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Dear Peter

Gas Security of Supply Significant Code Review (SCR) Initial Consultation

EDF Energy is one of the UK's largest energy companies. We provide 50% of the UK's low carbon generation. Our interests include nuclear, coal and gas-fired electricity generation, renewables, combined heat and power plants, and energy supply to end users. We have over 5 million electricity and gas customer accounts in the UK, including both residential and business users.

We welcome the opportunity to respond to this consultation. I confirm that this response is not confidential and may be placed on Ofgem's website. The key points of our response are as follows:

- The Government's stated energy policy objective is to achieve an affordable, low carbon, and secure energy mix. Any changes to the gas emergency arrangements should be aligned with this objective, to ensure that the interests of the UK and its energy consumers are met.
- Gas emergencies, by definition, should be a low probability event. Any emergency arrangements should be designed to impact on the market only during an emergency rather than at all times.
- Emergency arrangements are important. Any changes should be proportionate and market based, as this will hopefully minimise the costs to participants and consumers. The arrangements should also provide incentives on parties to balance supply and demand, and therefore reduce the risk of entering an emergency situation; this in turn will have a positive impact on security of supply.
- We note the three options for reform in this initial consultation. We believe that some elements of these options can be implemented, subject to certain detailed issues being resolved, namely:
 - There is merit in unfreezing cashout prices in order to attract as much non UK sources of gas potentially available in the event of an emergency.
 - It might be best to cap emergency cashout prices to enable market participants to better manage credit and trading limits.

- In theory an ex-ante Value of Lost Load (VoLL) might be an appropriate price with which to cap cashout prices. However, we do have some concerns about how it might be accurately calculated, particularly for domestic customers where the health and safety considerations of disconnection take priority.
- Obligations in the form of storage or physical supply contracts are not warranted, as they are complicated, difficult to target and may undermine current investments, thereby adversely impacting security of supply.
- There might be value in increasing the level of system reserve through either Operating Margin gas or demand-side options. This could be facilitated through Shippers or National Grid (NG) acting as the system operator.
- It is important to have a measure of the desired level of security of supply against which the options can be assessed. Ofgem should conduct an Impact Assessment, considering different emergency scenarios and circumstances.

We have provided some further detailed explanation of our key points below.

Objectives for the SCR

Central to this review are the Government's three priorities for energy, namely that it should be affordable, secure and low carbon. It is against these objectives that any reform has to be assessed and we note that regulatory uncertainty can delay or undermine investment decisions, which might have consequences for UK security of supply. We therefore believe that any reforms should be:

- Robust, enduring and implemented in a timely manner. This should ensure that a long term solution is implemented and reduce the risk of consequential regulatory change.
- Consistent with EU regulatory and policy developments.
- Incremental rather than fundamental reform, to minimise barriers to trade and entry.

The UK gas market has a more diverse supply and greater import capacity than in previous years. We note that this has been delivered by an open, liquid and competitive market. It is important that any reforms should be developed so that they take effect in emergency situations and do not impact on the gas market under normal operation. This should allow the market to respond to signals and deliver affordable increased security of supply to consumers.

Dynamic Cashout

Under the current arrangements, cashout prices are frozen at stage two of an emergency even though the market remains open throughout this period. Therefore, Shippers are exposed to cashout prices which are fixed at the level immediately before the stage two emergency declaration. Although, NG is no longer participating in the

market, Shippers are still able to trade between themselves; the effect is that the incentive to balance set by the cashout prices can become divorced from the market fundamentals. We believe that the UNC rules could be amended so that cashout continues to be set by the market; although we recognise that there are issues that need to be addressed. Floating cashout prices in an emergency might help to attract additional gas from non-UKCS sources and therefore reduce the severity and length of any emergency.

There are, however, issues associated with the unfreezing of cashout prices. In particular, in the face of increasing market and cashout prices, credit could become an issue, both for trading purposes and energy imbalance. Most trading companies also have trading limits in place, to limit the exposure of Shippers to any market movements and unauthorised trading. Both of these could result in Shippers and traders having to withdraw from the market at times of extreme prices, if they do not have sufficient credit or if they exceed limits. Trading limits for the On-the-day Commodity Market (OCM) would also have to increase, making it more difficult for smaller players. This could reduce market liquidity and limit Shippers' ability to balance. For these reasons, we believe there is value in capping cashout prices, to limit exposures and ensure that credit and trading limits do not create a barrier to entry.

