

Gas Markets Events faced during Winter 2016/2017

A EURELECTRIC background paper

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We speak for more than 3,500 companies in power generation, distribution, and supply.

We Stand For:

Carbon-neutral electricity by 2050

We have committed to making Europe's electricity cleaner. To deliver, we need to make use of **all low-carbon technologies**: more renewables, but also clean coal and gas, and nuclear. Efficient electric technologies in **transport and buildings**, combined with the development of smart grids and a major push in **energy efficiency** play a key role in reducing fossil fuel consumption and making our electricity more sustainable.

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We support well-functioning, distortion-free **energy and carbon markets as** the best way to produce electricity and reduce emissions cost-efficiently. Integrated EU-wide electricity and gas markets are also crucial to offer our customers the **full benefits of liberalisation**: they ensure the best use of generation resources, improve **security of supply**, allow full EU-wide competition, and increase **customer choice**.

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Europe's energy and climate challenges can only be solved by **European – or even global – policies**, not incoherent national measures. Such policies should complement, not contradict each other: coherent and integrated approaches reduce costs. This will encourage **effective investment** to ensure a sustainable and reliable electricity supply for Europe's businesses and consumers.

EURELECTRIC. Electricity for Europe.

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This paper intends to share EURELECTRIC's main takeaways from the events observed in European gas markets during the winter 2016/2017. This return of experience also **highlights the growing interdependency between gas & electricity markets**, notably at times of tight situations, which prove that the cross-commodity dimension should be strengthened in the evolution of regulatory frameworks in the energy sector (cf. revision of the gas SoS Regulation, release of the Clean Energy Package for all consumers).

This paper does not intend to exhaustively investigate all tense situations faced throughout Europe, but points out the most noticeable cases observed in the recent months in some European countries.

1. Greek case

As of December the 20th, 2016, the National Natural Gas System of Greece was declared by the Greek authorities in alert level crisis, due to insufficient gas supply to meet the increased demand. This tense situation on the Greek gas system practically continued until February the 12th, 2017.

As a result, over several time intervals throughout the aforementioned period, the following measures had to be taken, following relevant instructions by the Greek electricity TSO (ADMIE):

- Reduction of the operating level of gas-fired Power Plants.
- Maximization of the operating level of the lignite-fired power plants (in certain cases also using diesel oil to support such maximization) as well as of the hydro plants.
- Switching the dual-fueled Power Plants of PPC at Komotini and Lavrion (Unit No 4) to operation on diesel oil instead of natural gas.

Over the aforementioned period, to the best of our knowledge, several extra cargoes of LNG were delivered to Revithoussa.

The events faced over this period highlight the current dependency of the Greek natural gas system on LNG, especially in winter, given the limitations of the interconnections and/or gas supply availability through pipelines, with current interconnections only to Bulgaria and Turkey. **Such dependency may have serious impacts on the Security of Supply of the electricity system, given the heavy dependence of electricity generation on natural gas.**

2. Italian case

Italy experienced a tight situation for the supply of gas in January. The cold spell faced as from January 7th led to high amounts of gas being withdrawn from gas storages, forcing the Italian authorities to declare the alert level on January 9th. Shippers were invited - as planned in the Emergency plan - to increase the levels of imports to prevent a premature emptying of domestic storages. The Italian authorities lifted the alert level on February 1st, thanks to an expected decrease in gas demand.

However, it is worth noting that the **current Emergency Procedure activates the different emergency levels according to criteria that are no longer appropriate to capture the real emergency status.** These criteria refer, among other, to the utilisation level of contractual capacity by shippers. However, this capacity was duly restricted by the Ministry in the last years to guarantee a safe use of storages during winter times. It can therefore happen that, even if the contractual capacity is fully utilised, the system still has enough flexibility to face a critical situation. Indeed, storage capacity not being offered to shippers is still available.

This is exactly what happened in January: in accordance with the Emergency Procedure, the alert level was declared because the daily volumes withdrawn from storages accounted to a 100% of the daily withdrawal capacity conferred and available to users. However, the real availability of storage capacity was not critical as such even if “formally” the conditions to declare it were met¹. Consequently the Ministry decided not to increase the Emergency status.

