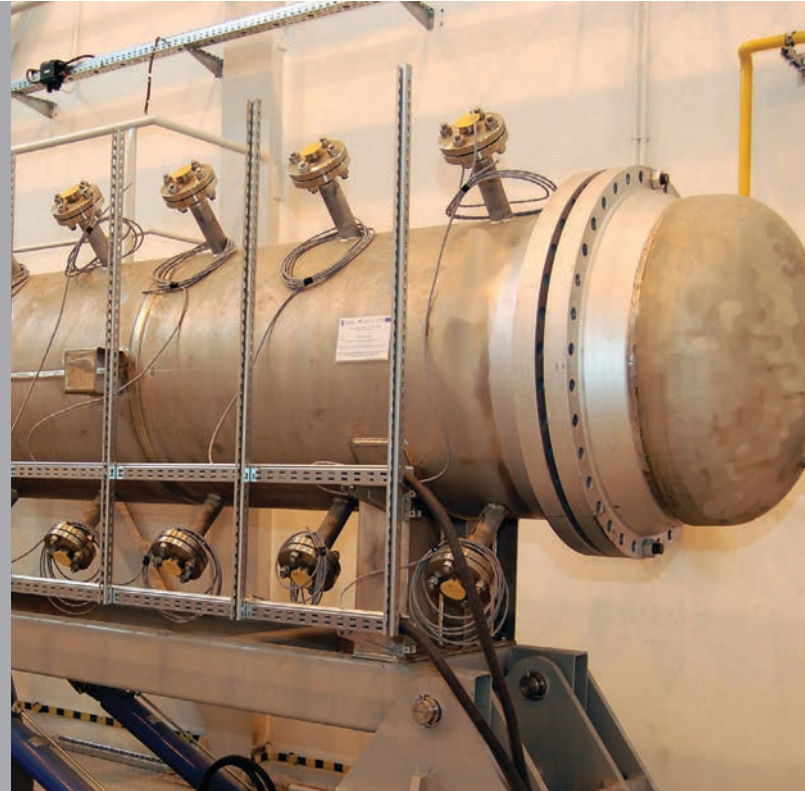


## Facility for underground coal gasification (UCG)



### Demonstration facility for underground coal gasification (UCG) with a capacity of 10-20 MW using the shaft method

#### Technology description

The solution consists in the production of low calorific gas using the method of underground coal gasification in situ by means of air, optionally enriched with oxygen, treatment of gas to the required level and its combustion in a dual fuel boiler with methane gas (mine or network) or coal. Underground coal gasification is carried out in residual coal seams in liquidated mines or mining areas with a thickness of more than 1.7 m, some of the infrastructure (pipelines, gas pre-treatment facilities) is located in the excavations and mine shaft. Due to limited resources of coal remaining after extraction using the mining method in a specific location, the power of the

installation in the gas is 10-20 MW. The installation is aimed at finally confirming the possibility as well as technical and economic feasibility of this technology implementation at a commercial scale. In mining industry, there is a strong need to develop cleaner methods of obtaining and using this raw material, and the power industry still using enormous amounts of coal, which must seriously face environmental consequences. Thus, natural directions have emerged for the commercialization of innovative Clean Coal Technologies.

DEPARTMENT OF ENERGY SAVING  
AND AIR PROTECTION  
Coordinator of Clean Coal Technology Centre

Prof. Krzysztof Stańczyk  
T: +48 32 259 22 67  
E: kstanczyk@gig.eu

## Facility for underground coal gasification (UCG)

### Advantages

- a comprehensive solution for medium-power type installations, including gasification, gas treatment and its combustion systems in the simplest possible way,
- development method of coal from mine workings using directional drilling,
- raw gas treatment method, partly in mine workings

### Application

Demonstration facility of UCG is the last stage before the implementation of technology on an industrial scale. The area of application is hard coal mining, especially within the USCB in areas where mining operations are terminated for economic or natural reasons (too great depth of resources) as well as power industry, particularly heat and electricity generation in medium-power type systems for local applications.



Fig. Installation for pressure simulation of the underground coal gasification process

