

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

1. Introduction

Enel welcomes the opportunity to respond to the EC public consultation on a European strategy for liquefied natural gas and gas storage since we recognize their key role in increasing flexibility of the gas systems and securing gas supplies to Europe.

2. LNG in the EU today

Question 1: Do you agree with the assessment for the above regions in terms of infrastructure development challenges and the need to allow access for all Member States, in particular the most vulnerable ones, to LNG supplies either directly or through neighbouring countries? Do you have a view on what an optimal level/share of LNG in a region or Member State would be from a diversification / security-of-supply perspective?

Please answer by Member State / region

It is a matter of fact that most of the LNG regasification capacity is located in Spain, Portugal, France and the UK. We believe that LNG facilities located in one Member State can provide flexibility and security of supply to other Member States. In particular, Spain accounts for more than one-third of the EU's LNG import capacity. However, as indicated in the consultation document, due to bottlenecks and network constraints within the French system, Europe cannot fully benefit from the Spanish LNG import capacity.

In our opinion, even if the bottlenecks and network constraints within the French system are eased, investments in new LNG terminals will be necessary in Europe.

The document, on the contrary, seems to reveal the belief of the EC that no additional investment in new LNG terminals in Europe is necessary. This idea reflects an expectation of extremely depressed gas demand in the coming years, due to the increase in renewables and energy efficiency (we refer to the graph reported in the annex to the consultation document which shows a sharp reduction in demand in Europe, from 410 bcm/y in 2014 to about 300 bcm/y in 2035).

These forecasts of future gas demand are not shared by the main international sources (IEA, IHS CERA, ENTSO-G), who see gas as a bridge fuel in the process of decarbonization of the electricity sector and foresee a growth, more or less steep, of demand and a simultaneous decline in domestic production. The programs for the phase-out of nuclear power plants, currently under discussion in several EU countries (e.g. France, Germany and Belgium), and the development of new sectors of gas demand, such as for ships and trucks, will also contribute to increased gas demand.

As a consequence, they forecast a rising trend in gas imports from non-EU countries (from the current 66% to about 80% by 2025).

In the absence of new investments in LNG terminals, even assuming full utilization of the existing ones, Europe will become increasingly dependent on a few major exporting countries outside the EU (and Russia will strengthen its role as a leading exporter to Europe, given the forecast downward trend in Algerian and Norwegian gas exports).

In this scenario, an additional element of risk may arise from the potential increase in the negotiating power of traditional producers vis-à-vis Europe, as a consequence of the expansion of their domestic demand, as well as of new markets and/or counterparts (such as China, Japan, Korea and others in Asia).

Therefore, with assumptions of supply/demand in line with the consensus among major analysts, there is a clear need to invest in new LNG terminals in the coming years.

Then, we believe that it is exactly the excess of regasification capacity over liquefaction capacity which supports international trade and the possibility of LNG to respond to price signals.

For instance, the Italian peninsula lacks sufficient regasification capacity. In fact, Italy is highly dependent on imports, which represent 88.4% of its gas demand in 2013, and the majority of imports come by pipeline from two supplier countries, Russia and Algeria (overall accounting for about 66% of 2013 total demand, with only a marginal contribution from LNG, which, as highlighted in the consultation, is below that of the other major European countries).

Developing additional regasification capacity in Italy would have a positive effect not only on Italy but on Europe as a whole, in terms of competition and both long-term and short-term security of supply, also thanks to the planned development in reverse-flow capacity. In fact, as a result of additional investment in LNG terminals, Italy i) will enhance the pluralism of its gas-supply sources and counterparts so as to be less exposed to a security-of-supply crisis; ii) will increase its capability to manage emergency situations on its own, thus reducing the impact on other European countries' security, iii) will reduce imports from neighbouring countries, thus increasing gas availability and competition in such countries, and iv) will be able to export gas to neighbouring countries should the market signal the necessity. Indeed, as stated in the Italian Energy Strategy, approved in 2013, Italy needs at least 8 bcm/year of additional regasification capacity to ensure an adequate system safety margin in emergency situations.

Finally, Enel believes that the optimal level of LNG depends on several factors which are country-specific so that a "one size fits all" approach cannot be applied. Among these factors, we include the availability of production facilities and storage, the access to different routes and sources, the presence of regasification capacity (preferably onshore, given their higher reliability), the level of interconnection with other countries, etc. Then, based on these factors, the optimal level of LNG can be determined with regard to both a market test and security of supply considerations.

