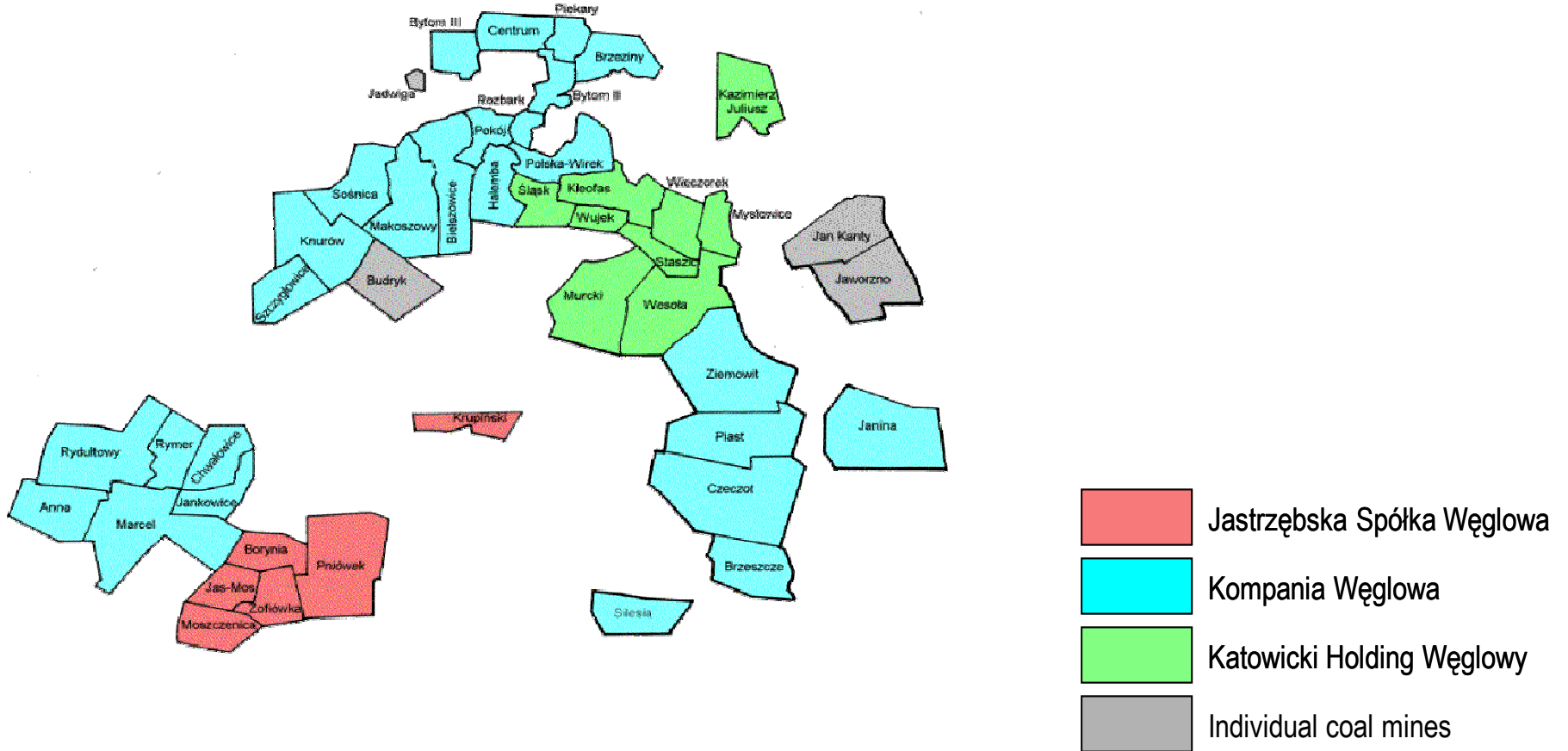
- ❖ EMPLOYMENT
113 187
- ❖ NUMBER OF MINES
30
- ❖ HARD COAL COMPANIES
 - ❖ KOMPANIA WĘGLOWA
 - ❖ KATOWICKI HOLDING WĘGLOWY
 - ❖ JASTRZĘBSKA SPÓŁKA WĘGLOWA
 - ❖ POŁUDNIOWY KONCERN WĘGLOWY
 - ❖ LUBELSKI WĘGIEL BOGDANKA
- ❖ OUTPUT
75.7 mln tonnes