3. Iberian case (Portugal, Spain)

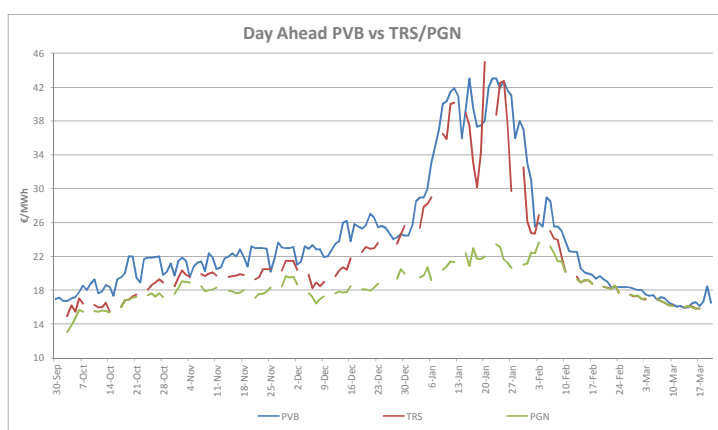
The Iberian Peninsula faced in December 2016 and January 2017 dry weather and very weak wind conditions which led to low levels of production from both hydraulic and wind sources.

Moreover, a cold spell in the first three weeks of January, together with the unavailability of various nuclear plants in France, increased gas demand both in France and in the Iberian countries. This also boosted gas and electricity exchanges between Spain and France due to very high spot prices on these markets.

This set of conditions resulted in a significant increase of thermal electricity generation (more specifically from combined cycle power plants) in both the Iberia and France, since coal commodity prices were also at a peak.

This situation of high demand for gas also occurred during a period of peak prices on the global worldwide LNG market, due to an increase of demand from Asia together with some default in the production of important LNG Asian suppliers. Last but not least, there was a technical shutdown of the liquefaction unit at Skikda in Algeria in January which also increased Mediterranean LNG prices².

Thus, from mid-December onwards, spot LNG prices in Iberia for the delivery of gas in winter increased by 10 to 15 €/MWh compared to summer prices and reached more than 30 €/MWh at the entrance of the Spanish or Portuguese systems. Taking into account the entry costs on LNG terminals and the transactions costs on the Iberian gas market, Mibgas spot prices were above 40 €/MWh for several days in January. Day-ahead prices in the region were correlated with those of Southern France:



Source: MIBGAS (PVB) and Platts European Gas Daily (TRS, PGN)

¹ The emergency level is declared when the overall volume withdrawn from storage - as accounted in the previous 2 gas days (D-2 & D-1) and forecasted in the current gas day (D) - is higher than the amount of the Daily Withdrawal Capacity, conferred and available to users for D-2, D-1 and D.

² Source: <http://news.trust.org/item/20170117202650-g6xvz/>

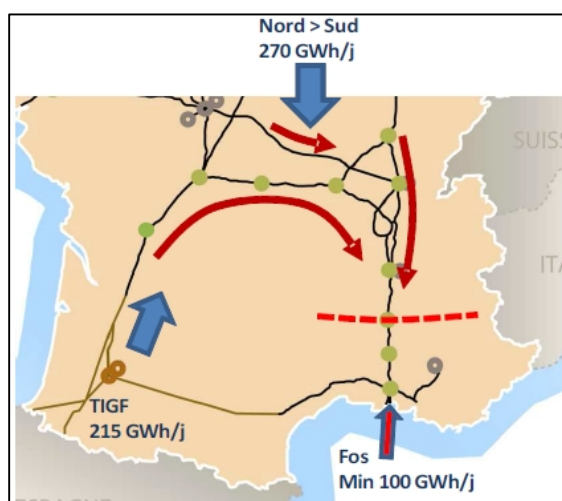
On top of this extremely tight situation in terms of gas supply, the Iberian storage infrastructures were not capable to provide flexibility to increase the market liquidity as they are mostly intended for regulated products and strategic reserves.