Question 2: Do you have any analysis (cost/benefit) that helps identify the most cost-efficient options for demand reduction or infrastructure development and use, either through better interconnections to existing LNG terminals and/or new LNG infrastructure for the most vulnerable Member States? What, in your view, are reasons, circumstances to (dis)favour new LNG investments in new locations as opposed to pipeline investments to connect existing LNG terminals to those new markets?

ENEL has no cost/benefit analysis of the sort asked for.

However, among the reasons to favour additional investment in LNG terminals, we highlight: diversification of gas sources and suppliers (which increases the security of supply and competition), access to a more flexible and international market (spot- and long-term), the possibility to divert gas to other destinations in case of variation in the expected demand.

An argument against new investment in LNG is the existence of LNG facilities with available capacity and the fact that it is cheaper to use what is already in place than to build new infrastructure. We believe that LNG facilities located in one Member State can provide flexibility and security of supply to other Member States. To this end, the interconnectivity of Europe should be increased and it is of utmost importance that the integration of the market through full implementation of the Third Energy Package be completed.

Still, as explained before, new LNG import infrastructure might be necessary, based on security of supply considerations. However, current market conditions make investment in LNG terminals unattractive. Thus, it is important to ensure financial support to foster such investment that would otherwise not be provided by the market. This will avoid cycle of boom and bust that may put at risk security of supply to Europe and make European countries even more dependent on traditional suppliers.

Question 3: Do you think, in addition to the already existing TEN-E Regulation, any further EU action is needed in this regard? Do you think the use of LNG gas and existing LNG infrastructure could be improved e.g. by better storage possibilities, better network cooperation of TSOs or other measures? Please give examples

We think that the use of LNG and existing related infrastructure could be improved.

In particular, we call for a higher degree of standardization/harmonization and a simplification of the products offered by LNG plants. In fact, in some countries there are many and very complex products, even different products among different terminals located in the same country, which represents per se a commercial barrier. The simplification of the products would ease the use of the LNG infrastructure.

In addition, we notice that a reduction in the “pancaking effect” would incentivize the use of existing LNG infrastructure and thus would obviate the need for expansion.

Question 4: What in your view explains the low use rates in some regions? Given uncertainties over future gas demand, how would you assess the risk of stranded assets and lock-in effects (and the risk of diverting investments from low carbon technologies such as renewables and delaying a true change in energy systems) and

weigh those against risks to gas security and resilience? What options exist in your view to reduce and/or address the risk of stranded assets?

In the case of the Iberian peninsula region, the low rates of LNG use are due to the reduction of demand (the expectation of demand was much higher when the decision to invest in LNG terminals was taken). This reduction has been absorbed by LNG since LNG is more flexible than gas arriving by pipeline due to the liquid spot market and the possibility of diverting LNG cargoes to other destinations. Diverting gas arriving by pipeline is more complicated due to the existence of bottlenecks and the “pancaking effect”. LNG represented 74% of the gas imports in 2009, while in 2014 it represented 47%.

In general, to reduce and/or address the risk of stranded assets, we consider that any investment decision should be subject to a cost-benefit analysis and a market test. Then, we recognize that under certain circumstances, some non-market-driven investment may be necessary on the basis of security of supply considerations.

Given the structural dependence of Europe on imports, there should be constant over-capacity in order to ensure the flexibility of the system and higher bargaining power of EU countries in the negotiation with suppliers (this is demonstrated by the Lithuanian LNG terminal, which - according to the press - has contributed to a reduction of over 20% of the price of gas imported from Russia).

In general, LNG terminal projects are (relatively) straightforward and of reduced size and cost; furthermore, as we saw in Spain, the LNG terminals limit costs for operators when demand decreases (e.g. allowing LNG cargoes diversions). Thus they represent the best strategy for increasing diversity of gas sources to Europe, limiting the risk of excessive “stranded costs”.

Question 5: The Energy Union commits the EU to meeting ambitious targets on greenhouse gas emissions, renewable energy and energy efficiency, and also to reducing its dependency on imported fossil fuels and hence exposure to price spikes. Moderating energy demand and fuel-switching to low carbon sources such as renewables, particularly in the heating and cooling sector, can be highly cost-effective solutions to such challenges, and ones that Member States will wish to consider carefully alongside decisions on LNG infrastructure. In this context, do you have any evidence on the most cost-efficient balance between these different options in different areas, including over the long term (i.e. up to 2050)?

