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IMPROVING GAS SECURITY IN EASTERN EUROPE: THE CASE OF BULGARIA

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Abstract

EU energy policies should be designed and implemented, both at the national and community levels, with the aim of providing secure energy supply, at an affordable price for customers, and with an impact on the environment as limited as possible.

The high reliance on Russian gas, especially in Eastern Europe, could be seen as one of the main challenges to the first of those 3 objectives. Several Member States in Central and Eastern Europe, even though they have relatively small gas markets, are heavily dependent on Russia, which is in some cases their single supplier. More than the reliance on a single supplier *per se*, the major threat to the security of supply is the absence of alternative sources of gas supply or of other energies, added to the limited ability to withdraw gas from storage to make up for potential major Russian gas supply disruptions.

Security of gas supply has been brought back at the top of the European political agenda when the high vulnerability of these countries has been stressed by recent gas crisis, and in particular the one of January 2009, during which Bulgaria suffered heavily as Russian gas supply was totally cut off for two weeks. In Bulgaria, tens of thousands of households went without central heating as gas-fired district heating plants had to stop generating. Many industrial companies had to stop their production. The resulting economic losses, not precisely known, are large.

Several Eastern European countries, Bulgaria especially, are in a situation of gas insecurity. And if the crisis has had a single positive outcome it has probably been to (temporarily?) revive the interest and awareness of the political and industrial arena and to eventually force them, to some extent, to study possible actions and to implement some of them. The Bulgarian authorities have been analyzing the feasibility of several projects, including for instance the expansion of the Underground Gas Storage (UGS) capability or the creation of gas interconnections with neighbouring countries. Some of these projects have now been launched.

This move is a very good step forward. Yet, there are different ways to bring Bulgaria from a situation of gas insecurity to a situation of gas security. By situation of gas security we mean a situation in which the country would have the ability to fully cover the demand in energy even in the event of a major gas supply disruption. For a given level of additional supply security that they bring, some measures are cheaper than others, and ideally the Bulgarian authorities should assess and compare the costs and benefits of various policies and measures before taking decisions regarding their implementation. Nevertheless, no analysis has so far been carried out to rank or prioritize the different projects. This paper attempts to provide some of the initial

assessments of the different accessible routes to bring Bulgaria from a situation of gas supply insecurity to a situation of gas supply security.

Several policy options have been studied: from expanding underground gas storage to maintaining dual-fuel capability for electricity and district heating generation; from reversing the flow in the pipelines linking Bulgaria with Greece and Turkey to building a new pipeline connection with Romania.

The results of our estimates for the costs and security of supply capacities brought by each option are summarised graphically in a ‘supply curve for gas security’. The curve relates the amount of security that each policy option would provide to the unit cost of security. Ideally, the government would implement policy options by order of rising costs until an appropriate level of security is reached. The curve is drawn for three different scenarios characterised by the frequency of major gas supply disruptions.

The methodology presented in this paper can easily be applied to assess the security of gas supply situation in other countries facing similar challenges, especially in Central and Eastern Europe. Because of its simplicity, this framework is particularly well adapted to summarize and explain to a variety of stakeholders, the costs and benefits of various policy alternatives.

The paper is organised as follows. First, we assess the gas supply security situation in Bulgaria. In the second section of the paper, we present and discuss the remedies that have so far been proposed and we give the definition of ‘security of gas supply’ that has guided our analysis. In the third section, we explain our methodology. Finally, in the last section, we compare and discuss the policy options available to improve the gas supply security situation in Bulgaria, and we conclude by giving policy recommendations.

The ‘supply curve’ for gas security resulting from our analysis for one of our gas supply disruption scenarios is presented in figure 1.

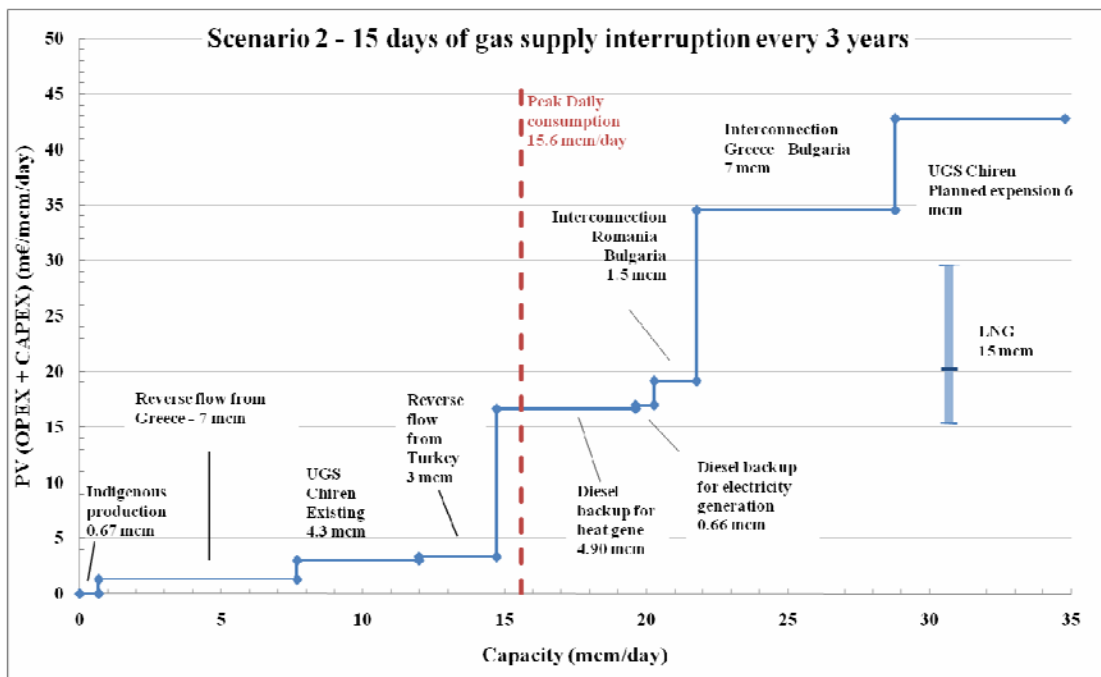


Fig. 1. ‘Security of supply’ curve in the case of a 15 days gas supply interruption every 3 years.