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CEER Response to European Commission Consultation on an EU Strategy for LNG and Gas Storage

Ref: C15-GWG-123-03
29 September 2015

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Introduction

As the representative body for Europe's energy regulators, the Council of European Energy Regulators (CEER) welcomes the opportunity to respond to the European Commission Consultation paper of an EU strategy for Liquefied Natural Gas (LNG) and gas storage.[1]

To reflect the position of CEER, the response examines which economic, environmental and social perspectives affect the role of LNG and storage to enhance security and competitiveness of supply in the EU. Also, CEER focuses on the challenges of LNG and storage and on potential actions for the EU in the coming years.

Regarding LNG, potential entry barriers for LNG, international LNG markets, LNG technology issues including LNG use in transport and LNG sustainability issues have been addressed in the CEER response.

The gas storage sector has been examined regarding internal market constraints and challenges, storage infrastructure, regulatory framework and potential barriers.

[1] European Commission Consultation on an EU strategy for liquefied natural gas and gas storage.

1. LNG in the EU today

Question 1: *Do you agree with the assessment for the above regions in terms of infrastructure development challenges and needs to allow potential access for all Member States, in particular the most vulnerable ones, to LNG supplies either directly or through neighbouring countries?*

CEER broadly agrees that infrastructure development could allow greater access to LNG supplies either directly (through regasification terminals, for instance) or indirectly (regasified LNG transported by pipeline).

However, these potential benefits should be weighed against the cost of this infrastructure. Europe currently has significant levels of regasification capacity, and so CEER agrees that consideration of infrastructure development should study whether interconnection allows indirect access to LNG.

Appropriate levels of interconnection and flexibility (as determined by market signals) would allow Member States to access diverse supplies from a range of sources, and so meet demand in the most efficient and cost-effective manner. Interconnectors and flexibility allow markets to choose between sources of gas, depending on their respective prices.

Question 2: *Do you have any analysis or 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*

LNG has an important role to play in diversifying sources of gas and providing access to the broader market (flexible response to changes in prices), thereby enhancing security of supply and increasing competition (enhance trading opportunities). In 2014, in Europe there were 23 terminals with a total capacity of 201 bcm/year. 5 terminals are under construction and they will add 28 bcm/year of regasification capacity. The average rate of LNG terminal utilisation in Europe (of total installed capacity) has decreased since 2010, from 53% to 25% in 2013 and in 2014. The unused capacity in the European LNG terminals was as high as 163 bcm/year in 2014. In addition, last year the average gas storage in LNG terminals amounted to 2.7 bcm out of a total capacity of 4.9 bcm.

European regasification terminals, which could cover 40% of European gas demand[2], show a balanced distribution along the coast but are mostly situated in the West. In part of Europe, there is currently a potential mismatch between the location of potential LNG demand in times of crisis and the location of EU regasification capacity, which are mainly located in North-West and South-West Europe, whereas countries heavily dependent on a single source of supply, and which are more likely subject to supply disruptions are in the Baltic region and South-East Europe.[3]

[2] *Source: Gas LNG Europe (GLE).*

[3] *October 2014 stress tests proved that LNG could be crucial in contributing to security of supply, provided that networks are sufficiently interconnected. Some bottlenecks and a certain lack of reverse flow capacity can limit, in certain areas, the contribution of LNG to Europe security of supply.*

Infrastructure development of European LNG terminals is now taking place in a non-traditional manner, as European terminals diversify the services offered to their customers, thereby increasing flexibility, as LNG is having new uses like in transport: bunkering and trucks.

LNG can affect the level of risk and volatility in a market. It can provide a flexible response to changes in prices, and enhance trading opportunities. However, each Member State's/region's gas network and market will vary. **CEER does not think it is possible to define a single optimum level/share of LNG per country.** In certain cases, LNG facilities are a consequence of historical pre-liberalisation decisions.

Rather than thinking in terms of "optimal shares'' of LNG (or any other source), it is perhaps more helpful to think in terms of ensuring that robust market arrangements are in place. This will guarantee that market participants are incentivised to determine the most efficient and least cost supply mix to meet demand. Increased transparency and effective incentives to deliver security of supply will ensure markets define the right level of LNG infrastructure and interconnections required to deliver European security of supply.

It is therefore important to determine the most cost-efficient solutions (pipe and LNG infrastructure) at EU level, in the framework of the newly created European Energy Infrastructure Forum, for instance. This would help identify which are the most cost efficient infrastructure needed to increase EU security of supply, where they should be located and how they should be financed.

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?

There are a variety of reasons that can play in favour of or against of LNG development instead of gas pipeline.

LNG can improve the security of gas supply of a Member State, by increasing diversification. Consequently, from the security of supply point of view LNG has a favourable position. However, the recovery of infrastructure costs can be at risk by lack of utilisation. The use of LNG regasification plant will be dependent on LNG price compared with other spot regional LNG prices, and on the relative price of the pipeline gas. Consequently, a cost benefit analysis is needed taking into account all the necessary issues and hypothesis: competition with pipeline gas sources, liquidity of the gas market, forecasted demand growth.

With regard to the social acceptance of energy projects, local opposition to the development of new facilities may play a role against a LNG plant more than in the case of pipelines.

Question 3: *Do you think, in addition to the already existing TEN-E Regulation, any further EU action is needed in this regard?*

In CEER's opinion, security of supply is best met by open, transparent, market-based mechanisms, underpinned by robust price signals. LNG forms part of a wider gas flexibility market. It is therefore important that the regulatory playing field between these sources is as level as possible, thereby delivering security of supply in the most economic and efficient way.

The 3rd Package and TEN-E Regulation provides the framework to complete the single energy market, facilitating efficient investment decisions by providing a clear, stable regulatory environment. The focus should be on fully implementing these Regulations and Directives to complete the internal energy market.

However, with regard to the TEN-E Regulation, **CEER considers there is room for improvement in the modelling of LNG in the recent TYNDP cost benefit analysis done by ENTSOG, in particular the gas supply diversification and prices given by LNG.**

Finally, where markets are still developing, targeted interventions may be necessary. However, these should be tailored to the specific market in question and implemented with maximum transparency so as to minimise market disruptions/distortions. They should be reviewed regularly, and designed so that they allow well-functioning markets to continue to develop.

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.

The 3rd Package requires transparent and non-discriminatory access arrangements. Where exemptions exist, market-based capacity allocation mechanisms, arrangements for secondary trading of capacity and clear transparency/information provision requirements should continue to be enforced.

The implementation of the Network Codes will further improve the integration of European energy markets by harmonising rules for cross-border trade, thereby increasing liquidity and ensuring that the gas networks are used efficiently.