Enel strongly believes that renewables will play an increasingly important role in the future energy mix, mainly in the power generation sector but also in the heating and cooling sector, and that energy efficiency should be properly exploited in order to reduce energy dependence and pollution. At the same time, we underline that according to the main international organizations’ forecasts, gas demand will potentially experience a further growth, serving as a “bridge” fuel on the path to a global low-carbon future.

3. Potential entry barriers for LNG

Question 6: What in your view are the most critical regulatory barriers by Member State to the optimal use of and access to LNG, and what policy options do you see to overcome those barriers? Have you encountered or are you aware of any problems in accessing existing LNG terminal infrastructure, either because of regulatory provisions or as a result of company behaviour? Please describe in detail.

One of the problems encountered in accessing an existing LNG terminal has been not to be able to unload the LNG from the vessel, despite having booked an unloading slot and the regasification capacity to supply customers. This has happened because the LNG tanks of the terminal were full of LNG belonging to shippers with no regasification capacity (so that they were blocking the terminal). These kind of problems may occur because the different products of the LNG terminal (i.e. unloading, storage and regasification) are offered in a completely decoupled and independent way. The solution would be to link unloading, storage and regasification.

Another problem encountered in accessing an existing LNG terminal is the existence of high regasification “minimum output rates” (i.e. the minimum amount of gas that has to be regasified in an LNG terminal to avoid potential problems in the plant). Sometimes the “minimum output rates” are too high (and in a non justified way) and so oblige users to regasify gas when they would not do it. This situation is a barrier to the use of an LNG terminal.

Also, the “pancaking effect” restricts the use of the LNG terminals from a regional /European point of view. The high costs of moving gas across countries/regions is a barrier to increasing the use of the existing LNG terminals, which reduces the security of supply of the EU and increases the costs of the whole gas system.

Question 7: What do you think are the most critical commercial, including territorial restrictions and financial, barriers at national and regional level to the optimal use and access to LNG?

As already mentioned, in our opinion one of the main commercial barriers to the optimal use and access to LNG at a regional level is the “pancaking effect”. It limits the use of the LNG mainly to the country where the LNG terminal is located, due to the excessively high cost of moving gas from one country to another.

Also, the lack of harmonization among the products offered by the LNG terminals in some countries, as well their complexity, represent a commercial barrier to the optimal use and access to LNG terminals.

Question 8: More specifically, do you consider that ongoing EU policy initiatives and/or existing legislation can adequately tackle the outstanding issues, or there is more the EU should do?

It is essential to complete the internal market, by effective implementation of the Third Energy Package and associated rules, as this will also improve market liquidity and investment signals.

In addition, in our opinion, EU policy initiatives should tackle the “pancaking effect” with a clear goal of reducing. Moreover, we advocate for a standardization and simplification of products offered by LNG terminal. These actions would help LNG flows into and across the EU.

4. International LNG markets

Question 9: How do you see worldwide LNG markets evolving over the next decade and what effects do you expect this to have on EU gas markets? Do you expect a shift away from oil-indexed LNG contracts, and if so under what conditions?

The LNG market is currently facing a potential oversupply as a consequence of a slowdown in the growth of demand versus an expected increase in supply, which is due to the sanctioning of new liquefaction projects.

In periods of oversupply, as we have seen in both the US and Europe, liquid gas markets tend to develop. This is where “the rules of the game” change, new entrants enter the market and gas experiences a degree of commoditization. In Europe this resulted in increasing liquidity at various hubs, reduced spreads between these hubs, and new ways to buy and sell gas/capacity, e. g. via brokers/organized screen-based platforms.

A similar phenomenon might happen in the coming years with LNG. Although LNG is a physical commodity with many features which make standardization difficult, in periods of oversupply LNG spot transactions increase and more dynamic traders/players look for locational swaps to reduce shipping costs. In addition, an increasing number of buyers/countries will use this opportunity to access competitive gas to fuel their increasing cleaner energy requirements (we are already seeing a growth in interest coming from China, Middle East, India, Lithuania etc). However, this potential oversupply may lead to the delay or even cancellation of some liquefaction projects, thus returning the market to a more balanced situation after a few years.

EU gas markets will be increasingly affected by LNG as more and more LNG volumes will be traded on the spot market. These flexible volumes may have different effects on the European market, depending on the conditions of the global LNG market. In periods of global LNG tightness or global demand surges, LNG is a source that competes with multiple destinations and therefore, as a potential alternative in Europe to gas by pipeline, can increase the risk of price spikes in the EU. In recent years, notwithstanding a tight global LNG market, this has not occurred, since the EU gas market was well supplied by pipelines. In period of global LNG market relaxation, LNG availability may have downward effects on EU prices.

