

## EDF Energy Plc's application for an exemption from section 19B of the Gas Act 1986

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**Target audience:** This document will be of interest to gas storage facility operators and users, gas shippers, suppliers and other interested parties.

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### Overview:

This document sets out for consultation Ofgem's initial view that an exemption should be granted to EDF Energy Plc for its proposed Hill Top Farm gas storage facility. Such an exemption would relieve EDF Energy Plc of the obligation to negotiate Third Party Access at its proposed Hill Top Farm gas storage facility under section 19B of the Gas Act.

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The Gas and Electricity Markets Authority (“the Authority”) exempts storage facilities from the requirements of negotiated Third Party Access (“nTPA”) when it considers that third party access is not required for the economically efficient operation of the UK gas market. This provision is contained within Section 19A(6)(a) of the Gas Act 1986.

Ofgem is required to interpret GB law in the context of European Legislation. Therefore, when assessing an exemption application under Section 19A(6)(a) of the Gas Act, we will consider, as set out in Article 19 of the Second Gas Directive, whether nTPA is technically and/or economically necessary to provide efficient access to the system for the supply of customers.

Ofgem welcomes further investment in gas storage facilities. Increasing gas storage capacity will help to meet the demand for flexible gas supply as production from the North Sea continues to decline. Flexibility in the supply of gas is required to meet seasonal and daily fluctuations in demand by customers. It also contributes to overall system security by responding to unexpected system supply outages.

- EDF Energy Plc’s request for an exemption from section 19B of the Gas Act 1986, February 2009: <http://www.ofgem.gov.uk>
- Gas Storage Minor Facilities Exemptions Open Letter, Ofgem, June 2009: <http://www.ofgem.gov.uk>

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## Summary

This document sets out, for consultation, Ofgem's initial view that an exemption should be granted to EDF Energy Plc ("EDFE") for its proposed Hill Top Farm gas storage facility. Such an exemption would relieve EDFE of the obligation to offer negotiated Third Party Access ("nTPA") at this facility. The Hill Top Farm gas storage facility project is 100 percent owned by EDFE. EDFE is a wholly owned subsidiary of EDF International SA<sup>1</sup>.

## Background

In February 2009, EDFE submitted an application under section 19A(6)(a) of the Gas Act 1986 ("the Gas Act") requesting an exemption from section 19B of the Gas Act in relation to its proposed Hill Top Farm gas storage facility. The Hill Top Farm gas storage facility is referred to in the application as "Project Revolution". It is a salt cavity storage facility which is currently being developed at Hill Top Farm in Warmingham, Cheshire, North-West England.

A number of existing brine cavities at Hill Top Farm will be converted into gas storage cavities. It is anticipated that the first cavern will be available for commercial operation from Q1 2011. A further nine caverns and additional gas plant will be brought on line such that the whole facility is expected to be commercially operational from Q4 2016. The expected final total capacity of the facility is 1,070GWh with an expected maximum deliverability of 160GWh/day and an injection rate of 175GWh/day.

This consultation document deals with EDFE's application for an exemption from the nTPA requirements in relation to the Hill Top Farm gas storage facility.

## Exemption criteria

On 16 June 2009, Ofgem published an open letter (referred to in this document as the June 2009 Open Letter) which stated that when considering an application for an exemption from the nTPA requirements for minor gas storage facilities, Ofgem will consider, on a case by case basis, whether nTPA is technically and/or economically necessary for providing efficient access to the system for the supply of customers.

We do not rely upon any single test to demonstrate whether an exemption should be granted to EDFE for its Hill Top Farm gas storage facility. Instead, as indicated in the June 2009 Open Letter, we examine a series of indicators to help us come to a view

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<sup>1</sup> This is itself a wholly owned subsidiary of EDF SA.

on whether an exemption should be granted for the Hill Top Farm gas storage facility<sup>2</sup>.

The following document presents our initial assessment of whether nTPA at EDFE's Hill Top Farm gas storage facility is technically and/or economically necessary for providing efficient access to the system for the supply of customers. We conclude that nTPA at the Hill Top Farm gas storage facility is not technically and/or economically necessary for this purpose.

Ofgem is therefore minded to grant an exemption to EDFE for its proposed Hill Top Farm gas storage facility. Such an exemption would relieve EDFE of the obligation to offer access to third parties at its Hill Top Farm gas storage facility on a negotiated basis under section 19B of the Gas Act.

Ofgem invites views on this consultation. Having considered respondents' views, we will publish our final decision on the granting of the exemption.

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<sup>2</sup> We consider that the requirements of the Gas Act and the Petroleum Act for when a minor facility exemption can be granted do not require additional analysis to that which we propose to undertake to consider when nTPA is technically and/or economically necessary.

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## 1. Introduction

### Chapter Summary

This chapter provides background on EDFE's Hill Top Farm gas storage facility and the relevant legislation for granting an exemption. It also outlines the structure of this document and the way forward.

### The Project

1.1. In July 2009, EDFE acquired a site from British Salt to develop a salt cavity gas storage facility at Hill Top Farm in Warrington, Cheshire, in North-West England. EDFE will convert ten existing brine cavities into gas storage cavities.

1.2. The facility will be wholly owned and controlled by EDFE however it will be physically operated under a service contract by EDF Trading (EDFT). Both EDFE and EDFT are subsidiaries of EDF SA.

1.3. The development of the Hill Top Farm gas storage facility will be independent from EDFT's nearby existing gas storage facility at Hole House Farm in Cheshire and will have a separate connection to the NTS. The Hole House Farm storage facility operates under an existing TPA exemption, granted in February 2005. EDFT will retain full ownership of the existing Hole House Farm facility.

1.4. The Hill Top Farm gas storage facility and the existing Hole House Farm gas storage facility are designed to operate separately, although under emergency circumstances there is the possibility of increased operational flexibility between the two facilities. For example, in the case of plant failure at the Hill Top Farm gas storage facility, plant at the Hole House Farm facility could be used to withdraw or inject gas into the Hill Top Farm gas storage facility.

1.5. EDFE intends to use the Hill Top Farm gas storage facility to help balance its exposure to volatility in the gas market against its sales to mostly domestic/small commercial customers. EDFT, as a company with a focus on the trading side of the market, has indicated that it uses its asset at Hole House Farm to manage its exposure to the gas market as part of its trading activities.

## Facility specification

1.6. EDFE has indicated that the Hill Top Farm gas storage facility will be developed over a number of stages from Q1<sup>3</sup> 2011. The whole facility is expected to be commercially operational from Q4 2016.

1.7. Each of the ten proposed caverns is expected to hold approximately 100GWh of gas with the total for the whole facility being 1,070GWh. There is expected to be some minor variation between individual cavern sizes. EDFE anticipates that the commercial start dates for the ten caverns will be evenly spread over the period Q1 2011 to Q4 2016.