Mechanisms such as Projects of Common Interest (PCIs) are one option to support expansion of interconnection capacity where market signals suggest a need.

Question 4: *What in your view explains the low use rates in some regions?*

LNG terminal usage rates are largely determined by global market dynamics: spot and long-term contracts. On the spot market, market prices dictate where cargos go. In order to see higher numbers of (spot) deliveries, European prices will need to compete with those of Asia/South America (with shipping costs taken into account). In recent years, it has generally been more cost effective for many European market participants to meet demand reducing the proportion of gas they import through LNG, and increasing the proportion they procure from other sources. Lower demand in Europe, and higher demand in Asia/America has driven LNG elsewhere. Over the past year, global LNG prices have fallen and this has led to an increase in utilisation rates in some regions. An increase in utilisation rates can also be expected for Europe.

Beyond global market fundamentals, **the attractiveness of any given terminal will depend on a number of factors, including the liquidity of that market and those connected with it, and arrangements around Third Party Access (TPA), secondary trading and congestion management.**

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?

Market participants are best placed to assess these risks, and make decisions on the most effective means of managing this risk. Investments driven by market signals should represent the most effective way of balancing these risks.

For regulated investment, **effective oversight by empowered independent National Regulatory Authority (NRA)** should ensure that regulated companies are investing in an economic and efficient way, taking into account and avoiding risks such as stranded assets.

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)?*

Well-functioning energy markets will deliver price signals to enable market participants to strike a cost-effective balance between these options.

In achieving emissions targets, the cost of LNG infrastructure should be considered against the cost of other measures that may be expected to achieve an equivalent reduction in emissions. Consideration should also be given to the role gas may play as a back up to renewable sources of electricity.

The use of LNG in new areas, such as transport, may contribute to emissions reductions. The Agency for the Cooperation of Energy Regulators (ACER) described some potential new uses of gas, inter alia LNG in transport, in the European Gas Target Model: Review and Update[4] (GTM2).

2. 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*

[4] ACER European Gas Target Model: Review and Update, January 2015

Regulation should ensure that there is no barrier to LNG in Europe. A transparent and non-discriminatory access to LNG terminals is indispensable to develop well-functioning gas markets in Europe. Indeed, removing barriers to entry (third-party access services, transparent capacity allocation, pricing visibility, effective congestion management), ensuring effective access to gas facilities, enhancing cross-border exchanges and minimising information asymmetry and costs are central to increase competition on the European gas markets. In Europe, among the 18 facilities in operation, 13 are subject to a regulated third-party access regime and 5 have been granted an exemption. In this case, the owner can negotiate contracts directly with primary shippers, but NRAs monitor anti-hoarding mechanisms and ensure that shippers have access to a sufficiently transparent secondary market.

European energy regulators have dedicated significant resources over the past years to promoting a regulatory framework conducive to investments and to improving how LNG terminals operate in Europe, with the aim of promoting competition and enhancing security of supply. Major outcomes have been:

- Publication of Guidelines of Good Third Party Access for LNG System Operator[5], notably to harmonise capacity allocation and congestion management procedures.
- Launching of a transparency template[6], in cooperation with GLE, to facilitate access to information provided by LSOs. Publication of the evaluation of the template's implementation.[7]
- Publication of the CEER status review[8] which provides an assessment of the rules in place, the level of utilisation, spot contracting, secondary market functioning, application of CMPs, new services offered in the terminals and new uses of LNG.

The main findings of this latter document concluded that all terminals have properly functioning Congestion Management Procedures (CMP) provisions, even though the capacity released is not often subscribed to by other shippers (this can be explained by a low demand for LNG in Europe, as cargoes were diverted to higher-paying markets in Asia). The report also stressed that the secondary market is active in Belgium, France, Greece, Portugal, Spain, the Netherlands and the UK. Regarding the number of active shippers, it appears that it is higher in terminals subject to a regulated TPA than in exempted terminals. CEER did not report any access refusals between 2009 and 2013, except at the Greek LNG terminal where capacity requests were denied due to a lack of storage capacity. The report finally highlighted that LNG terminals have adapted their facilities to the dynamics of the LNG market.

[5] "Guidelines for Good Third Party Access Practice for LNG System Operators (GGPLNG)", 7 May 2008, Ref. E08-LNG-06-03.

[6] GSE Transparency Template, February 2013.

[7] "CEER Monitoring Report on Implementation of the Transparency Template in the European LNG Terminals", 20 December 2013, Ref.C13-GWG-102-04.

[8] "CEER Status Review on monitoring access to LNG terminals in 2009-2013", 22 October 2014, Ref.C14-GWG-111-03.

Table 1: Ancillary services offered at the European LNG terminals in operation in 2013[8]

Member State	LNG Terminal	Services offered in 2013						
		Ship loading	Truck loading	Storage as unbundled service	Small ship loading	Cooling down and Gassing up	Bunkering	Transshipment
Belgium	Zeebrugge (*)	x	x		x	x		
France	Fos Tonkin		x		x	x	x	
	Montoir	x	x		x	x	x	x
	Fos Cavaou	x			x	x	x	
Greece	Revythoussa			x		x		
Italy	Panigaglia							
	Rovigo							
Portugal	Sines	x	x			x		
Spain	Barcelona		x			x		
	Cartagena	x	x		x	x		x
	Huelva	x	x		x	x		
	Bilbao (**)					x		
	Sagunto	x	x			x		
	Mugardos	x	x			x	x	
The Netherlands	Gate	x			x	x		
The United Kingdom	Grain							
	South Hook							
	Dragon							

(*) *Transhipment activity is expected as from 2015. The project consists of a capacity of 14,000 m^3 LNG/h and a minimum ship size of 2,000 m^3 LNG.*
(**) A tank of 150,000 m^3 storage is under construction at Bilbao terminal. The construction started in 2011 and is expected to be operational by July 2014. At that time, ship reloading and truck loading services will be offered.

As a matter of fact, **the current regulatory framework in the EU guarantees a fair, transparent access to LNG infrastructure, effective congestion management procedures and functioning secondary capacity markets at most LNG terminals.** NRAs should now make sure that those regulatory provisions apply to newly commissioned terminals across Europe.

Moreover, at the moment, the coexistence of regulated and exempted infrastructure has not led to particular issues. However, NRAs will have to ensure that this does not lead to competition issues in the near future, as exempted terminals tend to be more flexible than regulated ones, and may adapt their services more rapidly to market dynamics.