As far as price indexation is concerned, on the spot basis, many deals in the Atlantic basin are already closed on the National Balancing Point (NBP). In the mid to long term, all the new LNG supplies from the USA are and will be indexed to the Henry Hub (HH) price.

Generally speaking, increasing physical transactions will result in physical spot references developing. This in turn will develop into forward markets. Attempts at this made so far with the JKM and TOCOM/Ginga in Japan have not proved successful, but under the right conditions these exchanges/ways to price LNG will grow, and there will be a shift away from oil-based pricing. It would be reasonable to expect an Atlantic Basin and Pacific Basin price index to develop (see Singapore exchange developments).

Although the LNG price of these indexes will be traded independently, this does not necessarily mean that these exchange prices will not be correlated somehow with oil (as is the case today for the NBP). As long as oil remains a competing fuel, gas prices will remain connected to oil in some way. As renewables grow in importance, it will be interesting to see how this reduces the relationship between gas and oil prices.

Question 10: What problems if any do you see with the functioning of the international LNG market, particularly at times of stress? Are there specific actions the EU should take, in dialogue with our international partners, including in trade negotiations, to improve its functioning and/or to make the EU market more attractive as a destination for LNG? Could voluntary demand aggregation be helpful in some way?

As said before (point 9), tightness of the LNG global market would bring the risk of price spikes. On the other hand, in periods of LNG market relaxation (as could possibly occur in the coming years) the availability of flexible infrastructure, such as regasification terminals, would allow the European market to take advantage of low LNG prices and to benefit from a valid alternative to gas by pipeline.

In addition, the development of further LNG infrastructure will strengthen the European countries' bargaining power vis-à-vis pipeline gas suppliers and increase the interaction between EU and global markets.

Finally, in addition to flexible receiving facilities, a stable legal and regulatory framework is fundamental to attracting international players and sustaining investments.

5. LNG technology issues including LNG use in transport

Question 11: What technological developments do you anticipate over the medium term in the field of LNG and how do you see the market for LNG in transport developing? Is there a need for additional EU action in this area to reduce barriers to uptake, for example on technology or standards, including for quality and safety?

6. LNG sustainability issues

Question 12: Do you think there are any sustainability issues specific to LNG that should be explored as part of this strategy? What would be the environmental costs and benefits of alternative solutions to LNG? Please provide evidence in support your views.

The increase of gas import through LNG will result in a number of relevant benefits linked to the notion of sustainability, particularly in terms of safety and environmental impact. It is a matter of fact that the features which need to be taken into account when evaluating an LNG project in terms of potential risks and the environmental impact are much less numerous and onerous than those related to a pipeline project (also because the latter might impact a wider range of communities and geographical area). LNG is odorless, colorless, noncombustible, non-corrosive and non-toxic, it does not pollute land or water resources. If it is released on water, it evaporates with no residual trace. Moreover, LNG is stored at ambient pressure so that a tank rupture will not cause an explosion. Then, there is the proven fact of much higher incident levels leading to large losses of life in the case of natural gas pipelines, which is not present in the LNG industry.

In addition, we highlight that an LNG plant brings about an increased development of industrial activities and employment opportunities in the surrounding area; this not only because of the methane availability but also for the potential of exploiting the cooling power developed by the LNG process.

Finally, we stress that LNG can be sent by trucks to supply isolated distribution networks (distribution networks which are not connected to the transmission network), thus enabling the development/expansion of natural gas in such areas, with the effect of a reduction in the usage of more pollutant sources.

7. Storage

Question 13: What opportunities or challenges do the supply projections for different sources, in particular LNG and pipeline gas and low carbon indigenous sources, present for the use of gas storage / for gas storage operators?

LNG offers more flexibility than pipeline gas. Storage has multiple functions such as meeting seasonal swings, ensuring continuity of gas supply, mitigating price spikes, and taking advantage of arbitrage opportunities.

In the future, the demand for flexibility will likely increase, also as a consequence of the minor programmability in the use of CCGT.

In general, we do not see a competition, but rather an integration, among the various sources of flexibility.

Then, in our opinion, the main challenge for underground storage is the reduction of its cost as currently it is not competitive against summer/winter differential in the forward curve.

As for LNG storage, the main challenge is how to avoid hoarding LNG storage capacity that prevents other shippers from unloading and regasifying LNG (see our response to question 6).