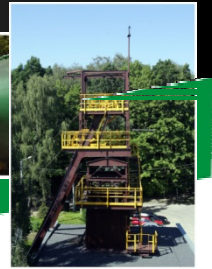
* completion of mining activities in 2000



Location of the hard coal mines in Upper Silesian Coal Basin



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POLISH HARD COAL COMPANIES



- the largest mining company in Poland and EU
- employment – 60.196
- 15 coal mines
- output – ca. 39 Mt of hard coal



Upper Silesian Coal Basin :

Presently **30** operating hard coalmines including:

26 gassy coalmines

19 use drainage systems

14 utilise CMM

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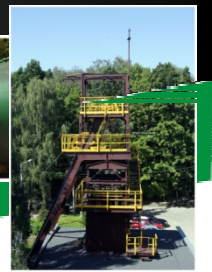
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TOTAL ANNUAL HARD COAL & CMM PRODUCTION

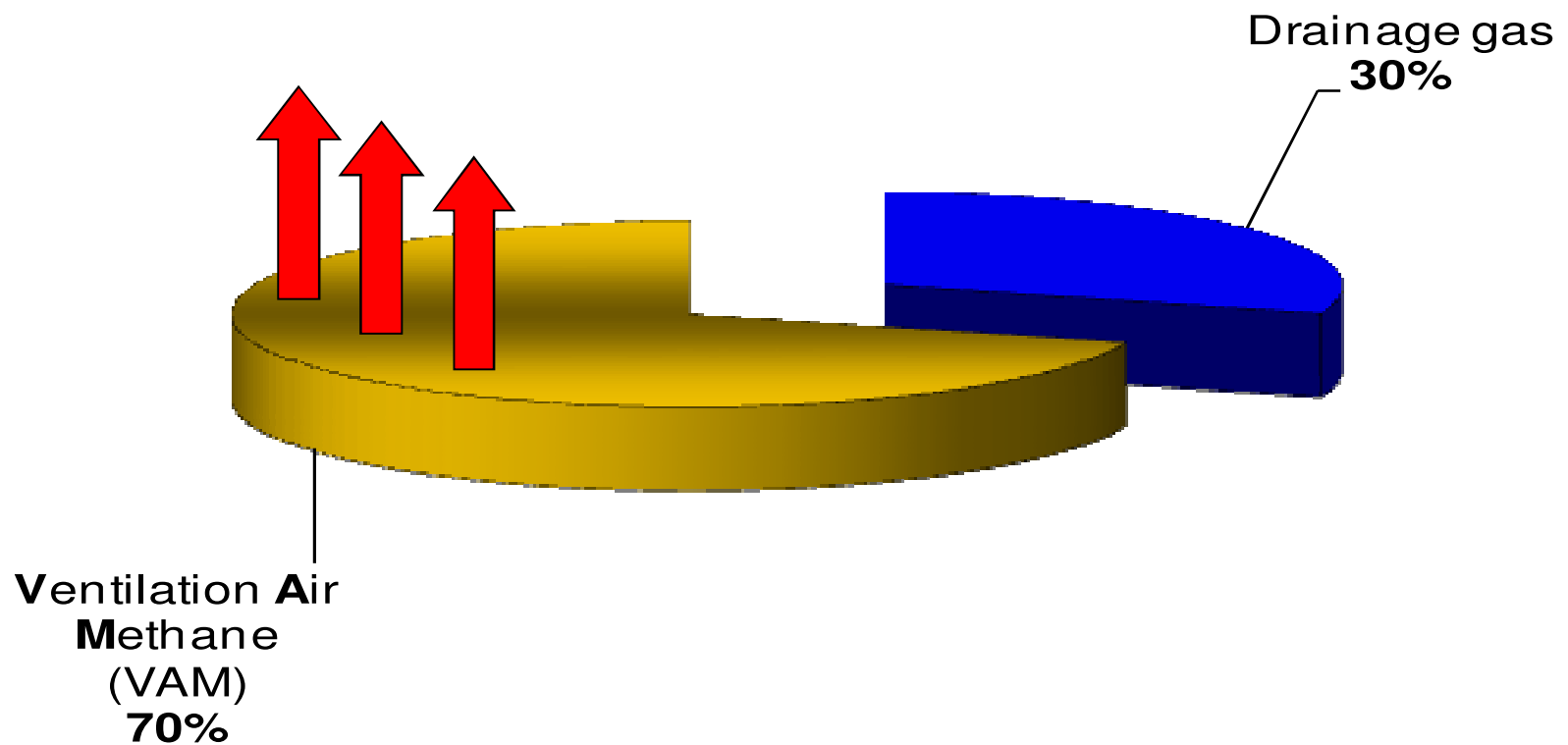
Hard coal output: **75.7 mln Tonnes**

Total absolute gasiness: **802.9 mln m³**

data for the end of 2011



TOTAL GAS RELEASED DURING MINING OPERATIONS (about 802.9 mln m³)