1.8. For the first cavern, the expected deliverability and injection rate is 29GWh/day and 58GWh/day respectively. For the second cavern, expected to be commercially operational from Q4 2011, the injection rate will increase to 116GWh/day whilst the deliverability will remain the same.

1.9. The injection and deliverability rates then increase in stages as new plant is developed. The peak injection rate of 175GWh is expected to be achieved in the second half of 2012. The peak deliverability rate of 160GWh/d is expected to be achieved after the sixth cavern has been developed in the first half of 2014.

1.10. Two further caverns are to be added in 2015 with the last two caverns expected to become commercially operational between Q1 2016 and Q4 2016. Note that this is not expected to further change the peak deliverability or injection rates.

1.11. Following completion of the project, the Hill Top Farm gas storage facility will have the ability to provide a maximum deliverability for approximately six days. Theoretically, while the caverns never tend to cycle fully (i.e. fill and empty), the Hill Top Farm gas storage facility will have the ability to cycle approximately 30 times a year.

1.12. The facility is classified as mid-range<sup>4</sup> according to the length of time it can theoretically deliver gas from its maximum stock at full capacity. However, it is considered to be a relatively small facility within this category.

## Legal Framework

1.13. The required access arrangements for gas storage facilities flow from Article 19 of the Second Gas Directive<sup>5</sup>. Although the Third Gas Directive<sup>6</sup> was adopted on 3

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<sup>3</sup> Note that this is a reference to a calendar year rather than a financial year.

<sup>4</sup> Short, Medium and Long range storage facilities are distinguished according to the length of time during which the facility can theoretically deliver gas from its maximum stock at full capacity: Short Range Storage (SRS) - up to 5 days; Medium Range Storage (MRS) - between 5 and 70 days; Long Range Storage (LRS) - more than 70 days.

<sup>5</sup> Directive 2003/55/EC concerning common rules for the internal gas market, 26 June 2003  
[http://energy.eu/directives/I\\_17620030715en00570078.pdf](http://energy.eu/directives/I_17620030715en00570078.pdf)



September 2009, the provisions relating to storage will not come into effect until March 2011. The provisions of the Third Directive are not expected to materially impact on Ofgem's consideration of this exemption application. Article 19(1) of the Second Gas Directive requires Member States to choose either nTPA or regulated TPA (rTPA) for:

*"... the organisation of access to storage facilities...when technically and/or economically necessary for providing efficient access to the system for the supply of customers".*

1.14. In the GB market the default access regime for storage facilities is nTPA. Under Article 19(3), where a Member State has chosen nTPA then it shall take the necessary measures for natural gas undertakings (industry participants but not final customers) and eligible customers either inside or outside of the interconnected system to:

*"...be able to negotiate access to storage...when technically and/or economically necessary for providing efficient access to the system".*

1.15. In certain circumstances, a storage operator will not be required to offer nTPA at a specific facility. That is, nTPA will not be required to be offered at a facility where access to that facility is not technically and/or economically necessary for providing efficient access to the system for the supply of customers. To provide transparency to the market on when nTPA is required to be offered at a storage facility, the Gas Act 1986 and Petroleum Act 1998 require that an assessment be made and a facility be specifically excluded from the requirement to provide nTPA (i.e. an exemption must be granted by the Authority in such circumstances). The assessment required under the Gas Act and the Petroleum Act is as follows:

*"The Authority shall give an exemption with respect to a facility where it is satisfied that use of the facility by other persons is not necessary for the operation of an economically efficient gas market."*

1.16. Ofgem is required to apply the requirements of domestic legislation in such a manner as to achieve the results envisaged by the relevant European legislation. Accordingly, we will consider the issues of technical and economic necessity when granting an exemption under the Gas Act or Petroleum Act.

1.17. We consider that the requirements of the Gas Act and the Petroleum Act for when a minor facility exemption can be granted do not require additional analysis to that which we propose to undertake to consider when nTPA is technically and/or economically necessary.

1.18. The Third Gas Directive and Regulation will enter into force on 3 September 2009. Member States will then have 18 months to implement the provisions of the Directive (March 2011) and 30 months to implement the provisions relating to

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<sup>6</sup> Directive 2009/73/EC concerning common rules for the internal gas market.

unbundling (March 2012). It is important to note that the access arrangements for storage operators under the Third Gas Directive will not significantly change although Member States will be required to publish criteria according to which it may be determined which access regime (either or both of nTPA or rTPA) shall be applicable to storage facilities. However, the new Gas Regulation introduces a number of additional requirements for storage operators, e.g. on the types of services offered and transparency.

## Ofgem review

1.19. On 16 June 2009, Ofgem published an open letter relating to exemptions granted under the Gas Act or the Petroleum Act to minor facilities, i.e. exemptions granted on the basis that Article 19 of the Second Gas Directive does not apply as nTPA is not economically and/or technically necessary for providing access to the system for the supply of customers (referred to as "minor facilities exemptions")<sup>7</sup>.

1.20. The letter followed an internal review aimed at ensuring that our approach to exemptions continues to be appropriate going forward. The outcome of this review is that Ofgem will continue to grant minor facility exemptions where the Article 19 requirements do not apply.

1.21. As part of our review we also considered the criteria that we would use to determine whether an exemption should be granted. Our open letter provides guidance to the market on the criteria that we generally expect to use when considering applications from storage operators for minor facility exemptions.

## Exemption Application

1.22. EDFE has requested an exemption under section 19A(6)(a) of the Gas Act for the Hill Top Farm gas storage facility. If Ofgem decides to grant an exemption, then it will apply unless and until it is revoked in accordance with its conditions. In particular, the Authority may revoke an exemption where it considers that nTPA at the facility is economically and/or technically necessary for efficient access to the system for the supply of customers; the exemption may also be revoked by the Authority with the consent of the facility owner. Ofgem will continue to monitor the market to understand the effect of the exemption and consider issues if and when they arise.

## Structure and approach

1.23. Chapter 2 presents Ofgem's assessment of whether nTPA is technically necessary for providing efficient access to the system for the supply of customers in respect of the Hill Top Farm gas storage facility. Chapter 3 then presents Ofgem's assessment of whether nTPA is economically necessary for providing efficient access

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<sup>7</sup> Gas Storage Minor Facilities Exemptions Open Letter, Ofgem, June 2009 <http://www.ofgem.gov.uk>

to the system for the supply of customers. The final chapter presents Ofgem's initial conclusions on this application and the conditions supporting the Authority's initial view that an exemption should be granted. Appendix 3 sets out a Draft Exemption Order.

## 2. Assessment of “technically necessary”

### Chapter summary

This chapter sets out our assessment of whether nTPA at the proposed Hill Top Farm gas storage facility is technically necessary for providing efficient access to the system for the supply of customers. We conclude that nTPA is not technically necessary at the Hill Top Farm gas storage facility given current and anticipated market conditions.

