



# **The International Energy Agency's response to the Consultation on an EU strategy for liquefied natural gas and gas storage**

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*Please note that this response reflects the views of the International Energy Agency (IEA) Secretariat but does not necessarily reflect those of individual IEA member countries.*

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*Paris, 21 September 2015*

## **Consultation on an EU strategy for liquefied natural gas and gas storage**

### **Introduction:**

The International Energy Agency (IEA) was established in November 1974 with its primary mandate to promote energy security amongst its member countries and provide authoritative research on reliable, affordable and clean energy.

In 2008 the member governments mandated the IEA to monitor gas security policies and advise on developing plans for long term security of supply and emergency preparedness. Unlike the case of oil, there is no framework for taking a collective action in response to a natural gas disruption, and IEA countries do not have equivalent obligation under the treaty to establish emergency response mechanisms for natural gas. Instead, IEA member countries agreed to review their gas emergency response policies on an on-going basis in order to identify and share best practices, and to explore together ways to reinforce gas security, individually and collectively.

Assessing a country's exposure to a possible gas disruption and its ability to respond was an integral part of the most recently completed cycle of the IEA Emergency Response Reviews (ERRs)<sup>1</sup>, and continues to be a central focus in its current cycle of reviews. The IEA therefore welcomes the opportunity to respond to the consultation on an EU strategy for liquefied natural gas and gas storage.

The IEA response does not attempt to answer the consultation's questions specifically but rather focuses on key considerations needed in formulating a long-term strategy.

Our response is divided in three sections; the first section deals with recent market trends and likely developments on LNG; the second with useful considerations for a European LNG strategy; and finally with considerations for a European gas storage strategy.

As LNG is making the gas market increasingly global, and given IEA global gas market knowledge particularly related to LNG and the Asia-Pacific region, the IEA offers to support the Commission in devising a long lasting European LNG strategy.

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<sup>1</sup> [http://www.iea.org/media/freepublications/security/EnergySupplySecurity2014\\_PART2.pdf](http://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_PART2.pdf)

## Recent market trends and likely developments on LNG:

- Over the next five years, LNG markets are likely to remain very well supplied, driven by a vast amount of new capacity coming on line. In the *IEA medium term gas market report 2015* we project incremental LNG production capacity to increase by almost 165 bcm between 2014 and 2020 – this is equal to more than 40% today's level.
- 90% of the new supplies will originate from Australia and the United States, contributing to a more diversified and geopolitically secured LNG supply outlook. Lower oil prices pose little risk to the timing of projects already under construction. The Australian projects are either ramping up or an advanced stage of development, while projects' sponsors in the United States have a limited price exposure once off-take agreements have been signed.
- However, low oil prices will affect LNG projects which have not yet been sanctioned. Several large projects – mainly in Canada and East Africa – are due to go to FID in 2015 and 2016. If oil and gas prices do not recover, deferrals are likely. This could result in tighter LNG markets moving into the next decade.
- As of today, roughly 85 bcm of US LNG capacity has been FID and set to be operational throughout the early 2020s. These volumes are significantly more flexible than those backed by traditional LNG contracts. They are free from destination restrictions, are not indexed to oil prices and are sold free of board (FOB). The ramp-up of US LNG exports will put pressure on other producers to offer contractual structures more appealing to buyers and is likely to be beneficial to the promotion and development of more liquid LNG markets.
- Higher supplies and slower Asian demand growth has resulted in much lower regional price differentials. West-to-East arbitrage opportunities – which had been a dominant feature of LNG markets since 2011 – have disappeared resulting in a collapse of large scale re-exports from Europe. Fundamentals point to a continuation of the status quo over the next few years at least.
- All buyers (but Asian in particular) are enjoying much cheaper prices than they have been used to. Not only spot prices but also LNG long-term contracts (which are mostly indexed to oil prices) have dropped markedly, with oil prices now trading nearly half the level of a year ago. While lower prices could trigger a pick-up in LNG imports in countries where gas demand is more price-sensitive, the current LNG outlook suggests the meaningful quantities of new LNG supplies will need to find their way to Europe. In this context, there seems to be little scope for a return to the structural increase in LNG re-exports from Europe witnessed in recent years.

## Considerations on Europe's LNG strategy:

In aggregate, Europe has substantial quantities of spare LNG regasification capacity relative to both current and projected future demand needs. In this context, the implementation of bi-directional flows on the major trunk-lines that still lack such option, in combination with the removal of any remaining barrier to full implementation of TPA to existing regasification and pipeline infrastructure, should be a strategic priority. This would be a low cost option to enhance both the efficiency and resilience of the European gas system, with no risk of resulting in stranded assets.