The market conditions from mid-December to end January highlighted once more the **importance of introducing regulatory/legislative incentives to storage operators in order to ensure the introduction of more capacity products that are negotiated under market conditions and adapted to real time market flexibility needs.**

4. The French case

France experienced a tight situation for both gas and electricity supplies over the winter 2016/2017. Whereas gas market prices remained aligned to other Northern market places, this tight situation boosted *day-ahead* gas prices in the Trading South Region (TRS) up to 40 €/MWh³ on January 26th.

Simultaneously, a local congestion appeared in South-Eastern France, i.e. within the TRS market zone. While French authorities did not trigger any crisis level tool at national level (neither alert nor emergency), the local TSO declared numerous orange and red alerts between mid-December and end of January, for various local network management issues.



South-East Gas congestion – Source : DGEC : évaluation des risques susceptibles d’affecter la sécurité d’approvisionnement en gaz en France – June 2014

Through such alerts, the local TSO issued guidelines and requested that shippers proceed with adjustments of their *day-ahead* or *within-day* nominations on the gas assets within the TRS zone, even if they fully complied with balancing requirements of the TRS balancing zone. Yet, such requests possibly hampered the asset optimisation of markets players if deployed in a non-market based manner, and possibly jeopardised the mid-term security of gas supply if they led to premature and forced emptying of storage assets before the end of winter periods (*cf.* disruption risk in case of late cold spell).

The local tight gas supply situations recently experienced in France should therefore strengthen the awareness of policy makers that **local gas congestion management should be done via**

³ Source : Heren European Spot Gas Markets Closing Prices Update – www.icis.com

genuine and *ex-ante* market based mechanisms, for both economic and security of supply reasons. The definition of such procedures may probably be envisaged in a similar manner than the one in place in the electricity sector for the delivery of ancillary services to TSOs for network tension management.

Conclusion

The events described highlight the importance of guaranteeing the security of gas supplies and show the potential collateral effects of tense gas supply situations on electricity systems. And this especially in countries where the availability of gas-fired power plants is key to ensure the security of electricity supply.

While low LNG deliveries seem to be a common root-cause of the various tense situations, EURELECTRIC also notices that the cold spells observed during this winter were less extreme than the 'once in 20 years' standard of Regulation 2010/944 in force since 2010. Hence, it may draw the attention of policy makers that, as for electricity, security of gas supply is still an issue to be carefully addressed, even in a context of a gas bubble. It is also important that Emergency Procedures are regularly updated in order to capture the real emergency status of a country.

In a more European perspective, the returns of experience described above show the importance of working on the regulatory/legislative incentives for the efficient use and development of gas supply sources across Europe. This can be done through the removal of the residual bottlenecks observed, in order to lower the exposure of some Member States to specific gas supply disruption risks.

For this purpose, a strong implementation of the network code on tariffs, together with the revision of the tariffs methodology definition along interconnections, for instance between Portugal and Spain, as well as between Iberia and central Europe, is crucial. The implementation of the relevant regulatory measures to strengthen an efficient use of physical interconnections – in light of the New Tariff Network Code - would foster gas markets' integration throughout Europe. Some investments in gas infrastructures would also ease the diversification of supply sources and notably provide LNG as an alternative source of supply to central Europe and relieve local gas congestions.

In substance, any barrier to gas flows across Europe should be removed. In particular, the issue of cross-border tariffs within Europe is key and should be carefully evaluated. We also would like to highlight that the access to capacity may be an issue in some EU countries, because of the lack of implementation of the CAM code and Congestion measures. The application of the third Package to Switzerland, a crucial country due to its geographical position, is also an issue to be tackled.

Solutions can be of different nature: they can take the form of regulatory changes, market evolution, or investments. In any case, the most cost-efficient and less distortive solutions must be retained. For this purpose, they should be looked at in a more coherent way between gas and electricity, through a reinforced coordination between ENTSO-E and ENTSG. In this respect, solutions creating any discrimination between operators should be absolutely avoided. In this context, EURELECTRIC welcomes the "Quo Vadis" study launched by the European Commission from which potential solutions should be identified to address the issues mentioned above.

EURELECTRIC pursues in all its activities the application of the following sustainable development values:

Economic Development

▶ Growth, added-value, efficiency

Environmental Leadership

▶ Commitment, innovation, pro-activeness

Social Responsibility

▶ Transparency, ethics, accountability



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