**Question 1:** Do you agree with Ofgem's approach to considering whether nTPA is technically necessary for providing access to the system for the supply of customers? If not, please explain why.

**Question 2:** Do you agree with our overall assessment that nTPA at the Hill Top Farm gas storage facility is not technically necessary for providing efficient access to the system for the supply of customers? If not, please explain why.

### Technically necessary

2.1. As set out in the June 2009 Open Letter, when considering an application for an exemption from the nTPA requirements for minor gas storage facilities, Ofgem will consider, among other things, whether nTPA is technically necessary for providing efficient access to the system for the supply of customers.

2.2. Whilst the market may have a technical requirement for flexible gas sources to meet fluctuations in demand, it clearly does not follow that nTPA for either storage generally or at a specific gas storage facility will be “technically necessary”. On the contrary, at all but a few very large or strategically important gas storage facilities we consider it unlikely that nTPA could potentially be considered to be technically necessary in the GB market. However, we recognise that in a dynamic market this position may be subject to change.

2.3. In considering EDFE's application for a minor facility exemption, we have considered the availability of capacity to supply gas from various sources, including from exempt storage facilities, to meet forecast demand. We have then considered the role of the proposed storage facility and the impact of any exemption in meeting this demand.

#### ***EDFE's view***

2.4. EDFE did not provide a view on whether there are circumstances where it would be technically necessary to require nTPA to be offered at the Hill Top Farm gas storage facility.

***Ofgem's view***

2.5. We do not consider there to be one single test, applicable in all cases, to demonstrate whether an exemption should be granted on the basis of technical necessity. Rather, in forming our view, we expect to consider a number of possible tests, the most appropriate of which will depend on the specific facts of the case being considered.

2.6. In this instance, we have undertaken demand scenario analysis to assess whether the Hill Top Farm gas storage facility is technically necessary for providing efficient access to the system for the supply of customers. This analysis helps us to understand the extent to which demand can or cannot be met without the presence of the Hill Top Farm gas storage facility, i.e. the extent to which the Hill Top Farm gas storage facility is necessary in meeting forecast daily demand across a winter period.

2.7. Our analysis is undertaken in the context of two winter periods covering 1 October to 31 March:

- Winter 2012/13 – when the Hill Top Farm gas storage facility is expected to approach its full injection rate but deliverability is not yet at full capability<sup>8</sup>; and
- Winter 2016/17 – when the Hill Top Farm gas storage facility is expected to reach its full deliverability and capacity size.

2.8. In the context of these two winter periods, we have calculated daily demand based on a combination of daily demand in winter 2008/09 and the annual demand growth projections in National Grid Gas's (NGG's) Ten Year Statement (TYS)<sup>9,10</sup>. We have considered two possible demand scenarios:

- High demand scenario – uses the TYS assumptions for both peak and overall demand growth. The overall average annual demand growth rate is approximately 0.5% to 2012/13 and then 1% to 2016/17<sup>11</sup>; and
- Low demand scenario – assumes zero annual demand growth<sup>12</sup>.

2.9. We have then compared, on a daily basis, the forecast gas demand on each day with our assessment of the quantity of gas available as base load supply, swing supply and at storage facilities, over these periods. Our model also takes into

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<sup>8</sup> For this scenario we have used an injection rate of 175GWh/day and deliverability at 79GWh/day. The scenario assumed that three caverns would be available with an approximate capacity of 300GWh.

<sup>9</sup> See: [www.nationalgrid.com/uk/Gas/TYS/](http://www.nationalgrid.com/uk/Gas/TYS/)

<sup>10</sup> We have not analysed all possible demand scenarios going forward, but rather have assessed whether the Hill Top Farm gas storage facility is technically necessary based on data from NGG's TYS to reflect normal market conditions. We recognise that under alternative demand conditions, the conclusions from our analysis may be subject to change.

<sup>11</sup> The 2008 TYS assumes average annual demand growth of approximately 1%, and average annual peak demand growth of 1.2%, over the ten year period. However, both the demand growth figures vary from year to year.

<sup>12</sup> The low demand growth scenario therefore assumes that demand in winter 2012/13 and 2016/17 is the equivalent to demand experienced in winter 2008/09.

account the possibility of injections and withdrawals. For example, for any given day, when demand for gas is less than the base load supply available, injections into storage can be made until such point as all storage facilities are full or there are no base load supplies remaining. If demand is more than base load supplies, but less than the sum of base load supplies and swing then no injections (or withdrawals) take place. Should demand exceed the sum of base load and swing, then withdrawals are made from storage facilities until such point as daily demand is met or the facilities have no gas remaining in store<sup>13</sup>.

2.10. In order to examine the concept of technical necessity, we have then sought to understand the level of supply loss that would be required in order for the Hill Top Farm gas storage facility to become “necessary” in at least one period i.e. one day. For the purpose of our modelling, the supply losses are assumed to be permanent across the winter period, i.e. effective from 1 October through to 31 March for the year in question, and affect base load supply, i.e. affect the ability to inject into storage.

2.11. Our results are set out in Table 1 below:

**Table 1: Supply loss required for Hill Top Farm gas storage facility to become necessary in one period**

Year	High demand scenario (mcm/day)	Low demand scenario (mcm/day)
2012/13	64	68
2016/17	110	136

### ***Conclusion***

2.12. These results imply that under normal market conditions, it would take a significant, permanent loss of supply across the entire winter period in order for the Hill Top Farm gas storage facility to become necessary in meeting the forecast daily demand over an average winter, in at least one period<sup>14</sup>. Based on our analysis, we therefore consider that the market is unlikely to have a technical requirement for the physical availability of gas at Hill Top Farm gas storage facility.

2.13. Lending support to this view is our consideration of GB’s market design. Various features of the GB market are designed to encourage sources of gas to be made available in the short term and to encourage investment to be made to meet forecast peak and winter demand, and the demand for flexibility. Therefore, even if an exemption was granted we would expect the facility to flow gas when market conditions dictate. These market design features include: diversity in the sources and ownership of gas supply; NGG’s System Operator role as residual balancer; and

<sup>13</sup> When supply does not meet demand then we have assumed that all facilities with gas remaining in store will be required and no one facility is considered to be necessary on its own.

<sup>14</sup> As with all models, our analysis is heavily reliant upon the underlying assumptions providing a good proxy for reality. As we note in paragraph 3.13 below, carrying out analysis which is by nature forward looking is inherently difficult. However, by using scenario analysis, this concern is to some extent mitigated.

price signals to the market to make gas available through the imbalance charge mechanism.