One of the objectives of the EU Third Energy Package and Gas Security of Supply Regulation is to achieve a more secure, competitive and sustainable energy supply. The new legislation is also intended to give energy consumers more protection and the benefit of the lowest possible energy prices. We note that some Continental markets link their imbalance prices to UK cashout prices. Depending of the design of UK emergency cashout arrangements, these might affect other markets, regardless of whether there is an emergency in those markets. The issue of UK cashout prices should therefore be considered in this wider context.

Value of Loss Load

In theory, the Value of Lost Load (VoLL) might be an appropriate cap for cashout prices. However, we do have some concerns about how it might be accurately calculated. Additionally, it might not be feasible to calculate VoLL for domestic gas consumers, since the health & safety implications of disconnecting domestic consumers should take priority, i.e. it is not simply an economic decision to interrupt. However, VoLL may be useful as a compensation price which large consumers, switched off in an emergency, could receive through demand-side contracts. Indeed, this might encourage more of these contracts to be struck. If VoLL could be accurately calculated from these contracts, then it could be used as a cap on cashout prices, to ensure the market is protected at a sensible level. This VoLL cap could be published ex-ante so that customers would have full transparency and would know what price they might have to pay for imbalance. However, we recognise that this might create perverse

incentives for parties to change their behaviours just before and during an emergency. We would recommend further consideration of such arrangements.

Obligations

We do not believe that obligations on Shippers, Suppliers or NG as the system operator are warranted at this stage. Any form of obligation would interfere with the current successful functioning of the market and may do little to increase security of supply if it undermined current and future investments. There are many storage facilities being planned that have been put on hold for a wide range of reasons, including regulatory and planning uncertainties. A stable and predictable regulatory environment is required to encourage the investment that Government and Ofgem have identified is required. DECC has stated in the past that it would be difficult to impose obligations, as it would be difficult to determine what level of storage or physical gas supplies would be needed. We believe that contracting for long-term physical supply contracts would have little impact on security of supply, but it may distort the structure of the UK gas market and provide upstream producers with a competitive advantage over non-physical players.

I hope you will find these comments useful. Our responses to the consultation questions are attached.

If you have any queries on our response, please do not hesitate to contact my colleague Rob Rome on 01452 653170, or myself.

A handwritten signature in blue ink, appearing to read 'D. Linford'.

Denis Linford
Corporate Policy and Regulation Director

Attachment

Gas Security of Supply Significant Code Review (SCR) Initial Consultation

EDF Energy's responses to your questions

Options for reform of the emergency arrangements

Question 1: Have we captured the appropriate range of options for reform of the gas emergency arrangements? Are there other options that should be considered?

We believe an appropriate range of options have broadly been covered and are wide enough to meet the objectives of a holistic review necessary to identify whether the current arrangements are robust. Any solution should be tested under different types of emergencies to effectively assess the potential for their success and whether they are fit for purpose. We would suggest two extreme types of emergency are used: a slow burning emergency, where supplies gradually run out due to an extreme cold winter and record global gas demand; and a rapid emergency, where a major part of the UK gas infrastructure fails.

Comparing the range of options under these different scenarios will also be useful for any Impact Assessment. It will help to focus the cost analysis and allow an assessment of the probability of an emergency occurring.

As highlighted at the workgroup meetings, the other options that might be considered are:

- One or a combination of some elements of the three options presented by Ofgem.
- The introduction of an "emergency alert" following the Gas Balancing Alert, prior to a Stage 1 emergency being declared. This would indicate that the system is close to an emergency and so provide a signal to shippers and consumers to take further actions to balance.
- Extra reserve gas as a buffer. This would meet Ofgem's objectives of minimising the likelihood and duration of an emergency. This could be achieved by NG booking more Operating Margins (OM) ahead of time, or by more demand-side contracts. The latter option could take place as an annual tender for demand-side turn down. These could be exercised just before an emergency.