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- **Drainage**

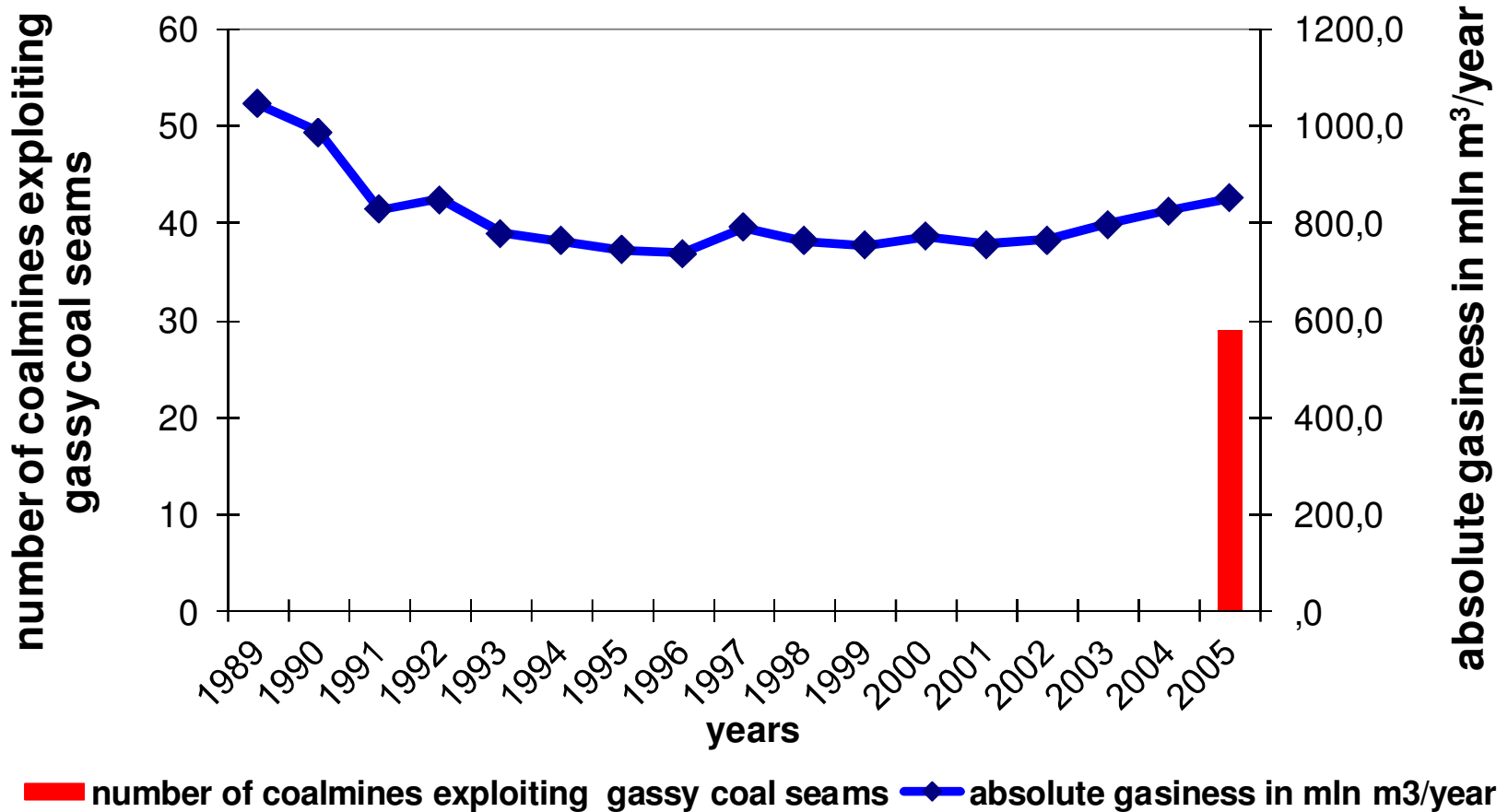
in 19 (from 26) gassy coal mines

227.6 mln m³ of methane was captured

167 mln m³ (73%) was utilized

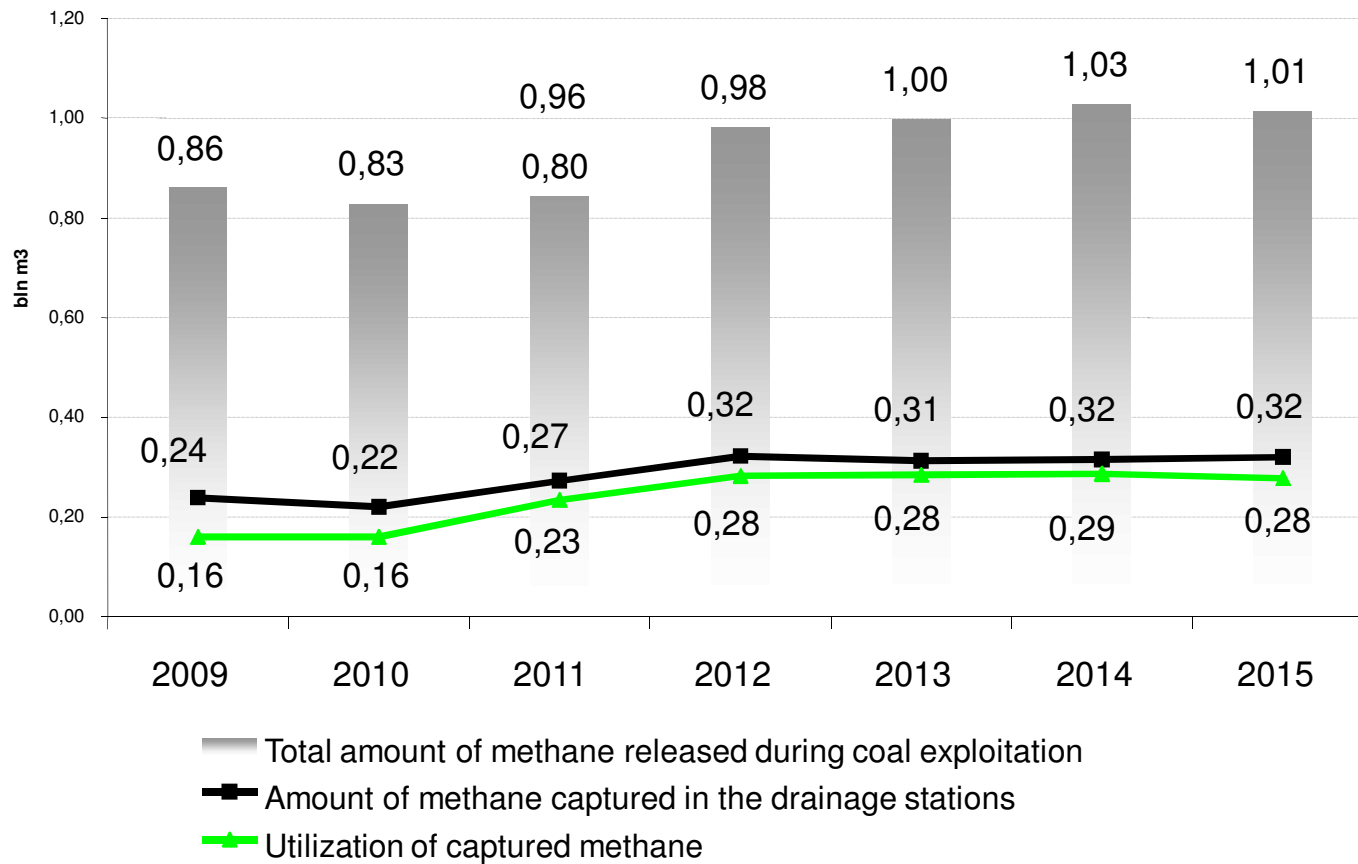


Changes of absolute gasiness versus decrease of active gassy coalmines' number





UTILIZATION OF METHANE



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Support system for CBM & CMM in Poland

Based on the Law dated January 8th 2010 concerning changes of the law – Energy law and changes of selected other acts certain support system based on the certificates of electrical energy origin generated in the highly efficient cogeneration in the unit fired with methane released and captured during underground mining works in operating, under liquidation or already closed hard coal mines was introduced. (Primary Energy Saving > 10%) from CBM and CMM.

This system is a real financial support for the efficient utilisation of CBM and CMM.

According to the energy law records, this system, will be valid until the year 2018

