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GIE views regarding the prevention and the management of gas crises

GIE is glad to carry on its contribution to the debate on Security of Supply organized by the European Commission and to have the opportunity to expose its own analysis on the recent Russia-Ukraine crisis and to share its views on the prevention measures and the management of gas crisis. This analysis is a follow-up on the GIE Response to the Commission's proposals regarding Security of Supply dated 18 March 2009.

In this analysis, GIE will describe the role played by infrastructures and then will expose its assessment on crisis prevention and management, particularly on transparency, interaction and responsibility.

As a synthesis, GIE will present some lessons, which it considers important to be learned and will make some recommendations to market participants.

GIE ASSESSMENT ON THE ROLE OF INFRASTRUCTURES IN THE MANAGEMENT OF THE CRISIS

GIE would like to highlight the critical role gas interconnection pipes, commercial storage and LNG terminals played in the response to the recent gas crisis in Europe. The extraordinary situation which Europe witnessed, as a result of the Russia-Ukraine gas dispute, aggravated by cold winter weather, saw Europe's infrastructure operators set in place the main mitigation measures :

- transmission system operators ('TSOs') managed the flows in their infrastructures, which required some unconventional flow paths, and made reverse flows available to the shippers ;
- storage operators delivered significant volumes of commercial gas stocks without using strategic storage ;
- LNG terminal operators received additional cargos and increased their output.

Gas pipes (interconnections and core networks)

As they are interconnecting countries, gas pipes played an essential role in mitigating the consequences of the crisis which started in a period of severe winter conditions.

First of all, TSOs adapted very quickly the gas flow patterns in their core networks to cope with the new supply configuration generated by the crisis. In many countries, like France, Belgium or Germany, flows have been reversed as compared to the flow direction under usual operational conditions.

Some interconnections pipes between countries are already working in both directions under standard conditions, depending on the market demand. This is the case for example of the Interconnector between UK and Belgium and of the interconnection between the Czech Republic and Germany. The flow in these interconnections pipes has been reversed as compared to the direction of the commercial flow before the crisis. The reverse of the flow from Germany to Belgium and the UK from westward to eastward is an example hereof.

Furthermore, some interconnection pipes between countries have been used for physical reverse flows that do not exist under normal operational conditions. This has been observed in pipes from the Czech Republic to Slovakia, from Greece to Bulgaria and from Germany to Austria and then to South Eastern Europe.

These quick reactions demonstrate the flexibility that interconnection pipes and core networks have for the European gas market by facilitating the transportation of gas from other supply sources.

Storages

Commercial gas stocks were drawn down by around 15% across Europe during the 2 weeks of the crisis[1], which is thrice more than the average of 2.5% per week observed in former fist quarter periods. Stored gas has moved across country borders, reinforcing the important role commercial storage plays in the functioning of both national and regional gas markets.

It is important to note that strategic storage was not used during the crisis : all gas consumers have so far been supplied from commercial gas stocks and no gas has been drawn down from strategic gas stocks.

LNG terminals

LNG terminals played their role to mitigate the consequences of the crisis in two stages. During the first days LNG terminals increased their output, where and when necessary, by using their storage capability. This extra volume of gas helped to cope with the supply disruption.

Secondly, LNG terminals have accommodated the re-routing of LNG cargos. These could consequently be directed to areas where the need for gas was highest (for example Greece received one additional cargo which has changed its route).

GIE ASSESSMENT ON CRISIS PREVENTION AND MANAGEMENT

Transparency

Infrastructure operators are well suited to manage crises because this is part of their regular activity. Infrastructure operators have a long experience of cooperation and of exchanging data for their day-to-day operational activities and for the management of crises; they have set up specific procedures to cope with various crisis situations. In particular, during the exceptional situation in the European gas markets in January close information sharing between TSOs about upcoming supply disruption at Waidhaus and on specific cross-border flow possibilities (nonbinding and interruptible) made it possible to adapt to the critical situation.

Exchange of relevant data and information between infrastructure operators, market parties and the authorities helped to reduce the consequences of the crisis. GSE has accelerated the release of the weekly gas inventory scheme. The GSE Aggregated Gas Storage Inventory platform has proven to be a powerful tool during the crisis.

The management of the Russia-Ukraine crisis which concerned many European countries raised some difficulties, confirming the high importance of transparency in the management of crisis:

- each operator had only parts of information available but no one could give an overall view on the situation (where capacities were available, where gas was needed and in which quantities).

[1] Referring to GSE aggregated gas storage inventory scheme (http://transparency.gie.eu.com)

- the constraint due to the confidentiality of data limited information exchanges between infrastructure operators and their shippers and prevented operators from finding the relevant solutions ;
- there is no formal procedure in place to transmit the right information from authorities to infrastructure operators.