Any solution implemented by Ofgem would have to be shown to be consistent with the Government's objectives of developing affordable, secure, low carbon energy supplies.

Question 2: Of the three options presented, which do you prefer? Why?

The list of options has been developed by the workgroup in the limited time since Ofgem's consultation was issued. As they are structured we do not have a preferred option at this stage.

However, we believe there is merit in unfreezing cashout prices in an emergency to ensure all potential sources of both domestic and international gas supplies arrive at the GB market. We believe the market needs to be able to respond to limit the length and severity of the emergency. We also recognise it is sensible to ensure there is some form of cap to cashout prices. This will help to address some of the issues associated with credit, trading limits and liquidity in the face of increasing prices.

We note from the figures presented by NG to review group 0291¹ that the default cashout price is applied consistently on roughly 70% of days. This default price is derived from SAP, and so ultimately the market sets the default price for 70% of days. We therefore believe that there are no fundamental problems with allowing the market to set cashout prices in an emergency. There may also be benefits associated with this, as this will help to ensure that the incentive to balance reflects the market fundamentals and so is not unduly lenient or penal.

Certain elements of the options could be implemented separately without having to accept the whole range of change under each option. We welcome Ofgem's view on whether this is possible.

We believe that interaction with the E3C committee and their emergency plans is necessary to ensure that reforms and developments in this area support each other. We note that the E3C committee has identified that there could be a gas "oversupply emergency on the same day as a Gas Deficit Emergency (GDE) given the inability of offshore fields to shut down production were the CCGTs to be switched off.

Question 3: What is the appropriate role for NGG in an emergency?

NG's role in an emergency should broadly follow the current arrangements, i.e. split into operational and commercial roles. NG should continue to provide operational expertise to the National Emergency Coordinator; however, they should have limited commercial involvement once they progress into a stage 2 emergency. We agree that NG could continue to set cashout prices in stage 2 however they should not be

¹ Available at: <http://www.gasgovernance.co.uk/0291/210510>

involved in procuring gas from outside the UK in an emergency. This was NG's position throughout the workgroup meetings and we agree with their position that this is best left to the market.

NG should ensure ahead of an emergency that it has the correct contact details of customers needed to be switched off in an emergency. This would meet Ofgem's objectives of ensuring the duration of an emergency is minimised as much as possible.

Question 4: Do you have any comments on our initial assessment of the pros and cons associated with each option?

Ofgem's assessment of the pros and cons of each option appear balanced.

Question 5: Are there any safety case implications associated with each option?

Yes, suspending shipper-to-shipper trading under options 2 & 3 appears counter intuitive and may adversely impact on the duration of an emergency. Any changes to NG's role and actions after stage 1 emergency would also require an amendment to the safety case as NG's licence obligations cease and turn into a HSE safety case requirement. Both changes would require approval from the HSE and we would welcome Ofgem's view on how commercially efficient NG would be whilst also having an HSE obligation to avoid an emergency at all costs.

Question 6: What benefits, if any would dynamic cash-out bring relative to the post emergency claims arrangements?

There are many interpretations of what dynamic cashout price in an emergency means and whether NG or NEC is involved in setting cashout prices and whether VoLL is introduced for example.

We believe there is merit in unfreezing cashout prices to ensure all potential sources of gas are incentivised to be delivered to the GB market; however, this requires further development and analysis to understand the operational arrangements and their implications .

Currently cashout prices are not frozen until stage 2 of an emergency, at which point the NEC also has the discretion to remove NG from the market if it identifies that no extra gas is being delivered to the NBP. It is unclear what level cashout prices will be at this stage; however, it is likely that they will be high, both under a slow burning and a rapid emergency. This was confirmed by NG at the workgroup meetings where it was stated that there are procedures and time to take market actions to ensure supplies are increased even in a fast emergency. We believe these high prices already create an

incentive for Shippers and customers to take action both before and during an emergency to avoid and alleviate an emergency.

