Concerning: Consultation Response to an EU strategy for liquefied natural gas and gas storage

Date : 24 september 2015

Dear Mr. Moser,

Vattenfall would like to thank the Commission for the opportunity to contribute to the EU strategy for liquified natural gas (LNG) and gas storage.

With this response, we aim to provide our view on challenges and opportunies for the role of LNG and storage in the European energy market, in particular with regard to security of supply and competitiveness.

Vattenfall is 100 percent owned by the Swedish state and is one of Europe's largest generators of electricity. Our main products are electricity, heat and gas. Vattenfall supplies gas to nearly two million European customers, from households to large industrial clients, all over northwestern Europe. Of our electricity generation portfolio of 40.000MW, 7000 MW is attributed to gas fired power plants. Vattenfall is both a user (booker) of several European gas storages, as well as an owner of a gas storage in Germany[1]. Finally, we conduct energy trading in all established and several developing European markets. With regards to LNG, Vattenfall keenly follows all regulatory and market developments. We do not own LNG terminals, but consider LNG to be a valuable element of the European (and global) commodity and flexibility market.

Considering the above, we consider ourselves a key stakeholder and trust the Commission finds our views and suggetions valuable.

Kind regards,

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In brief; **Vattenfall believes:**
Diversification of gas sources can contribute to security of supply and must be **market-driven**;
The **role of storage facilities and LNG terminals in Security of Supply is very different** and must be acknowledged in regulation;
TPA rules must be harmonised across Europe, for a stable investment climate and transparency on availability;
Primary capacity mechanisms for rTPA markets must be improved, to optimize efficient and transparent use of capacity;
Secondary capacity market rules for all European LNG-terminals – irrespectively if subject to TPA exemptions or fully regulated – should be **clarified and harmonised**.

[1] Please find general information and the availability of the storage through this link: http://corporate.vattenfall.com/about-vattenfall/operations/market-transparency/gas-storage/

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? 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

VATTENFALL Answer 1: The experience Vattenfall – as a market participant exploring the possibilities to enter the European LNG market – is mainly limited to LNG-terminals in North-Western-Europe. Vattenfall has identified a number of challenges related to LNG and its role within the European gas market in this region. A lot of these challenges are often linked to the access of new market participants to LNG capacity/slots. These challenges should be addressed by the European Commission at an EU-level in order to improve the functioning of the market and to allow for LNG to increase Security of Supply.

Furthermore, we believe that a distinction should be drawn between the purpose/role of LNG and storage facilities to ensure security of supply within the European Union. Shippers can use storages as a tool to ensure short-term flexibility of the gas market. LNG – on the other hand – can rather be determined as a fuel that can have an impact on the long-term viability of the European energy market and has potential to secure gas supply in case of a security of supply crisis. Thus, in order to increase the level of diversification of energy supply and to increase the number of competitors at the same time the selected regulatory intervention (in this case TPA-exemptions) with respect to individual sources of natural gas (i.e. LNG) should be rejected or only granted under limited circumstances at the EU-level.

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?

VATTENFALL Answer 2:

No comment.

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

VATTENFALL Answer 3:

The TEN-E Regulation No 347/2010 mainly looks at the various trans-European energy infrastructures including also LNG-infrastructure facilities and proposes measures to achieve a well-functioning network infrastructure within the European Union. Apart from the expansion of the LNG infrastructure facilities we believe that is of the utmost importance that European legislations also improve the functioning of the LNG-market as such, in particular, the entrance of non-primary capacity holders. In fact regulatory uncertainty can jeopardise the role LNG can play on the European energy market and its potential to diverse energy source and the number of energy suppliers.

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?

VATTENFALL Answer 4:

No comment.

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)?

VATTENFALL Answer 5:

No comment.

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.

VATTENFALL Answer 6:

Overall, Vattenfall believes that LNG regulation should be harmonised across European markets, ensuring LNG terminals are either regulated, or can apply for TPA exemption in the same transparent manner. Subsequently, a uniform regime across Europe stabilizes the investment climate and provides transparency on the access possibilities for third parties.

Additionally, we believe that disclosure of information on the access procedures to regulated and non-regulated LNG terminals should be mandatory and harmonised as this enhances the functioning of the European gas market. Currently, the provided information to the access to the slots of the LNG-terminals varies across all 18 European LNG terminals. The application of the existing transparency rules according to Article 19 Regulation 715/2009/EC should be mandatory to all European LSOs to adhere to the standing transparency requirements. Such transparency would be a big step towards improving the functioning of the LNG market.