Furthermore, transparency is crucial in prevention stages too. In particular, transparency regarding capacity and flow data is an essential input in order to :

- analyse the past crisis ;
- analyse which preventive measures can be taken ;
- assess the network resilience against clearly pre-defined and agreed set of crisis scenarios.

Interactions between market players and authorities

GIE is pleased to confirm the good cooperation between adjacent TSO and globally with all adjacent infrastructure operators. All companies are used to deal with emergency situations and to closely cooperate when these occur. Nevertheless it has been very hard to have a general overview of the situation.

In addition, TSOs, managed to coordinate themselves and very quickly succeeded in sending experts to Ukraine to monitor the situation at border points, with a mandate from the Commission.

The interaction with other market participants and authorities showed the following:

- the requirement to flow commitments (i.e. obligation on shippers to put gas in some part of the network at a certain moment in time to help balancing the network) has been used in countries where it is allowed ;
- none of the parties involved has an overall view of all relevant information on capacity and commodity at the same time, mainly due to confidentiality reasons ;
- the interaction with authorities has been organized in the framework of national emergency plans and in coordination with the Gas Coordination Group.

Responsibility

The crisis showed that Member States have very different levels of preventive and reactive measures in place and demonstrated some difficulties where Member States did not adopt the same definitions or where different risk levels were used.

Security of Supply is a topic concerning the whole gas chain : infrastructure operators, suppliers, regulators, customers and Member States. It is important to point out that, security of supply cannot be the sole responsibility of infrastructure operators, which, in particular, can never control the suppliers' compliance with security of supply criteria. For instance, in case of a supply crisis, a shipper has to put the gas in the system. The question of responsibility and control is essential: which parties are responsible in setting up prevention measures and who should deal with operational measures in case of an emergency?

For GIE, a crisis can be managed at three levels depending on the impact of the crisis:

- level of the gas industry : the gas industry is able to cope with the great majority of gas crises, as the design of the gas infrastructure is such that it can cope with predefined crisis scenarios ;
- level of Member States : in situations where the crisis cannot be dealt with by the gas industry alone there is a need for intervention by the Member State, for example through national emergency plans ;

- Regional or EU level : at this third stage, the crisis is impacting several countries and its solution will need coordination between Member States (for example coordination by the Gas Coordination Group) and, if necessary to enforce the market by taking some decision for the general interest.

LESSONS TO BE LEARNED FROM THE CRISIS

What worked well

Taking into account the above, GIE considers the following solutions as successful during the crisis :

- TSOs quickly redirected many flows. In particular some flows were reversed inside the core networks and between countries. Shippers agreed to transport the gas backwards at interconnection points ;
- Shippers used the flexibility of different sources of gas : LNG terminals, storages, alternative piped gas ;
- Commercial storages were used to match the demand during this crisis that coincided with severe winter conditions. All gas consumers have been supplied from commercial gas stocks and no gas has been drawn from strategic gas stocks.
- The response from the gas industry to anticipated crisis scenarios was in accordance with expectations. This demonstrates the importance of Security of Supply scenarios to define preventive measures and of a supra national level of analysis (regional / EU).
- Demand has been reduced in some countries, where this has been foreseen as a potential measure in emergency plans (for example dual-fuel power plants switching to an alternative fuel).

What did not work well

On the other hand, GIE has also observed some solutions that did not work well during the crisis :

- Despite the efforts made by infrastructure operators to share information and to progress in transparency, an overall view of the situation was lacking. The main reason is that confidential data from traders/suppliers on gas availability could not be shared with operators and therefore it has been impossible to put information on capacity and commodity together.
- In market areas where the crisis had not been anticipated, the market response was in some cases insufficient.
- Pricing signals did not correspond to the scarcity of gas in certain areas and as a consequence no additional gas has been attracted by these areas to fulfill the demand.

Important role played by all parties involved in the gas chain

GIE points out the role played by all parties involved in the gas chain in managing the Russia-Ukraine crisis and stresses again the importance of the definition of preventive measures.

Infrastructure operators played a central role because they operate the gas infrastructure. They are well suited to manage crises because of their scenario-thinking, through the design of infrastructures, and internal crisis management procedures. Each operator has its own dispatching centre receiving all relevant information concerning its infrastructures, and closely exchanging information with neighbour dispatching centres. Infrastructure operators were the first to see the physical reduction of flows and then to transmit the information to downstream

operators and to other market parties. GIE highlights the good cooperation between infrastructure operators that undertook the necessary measures to make reverse flows available when possible and to increase the use of storages and LNG facilities.

Infrastructure operators helped the Commission in quickly sending experts to monitor the situation in Ukraine and by organizing a continuous presence.

On the market side, shippers, suppliers and producers have shown they are prepared to pay their part in managing a supply crisis. They can use their flexible contracts to adapt to the situation and make gas come from other sources : LNG terminals, storages, alternative piped gas.