2.14. This chapter has set out our assessment of whether nTPA at the proposed Hill Top Farm gas storage facility is technically necessary for providing efficient access to the system for the supply of customers. Based on the results of our analysis, we conclude that nTPA at the Hill Top Farm gas storage facility is not technically necessary for providing efficient access to the system for the supply of customers.

### 3. Assessment of “economically necessary”

#### Chapter summary

This chapter sets out our assessment of whether nTPA at the proposed Hill Top Farm gas storage facility is economically necessary for providing efficient access to the system for the supply of customers. Our assessment includes consideration of the relevant market scenarios, as well as our approach to existing facilities which are subject to TPA. The analysis concludes that nTPA is not economically necessary at the Hill Top Farm gas storage facility given current and anticipated market conditions.

**Question 3:** Do you consider that our market scenario analysis is appropriate? If not, please explain why.

**Question 4:** In particular, do you consider our three potential market definition scenarios to be appropriate? If not, please explain why.

**Question 5:** Do you agree with Ofgem's approach to considering whether nTPA is economically necessary for providing efficient access to the system for the supply of customers? If not, please explain why.

**Question 6:** Do you agree with our overall assessment that nTPA at the Hill Top Farm gas storage facility is not economically necessary for providing efficient access to the system for the supply of customers? If not, please explain why.

#### Economically necessary

3.1. In considering EDFE's application for a minor facility exemption, we have analysed whether it is economically necessary to offer nTPA at the Hill Top Farm gas storage facility to provide efficient access to the system for the supply of customers. In doing this, we have examined whether the exemption is likely to distort the market and provide a materially worse outcome than if the exemption is not granted.

3.2. As set out in the June 2009 Open Letter, the principal ways through which such distortion may arise is through market power or weak competition in the relevant market or markets for flexible gas. As with our consideration of technical necessity, the relevant counterfactual is that the exemption is not granted (rather than the facility not having been built at all).

3.3. In modelling the impact of the exemption we generally expect to consider the facility as if all of the storage space and deliverability was assigned to the storage operator (given that the safeguards provided by nTPA are proposed to be removed). However, we recognise that in some cases, a storage operator will provide access to



other market participants and that the specific facts of each case will need to be considered.

3.4. As noted previously, we have relied upon no single test to demonstrate whether an exemption should be granted. Instead, we have examined a series of indicators to help us come to a view on whether an exemption should be granted for the Hill Top Farm gas storage facility.

3.5. First, we consider issues around defining a relevant market. We set out EDFE's view and then describe the market scenarios we have considered as a proxy for the relevant market.

3.6. Second, we consider our first test area, market power. Four potential indicators of market power are discussed in turn: market shares; winter period market power; market concentration; and vertically linked markets. In each instance, we set out EDFE's view before discussing our own analysis.

3.7. Third, we consider our second test area, market signals. Again, we set out EDFE's view before discussing our own view of EDFE's proposed use of the facility as well as the transparency, anti-hoarding and secondary capacity allocation arrangements.

3.8. Finally, based on the analysis set out in this chapter, we set out our view on whether nTPA at the Hill Top Farm gas storage facility is economically necessary for providing efficient access to the system for the supply of customers.

3.9. Note that, unless specifically stated, our analysis includes both companies (EDFE and EDFT) within EDF SA that operate in the GB market. We have therefore used the term 'EDF SA' for the purpose of Ofgem's analysis in this chapter. The analysis presented by EDFE in its exemption application also relates to both EDFE and EDFT. EDFE has confirmed that EDF SA does not have access to other sources of gas flexibility in the GB gas market outside of these two companies.

## **Relevant market – scenario analysis**

3.10. Defining a relevant market enables the calculation of descriptive statistics such as market shares and the Herfindahl-Hirschman Index (HHI)<sup>15</sup>. In order for a market definition to be coherent it should capture the main competitive constraints on the facility that is the subject of the study.

### ***EDFE's view***

3.11. In defining the relevant market, EDFE refers to Ofgem's final decision on the application made by StatoilHydro in relation to its share of the Aldbrough storage

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<sup>15</sup> HHIs are a measure of the size of a firm in relation to the size of an industry. They are used as an indicator of the amount of competition among them.

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facility ("the Statoil Decision")<sup>16</sup>. In that decision, Ofgem referred to the Competition Commission's assessment of the Centrica Rough merger case in 2003 in which the gas flexibility market within GB was used as the relevant market<sup>17</sup>. EDFE has elected to use this definition in its application.

3.12. Further, based on Ofgem's assertion in the Statoil Decision that, theoretically, numerous sources of flexibility in the gas market could be substituted for MRS, EDFE concludes that there are three separate potential market definitions:

- Market Definition 1: MRS + LRS + IUK + Flexible beach + LNG imports
- Market Definition 2: MRS + LRS + IUK + Flexible beach + LNG imports + Flexible element of Langeled (200GWh/day)
- Market Definition 3: MRS + LRS + IUK + Flexible beach + LNG imports+ Flexible element of Langeled (600GWh/day)<sup>18</sup>

### ***Ofgem's view***

3.13. The composition of the gas supply market continues to evolve as domestic gas production from the UKCS declines. This means that carrying out analysis, which is by nature forward looking, is difficult. From a market definition point of view this is problematic for a number of reasons, for example:

- Analysis of the behaviour of existing facilities may not be indicative of how a facility will be operated in the future;
- The behaviour of a particular facility may not be indicative of how other facilities of the same type will be operated;
- Future demand for flexibility is uncertain; and
- There are a significant number of proposed new storage and LNG projects, corresponding to more than peak GB demand. It is uncertain to what extent all of these will be built.

3.14. Taken together, this means that finding a single market definition for a gas storage facility is difficult.

3.15. Given the difficulties in establishing a single market definition, our assessment of whether nTPA at the Hill Top Farm gas storage facility is economically necessary for providing efficient access to the system for the supply of customers, has been undertaken in the context of a number of possible scenarios. Each market scenario represents a possible market definition. Where the results from our analysis are

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<sup>16</sup> See: <http://www.ofgem.gov.uk/Markets/WhlMkts/CompanEff/TPAccess/Pages/TPAccess.aspx>

<sup>17</sup> Centrica plc and Dynergy Storage Ltd and Dynergy Onshore Processing UK Ltd: A report on the merger situation. See: [http://www.competition-commission.org.uk/rep\\_pub/reports/2003/480centrica.htm](http://www.competition-commission.org.uk/rep_pub/reports/2003/480centrica.htm)

<sup>18</sup> In the Statoil Decision, Ofgem did not consider that the total daily deliverability of Langeled should be included in the relevant market. This is because, while Langeled could not be considered to provide flexibility in the same region as MRS, we had observed that Langeled showed some flexibility, that is, by increasing the volume of supply in response to the flow rate on peak demand days. To take into account the pattern of flexibility at Langeled, we modelled two different scenarios, one where a relatively low proportion is considered to be flexible (200GWh/day) and the other where a relatively high proportion is considered to be flexible (600GWh/day).

relatively stable across the different scenarios, we have taken some certainty that the conclusions are robust; where any results diverge significantly across the different scenarios, we have placed more emphasis on the likely impact of an exemption on effective market signals and economic use of storage capacity.