The build-out of physical infrastructure (both in the form of new or expanded regasification terminals, or connecting pipelines to existing ones) must be carefully considered in the context of fundamentally stagnating demand and spare LNG regasification capacity at an aggregate level. South East Europe's high dependency on Russian gas might justify the cost of investing in new physical infrastructure to better connect the region to other supply sources. But for Europe as a whole, the notion that every single regasification facility must be able to be fully leveraged via the build-up of new physical interconnection across Europe is not obvious.

The functioning, liquidity and transparency of LNG markets should be further encouraged. Given the geographical and political challenges of new pipeline routes, LNG is an important diversification option for Europe. It is the only practical channel for the abundant gas resources of North America to contribute to European and global gas supply security. It is therefore in Europe best interest to engage with the various stakeholders in the LNG value chain for the promotion of competitive, efficient and liquid LNG markets. Priority actions should be the removal of destination restrictions from contractual practices and promotion and regulatory support for a seaborne secondary market for LNG.

While increasingly flexible and competitive LNG markets can enhance the overall resilience of global gas markets, they do not directly translate in short-term supply flexibility. From a European perspective therefore, well-functioning LNG markets, while beneficial, are not a guarantee of high utilization of existing regasification terminals. The key advantage of more flexible and competitive LNG markets is a much easier aggregation of regional demand and supply flexibilities in responding to demand or supply shocks. In flexible markets, available supplies can be redirected more quickly and at a lower cost, thus increasing the resilience of global gas markets.

However, because LNG operations tend to run base-load, destination-flexibility does not translate into production-flexibility. LNG supplies are highly inelastic in the short-run, with no upswing capability. As a consequence, there is no guarantee that additional LNG supplies would flow to Europe in the event of a supply disruption in the region, as those additional LNG volumes would need to be diverted from elsewhere. How much LNG Europe will ultimately receive is a function of where the cheapest adjustment to the supply-shock takes place in the global gas system.

## Considerations on Europe's gas storage strategy

Gas storage has a very powerful contribution to supply-security. Gas storage was the single most important channel of responding to either the 2009 Russia-Ukraine gas disruption or to the 2013/14 polar vortex in North America. In a theoretically perfect market spot and forward price signals would create an incentive to store gas, and widening price differentials create incentives for new storage investment. Unfortunately it is debatable whether a perfect market case is an adequate basis for regulatory policy.

Price signals might fully reflect variations in demand but not the likelihood of high-scale low probability disruptions. While winter-summer demand fluctuations are typically well reflected in the forward price curve, the possibility of low probability-high impact events such as a transit disruption or a sudden demand upswing are not necessarily. In Europe the overwhelming majority of gas storage capacity has been designed for a winter-summer cycle with rigid operation. Almost 90% of existing storage capacity comprises of depleted fields or aquifers – which are primarily used to respond to seasonal demand fluctuations. Raising the peak withdrawal rate compared to the mobile capacity (the gas stored annually) and enabling multiple cycles is a very significant additional investment and many storage operators would be reluctant to do so, on the basis of forward prices only.

In the absence of very high balancing charges that reflect the social value of a disruption, market participants could have an incentive to under-contract and rely on the spot market but this could lead to liquidity to disappear in less than perfect markets. On the other hand, the experience of countries that adopted strategic stockpile policies show that it is rather expensive and it is difficult to set up without causing market distortions.

There are a number of options to fine tune the regulatory policies and improve the supply security contribution of storage. In particular when competing to offer flexibility, a storage facility's position is strongly determined by the transmission tariff structure of the market they are part of. High transmission tariffs on the border – and especially storage entry/exit tariffs to the network can prohibit the ability of some facilities to compete with other forms of flexibility. If regulators want to encourage higher levels of storage fillings, they have to take into consideration the set of bundled storage and transmission fees. As in several countries storage tariffs are regulated, one option could be to design tariff bands that incentivize a higher level of storage fill, taking into account the high fix-cost of storage facilities.

On an aggregate level, Europe has vast storage capacity, albeit unevenly distributed. Insufficient physical interconnectivity of markets and limited access to other countries' storage facilities in certain cases (for example transmission capacity bookings on an interruptible basis between two national markets) create barriers to the emergence of efficient regional storage markets in Europe. Addressing these constraints could improve the efficient utilization of storage.

Looking ahead Europe's storage needs are likely to shift increasingly towards more flexible capacity. Efficiency gains are starting to erode residential demand loads, while gas is taking up a bigger role for intermittent power generation. This will require substantial level of investments to adapt the existing storage capacity.