Vattenfall has experience at accessing LNG-terminals subject to rTPA and without any TPA-exemption. Based on this experience we can draw the conclusions that the secondary market rules and conditions are functioning better in a liberalised system compared to LNG-terminals subject to TPA-exemptions. Thus, we believe that the rules and conditions of the secondary market should be harmonised and clarified at a European level and applicable to all European LSOs irrespectively whether LNG-terminals are exempt of

TPA-rules or have a fully regulated status. This would support non–discriminatory access and facilitate the development of competition between suppliers of LNG to the European.

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?

VATTENFALL Answer 7: At the moment parties interested in acquiring slots at LNG-terminals, are often faced by various and deviating rules. This is an additional obstacle for (new) market participants to enter the LNG-market, as the rules are not comparable to each other. It is of main importance that LNG-slot contracts are standardised at a European level, and that the same rules and conditions apply to all LNG-terminals.

At some LNG-terminals we have the experience that an "entrance fee" has to be paid by new parties interested in getting access to the LNG-slots. This fee cannot be taken as a warranty for those parties to eventually get access to the LNG-terminals as the LSOs are still able to turn down the entry of new participants to the LNG-terminals. Such "entrance fees" - not even guaranteeing the status of becoming a registered user - are not justified and can even result in an additional barrier for new participants to the LNG market and should therefore not be allowed according to European law.

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?

VATTENFALL Answer 8:

Vattenfall has encountered a number of existing barriers for non-primary capacity holders to get access to LNG terminals in Europe. The focus should be on removing such barriers through improving interconnectivity and implementation of the Third Energy Package, the associated Network Codes and the Regulation on Security of Gas Supply. Existing EU legislation should be adequate to tackle the outstanding issues.

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?

VATTENFALL Answer 9:

No comment.

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?

VATTENFALL Answer 10:

No comment.

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?

VATTENFALL Answer 11:

No comment.

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.

VATTENFALL Answer 12:

No comment.

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?

VATTENFALL Answer 13:

In our main markets, in North West Europe, the supply is sufficiently diverse not to pose great challenges. The continuous growth of renewable electricity or low carbon indigenous sources, does provide the European gas market with significant challenges, considering lower running hours and merit order challenges.

Vattenfall believes that diversification of gas sources is driven and enhanced by a mature and competitive market. Our home market (North Western Europe, respectively the Netherlands and Germany) is considered mature as well as competitive. Therefore, with developing and in time sufficient price levels, we could envision LNG reaching the continent. The likely increasing supply projection for LNG is considered an opportunity.

Also regarding sourcing pipeline gas, we consider a functioning market based European commodity and flexibility market as vital, without distorting regulation. We make use of a balanced portfolio for sourcing pipeline line gas. Currently, we do not encounter any challenges regarding supply projections for pipeline gas. In the future, we see times changing for low Cal gas due to the developments at the Groningen field. We believe this is a challenge, being dealt with through measures set by the Dutch government (availability conversion capacity and upcoming heat strategy).

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)?

VATTENFALL Answer 14[2]: In general, we highlight that a functioning liquid market, rather than regulatory obligations, ensures the highest supply standard. In our view and in several of the markets that are important to Vattenfall, current market and regulatory conditions are adequate to ensure that storages can play their role in addressing supply disruptions or other unforeseen events (e.g. extreme cold spells). However, there are several markets in Europe where regulatory arrangements provide restrictions on the availability and use of storages in ensuring supply meets demand at any given time.

We have the following experiences with these measures:

- **Storage obligations**: Vattenfall believes that storage obligations are not required to reach the objective of security of supply. We believe that a mature and competitive market enhances the level of security of supply, and increases diversification of gas sources.
- **Strategic stock**: Vattenfall believes that strategic stock is not needed to secure security of supply. We believe that a mature and competitive market enhances the level of security of supply, and increases diversification of gas sources. However, strategic (storage) stock could, in an N-1 situation of restricted sources, provide supply security insurance for Member States, as long as this is set up in a transparent and market based manner.
- **Diversification obligations**: Vattenfall believes that an obligation on shippers to diversify (supply) is not necessary, and could even act disrupting and could decrease efficient use of flexibility and supply sources. However, Member States may choose and steer upon their own energy mix. If they believe they require additional insurance against supply disruptions, they should ensure that any strategic stock measures are set up in a transparent and market-based manner, f.i. through a tender process open to all market participants. Vattenfall believes that strategic stock is an insurance policy that provides an additional cost to the consumers in that market. In addition, strategic stock removes some of the gas or flexibility from a market, making it tighter and thereby possibly driving the market price up, which increases the cost of energy for consumers. We believe Member States should carefully weigh these additional costs against the possible risk of interruption without these measures.

Supply standard for extreme cold spells

We would like to add that if and when supply standards are deemed necessary by a Member State as insurance in addition to the markets ability to attract more supply when necessary, it would be most (cost) efficient to place the responsibility for this insurance with the national TSO. When the mechanism is described and effectuated in a transparent and market based manner, such a supply standard would be interfering minimally with market functioning.