### *Sources of flexibility*

3.16. The characteristics of EDFE's Hill Top Farm gas storage facility were described in Chapter 1. These characteristics indicate that the facility constitutes a MRS facility. MRS has been defined for the purposes of our market scenarios analysis as storage facilities with the capability to deliver gas from its maximum stock at full capacity for between five and 70 days. Such facilities tend to be run down in winter and filled up in summer. The other MRS facilities are likely to be the closest substitutes to the proposed EDFE Hill Top Farm gas storage facility. Unlike Long Range Storage (LRS) or Short Range Storage (SRS) (discussed below), the ability to cycle gas in MRS facilities is more common, although this depends on the specific characteristics of the facility in question<sup>19</sup>.

3.17. There are other sources of gas which have flexibility characteristics. These include the following:

- Short Range Storage (SRS): storage facilities with the capability to deliver gas from the maximum stock at full capacity for less than five days. The SRS in GB is able to provide a high rate of deliverability, but as these facilities are LNG storage facilities with very low injection rate, this severely reduces its ability to cycle gas and therefore its commercial capabilities<sup>20</sup>. These characteristics tend to mean that SRS is only likely to be used on the highest demand days of a year.
- Long Range Storage (LRS): storage facilities with the capability to deliver gas from their maximum stock at full capacity for a duration of more than two months. Rough is the only facility of this type in GB. While these facilities are able to cycle gas, they tend to achieve most of their value by being filled up in the summer and emptied in the winter.
- Interconnector UK (IUK): the Belgian-UK interconnector, which flows gas to and from Belgium. Over winter 2008/09, IUK was dominated by exports to the continent which appeared to be driven primarily by conditions and events on the continent. During the same period, imports to GB appeared to be more responsive to prices, though the conditions on the continent were still a factor.
- Balgzand Bacton Line (BBL): the Dutch-UK interconnector, flowing towards the UK only. Since coming on-line in November 2006, BBL has run essentially base

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<sup>19</sup> Storage space can be cycled more than once on an annual basis, meaning that after gas has been withdrawn from store, more gas can be injected in and again withdrawn, allowing customers to increase the value achieved from their capacity bookings.

<sup>20</sup> For example, some SRS facilities can deliver up to 200GWh/day for five days but take over 400 days to refill.

load. However, this is likely to have the ability to behave more flexibly in the future<sup>21</sup>.

- LNG importation terminals: terminals offloading LNG vessels. During winter 2008/09, these were limited to the Isle of Grain terminal Phase 1 and 2. Cargoes arriving at these facilities were driven by demand conditions in international markets. With the commissioning of South Hook and Dragon, GB LNG importation capacity has increased significantly. We expect the use of these facilities to continue to be dictated by the interaction between GB and international prices. Supply limitation may also limit the amount of LNG economically available at any time.
- UK Continental Shelf (UKCS or Beach) production: domestic offshore supply. UKCS production is essentially base load. However, some Southern North Sea and Irish Sea fields such as Sean and Morecambe offer a more flexible supply. Only limited information is available to us regarding the scale of this flexibility. In light of this we have used Morecambe and Sean deliverability as a conservative proxy. We have referred to this in the document as "flexible beach". It is also worth noting that these supplies are currently in decline so that the amount of beach flexibility available in future is likely to decrease.
- Pipeline imports: The Langeled and Vesterled pipelines, and the Tampen link, import gas from Norway. Analysis from 2008/09 indicates that these pipelines seem to run essentially base load, and variations in supply volumes have not been coupled with price, but rather are a result of continental nominations and available gas. However, we may see pipeline imports behave differently in the future, as the UKCS declines further and market arrangements on the continent develop further.
- Demand-side response: end-users respond to high demand by reducing consumption, freeing supply for other users. Demand-side response, particularly by the power sector, seems very flexible in response to high prices. We have not included demand side response in our market scenarios and therefore consider our analysis to be conservative in terms of the potential substitutes given its focus solely on the supply side. Ofgem may give further consideration to the inclusion of demand-side response where the granting of a minor facility exemption is marginal.

### *Market Definitions*

3.18. Having carefully considered the past behaviour of the gas supply sources, as well as their characteristics, we consider that three potential market definition scenarios may be appropriate. These are:

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<sup>21</sup> This may be impacted by two factors. BBL is in the process of developing a non-physical reverse flow product, which could reduce the level of imports. In addition, BBL's TPA exemption for flows to GB is time bound and is due to be partially removed in 2016 and fully removed from 2022. Capacity that is not covered by an exemption will operate under a regulated TPA approach and will be available to the market.

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1. Scenario 2: MRS + LRS + 43% IUK + Flexible Beach
2. Scenario 3: MRS + LRS + 43% IUK + Flexible Beach + 50% LNG
3. Scenario 4: MRS + LRS + 43% IUK + Flexible Beach + LNG

3.19. The most important difference compared to the previous Aldbrough decisions is that we consider that the supplies from Norway, while clearly observable as *variable* on a day-to-day basis, should not be considered as *flexible* in the sense of being responsive to demand or price signals in the UK. The variability in these supplies appear to be determined by interactions between restrictions such as the flexible clauses in continental contracts and the terms of the Norwegian production permits as well as external factors such as production disruptions.

3.20. We further consider that given the recent completion of significant LNG importation infrastructure it is appropriate to consider alternative scenarios for the role of LNG terminals. We have therefore considered scenarios where 0%, 50% and 100% of LNG importation capacity is included in the definition of the relevant market.<sup>22</sup> We have further taken the view that only a proportion (325GWh/d)<sup>23</sup> of the IUK interconnector should be included in the flexibility market.

3.21. We also continue to consider that the BBL pipeline provides predominantly base load supplies and further, that demand side response and short range LNG storage, while providing a degree of flexibility will only provide a very weak (if any) competitive constraint on MRS facilities.

## Market Power

3.22. The first area we have examined relates to whether the exemption appreciably impacts on competition. For example, a party which obtained a high proportion of the market for flexible gas might be able to raise barriers to entry to potential rivals or foreclose access to services with the effect of an appreciable increase in the cost of accessing the system.

3.23. There is no single indicator that is likely to infer potential market power therefore we have considered the following factors which are set out in turn, below.

- Market share analysis,
- Winter period market power,
- Market concentration, and
- Vertically linked markets.