Furthermore, the roles played by infrastructure operators and by other market players are complementary. This is even more crucial in the case of a gas crisis: the market cannot work efficiently without enough infrastructures and infrastructure operators cannot find a solution either alone because they do not own the gas and do not have any automatic right to redirect the gas flows on their own initiative.

End users can switch to alternative fuels, when a reduction in supply is forecasted. They can use opportunities available to them to switch to alternative fuels.

Member States play a crucial role in defining preventive measure to prepare their country for any crisis situation and in managing crises by activating emergency plans including, for example, reduction of gas demand in case of a crisis.

The Gas Coordination Group provides here some experience of coordination and cooperation.

Furthermore Member States play an important role, together with the European level, in maintaining good relations with energy supplying countries through effective diplomacy.

Actions already started by GIE

GIE has already launched actions that will contribute to prevent any future crisis and to reduce potential consequences of any such crisis:

- GTE+ has started a study investigating the possibilities to improve reverse flow in Europe. This study is mainly focusing on adaptations of infrastructures at existing border points and compressor stations with a focus on implementing amendments within a couple of years.
- GIE is developing transparency platforms in order to allow market participants to find relevant information regarding infrastructure in Europe.
- GIE has set up a task force which is working on Security of Supply issues. Its mission consists in providing the European Commission with inputs in the process of improving Security of Supply in Europe.

GIE RECOMMENDATIONS

As a synthesis, GIE would like to make the following recommendations to the public authorities (Member States, regulators, EU) and to the gas industry (infrastructure operators, shippers), most of them being already stated in the Response to the Commission's proposals regarding Security of Supply made by GIE on 18th March 2009.

1. Define and share a common level of risk among European countries and agree on more precise definitions related to this issue : e.g. protected customers, peak winter conditions, normal winter conditions, duration of the crisis. The variety of situations encountered in Member States makes it undesirable to adopt detailed rules that can be applied to all. In consequence this acceptable level of risk should be guaranteed in every country by choosing the means among a list of standards improving Security of Supply, e.g. possibility of reverse flows, design margin, volume and flow capacity of commercial storage, fuel switching, interruptible customers, alternative supply source, new gas routes, increase of national production capacity.
2. As it is hard to cope with non forecasted events, an analysis of the Security of Supply conditions should be made at each Member State level. This analysis should take into account technical crises as well as supply crises because both approaches are complementary :
    - Technical crises are for example the breakdown of an entry point infrastructure and this should be examined country by country, keeping in mind that the worst crisis in a country may not be caused by the loss of the biggest entry point ;
    - Supply crises are for example political crises, general strikes, major breakdowns in upstream or major interconnection facilities. They are impacting several countries and the analysis of their consequences should be conducted at regional or European level through the study of supply disruption scenarios (GIE will make a proposal of scenarios as a contribution to the general debate).
3. In the future, the Security of Supply dimension will be included in ENTSOG work on the efficiency of European infrastructure network. In particular, the European 10 year network development statement should also include in the future an assessment of the network resilience against clearly pre-defined and agreed set of crisis scenarios with respect to transmission capacity. It is very crucial that these specific supply disruption scenarios are developed and agreed on the regional/European level as a basis for the further creation of European instruments and mechanisms.
4. GTE+, together with GSE and GLE could have an important role of coordination at the prevention stage :
    - Improving transparency, enhancing cooperation between market players, building of supply shortage scenarios
    - Helping to conduct the relevant analysis for the statement of preventive measures in contributing to the analysis of the Security of Supply situation at regional and European levels and in making regional or European solution to emerge, with the respect to the improvement of interconnection capacities between countries and with sources of gas to give a better access to LNG, storages and main supply pipes
    - Through Transparency Platforms, monitoring flows and stock levels and in general security of supply by publishing some relevant ratios related to the use of interconnection capacity, to consumption and to aggregated stock levels. The setting of ratios could serve as warning indicators. Monitoring security of supply situation cannot be reduced to the calculation of a single ratio, it would be attractive

but too simplistic if we take into account the variety of situations encountered in Member States.

5. The EU should favour the development of additional underground storage capacity within the European gas network to increase storage duration and help to solve supply disruptions. GIE believes that existing and new commercial storage are critical to guaranteeing security of supply, working alongside additional gas supply routes and LNG re-gasification facilities to secure energy supply within Member States.
6. Improve exchange of information and data between all parties involved in the chain, including the authorities (in all directions) and find a way to allow the transmission of data in emergency cases without breaching confidentiality agreements.
7. The regulatory framework should provide appropriate incentives for infrastructure operators to invest.
8. Start a debate to recover the cost of investment which are specifically needed for SoS purposes and check that the economic impact of these projects remains acceptable by the market.
9. Establish some principles at European level related to the management of a supply crises impacting more than one country. This could in particular help future decisions in making choices regarding the market that should benefit from the capacity and from the commodity. Here GTE+ and in the future ENTSOG, together with GSE and GLE could play a central role in the management of a crisis.