Finally, it has to be underlined that the main issue regarding **access to LNG is linked to the liquidity of hubs, with liquid hubs capturing LNG volumes more easily than narrow markets.** This is symptomatic of gas markets still being fragmented across Europe and would require achieving full integration of European gas markets: a single European market will compete more effectively for LNG supply. **Regulatory improvements regarding LNG's contribution to EU security of supply concern more shipping and supply contracts than access rules for regasification terminals.**

[9] Source: CEER Status Review on monitoring access to LNG terminals in 2009-2013, 22 October 2014, Ref.C14-GWG-111-03.

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?*

Access to infrastructure, in the current situation, is working well (see previous report of CEER[10]). As a result thereof, it is rather a commercial issue than an infrastructure one.

LNG provides flexibility and, in a context of decreasing European gas demand, reduces demand for pipeline gas. However, LNG availability is clearly influenced by prices. Moreover, market demand changes quickly.

The LNG market is by nature a worldwide market. Therefore, **access to LNG occurs according to market-based mechanisms and spread of prices**. Those willing to pay the price will get access to LNG.

Many countries are developing new regasification terminals, so if Europe suddenly needs new LNG supplies, it will need to compete with the rest of the world (higher competition for bigger quantities). This can be achieved in terms of LNG procurement by tenders in illiquid markets, by price attractiveness or via master agreements with potential suppliers (parties negotiate in advance).
One infrastructure element of the supply chain that is of utmost importance, especially in emergency situation, is the availability of shipping capacity (as well as sea travelling time). At the end of 2014, the total LNG tanker fleet consisted of 421[11] vessels in the world, including 5 Floating Storage Regasification Units (FSRU's), 15 Regasification Vessels (RV's) and 24 ships of less than 50 000 m^3. In all, about 4023 loaded vessels were delivered in 2014. At the end of 2014 the order book comprised 163 vessels, 47 of which were scheduled for delivery in 2015.[12]

However, interconnection restrictions between Western and Eastern Europe are such that networks are not always designed to flow LNG from terminals to the places that might need it if there is a disruption.

Member States need to work together to remove barriers, help free trade so that customers are able to choose the most suited type of contract.

[10] "CEER Status Review on monitoring access to LNG terminals in 2009-2013", 22 October 2014, Ref. C14-GWG-111-03.

[11] Source : GIIGNL 2014.

[12] Source : GIIGNL.

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

Globally, ongoing EU policy initiatives and existing legislation, notably Regulation 994/2010[13], have increased the EU's resilience to supply shocks. Moreover, the regulatory framework seeks to give a better access to the whole LNG value chain. **Regulators should focus on overcoming barriers that might be linked with the development of new services and the use of new technologies at LNG terminals**. **The regulatory framework should ensure a level playing field between "conventional" and new technologies** such as small-scale LNG infrastructure, which could increase LNG's contribution to gas security of supply. For instance, the redistribution of LNG to smaller terminals (truck loading or virtual pipelines) would allow poorly-interconnected areas to benefit from available gas. In this respect, **European terminals have already demonstrated that they are able to follow market trends**. They are adapting their facilities to market dynamics and are providing new services, reloading, transhipment, loading of bunkering ships, truck and rail loading, which increase the flexibility of LNG. The availability and use of those services are expanding. For example, according to Gas LNG Europe (GLE), "the number of reloading (the transfer of LNG from the LNG reservoirs of the terminal into a vessel) quadrupled in the past 4 years".

Nevertheless, in addition to improving the functioning of the European gas market (higher levels of interconnections, availability of price references, liquidity of markets, level-playing field among technologies, etc.) **the EU should also focus on enhancing the resilience to external shocks**. In this matter, and regarding LNG, the European Commission could investigate how LNG, through solidarity measures, (transparent, non-discriminatory and regulated), and on a voluntary basis, could be used to mitigate supply disruptions in cases where markets cannot ensure the continuity of supply. Any policy measures developed should be compliant with the EU competition law.

3. International LNG markets

Question 9: *How worldwide LNG markets will evolve over the next decade and effects expected on EU gas markets.*

LNG allows gas to be traded across large distances, connecting distant sources of supply with centres of demand. This means that markets with LNG capacity are part of a globalised gas market. The evolution of worldwide LNG markets is largely influenced by the development of global gas demand and supply. Global gas demand is projected to grow 2% on average between 2014 and 2020, slower than the 2.3% averaged over the previous 10 years.[14]

[13] Regulation (EU) No 994/2010 of the European parliament and Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.

[14] IEA Gas medium-term market report 2015.

Growth in gas production is expected to slow over the next 5 years. Low oil prices have a strong effect on upstream investment. Due to its capital-intensive nature the LNG industry will face a tough battle. The prospect of lower gas prices to Asia has led to questions about the viability of new LNG projects planned in Australia and the US. The slowdown in Asian LNG demand and stagnant European gas demand have a direct causal impact on European hub and LNG spot prices.[15] In parallel, the oil price fall has brought oil-indexed gas and LNG contract price to low levels difficult to predict. As a result, and due to challenged project economics and fluctuating cash flows, investors in new LNG projects will hold back, to cut costs and await a more positive market outlook. As a result, projects have already been cancelled or postponed; this trend might continue if prices do not recover. Some expect that if current low prices persist, LNG markets could start to tighten up substantially by 2020. However, the LNG market will have to cope with a flood of new supplies over the next 2 years at least; global LNG export capacity additions throughout 2020 will amount to more than 40% of today's existing infrastructure.[16]

The fact that new supplies (e.g. in Australia) are starting to come online while demand may struggle to handle all new supplies, could keep LNG prices much lower than expected. After a strong divergence in regional gas prices, driven by both supply and demand factors – (amongst others the Fukushima nuclear crisis, European economic crisis, the US shale gas boom) - there is now a trend to increase convergence in LNG spot prices between the Pacific and Atlantic markets. Without such shocks and due to the growth in global LNG liquefaction capacity, this trend is expected to continue.

LNG has played a role in the diversification of gas supplies for the EU. LNG is also a key source of flexibility rather than a base-load supply source. The EU has massive LNG infrastructure and the capability to import significant volumes of LNG. Driven by European demand for LNG and global market conditions, LNG deliveries to the EU have fluctuated from year to year. Due to rising global LNG prices in the past (e.g. caused by increased demand for LNG in East Asia and South America), coupled with relatively low gas demand in Europe, LNG deliveries to Europe have been low.