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<sup>22</sup> This reflects a level of uncertainty associated with LNG flows. For example, the recent commissioning of significant new infrastructure means that we do not have sufficiently robust observable data to base more specific assumptions on. In addition, LNG flows are also, arguably, more exposed to global exogenous influences than other sources of supply and therefore their scope to act as a flexible source of supply in the GB market, as opposed to other geographical markets, may be limited.

<sup>23</sup> This figure is based on a maximum IUK import level of 30mcm/d (in the context of approximately 70mcm/d total capacity) based on NGG's preliminary assessment of maximum winter outlook capacities for 2009/10.

**(a) Market share analysis**

3.24. This test involves an examination of the market share (deliverability and space) of EDFE under our three flexibility market scenarios.

*Treatment of TPA facilities*

3.25. Under all three market scenarios proposed by Ofgem, a proportion of the flexibility market (i.e. Hornsea and Rough ("TPA facilities")) are subject to TPA and as such are already required to offer access to capacity to all market participants. Assessment of this exemption is concerned with the market position of EDFE and whether it could be considered to have an insignificant competitive effect.

3.26. The provisions of TPA remedies (imposed by either virtue of section 19B of the Gas Act or otherwise) are specifically designed to prevent the exercise of market power. Consequently, there is an argument for treating TPA capacity differently from unregulated sources of flexible supply within our analysis.

3.27. That said, once capacity is awarded under TPA rules, capacity holders may still be able to exert some degree of market power, even if this is over the short term. This may, for example, depend on the nature of the capacity allocation arrangements in place. However, we also note that this market power can be further limited by anti-hoarding arrangements. For completeness, and given the potential for market power, we have included scenarios where capacity awarded under TPA has been both included and excluded in our analysis.

***EDFE's view***

3.28. In carrying out its market share analysis, EDFE refers to three separate potential market definitions. These were set out in section 3.12 above. EDFE has also considered the impacts of including and excluding its share of capacity at other facilities that have TPA arrangements. In doing so, it notes that:

*"...it is sensible to suppose that use it or lose it rules (UIOLI) in both LNG import facilities and IUK will prevent both capacity hoarding and the exercise of market power..."*

3.29. Further, EDFE indicates that it has incorporated all contracted sources of potential flexibility within the GB gas market available to the relevant companies, EDFE and EDFT. It has also conducted its competition analysis in the context of Gas Years 2010/11 and 2011/12, which EDFE believes provides the most severe case for its competition analysis as this is when EDFE's and EDFT's share of the flexibility market is expected to peak. Note that it is assumed that the relevant capacity at the EDFE Hill Top Farm gas storage facility is allocated to EDFE.

3.30. A summary of the results from EDFE's market share analysis is summarised in Table 2 below. Note that we have used ranges for confidentiality purposes.

**Table 2 – Market Shares of EDFE and EDFT under Flexibility Market Definitions (deliverability)**

Market Definitions	2010/11		2011/12	
	EDF TPA included	EDF TPA excluded	EDF TPA included	EDF TPA excluded
MRS <sup>24</sup> + LRS + IUK <sup>25</sup> + Flexible beach <sup>26</sup> + LNG imports <sup>27</sup>	0-5%	0-5%	5-10%	5-10%
MRS + LRS + IUK + Flexible beach + LNG imports + Flexible element of Langed (200GWh/day)	0-5%	0-5%	5-10%	5-10%
MRS + LRS + IUK + Flexible beach + LNG imports + Flexible element of Langed (600GWh/day)	0-5%	0-5%	5-10%	5-10%

3.31. According to EDFE's figures, under all six market definition scenario's, EDFE and EDFT have a combined market share of less than 5% in 2010/11, and a combined market share of between 5-10% in 2011/12.

#### ***Ofgem's view***

3.32. We have considered EDF SA's market share in the Gas Years 2012 and 2016 since the Hill Top Farm gas storage facility is forecast to become fully operational over this period.

3.33. As noted above, we have incorporated all contracted sources of potential flexibility within the GB gas market available to companies within EDF SA (confirmed as being EDFE and EDFT).

3.34. As noted above, to present a full and complete analysis of market shares held by EDF SA under our various market scenarios, we have run our analysis under two TPA scenarios. These aim to capture different approaches to the treatment of facilities that are subject to TPA obligations, namely Rough and Hornsea:

- No capacity at TPA facilities to be included in the applicant's market share.
- Applicant's current and potential<sup>28</sup> holdings at TPA facilities to be included in the applicant's market share;

3.35. The results of our market share analysis are set out in Tables 3 and 4 below:

<sup>24</sup> MRS total market derived from National Grid Base Case projection for relevant year in NGG's TYS 2008.

<sup>25</sup> Limited IUK flexibility (433GWh/d) has been assumed rather than capacity of 755GWh/d.

<sup>26</sup> Sean and Morecambe have been used as a proxy for Flexible Beach.

<sup>27</sup> LNG total market derived from National Grid Base Case projection for relevant year in NGG's TYS 2008. EDFE's and EDFT's share of the LNG import capacity has been reduced by the same factor.

<sup>28</sup> By including potential holdings at TPA facilities in the applicant's market share we are able to take account of a situation where the applicant may, from time to time, hold short term capacity in TPA facilities.

**Table 3 – Market shares of EDF SA including the Hill Top Farm gas storage facility (deliverability)**

Ofgem market definition scenarios	2012		2016	
	EDF (no TPA holdings)	EDF + TPA holdings	EDF (no TPA holdings)	EDF + TPA holdings
MRS <sup>29</sup> + LRS <sup>30</sup> + 43% IUK + Flexible Beach <sup>31</sup>	5-10%	5-10%	5-10%	5-10%
MRS + LRS + 43% IUK + Flexible Beach + 50% LNG	0-5%	5-10%	5-10%	5-10%
MRS + LRS + 43% IUK + Flexible Beach + LNG	0-5%	0-5%	5-10%	5-10%

**Table 4 - Market shares of EDF SA including the Hill Top Farm gas storage facility (space<sup>32</sup>)**

Ofgem market definition scenario	2012		2016	
	EDF (no TPA holdings)	EDF + TPA holdings	EDF (no TPA holdings)	EDF + TPA holdings
MRS + LRS	0-5%	0-5%	0-5%	0-5%

### **Conclusion**

3.36. The analysis shows that the capacity at the Hill Top Farm gas storage facility allows EDF SA to control less than 10% of storage deliverability under all three market scenarios when any holdings at TPA facilities are excluded, across both Gas Years 2012 and 2016. The results are similar when the holdings at TPA facilities are included.

3.37. Further, the analysis also shows that the capacity at the Hill Top Farm gas storage facility allows EDF SA to control no more than 5% of storage space<sup>33</sup>.

### **(b) Winter period market power**

3.38. This test reviews the market's ability to manage without the presence of the capacity holders at the Hill Top Farm gas storage facility, e.g. over the winter period when demand is likely to be higher, and capacity holders have the potential ability to take advantage of a temporary market power position.

