

Assessment of shale gas potential in Poland (2014)

Estimates of shale gas resources

The search works in the northern and eastern part of Poland point to the possibility of shale gas deposits of 1000 to 3000 billion m³, which would mean that – considering the present development of gas demand – the deposits could prove sufficient for about 65 to 200 years. The estimates refer exclusively to the area of Lublin, eastern Mazovia, and central Pomerania. Such resources can largely affect gas prices in Poland and the region, which does not remain out of the interests of Russian conglomerates. There is a problem of gas price in relation to the costs of its mining, however, the prices of gas paid by Poland or Germany to Gazprom remain significantly higher than the prices on the shale gas market in the USA [1].

The Polish Geological Institute, in cooperation with the American Geological Service, analysed the data from the years 1950-1990 in shale formation of lower Palaeozoic in the Baltic-Podlasie-Lublin basin. On their basis, it has been determined that the mined gas resources for the land area and the shelf may amount to the maximum of 1920 billion m³. However, considering the estimate parameters, they probably amount to approx. 346-765 billion m³ [2]. It must be stated that these are not the first estimates of non-conventional gas in Poland; for example, in the 1980s, a team of scientists from the Polish Geological Institute estimated the deposits at the level of 665 billion m³, whereas in the 1990s, a team from the University of Science and Technology pointed to 402 billion m³. The latter results were verified in 1996 – at the time, average value of non-conventional gas resources was indicated at the level of 1,595 billion m³, with simultaneous range of 799 – 2,393 billion m³ [3].

According to the 2013 data of the Ministry of the Environment, 113 concessions for investigation and research works were issued, 26% of which were granted to Polish companies. Until then, about 40 investigation bores had been made, and for the next eight years, further 270 are planned [4].

It is worth to point out the indolence of authorities, who in the area of “real politics” intensely discuss diversification of gas supplies to Poland, as well as becoming independent of gas supplies from the Russian Federation, yet are unable to prepare an effective strategy and a transparent concession system in the area of shale gas research and mining.

Assessment of authorities and public administration in the area of search, mining and management of shale gas in Poland

In 2014, operation of state institutions in the area of search, mining and management of gas from shale deposits (in 2007-2013) was subjected to evaluation by the Supreme Inspection Chamber (NIK) [5]. NIK stressed that geological works (in the period analysed) were carried out in a small part of the concession area. Often, the works recorded significant delays. Lack of dynamics in these works can be attributed to economic-financial factors, incorrect public administration measures, and broadly lack of transparency of the legislative process in the works of the Polish legislator.

The main obstacles to the development of the “shale gas economy” include:

- Prolonged legislative process in the area of regulations regarding hydrocarbon search and mining
- Lack of relevant body to coordinate hydrocarbon mining development
- Lack of governmental strategy for the use of shale gas and the synergy of potential “shale revolution” with the entire economy
- Ineffective work of the Ministry of the Environment in the area of ministry work organisation (e.g. organisational drawbacks in the area of administration in charge of concession granting). In general, problems with accountability of the Ministry of the Economy for energy policy, and in special cases also of the Ministry of the

Environment, point to the need of appointing a more effective Ministry of Energy and sustainable development.



- Improper concession granting process (including the scope of concessions granted – without considering e.g. financial and technical potential of companies).
- Problems with long-term and unreliable dealing with concession requests of entrepreneurs, also illegal payment of concession fees and setting the deadlines for their payment. Furthermore, arbitral approach to proceeding and unequal treatment of applicants.
- Lack of credible, final and reliable estimates of shale gas resources in Poland, despite engagement of state institutions to assess the resources, which suggests state's incompetence in the area of works related to improvement of the state's energy security.
- Lack of actions in the area of limiting the corruptive areas and mechanisms in the aspect of concession-granting process (search concessions).
- Slow pace of search bores, which are necessary for reliable resource estimates.
- Shortages in results of samples from geological bores (including samples failing to meet quality standards).
- Poor supervision of mining authorities over entrepreneurs' activities as regards environment protection requirements.
- Unreliability of some entrepreneurs performing search activities in the area of roles and responsibilities resulting from search concessions.

Notes

[1] Data quoted from: National Geological Institute.

[2] *Bilans zasobów złóż kopalni w Polsce wg stanu na 2012r.*, PIG, PIB, Warszawa 2013, pp. 16 – 17.

[3] M. Rutkowski, *Gaz pojawia się i znika, czyli krótka historia szacowania zasobów węglowodorów niekonwencjonalnych w Polsce*, „Przegląd Geologiczny”, Vol. 61, no. 1, 2013, pp. 331 – 333.

[4] Data on the basis of the Ministry of the Environment (as of 2013).

[5] *Poszukiwanie, wydobywanie i zagospodarowanie gazu ze złóż łupkowych*, NIK, Warszawa 2014.