Recently, due to falling LNG spot prices, flows into Europe have increased in cases where it is the most efficient means of meeting demand. European gas import requirements are set to increase between 2014-2020, notably because European gas production is declining. With large quantities of cheap LNG supplies available (due to lower than expected oil prices and the arrival in the market of Henry Hub indexed volumes), as expected at least in the next few years, these growing European import needs would be a welcome market to (abundant) LNG exports. The IEA forecasts European imports to roughly double between 2014-2020.

[15] "The Impact of Lower Gas and Oil Prices on Global Gas and LNG Markets', The Oxford Institute for Energy Studies, July 2015.

[16] IEA Gas medium-term market report 2015.

However, it has to be underlined that the EU market tends to be a last-resort option for LNG: EU's LNG imports depend on Asian and South American LNG demands. Currently, with a lower than forecasted economic growth in China and the possible restart of nuclear power plants in Japan, LNG is coming back to Europe. But, due to Europe's ability to source with pipe gas, **Europe is set to stay an adjustment market, importing what other regions in the world do not need.**[17] This means that if demand was to rise in Asia or South America, it is highly probable that LNG flows would again be diverted from Europe towards those markets. However, in current market conditions, this means Europe can benefit, for quite some time, from relatively cheap LNG imports which keep gas wholesale prices lower.

Do you expect a shift away from oil-indexed LNG contracts, and if so under what conditions?

Historically, LNG prices were linked to oil because LNG was displacing oil. Currently, there is a new debate on the pricing structure of LNG. LNG buyers are attracted to lower natural gas hub prices, while LNG developers still need strong pricing to generate sufficient return on their investments. Well-functioning hubs provide more certainty to allow contracts to be indexed to them.

Oil-indexation of gas contracts will become more difficult because of more price-sensitive buyers, greater competition between sellers, gas-on-gas competition between pipeline infrastructure and LNG, increased spot market liquidity and increasing availability of spot-price based LNG exports. Currently, LNG buyers have already signed contracts for future US-based cargoes at Henry Hub-linked prices. Its relevant volumes concern a fairly small part of the total gas portfolio. In spite of this, it can be expected that the use of spot-based contracts (like for instance to Henry Hub spot prices) will increase and might put pressure on the oil-linked sellers, moreover these sellers could have a strong incentive now to change gas contract indexation, since oil prices are remarkably low. Some expect that this will not be a paradigm shift in pricing, but a gradual and only partial migration away from oil indexation. Note that hub-based pricing might not always be cheaper than oil-indexation: it depends on the oil price, the percentage of the oil price used as an index, and the hub gas price. As has been the case in the past, gas prices can be higher than oil prices and can be extremely volatile. This volatility is also an issue when choosing a price index. An advantage of a hub-based contract is its greater contract flexibility. On the contrary, a disadvantage is that spot pricing may introduce more volatility for buyers and cause LNG project developers to have higher breakeven thresholds to account for this volatility risk.

To conclude, CEER considers **it will, and should be, a market outcome whether oil-indexed LNG contract will stay or be probably (partially) replaced by hub-based contracts**.

It is worth noting that one of the key lessons of the past 18 months has been the unpredictability of how a global market evolves. Nobody anticipated the current abundance of LNG supplies and the corresponding crash in prices. Indeed, until very recently there was almost universal consensus that the LNG market would remain tight until 2015/2016. Any speculation as to how the market may evolve over the coming decade should therefore be heavily caveated.

[17] It could be predicted that Europe will be a passive recipient of excess supply. Source: "The Impact of Lower Gas and Oil Prices on Global Gas and LNG Markets". The Oxford Institute for Energy Studies, July 2015.

Question 10: *What problems if any do you see with the functioning of the international LNG market, particularly at times of stress?*

LNG's contribution to European supplies in times of stress has to be considered both in the light of the technical characteristics of the LNG chain and economical dynamics of global markets.

Indeed, the LNG chain is characterised by the fact that logistics remain rather rigid upstream on a short basis (it can take days or even weeks to get a spot cargo depending from where the cargo is, destination clauses may restrict the redirection of LNG volumes to high demand markets), while terminals offer flexible services based on LNG storages or trucks.

Moreover, the pattern of LNG flows (under normal conditions or in times of crisis) depends on the balance between global LNG supply and demand. For now, worldwide regasification capacity is 2,4[18] times greater than liquefaction capacities, which has led to markets competing to procure LNG volumes: **LNG flows respond to price signals inducing arbitration between markets**. If increased LNG flows are needed to meet demand or to resolve a crisis, then market prices should rise to the necessary level to attract these cargoes. The extent to which the LNG market is able to respond to these price signals is dependent on the proportion of LNG already under contract and hence the availability of spot cargoes. For instance, during the past few years, the LNG market has been tight. This can be explained by a surge in demand, mainly driven by Asian countries, notably Japan following Fukushima disaster, in a context were supplies remained stable. Nevertheless, the vast majority of volumes were diverted to higher-paying markets, illustrating the flexibility of the LNG markets and the increasing tendency to short-term trading. Figures show that on its own, the Asian market captured on average 52% of total volumes exchanged between 2011 and 2014, with 36% contracted on a short term basis, which indicates that in times of emergency, LNG markets have been able to meet a surging demand.[19]

However, **the flexibility of the LNG markets is a two-edged characteristic**. As previously mentioned, in times of supply stress, LNG flows to higher-paying and liquid markets. This means that narrow markets, not very liquid or not providing price signals, might struggle attracting cargoes when they need it most, especially if they are competing with more liquid markets. In Europe, for instance, this situation might happen to countries poorly-interconnected to liquid markets. Only in circumstances where markets are not sufficiently developed to provide effective price signals, could there be a case for interventions to ensure cargoes are delivered where necessary. When considering such policy interventions, it is important to underline that such interventions should be limited to situations where there is clear evidence of a market failure. In case of intervention, these should be publically known, transparent, non-discriminatory, temporary and reviewed on a regularly basis in order to minimise disruptions to the development of a well-functioning European gas wholesale market.

[18] IEA Gas medium-term market report 2015: in 2014, worldwide liquefaction amounted to 406 bcm against 981 bcm of regasification capacities.

[19] Source: GIIGNL.

To conclude, here are the main factors which might limit the use of LNG in crisis situations:

- Lead procurement time
- Market liquidity, price signals
- LNG price

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?

The main objective of the EU should be to foster market integration where energy can circulate freely, which would allow market players to take advantage of supply complementarities. This requires the **full implementation of Network Codes, and the Gas Target Model**, which would facilitate the cross-border exchanges of energy and a sound development of necessary infrastructure, based on cost-benefits analyses.

