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**ASSESSING THE FUTURE OF EUROPEAN GAS SUPPLY: WHAT  
COULD UPSTREAM COMPETITION LOOK LIKE?**

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**Overview**

Natural gas demand is expected to increase significantly in European countries in the next decades. On the other hand, domestic production of the European Union is expected to decline. Given the distribution of natural gas reserves across the world and the existing or in project infrastructure, the number of future European suppliers will be limited (IEA (2006)). Among them, producers located in Former Soviet Union countries, Norway and Algeria should play a dominant role.

This context should prompt us to examine carefully some important issues. How will future competition among gas producers be organised at the continental level? Will the dominant players be able to exert “market power”? In a recent agreement, Russia and Algeria have initiated a dialogue on gas issues (European Gas Markets, 2006). Can such an agreement be considered as a first move towards the emergence of a collusive situation? If yes, is the gas industry compatible with the conditions needed to collude?

This article first proposes some market equilibrium comparative statics in case of collusion at the production stage or not. After that, we discuss possible ways to mitigate this upstream market power. LNG development is considered as one of them, as it contributes to reduce transport capacity constraints with flexible destination guaranteeing price arbitrages between geographical areas.

**Methods**

To tackle this question, we built an equilibrium model for the European natural gas industry (recently Boots et al. (2004), Egging and Gabriel (2006)). The European market is split in 4 consumption regions, characterized by a constant elasticity demand function. Downstream retail competition is considered ex-ante, through a modification of the final demand function observed by producers (Greenhut and Ohta (1976)). Finite transit capacities link the consumption regions, allowing for perfect arbitrage between zones. International access routes and fees are fixed and exogenous; they are aggregated for each producing firm to access any of the 4 markets. Large producers are assumed to be Cournot players, while a competitive fringe complements the offer. All have fixed production capacities. The problem is solved by means of an adaptive learning procedure (Reichmann (2002)).

We formulate various assumptions to model the nature of the Russo-Algerian agreement. In each case, we investigate the mitigating power of new gas brought to Europe by LNG.

**Results**

Comparative statics studies illustrate how LNG routed to the European market represents a mitigating factor in order to limit the possible upstream market power in Europe, especially in the case of an agreement between historically dominant players. Flexible LNG allows arbitrage and widely contributes to market integration, especially between south and

northwest Europe. Reducing LNG quantities brought to Europe strongly impact regional prices, in particular in southern Europe, extending local market power of large producers.

### **Conclusions**

The potentiality of a sellers agreement raises strong concern on the future of the European market. New projects bringing gas to Europe would be needed to straighten competition. The results presented in this article tend to demonstrate how significant market power could design the shape of future upstream market.

### **References**

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