Vattenfall would like to illustrate the above with the supply standard mechanism in the Netherlands. The national supply standard procedure (the so called Peak Supply) kicks in between minus 9 and minus 17 degrees Celsius, shifting the supply responsibility for this peak volume from suppliers to the TSO, for which it uses previously tendered flexibility and commodity. So far, no commodity price effect has been registered (in comparison with neighbouring markets), as the peak supply volume is very small, leaving supply and demand nearly unchanged. In addition, the system ensures the market continues to function, even on these very cold days, as the bulk of the supply volume remains the responsibility of the shippers/suppliers. We suggest that the Commission look deeper into this system, as a means to secure European supply security, keeping in mind that even the Dutch system is currently not perfect and we would like it to be more transparent and ensure non-discrimination.

We compared the spot price spread between Germany and the Netherlands through extreme cold-weather conditions in February 2013 and during a Dutch Peak Supply Obligation situation. We didn't

[2] See our consultation response of 7 April 2015 on the Revision of Regulation (EU) No 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC, page 6 and 7.

register transport limitations between Germany and the Netherlands. One could expect that after the shift of responsibility from shipper to TSO, the Dutch market would have experienced a drop in demand, resulting in lower prices. The price in the German market would have stayed high(er) before adjusting accordingly across border. As we did not see this happening, we can conclude that the volume is too small to cause any price effects. Hence, when an obligation is set on the national TSO (like in NL) and we do not see any obligation in place (DE), supply security is settled by the market.

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

VATTENFALL Answer 15: As mentioned in answer 14, if Member States believe additional insurance against supply disruptions is required, we encourage to ensure that obligations are placed on the TSO, rather than market participants, to increase efficiency. We believe they must be set up in a transparent and **market-based manner, f.i. through a tender process, open to all market participants**.

In addition, providing the market framework that allows flexibility to be used across borders would improve efficient use of such assets and provides a chance for markets without such assets to still ensure reserves are available. Finally, creating a stable market design and regulatory framework is crucial for a stable investment climate, which in turn could realise, if the market indicates a lack of flexibility, additional assets, such as storage facilities or LNG terminals.

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?*

VATTENFALL Answer 16: We consider a functioning liquid market to deliver the optimal level/share of flexibility in a Member State or region. If market-prices are high enough, and if storages are easily accessible without hindering regulation, an optimal share will be reached. We strongly believe that storage should be viewed together with other flexibility tools, like for instance storage tanks in LNG terminals, or demand that can be scaled down at request.

We realize that due to geographic circumstances, some regions possess more storages then others. Therefore, infrastructure development initiatives can be a solution, providing access to flexibility assets across borders and optimizing its utilisation. To assess if additional infrastructure is needed, we advise the Commission to take the current N-1 rule into account, as the N-1 rule provides an indication of the presence of a sufficient level of infrastructure for security of supply purposes. We believe the implementation of this in as many markets as possible must be ensured by the Commission. If exemptions are granted, they should be published on the Commissions' website, alongside with its underlying reasoning. Moreover, exempted parties should be given a timeline when to mend the reason(s) for exemption, if such is financially and physically the most efficient way to provide that market with supply security.

Vattenfall believes that it is not possible to view the use of infrastructure merely on a national basis. A European or regional approach must ensure that bottlenecks do not occur when two or more markets depend on a single piece of infrastructure, especially when they each believe to have the first right to such infrastructure.

However, Vattenfall has concerns regarding prescribing an exclusive regional approach, as this – in the case of the Network Codes – often only consists of an exchange of information between Member States, rather than a coordinated and joined approach, with binding agreements. A clear definition of the obligations of regional coordination should be included in the Commissions' regulation concerning measures to safeguard security of gas supply, as this could ensure a real further development rather than provision of information only.[3]

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

VATTENFALL Answer 17: See our response to question 16.

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?

VATTENFALL Answer 18:

We believe that gas security and gas demand exist in a challenging counterbalance. If, or rather when, gas demand decreases in Europe, fixed costs of assets - including gas fired power plants, storage facilities, LNG terminals, but also infrastructure – will have to be recovered over less cubic meters sold, traded or burnt. This puts more pressure on the position of gas in the merit order and may lead to mothballing or closure of existing assets, as well as have a limiting effect on any new investments.

In addition, security of supply requires a long term vision and more importantly, long term stability to support business cases of the aforementioned assets. Any significant change in market design can make or break new and – more importantly – existing business cases.

In our view, Capacity Remuneration Mechanisms (CRMs) are not an option to reduce the risks of stranded [power] assets. In a situation of fundamental oversupply, there is no need for the introduction of CRM. Low prices and mothballing of capacity are signals of overcapacity. Prices and capacity should be allowed to adjust until a new equilibrium is reached.