To ensure security of supply (whether in normal operation or a crisis) it is necessary, among other things (for instance, infrastructure) to have effective price signals. Well-functioning markets (with a high level of liquidity) with effective balancing arrangements can ensure that wholesale market prices reflect security of supply. This incentivises market participants to choose the most efficient means of delivering security of supply. In the case of LNG, market participants may take actions such as:

- Agreeing contracts in advance that would provide for deliveries in times of supply disruption or extreme events;
- Procuring additional LNG cargoes on spot markets where needed;
- Using temporary storage at LNG terminals to provide flexibility; or
- Procuring flexible delivery technology (such as floating storage and regasification units) and developing connection infrastructure for these.

The European Commission proposals regarding specific actions meant to make the EU LNG market more attractive have not yet been articulated precisely. Nevertheless, **CEER expresses concerns on concepts such as demand aggregation, both on the concept and its potential implementation**. Indeed, demand aggregation through common purchasing could raise competition issues and thus distort the functioning of gas markets: any source to such instrument should be fully compliant with World Trade Organisation and EU competition rules. Moreover, CEER considers some issues/questions regarding the process of the demand aggregation concept. It is not clear how a demand aggregation would work: who would negotiate, would a public central buyer need to be created? For what amount and which destinations? In any cases, the European Commission does not seem to be the competent authority to carry out negotiations with suppliers, and one might think about the collateral effects this involvement would bring. Indeed, any collective purchases neglect the relationships that have been developed between suppliers and producers. A cartelisation of demand might provoke incomprehension and antagonistic reactions from gas-producers and not solve the security of supply issue. If demand aggregation were a desired outcome to attract LNG to the EU this should be at the initiative of market participants and should be compliant with EU competition rules.

4. 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?*

The main developments over the medium term in the field of LNG are, on the one hand, the availability of LNG being imported in Europe from the US, and, on the other hand, LNG being used as fuel for different sorts of uses.

Imported LNG from the US will mostly be LNG that derives from a surplus of shale gas and the willingness of both project developers and politician leaders to encourage the export thereof. In that respect, new fracking techniques allowing recovering of more volumes of shale gas in a more economically and environmentally friendly process will probably enable stakeholders to further promote such industry and as a result will increase the amount of that shale gas that will be available for exports. With more volumes available, LNG will definitely play a more important role in security of supply through both long term contracts in the framework of supply diversification and short term deals that provide flexibility to the market.

The new market development for LNG (i.e. different from the traditional LNG supply chain) is used as a fuel for transportation.

The main driver for such developments are the different actions taken to reduce emissions of, among others, energy-related greenhouse gasses.

With regard to LNG as a fuel for ships, and due to the creation of Emission Control Areas (ECAs), the maritime industry has begun studying and implementing LNG as maritime transport fuel to reduce emissions (see answer to question 12). ECAs are sea areas in which stricter controls were established to minimize airborne emissions (SOx, NOx, ODS, VOC) from ships as defined by Annex VI of the 1997 MARPOL Protocol which came into effect in May 2005. Annex VI contains provisions for two sets of emission and fuel quality requirements regarding SOx and PM, or NOx, a global requirement and more stringent controls in special ECA. These regulations stemmed from concerns about the contribution of the shipping industry to "local and global air pollution and environmental problems." By July 2010 a revised more stringent Annex VI was enforced with significantly tightened emissions limits.[20] As of 2011, there were 4 existing ECA's including the Baltic Sea and the North Sea. Within ECA's the sulphur limit was reduced to 0.1% from 1% effective 1 January 2015. Currently, there are 34 LNG fuelled ships in operation or on order as of January 2015.[21]

In addition, the road transportation sector can have a great impact on reducing emissions by using LNG as fuel for trucks, as these vehicles are used on defined corridors and at rather regular schedules which enable the development of refuelling stations. However, it is difficult to predict the evolution of the sector, as the availability of versatile natural gas trucks is still below expectations; the low oil prices led truck owners to postpone their decisions to switch to LNG; and current number of refuelling stations and geographic spread are limiting pan-European operations.

[20] International Maritime Organization, Air pollution and Greenhouse Gas (GHG) Emissions from International Shipping.

[21] Source: IGU.

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?

A success factor in the evolution of LNG as a fuel is the growth and availability of small scale LNG.

With regard to LNG fuelled ships there is still a **lack of harmonised technical standards**. In addition, a dilemma exists between the level of LNG demand and availability of LNG supply and distribution.

Finally, **taxation will also play a role**. If LNG is taxed on a volumetric basis, this could be detrimental for LNG because of its relatively lower content of energy per unit volume in comparison with other fuels. Levying tax on an energy basis will be required, even if it is more complex to implement.

5. 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?*

From an environmental perspective, LNG compared to natural gas produces 20% to 40% more CO_2 than burning natural gas transported exclusively through pipeline, due to liquefaction, shipping and regasification activities. However, LNG has some advantages respect to natural gas: the higher content of energy for a certain volume (one cubic meter of LNG contains around 600 times more energy than the same volume of natural gas) and its ability to be transported as a liquid (not through a network).

These advantages are more relevant when they are compared with other fuels. LNG consumption is more environmental friendly than other fuels such as coal, diesel and marine bunker fuel.

LNG as fuel is a viable mitigation tool to reduce emissions of carbon dioxide by up to 20%, sulfur oxide by 100%, nitrogen oxide by 90%, and solid emissions by 99% when compared with diesel. It gains importance in maritime use, mainly due to international caps on the sulfur content of marine bunker fuel, in particular within the ECA.[22] For this reason, LNG can substitute bunker fuel, diesel for heavy vehicles and coal for heat and power generation.

[22] Enviromental advantages of LNG as a bunker fuel:

SOx Relative emissions (%): Heavy Fuel Oil, 100 %; Heavy Fuel Oil plus scrubbers 10%; Low sulfur Fuel Oil 10%; LNG 0%

NOx Relative emissions (%): Heavy Fuel Oil, 100 %; Heavy Fuel Oil plus scrubbers 94%; Low sulfur Fuel Oil 100%; LNG 14%.

Particles Relative emissions (%): Heavy Fuel Oil, 100 %; Heavy Fuel Oil plus scrubbers 58%; Low sulfur Fuel Oil 37%; LNG 0%

CO2 Relative emissions (%): Heavy Fuel Oil, 100 %; Heavy Fuel Oil plus scrubbers 100%; Low sulfur Fuel Oil 100%; LNG 75%

Source: SEDIGAS. Asociación Española del Gas

In addition, LNG can be used to introduce gas to new zones, poorly interconnected areas and isolated regions (truck loading and satellite plants) and in the non-road transportation sector (using LNG as a fuel supply for mining and drilling operations).