Question 14: Are, in your view, current market and regulatory conditions adequate to ensure that storages can fully play their role in addressing supply disruptions or other unforeseen events (e.g. extreme cold spells)?

Where possible, Member States should allow Storage System Operators to offer all storage capacity to the market on a non-discriminatory basis. However, in some cases, intervention may be required. In general, we think that security of supply cannot totally rely on the market. There should be a balance between regulatory measures and market measures, especially in those countries without production or which are not well interconnected.

Strategic/emergency/mandatory reserves are aimed at protecting consumers against non-market risks (risks that the market cannot cover under normal conditions and which accordingly fall outside the reliability standards of the gas market). Depending on the country (the availability of production facilities and storage, the access to different routes and sources, the presence of regasification capacity, the level of interconnection with other countries, etc...) these mechanisms can be necessary to ensure security of supply. If introduced, they should be reasonable, not distort the functioning of the market and be settled in a transparent way.

Question 15: As an alternative to mandatory reserves, how could market based instruments ensure adequate minimum reserves?

How markets balance demand and supply should primarily be a commercial decision and the relevant market in storage, as for other flexibility instruments, should not be constrained by borders.

Within this framework, Member States should continue to have discretion to introduce complementary measures, if it can be demonstrated that there is a security of supply issue to address, even if the market is functioning well and it is compliant with the requirements of current legislation.

Storage Infrastructure

Question 16: Do you have any analysis or view on what an optimal level/share of storage in a Member State or region would be? What kind of initiatives, if any, do you consider necessary in terms of infrastructure development in relation to storage?

In terms of new infrastructure development, we consider that any investment decision should be subject to a cost-benefit analysis and a market test. Also, if a new infrastructure is developed for security of supply reasons, the cost of the infrastructure should be paid by those who benefit from the increase in the security of supply.

Enel has no analysis or definition of an optimal level of storage; probably, case-by-case project analysis is required. Certainly, when considering new investment in storage projects, it is important to value their flexibility in terms of withdrawal/injection capacity per day, and not only the total amount of gas that can be stored.

Question 17: Do you think, in addition to the existing TEN-E Regulation, any further EU action is needed in this regard?

Enel believes that no further EU action is required.

Question 18: Given uncertainties over future gas demand, how would you assess the risk of stranded assets (and hence unnecessary costs), lock-in effects, the risk of diverting investments from low carbon technologies such as renewables, delaying a transition in energy systems and how would you and weigh those against risks to gas security and resilience? What options exist in your view to reduce the risk of stranded assets?

In general, to reduce and/or address the risk of stranded assets, we consider that any investment decision should be subject to a cost-benefit analysis and a market test. Then, as already said above referring to investment in LNG terminal, we recognize that under certain circumstances, some non-market-driven investment may be necessary on the basis of security of supply considerations.

Regulatory framework and potential barriers for storage

Question 19: What do you think are the most critical regulatory barriers to the optimal use of storage in a regional setting?

In the case of the Iberian peninsula region, there is a lack of products that fit customers' needs, and storage is expensive.

In particular, as for underground storage, there is just a yearly product. Having daily, monthly, quarterly products would help to optimize the storage usage.

Concerning the cost, it is currently cheaper to buy a vessel on the spot market in winter than to buy one in summer and store the gas until winter. The summer-winter spread is not enough to justify the use of storage.

Then, in general, we point out that it is extremely important to complete the integration of the internal market through the full implementation of the Third Package and Network Codes across Europe.

Question 20: Do you think ongoing initiatives and existing legislation can tackle the remaining outstanding issues or is there more the EU could do? Do initiatives need to include additional issues further to the ones described here?

There is no need for further EU-level legislation, beyond some amendments to the Regulation 994/2010 aimed at clarifying and strengthening its objectives, and the enforcement of correct implementation of the Third Package and the Network Codes.

Question 21: Do you consider EU-level rules necessary to define specific tariff regimes for storage only or should such assessment be made rather on a national level in view of available measures able to meet the objective of secure gas supply?

Enel believes that it is sufficient to act at a national level on this matter.

Question 22: Have you ever encountered, or are you aware of, difficulties in accessing storage facilities? Has this concerned off-site or on-site storage facilities? Please describe the nature of the difficulties in detail.

We have not encountered particular difficulties in accessing storage facilities.

Question 23: Have you ever encountered, or are you aware of, difficulties related to feeding LNG gas from the storage site back into the gas network? If so please describe the nature of these difficulties (regulatory provisions, company behaviour, technical problems) in detail.

We have not encountered particular difficulties.