Unfreezing cashout prices could result in higher or lower cashout prices than if they had remained frozen. We believe that the proposal to introduce VoLL as a cap will see cashout prices frozen at an administered price which may be higher or lower than current arrangements. There is also a risk that VoLL will create winners and losers depending on whether customers' costs are higher or lower than an administered VoLL. In the worst case scenario the market might be switched off at some point either to limit shipper and customer liabilities, or as a result of Shippers withdrawing from the market as a result of credit and trading limits.

We believe that if VoLL was introduced as a cap it should be published ex-ante to act as an incentive for parties, both demand and supply side, to contract ahead for demand side response, and also to provide an operational signal to Shippers. We note that previously, the emergency cashout prices were frozen at 30 days average System Average Price (SAP) prior to an emergency and this was removed due to the concern that it may incentivise adverse market behaviour as the price was predictable prior to an emergency. The same issue could be associated with capping cashout at VoLL.

The potential case for enhanced obligations

Question 1: Are there any reasons why industry might not respond adequately to sharper price signals, thus delivering sub-optimal security of supply? How could these be overcome?

We believe that the UK gas market has and will continue to respond to sharper price signals. The high level of new import and storage capacity brought on line in recent years is testament to this.

However, it is unclear how the market will respond to sharper price signals in an emergency as these are rare events and it is dependent on the perception of the likelihood of an emergency occurring. This could also be an issue when explaining potentially higher prices to customers for increased security of supply. To this end willingness to fund research and analysis in this area may help to identify what value customers place on increased security of supply.

We note that NG's LNG storage facilities are slowly being run down due to low demand for their services as a result of new flexible supplies from LNG import facilities. This is evidence of the difficulties in making an investment case in response to a low probability but high impact event..

We believe that demand-side investments and contracts are more responsive to sharper prices and further information would be useful as to why more demand-side

response contracts have not been struck if the alternative is to be interrupted with no compensation. We note that following the reform of interruptible contracts only 23 customers have entered into a contract for turn-down with the DNOs. This may have reduced the appetite for customers to enter into a demand side contract.

Question 2: What are the likely barriers to attracting gas imports during a GDE? Could these barriers be overcome?

We note that the EU Gas security of Supply regulation will remove some of these barriers by obligating TSOs to cooperate in an emergency and facilitate cross border flows through ex-ante arrangements to ensure gas flows where needed on the day.

However, Continental gas markets tend to have more penal cashout arrangements compared to the UK. A likely reason is that these markets have limited, if any indigenous gas production and are keen to ensure that gas supply and demand is matched. This may mean that gas will flow in preference to those continental markets. We also note that some European markets have linked their cashout price to the UK's cashout price and this aspect should be further considered in any impact assessment.

Question 3: Do you think that the risks associated with sharpening price signals make it necessary to apply additional obligations on relevant parties?

Sharper price signals should provide the necessary market response and that obligations should be avoided.

Question 4: If enhanced obligations were applied, to whom should they be applied and why?

We do not believe that any obligations are needed at this stage. If they were then any obligations should be targeted at market participants who can comply, e.g. NBP shippers could not be expected to bring on physical gas for example.

It would be difficult to ascertain one market segment that should be left with the obligation however the simplest way to do it would be through the System Operator.

Question 5: How could obligations be designed and enforced?

The System Operator could be obligated to create a security of supply level which it would procure from the market and then recover the costs of this from the market. However, this might interfere and undermine current market investments.

Question 6: What are the risks and potential unintended consequences associated with placing enhanced obligations on parties to ensure security of supply? Can these be overcome?

The potential risk is that the design of obligation distorts competition in the market. It may also be damaging for security of supply and increase the costs to consumers. Regulatory uncertainty might well have had a negative impact on the investment case for a number of storage investments recently, with a number of projects put on hold last year.

It is unclear how these issues can be overcome and reassert the need for clear and stable regulatory frameworks so that the market can invest confidently and bring forward the infrastructure that is needed.

Criteria for assessing options

Question 1: Have we captured the feasible range of costs and benefits for inclusion in an impact assessment.