CEER considers that market participants are best placed to analyse the risk these facts bring to the market and to make investment decisions accordingly. Therefore, studies, projects and proposals related to the use of LNG in heat and power generation in isolated locations should be based on market fundamentals. The preferred technology should be the outcome of investments driven by market signals. Also, both regulated and exempted facilities must guarantee that services are offered in a transparent way; since, as already mentioned, transparency is crucial for a well-functioning gas market.

Apart from Europe's energy strategy, other factors affect the advance of new uses of LNG, among others: geographical location, national energy mix, national incentives to gasify locations through LNG satellite plants, national targets set by Member States recognising economic and financial reality of each country.

As mentioned in previous answers, CEER notes is the importance of ensuring that regulatory arrangements facilitate new uses of LNG. When using a harmonised and transparent analysis of costs and benefits (including environmental) of LNG or other energy sources, the decision of a proposed policy action are taken in a proper framework for identifying, quantifying, and comparing the inputs and outputs.

Regulators encourage ensuring that interests of consumers are considered ahead of final policy formulation. Coordinated work will guarantee that consumers and stakeholders know the necessary information about new uses of LNG. For instance, information on LNG safety in transportation should be provided.

The development of new policies should be in line with the related policies related already in place, in particular transport, climate and environmental policies. Also, they will be consistent with the guidelines and rules established in the current initiatives on the use of LNG as fuel, such as the Blue corridor initiative and the Directive on the deployment of alternative fuels infrastructure.

CEER considers that the energy framework in Europe should support competition among energy sources by removing any unnecessary regulatory barriers to the extension of any form of gas (LNG and gas) to new areas and customers, considering the most efficient solution in terms of sustainability, i.e. in environmental, social and economic aspects.

6. 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?*

Market participants no longer rely solely on storage to meet their flexibility needs. In many markets, they choose from a variety of sources. The development of the internal energy market has led to a situation where storage facilities are in competition with other forms of flexibility. Participants can choose alternatives to gas storage such as flexible gas production, import contracts, interconnection, line pack, swaps, interruptible contracts, scale down contracts, LNG and hub products. Each of these products can deliver flexibility to gas trading hubs but differ in price, nature of service and availability. The merits of different tools depend on the structure of different markets and the physical characteristics of the particular asset. It should be noted that storage offers the advantage of being a physical asset located close to demand areas. There is also a level of complementarity between storage and other forms of flexibility, e.g. flexible gas production.

As a result, storage usage will be affected by variations to any of these alternatives to the extent to which market participants believe them to be substitutable or enable them to meet their supply contracts more efficiently. The regulatory regime for storage should be conducive to innovation from Storage System Operators (SSOs) and allow them to compete with these alternatives on a level playing field.

The booking of storage capacity and the utilisation of that capacity depends on several factors. In CEER's Final Vision on Regulatory Arrangements for the Gas Storage Market[23] we set out several of the key drivers:

- European Demand
- Total European storage capacity
- Flexibility market alternatives (including LNG and indigenous production)
- Summer-winter spreads
- Storage booking levels

During our engagement with industry participants and storage operators in recent years, two main developments have stood out as having a large impact on future flexibility requirements:

- The demand for flexibility will likely increase, largely based on a new role for gas-fired power generation as a source of backup for renewable sources of power generation. Gas-fired power stations are ideally placed to fulfil the flexibility requirements needed to balance an electricity grid which will have ever increasing amounts of intermittent (and largely inflexible) sources of generation. It is important to note, however, that the role of gas-fired power stations will depend on market fundamentals, e.g. fuel cost and competition with other types of generation.
- Implementation of the Network Code on Gas Balancing in Transmission Systems will ensure that shippers are responsible for balancing their inputs and off-takes from the system. This will introduce a shift towards more short term flexibility, and potentially

[23] CEER Final Vision for Regulatory Arrangements for the Gas Storage Market, 25 May 2015, Ref.C15-GWG-119-03.

an opportunity for fast cycling storage, because network users are required to balance their portfolio on a daily basis.

Industry developments, including the implementation of the 3rd Package and associated Network Codes, have contributed to increased levels of data provision and transparency. This has improved the flexibility of the network and the ability of TSOs to manage demand profiles. Shippers are increasingly able to use short term tools for balancing purposes. These developments and the increased availability of demand side response may also reduce the need for traditional forms of flexibility.

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)?

CEER considers that well designed and well-functioning, undistorted markets, are best placed to value and deliver an efficient level of security of supply; effective competition between different sources of flexibility should deliver the most economic and efficient solution. However, in some European markets intervention may be required in order to correct or prevent a failure to accurately evaluate the different levels of reliability of flexibility tools, e.g. where a market cannot physically respond to price signals, or when market players do not sufficiently or rightly anticipate some possible extreme events. It is important that where this is necessary it is undertaken with a view to regional impacts as well as national.

CEER notes that storage forms part of a wider flexibility market, as discussed in our previous response, and accordingly the regulatory arrangements in place should allow for competition between sources. This competition can not only deliver the most economic and efficient solution, but can also help improve security of supply for consumers. To create competition, a level playing field should exist and many of the building blocks for this are already in place. The requirements of the 3rd Package ensure transparency, open access to transmission and storage facilities and the foundations for competitive wholesale market.

In CEER Final Vision on Regulatory Arrangements for the Gas Storage Market we set out practical proposals that NRAs, SSOs and policy makers should consider:

- CEER considers that market participants' use of storage is driven, in the main, by economic reasons. Allowing non-discriminatory rules for storage access to continue in emergency situations enhances the value of storage to the market and contributes to market participants realising the insurance value of storage.
- A regional approach should be taken when considering security of supply and the role of storage. Any restrictions on the cross-border use of storage between Member States, including in emergency situations, should be reviewed. Cross-border arrangements should avoid free-riding.
- Where possible, the value of security of supply should be established in the market without further intervention. Where there is evidence of market failure, interventions may be necessary but they must be designed to minimise undesirable distortions on market functioning and not foreclose the growth of wholesale markets. Any intervention must be transparent, non-discriminatory and publicly known.
- Storage obligations/strategic storage can provide a degree of certainty regarding the level of storage bookings. When introduced, clear rules, responsibilities and

boundaries are needed. They should take into account the national and regional contexts and the impact on the market should be understood and minimised.

- Member States should review policies designed to ensure security of supply to ensure they are fit for purpose in light of changing market dynamics. Interventions should be removed when market conditions allow.

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

CEER considers that it is difficult to objectively define an "appropriate level of security of supply" or amount of storage a given market requires. Therefore, it is not clear what "adequate minimum reserves" would be, whether to guide interventionist measures or assessment of the suitability of market-based instruments. Different markets have different characteristics and a case by case approach must be taken to monitoring security of supply.