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- The idea of the support system was to put the **obligation on the energy companies selling the electricity to the end-users to buy** and present it to the President of Energy Regulation Office in order **to be remitted**, certain amount of **certificates of electrical energy origin, produced in cogeneration** **or** paying supplementary fee instead !

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It must be emphasized that above system could be effective only several months during the year, when there is sufficient demand for the heat !!!

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The mechanisms to support production of electrical energy from coal mine methane already existing in Poland are not sufficient.

The support system created in the year 2010 using the certificates and public support meant for the construction of new or adjustment of existing energy installations to utilize methane coming from the drainage systems of hard coal mines do not encourage to increase economical utilization of coal mine methane.



Based on the analysis performed after 2 years since introducing above incentive Polish authorities recommended to:

- **rely existing support system on the same rules as for the system of renewable sources of energy (pl:OZE), without necessity to produce energy in cogeneration,**
- **increase the amount of supplementary fee used in the present support system,**
- **create the support system for capturing and utilization of ventilation air methane.**



Conclusions / Challenges for Polish CMM and CBM

- **Only 30%** from **802.9 mln m³** of methane released during mining operations is being captured by drainage systems.
- **Only about 66%** of drainage gas is being utilized...
- **Will the supporting system for the cogeneration energy be able to stimulate more efficient utilisation of CMM ?**
- **70%** of methane released during mining operations is being vented to the atmosphere; **VAM projects are needed !**
- **Consideration of VAM & CMM emissions' reduction in the national plan of allocations could stimulate new projects !**



- **Shale gas operations in Poland another hope for Polish CBM when implementing new Directional Drilling Technologies ?**

Companies:

Dart Energy

Poltex-Methane,

New Millennium Resources Poland,

still in Upper Silesia region....

- **New initiative of Ministry of Environment to verify CBM directional drilling ahead of mining in Polish conditions**
- **Can we afford not to use this source of energy ?**

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Thank you for your attention



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