Ofgem has captured a good range of criteria necessary for assessing in an impact assessment. However, it is not clear what measure of success Ofgem will use to demonstrate whether or not any of these proposals will have a net benefit compared to current arrangements, particularly as there has never been a gas emergency. We believe that a measure of security level required would be needed alongside the probability of breaching such levels to be able to effectively value the net benefit of any change and we look forward to Ofgem's views on this. Ultimately, any change should not lead to a deterioration of current gas security levels.

The key difficulty will be to demonstrate how any change to current emergency arrangements will meet Ofgem's objectives to increase security of supply levels whilst having a positive outcome for consumers.

The value of lost load (VoLL)

Question 1: Would it be appropriate to have multiple administrative VoLL settings for different customer groups? Why/ why not? How are VoLL estimates likely to vary between customer groups?

In theory an ex-ante Value of Lost Load (VoLL) might be an appropriate price with which to cap cashout prices. However, we do have some concerns how it might be accurately calculated, particularly for domestic customers where the health and safety considerations of disconnection take priority.

In terms of compensating consumers interrupted during an emergency we agree that this has merit and VoLL could be used as a measure of compensation; however, we believe that VoLL should be targeted at the I&C market as they are most able to economically value and provide demand side response. We note that if NG were faced with a choice of isolating parts of the electricity network for a few hours or disconnecting domestic customers for several months, then it is unlikely that domestic gas customers would be isolated.

For this reason, we do not believe it is feasible to place an economic value on security of supply for domestic gas customers since health and safety considerations mean that it is not realistic to plan to interrupt them. Such an approach will not lead to more rational economic decisions, which is the aim of this review, but does carry the risk of driving higher costs for consumers without any accompanying benefit. This is also the reason why NG's licence obligations are replaced with Health & Safety obligations, which do not take into account economic or efficient considerations, once in a stage 2 emergency.

Question 2: For a customer group, how should we determine where in the range of estimates (i.e. VoLLmax, VoLLaverage or VoLLmin) we should apply a single administrative VoLL setting?

We note the difficulties of calculating VoLL and so it is likely to be inaccurate. We believe it could be achieved though through demand-side contracts which will slowly converge for certain types of similar customer types. If Ofgem were to use one estimate we would prefer the VoLL average.

Question 3: Should the compensation payments to disconnected firm customers (based on VoLL) change with the duration of the interruption and the season in which the interruption occurs?

Amending VoLL depending on the duration of an emergency would be complex; although, we recognise that maintaining a high VoLL throughout an emergency could have an impact on the financeability of Shippers and so impact on competition once an emergency has ended. We therefore believe that were VoLL to change during an emergency then it should generally decrease if alternative energy sources could be arranged.

At the moment we have seen no evidence that VoLL should vary with the seasons for I&C customers, but recognise that this may be appropriate for domestic customers who place a higher value on gas in the winter.

Question 4: What are the advantages and disadvantages of various methods for estimating VoLL?

As stated above any calculation of VoLL is likely to be inaccurate, no matter how close it is to the actual value customers place on having their supplies disconnected. The methods that Ofgem has put forward from previous studies and other market experiences seem as reasonable as any other. However, a level of market transparency is needed over several years to accurately create VoLL prices for different types of customers. This could be achieved through market surveys for example in the absence of demand-side contracts being struck.

Question 5: What sort of compensation arrangements should be used to apportion the costs of compensation between shippers?

We do not believe it is economic or efficient to have compensation arrangements for all consumers as this will be expensive and might distort the market. We do not believe that all shippers should have to provide compensation for their customers and only those larger customers who can provide some demand-side relief should have compensation arrangements. In this instance it would be their shipper who would provide the compensation payments as they would have also benefitted from selling their energy back to the market.

It is highly unlikely that domestic consumers will be switched of in an emergency due to the level of protection involved for safety issues and length of time to restore their supplies. Introducing this level of industry insurance would require a radical overhaul of supplier obligations and customer contracts and is not warranted at this stage. Fundamentally changing the market in this respect would appear disproportionate, especially when smaller tweaks to provide more demand-side reserve may be all that is needed to meet Ofgem's and the Government's objectives.

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