Rather than focusing on "adequacy" of reserves and measures to enforce a specified level of security, CEER encourages the European Commission to focus on the functioning of gas markets and the incentives on market participants.

As stated in response to previous questions, CEER believes that well designed and well-functioning, undistorted markets are best placed to value and deliver an efficient level of security of supply. Well-functioning markets will set the framework for security of supply: they optimise flows by signalling scarcity and promoting efficient use of assets through price signals.

The Gas Balancing Network Code creates the right framework for the value of security of supply to be incorporated into a market-based balancing regime. Within the balancing regime, incentives can be established for market participants in order to help keep the system in balance. Particularly in the prevention stage, the Balancing Network Code also provides the instruments to monitor the balancing situation.

CEER advocates using market-based instruments (e.g. balancing incentives) as long as possible (during the prevention phase), before moving into the mitigation (state intervention via emergency plans) phase.

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?*

Defining an optimal level of storage capacity in a given Member State or region could prove very difficult, if not impossible, as many parameters need to be taken into account when assessing the overall needs for storage (e.g. current and future characteristics of the network and interconnections, supply and demand scenarios, gas flow patterns, competition with other flexibility tools).

Competent authorities should monitor the storage market and the availability of appropriate infrastructure. Where interventions are introduced to facilitate infrastructure development/maintenance or to prevent the closure of existing facilities, competent authorities should be aware of the impact this has on the market and risks such as stranded assets, as discussed in Question 18. However, it is also important to note that there is a significant lead time to build and bring online new or mothballed storage facilities.

CEER considers that market participants are best placed to analyse the risk this introduces to the market (e.g. under supply of storage for a period of time) and to make investment decisions accordingly. The presence of market failures, however, may introduce a need for initiatives to support infrastructure projects. In these cases, undesirable distortions on the market should be understood and minimised. In all cases, the legislative/regulatory framework should be transparent and fit for purpose in changing market conditions.

Whether initiatives are introduced or not, there would be value in increased transparency regarding how current and future storage needs are assessed by competent authorities at the level of each Member State or region, and how the possible existence of market failure is evaluated. In addition to the publication and reporting of such analysis, the Future Energy Infrastructure Forum, announced in the Energy Union Communication, which intends to convene for the first time in late 2015, could be an opportunity to share information between competent authorities and stakeholders on a regular basis. Such a cooperative framework could facilitate, where appropriate, an increasingly regional approach when considering security of supply and the role of storage.

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

CEER does not think that further legal action is needed, but the PCI process should be more streamlined and efficient. In particular, the selection process should first focus on the infrastructure needs, and only then on the evaluation of to what extend the candidate PCIs can address them. Storage projects are part of this process and should be coordinated/integrated with pipeline projects to ensure that they – once they are built - could be efficiently used.

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?*

CEER considers that market signals should be used, as much as possible, as the main driver to infrastructure development, in particular when markets are liquid enough. However, CEER notes that in less developed markets the interaction between market fundamentals and the long lead time of storage facility development needs to be carefully assessed. Given that storage competes with other sources to provide market participants the flexibility they need, the availability and price of these other sources of flexibility has an impact on the demand for storage.

Against the backdrop of falling demand, new storage facilities have come online in the past 5 years. Storage capacity has increased by more than 20% since 2009. Given that storage capacity has not sold out at a number of facilities across Europe in recent years, it may be the case that Europe has already built sufficient gas storage capacity for current demand levels. In some situations, the closure or mothballing of certain storage facilities may be an efficient market correction in current market dynamics.

Where Member States or NRAs intervene to influence investment signals for gas storage, competent authorities should evaluate through a suitable cost-benefit analysis, both the

benefits associated with such infrastructure (and whether they are adequately taken into account by market participants, e.g. wider societal benefits), and the associated risks such as stranded, publically underwritten assets and lock-in effects.

Uncertainty over future gas demand is only one factor that influences the investment climate for gas storage. With regard to investment in renewables, it is important to note that gas will play an important role in providing flexibility and backup to intermittent renewable generation. As such, there may not be direct opposition between investment in gas storage and renewables, i.e. it is not a zero sum game.

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

Market development is at different stages across Europe, therefore the priority must be to develop efficient and integrated markets through implementation of the European Network Codes by delivering price signals and access to cross-border capacity.

A regional approach should be taken when considering security of supply and the role of storage. Focusing on the optimal use of storage in a regional setting, CEER has identified the following barriers:

- Insufficient regional cooperation: It is important that Member States cooperate with each other to ensure that multiple Member States are not relying on the same molecule of gas for their security of supply. It is also more efficient for storage to be built in the right areas, e.g. where the geology is favourable. To allow a regional approach to work, it is important that full cooperation between Member States is achieved.

- Discriminatory access to storage: SSOs should offer all storage capacity to the market on a non-discriminatory basis. This capacity should be fully contestable and have no restrictions on usage. Users should be able to access storage capacity in adjacent markets without restriction on its use, including (where appropriate) in emergency situations. In Member States where a certain level of storage obligations/strategic storage is needed for security of supply reasons, these obligations should be designed to minimise undesirable distortions on the market (including considering effects on neighbouring markets), while at the same time not encouraging freeriding.

- Lack of innovation and development of new products: SSOs should not be prevented from innovating and developing new products. SSOs should offer a wide range of products to the market and these should be freely tradable on the secondary market to ensure the most efficient use of the infrastructure. However, any arrangements that encourage innovation should not lead to any discrimination between storage users.

- Lack of adequate information provision: Information is vital for market participants: i) to ensure non-discrimination; ii) to manage their risk exposure; and iii) to develop functioning wholesale markets. A sufficient level of transparency, in both English and the local language, is critical to allow cross-border storage to be used efficiently.

- Lack of harmonisation in the allocation of storage capacity and transmission capacity at interconnection points: Capacity products in Capacity Allocation Mechanism (CAM)

Regulation are not consistent with the typical pattern of use of the storage. If a user in one country wants to use storage in another country he needs exit capacity during the summer (to fill the storage during the injection cycle) and entry capacity during the winter (to import gas withdrawn from the storage). Although CAM allows for the booking of quarterly capacity, the auction is held many months before the allocation of storage capacity. This could present problems for storage users in the event that there is congestion at interconnection points. The introduction of the possibility to book simultaneously storage capacity and transmission capacity at interconnection points can help the optimal use of storage in a regional setting.