We see the following options for strengthening the existing market without creating a national capacity mechanism:

- Turn every stone to strengthen the transmission development;
- Reward flexibility by increasing liquidity and cross-border trade for electricity balancing (Gate closure times should be harmonized to increase possibilities for cross border trade of balancing power. The TSOs should propose a harmonized gate closure time. The proposal should be based on cost efficient balancing for the interconnected market.);
- Further integrate renewables by allowing trade closer to real-time;
- Allow for freely fluctuating prices to enable future investment signals.

[3] See our consultation response of 7 April 2015 on the Revision of Regulation (EU) No 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC, page 2.

Vattenfall also believes regional cooperation reduces the need for national generation adequacy measures. Conducting regional supply adequacy assessments (that take cross-border contributions into account) and judging the capacity situation against nationally desired security of supply levels, allows for more efficient use of resources. If the target supply adequacy level is in danger, the transmission system operator should be allowed to procure a strategic reserve. Regional solutions for the strategic reserve should be designed.

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

VATTENFALL Answer 19: Vattenfall primarily supports the realization of a market based European flexibility market, without distorting regulation on storage. As storage is part of the commercial flexibility market, we believe national regulation on storage obligations must be removed, to ensure storage can be part of this flexibility market.

Vattenfall believes that storage obligations are an insurance policy that provides an additional cost to the consumers in that market. In addition, it removes some of the gas or flexibility from a market, making it tighter and thereby driving the market price up, which also increases the cost of energy for consumers. We believe Member States should carefully compare additional costs with the possible risk of interruption without these measures.

The most critical regulatory barriers to the optimal use of storage in a regional setting are:

- Storage obligations that provide preferred use or access to storage on the basis of customer portfolio in that market, or other discriminatory measures that do not allow storage flexibility to be used to react to supply-demand fluctuations if and when needed. This includes storage obligations that require a reservation of such storage capacity for specified situations, especially if these storage obligations are not described clearly and in a transparent manner.
- Adjustments of regulatory regimes, especially considering pipeline capacity to and from storage facilities, security of supply regulation and cross-border flow limitations, such as ST UIOLI and discriminatory tariffs.
- Cross border restrictions for the use of storage. Storage capacity should be enabled to be used where and when required. Borders of markets should not be a limiting factor, as this prevents efficient use 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?

VATTENFALL Answer 20:

No comment.

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? 12

VATTENFALL Answer 21: Vattenfall considers EU-level rules necessary to define specific tariff regimes as a just method to regionally meet the objective of secure gas supply, rather than just nationally. We support the former sentence in the network code on tariffs a minimal requirement.

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.

VATTENFALL Answer 22:

Yes, we have encountered difficulties in accessing storage facilities, mainly in the French and the Eastern European market.

Difficulties in accessing storage facilities in France

Firstly, in France, storage obligations are applicable to storage users when supplying end customers with gas. In this regard new storage users are discriminated against existing storage users, as the latter often did booked storage capacity on a long term basis that can be charged to end customers, whereas new parties do not have the same possibility. This eventually results in a more privileged position for existing storage users, as they can supply end customers with gas at lower costs. In European countries where storage obligations are applicable the existing rules should not lead to discrimination or a weaker position of new storage users compared to existing parties.

Secondly, the storage product that is to be offered by the storage operator also consists of an entry and exit part that is allocated to the storage user in question on an automatic basis. In practical terms we have encountered the problem that this mechanism seems to be rather inflexible and does not always lead to the lowest cost for the storage user. In particular the period of the booked storage product and the allocated entry and exit capacity to the storage – that is to be matched by the storage operator – often result in high costs for the storage user. Consequently, in order to minimise the costs for storage users leading to an indirect basis to lower costs for end customers the storage operator should communicate well with the Transmission System Operator with the outcome to minimise the costs as much as possible.

Difficulties in accessing storage facilities in Poland

In Poland, we encounter difficulties in accessing obligated storage due to high prices. Through Polish law, a gas importing company is required to secure some percentage of imported gas in gas storage. It obliges the importer to buy storage capacity and to keep gas. A partial release from the obligation can be obtained; most trading companies are therefore released from gas storage obligation up to gas import volume equal to 100 mcm. However, when a company imports over 100 mcm, it is obliged to buy gas storage. Even though the storage is available, prices are high, making import not financially justified. Even though gas can also be stored out of Poland, securing available cross border capacity has proven to be difficult due to pricing as the internal Polish gas market is very competitive. The flexibility of the Polish market would be enhanced if e.g. the gas storage obligation could be only applicable to importers supplying in Poland sensitive customers like hospitals, schools and households etc.

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.

VATTENFALL Answer 23:

No comment.