<sup>29</sup> For 2012, MRS includes Hornsea, Hatfield Moor, Humbly Grove, Hole House Farm, Caythorpe, Holford, SSEHL Aldbrough and STUK Aldbrough. For 2016, in addition to the above, MRS includes Bains, Baird, Stublach and Portland.

<sup>30</sup> For 2016, LRS includes Rough and Hewett.

<sup>31</sup> The UKCS, including its flexibility, is declining. In our Flexible Beach definition we are including an assessment based on Sean and Morecambe, as well as information provided to us on a confidential basis by EDFE. For 2012 this assessment indicates 288 GWh/d and for 2016, 256 GWh/d.

<sup>32</sup> It is not possible to provide comparators to storage space for other sources of flexible supply in our market definitions.

<sup>33</sup> This is based on storage space at all MRS and LRS facilities as described in footnote 31.



***EDFE's view***

3.39. EDFE did not provide a view on the impact of an exemption on winter period market power.

***Ofgem's view***

3.40. We have used winter period market power analysis to assess the potential market power of EDF SA in supplying flexible gas. Where EDF SA is key in meeting the relevant demand, it is feasible that it could take advantage of temporary market power by withholding gas from the system when the market needs it, thereby influencing the price at which it can sell the gas on. We note that this test does not seek to determine whether market players other than EDF SA could potentially take advantage of temporary market power by withholding gas. However, we consider that it is still a valid indicator in relation to the exemption application.

3.41. We have assessed the potential winter period market power of EDF SA based on a number of scenarios for the winters 2012/13 and 2016/17. The analysis simulates the GB supply<sup>34</sup>, demand<sup>35</sup> and storage situation over the winter period (October - March).

3.42. The simulation assesses the potential for temporary market power by comparing the ability of GB gas supplies to fulfil daily demand with and without the supplies controlled by EDF SA.

***Base scenario***

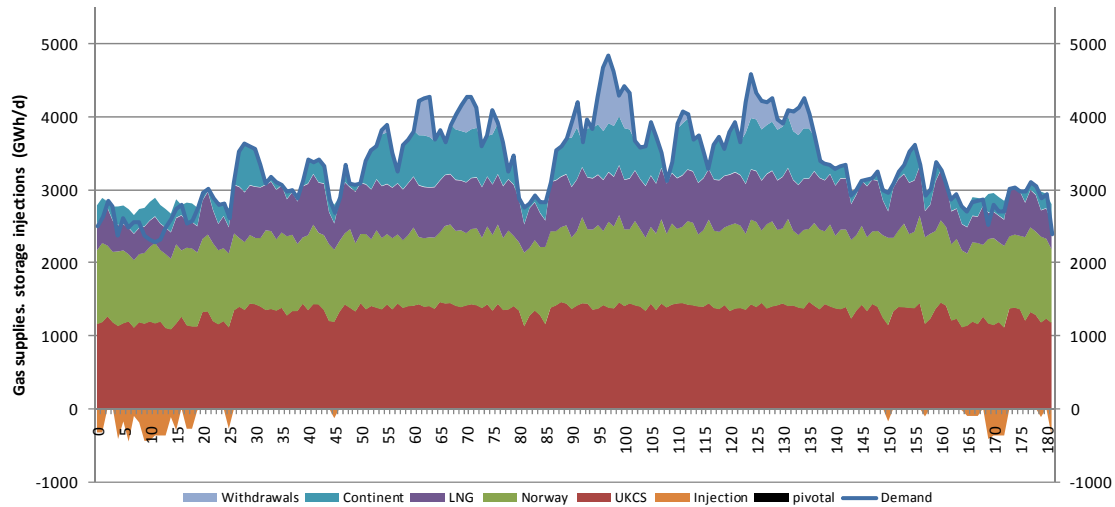
3.43. The base scenario assumes that UKCS production and flexibility and imports from Norway, LNG and the continent develop in line with the projections in NGG's TYS. The scenario further assumes that the Holford and Caythorpe facilities are operational by winter 2012/13. For 2016/17 it assumes that in addition to the above the Stublach, Baird, Bains, Portland and Hewett facilities are operational.

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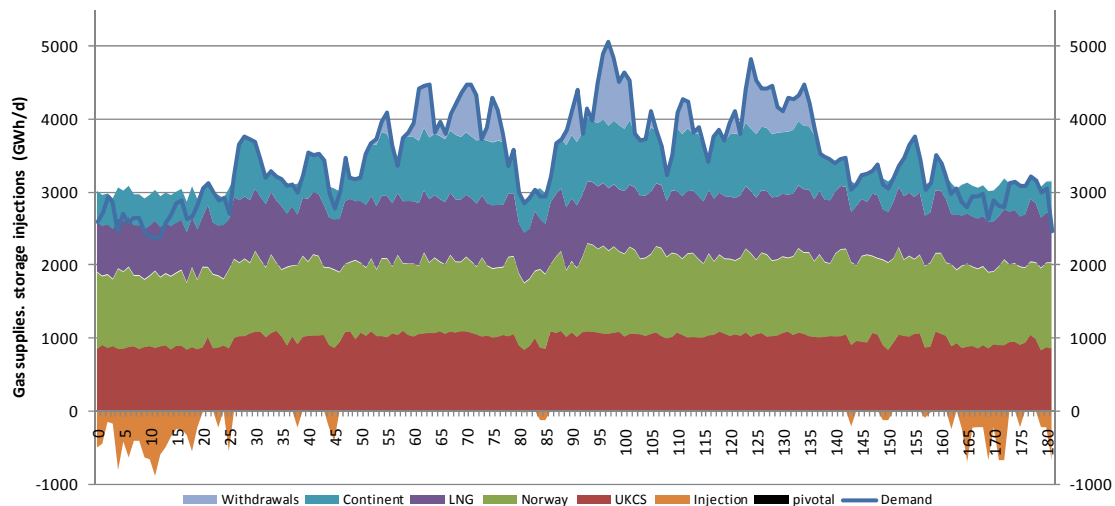
<sup>34</sup> The supply scenario has been derived from NGG's 2008 TYS.

<sup>35</sup> The model uses winter period demand profile based on outturn winter 2008/9 demand. The demand profile has been modified to remove the element of demand derived from storage injections (endogenous to the model) and interconnector exports to the continent. Demand has further been increased based on NGG's 2008 TYS assumptions of growth in peak and average gas demand.

**Figure 1: Base scenario simulation of gas supplies for winter 2012/13**



**Figure 2: Base scenario simulation of gas supplies for winter 2016/17**



3.44. The gas supplies in the base case scenario are illustrated in Figures 1 and 2. Our analysis indicates that under this scenario EDF SA will not be pivotal on any winter day in either 2012/13 or 2016/17<sup>36</sup>. It is therefore unlikely that EDF SA would have market power in this scenario.