- High transmission tariffs: Transportation tariffs should consider the benefits and costs that storage facilities provide to the overall system. In addition to the cost of purchasing the commodity and storage capacity market participants also have to pay a transmission fee to inject gas into, and withdraw gas from a storage facility. Restrictions imposed by artificially high transportation tariffs can make accessing storage facilities less attractive and make them uncompetitive with other sources of flexibility.

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?*

CEER considers the full implementation of the 3rd Package and the related set of Network Codes to be of primary importance. If implemented correctly they should tackle many of the remaining outstanding issues and deliver well-functioning spot and forward markets which in turn will deliver the best outcome for customers. The correct implementation of the 3rd Package and its Network Codes should be a priority of the European Commission. CEER considers that, in particular, the implementation of the Capacity Allocation Mechanism Network Code will increase the opportunities to trade between markets whilst the Balancing Network Code will deliver price signals in markets across Europe and reflect the value of storage in the market prices.

As far as transparency issues are concerned, CEER and Gas Storage Europe (GSE) worked together to develop GSE's Transparency Template in 2012/2013. The Transparency Template is a harmonised template for the publication of important information on SSO website. One objective of the Transparency Template is to help SSOs to fulfil transparency requirements (in particular 3rd Package requirements). The correct implementation of the Transparency Template will also help to tackle one of the regulatory barriers identified in the previous question therefore promoting open, fair, non-discriminatory and transparent access to storage facilities across Europe.

In addition, CEER encourages Member States to adopt a clear set of criteria to enable NRAs to monitor the effectiveness of each TPA regime. Article 33 of the Gas Directive[24] provides that the regulatory authorities (where Member States have so provided) or Member States shall define and publish criteria according to which the access regime applicable to storage facilities should be chosen. Article 41 of the Gas Directive states that NRAs are responsible for monitoring the correct application of the criteria to be used to assess whether a

[24] Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.

Negotiated Access Regime (nTPA) and/ or a Regulated Access Regime (rTPA) will be in place for the organisation of access to a storage facility.

In 2012, CEER reviewed the implementation of TPA across Member States and concluded that while an access regime (either regulated or negotiated) had been chosen in most Member States, in many cases this has not been based upon defined criteria (e.g. level of competition in the flexibility market). Criteria should be published so that under changing market conditions, the rules governing access to storage facilities will be adapted accordingly. The lack of a clear set of criteria makes it difficult for NRAs to monitor the effectiveness of TPA's implementation.

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?*

CEER considers that specific tariff regimes for storage should be left at the national level because each country can better assess the role of storage in meeting the objective of secure gas supply.

Storage offers an advantage of being a physical asset located close to demand areas. In some countries, gas storage is necessary: i) to support efficient use of the transmission system; and ii) to ensure physical security of gas supply in case of severe weather conditions or supply disruption; iii) in some markets, all three values of storage (system, insurance, arbitrage) may not be valued appropriately by market participants, which could lead to inefficient booking and utilisation of storage. CEER recommends that transportation tariffs should consider the benefits and costs that storage facilities provide to the overall system.

Taking into account the interests and needs of the region, all decisions in this matter should be made at national level putting more emphasis on the need for transparency as opposed to harmonisation of storage tariff arrangements.

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.*

CEER is not aware of technical difficulties in accessing storage facilities.

CEER believes that TPA and transparency are two vital building blocks to promote non-discriminatory markets and fair access to gas storage facilities. The GSE Transparency Template and CEER's Guidelines of Good Practice for Third Party Access for CAM and CMP (GGPSSO)[25] are voluntary initiatives that aim to enhance transparency and access to storage facilities across Europe. CEER recently published a monitoring report[26] on these initiatives. For the Transparency Template, the main finding was that SSOs are not

[25] Guidelines of Good Practice for Third-Party Access for Storage System Operators (GGPSSO), ERGEG, March 2005, Ref. E04-PC-01-14.

[26] CEER Report Monitoring Implementation of the Gas Storage Guidelines of Good Practice and of the GSE Transparency Template, 21 July 2015, Ref.C15-GWG-121-03.

satisfactorily adhering to the structure and direct access requirements of the Transparency Template. For the GGPSSO, we made some key recommendations to improve compliance with regards to transparency, product development and choice of allocation mechanisms. These recommendations should support better access to storage facilities across Europe if adhered to by SSOs.

Annex 1 – About CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national regulators of electricity and gas at EU and international level. CEER's members and observers (from 33 European countries) are the statutory bodies responsible for energy regulation at national level.

One of CEER's key objectives is to facilitate the creation of a single, competitive, efficient and sustainable EU internal energy market that works in the public interest. CEER actively promotes an investment-friendly and harmonised regulatory environment, and consistent application of existing EU legislation. Moreover, CEER champions consumer issues in our belief that a competitive and secure EU single energy market is not a goal in itself, but should deliver benefits for energy consumers.

CEER, based in Brussels, deals with a broad range of energy issues including retail markets and consumers; distribution networks; smart grids; flexibility; sustainability; and international cooperation. European energy regulators are committed to a holistic approach to energy regulation in Europe. Through CEER, NRAs cooperate and develop common position papers, advice and forward-thinking recommendations to improve the electricity and gas markets for the benefit of consumers and businesses.

The work of CEER is structured according to a number of working groups and task forces, composed of staff members of the national energy regulatory authorities, and supported by the CEER Secretariat. This report was prepared by the LNG and Gas Storage (GST) Task Forces of CEER's Gas Working Group.

CEER wishes to thank in particular the following regulatory experts for their work in preparing this report: Ana Barrera García, Benoît Esnault, Rocío Prieto, Ryan Mclaughlin, Edward Freeman.

More information at www.ceer.eu.

Annex 2 – List of abbreviations

Term	Definition
ACER	Agency for the Cooperation of Energy Regulators
CAM	Capacity Allocation Mechanism
CEER	Council of European Energy Regulators
CMPs	Congestion Management Procedures
ECA	Emission Control Areas
FSRU	Floating Storage Regasification Units
GGPLNG	Guidelines for Good Third Party Access Practice for LNG System Operators
GLE	Gas LNG Europe
GSE	Gas Storage Europe
GGPSSO	Guidelines of Good Practice for Third-Party Access for Storage System Operators
GWG	Gas Working Group
LNG	Liquefied Natural Gas
LSO	LNG System Operator
NRA	National Regulatory Authority
nTPA	Negotiated Access Regime
PCI	Projects of Common Interest
RV	Regasification Vessels
SSO	Storage System Operator
TEN-E	Trans-European Energy Networks
rTPA	Regulated Access Regime
TPA	Third Party Access
TYNDP	Ten Year Network Development Plan