

# ***HUB-BASED GAS SOURCING FOR MARKET LIQUIDITY AND CONTINUITY OF SUPPLY***

Chris Cuijpers, Commission for Electricity and Gas Regulation (CREG),  
Nijverheidsstraat 26-38, B-1040 Brussels, Belgium  
Phone: +32 (0)2 289 76 63, [chris.cuijpers@creg.be](mailto:chris.cuijpers@creg.be)  
Andreas Tirez, Commission for Electricity and Gas Regulation (CREG),  
Nijverheidsstraat 26-38, B-1040 Brussels, Belgium  
Phone: +32 (0)2 289 76 77, [andreas.tirez@creg.be](mailto:andreas.tirez@creg.be)

## **Overview**

In this paper we address the micro-economics of gas market design in order to internalize security of supply needs. The European Union has made significant progress in developing market mechanisms for gas trading and competition. Emerging liquid gas hubs are more and more considered as platforms for market clearing and gas price indexation. Liquidity attracts more liquidity since these platforms develop tools for gas transactions for various time horizons (e.g. from within-day to year-ahead and even transactions further in the future). These trading tools enable gas traders to manage their supply portfolio and to hedge risks, also physical supply risks. These market dynamics provide conditions for efficient gas sourcing, even during periods of scarcity due to extreme peak demand or supply disruptions. The paper argues that the emergence of these trading mechanisms creates market resilience and regulatory opportunities to facilitate the internalization of security of supply needs. Particularly the market-based balancing regime is well-suited to value the balancing of gas injections and offtakes and thus continuity of supply when proper price signals are in place.

Adequate scarcity pricing at hubs and sufficient cross-border transmission capacity go hand in hand. The EU regulation on trans-European energy infrastructure (EC, 2013) facilitates the building of sufficient capacity in order to achieve effective market integration and more secure gas supplies. In an internal gas market, gas should be able to flow according to the price spreads until an equilibrium is reached between demand and supply. In this integrated market environment temporary gas scarcity will be spread across the internal market while the dynamics of demand and supply will lead to a new market clearing situation. Demand response will be visible at higher gas prices as well as the attraction of new liquidity. However, it is right to say that this target is not yet fully achieved since market maturity still differs in the EU but the process to market maturity may not be hampered by state interventions to safeguard security of supply. Security of supply becomes more and more an issue of getting gas produced elsewhere in the world at EU-borders instead of implementing specific security of supply measures within the EU gas market.

LNG-terminals as well as storage facilities are flexible tools to mitigate EU gas supply risks from disruptions of major supply corridors for pipeline gas. LNG-terminals at the EU coastline have shown to be very flexible in attracting LNG spot cargoes during peak demand periods with scarcity prices. In case of a disruption of pipeline gas supply upstream, LNG as well as gas in storage, which are higher ranked in the merit order, become cost-effective. Hub-based sourcing opens opportunities for gas producers to be more active in gas trading in the EU and to move closer to the customers in the supply chain. The facilitation of competition and trading at the upstream gas production level will strengthen the guarantees that gas exports follow the economics and are less vulnerable to geopolitics.

The paper follows a bottom-up market approach to meet security of supply needs and questioned the efficiency of a security of supply policy based on geopolitics, certainly if the overall policy is to rely on the market forces to provide efficient solutions. State interventions in this area rapidly interfere with market mechanisms and the progress to market maturity.

## **Method**

The paper starts discussing the market design resulting from the European Third Energy Package (EC, 2009 a,b) and Network Codes in order to move to an effective internal gas market (ACER, 2015). We argue that a full implementation creates a competitive and contract-based market environment which largely integrates security of supply concerns. For instance, the Gas Balancing Network Code (EC, 2014) puts a right framework in place for the value of security of supply to be incorporated into a market-based balancing regime. The Gas Balancing Network Code should play an important role in the market internalization of gas security of supply. Within the balancing regime, price signals and incentives can be established for market participants in order to help keep the system in balance and thus continuity of gas supply.

Well-functioning spot and forward markets set the framework for security of supply: to optimize transactions and flows by signaling scarcity and promoting efficient use of assets through price signals. The market responsiveness to a gas supply disruption leads to efficient solutions. The paper presents guidelines aiming at enabling the market to be as resilient as possible without interventions of authorities which may hamper market functioning. It is argued that such an approach would accelerate moving towards more mature gas markets in Europe. It requires sufficient infrastructure, efficiently used (e.g. physical reverse flows) to ensure access to markets.

The assessment is based on ongoing regulatory assessments in the task force of the Council of European Energy Regulators (CEER, 2015a,b) which develops views concerning measures to safeguard security of gas supply in general and the use of market-measures in particular. However, this paper goes further by analyzing the role that hub-based gas sourcing is able to play in order to guarantee liquidity and continuity of supply. These assessments contribute to the regulatory as well as political debate regarding the revision of Regulation (EU) No 994/2010 (EC, 2010) and how EU security of supply policy should look like in coherence with initiatives to realize an effective internal energy market.

### **Results**

The paper shows to what extent the market design in the EU fits for security of gas supply purposes. It is argued that the implementation of the European Third Energy Package and Network Codes is the best guarantee to achieve efficient trading, market liquidity and security of supply. Especially the market-based balancing regime for gas networks is a framework which largely incorporates security of supply concerns since scarcity is signaled and suppliers are incentivized to inject gas into the network according to the offtakes of their customers. The paper builds further on these insights in order to upgrade the current European regulation in order to internalize as much as possible security of supply concerns.

The paper presents insights to achieve security of gas in the EU by facilitating hub-based gas sourcing. The analysis provides insights on the opportunities gas producers have to become more active in gas trading on gas hubs and by doing so, strengthen the market resilience.

### **Conclusions**

Well-functioning markets set the framework for security of supply. Price signals optimize flows by signaling scarcity and promoting efficient use of assets, including gas storage and LNG sourcing. The more mature gas markets, the more efficient provision of security of supply and the less dependence on market interfering state measures to cope with gas disruptions. Hub-based gas sourcing allows to expand trading and competition between midstream gas companies to upstream gas producers. This process contributes to the mitigation of external risks to EU's security of supply.

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