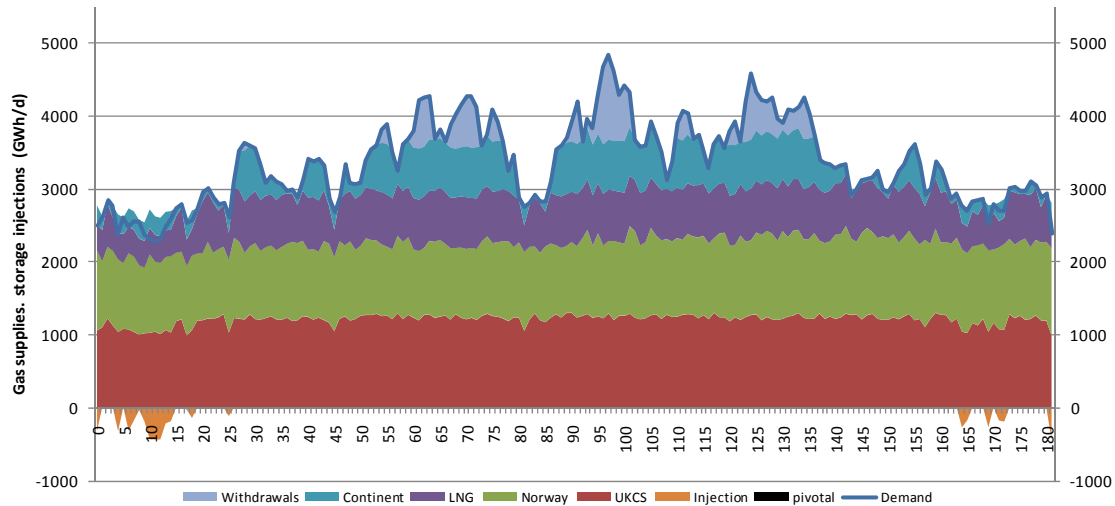
*Stress test Scenario 1*

3.45. The first stress test scenario simulates a situation where UKCS supplies decline faster than expected. It does this by increasing the average annual rate of decline of UKCS production and flexibility by 2%. This has the effect of reducing the availability

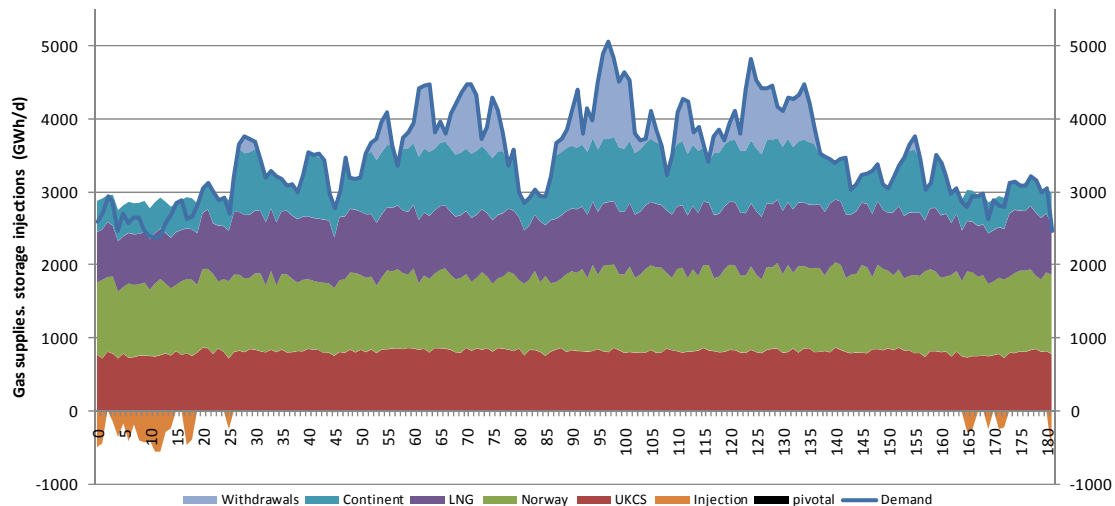
<sup>36</sup> Note that, if EDF SA was to be pivotal on a given day then this would be diagrammatically represented on the graph by a black line for that particular day.

of the relatively reliable UKCS supplies by around an extra 200GWh/d. The other supply assumptions in this scenario are held constant.

**Figure 3: Stress test scenario 1 simulation of gas supplies for winter 2012/13**



**Figure 4: Stress test scenario 1 simulation of gas supplies for winter 2016/17**

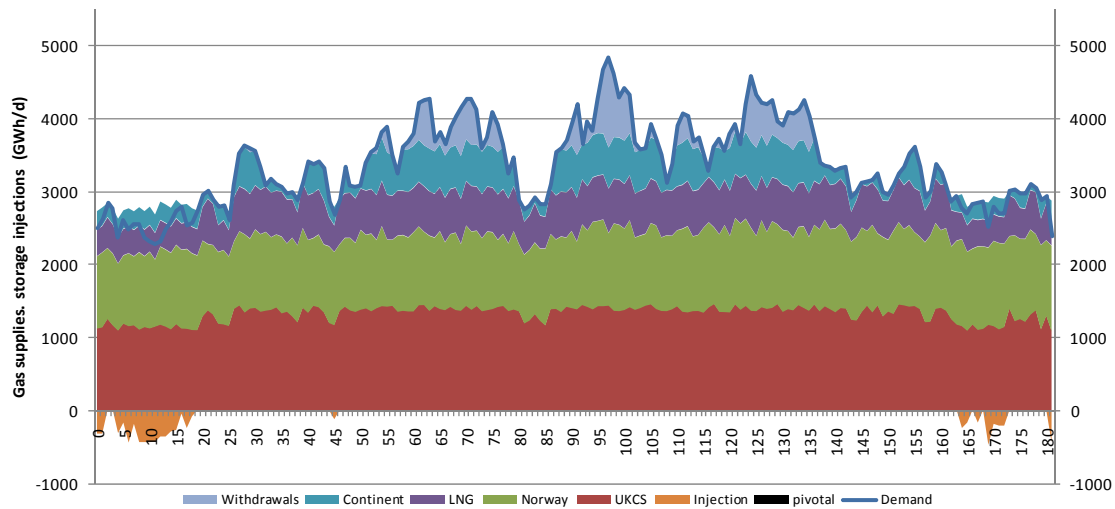


3.46. Figures 3 and 4 illustrate the winter period supply situations in stress test scenario 1. The scenario increases the relative importance of storage by removing both some of the 'low merit' UKCS capacity, but also a proportion of flexible beach. Our analysis indicates that under this scenario EDF SA will not be pivotal on any winter day in stress test scenario 1.

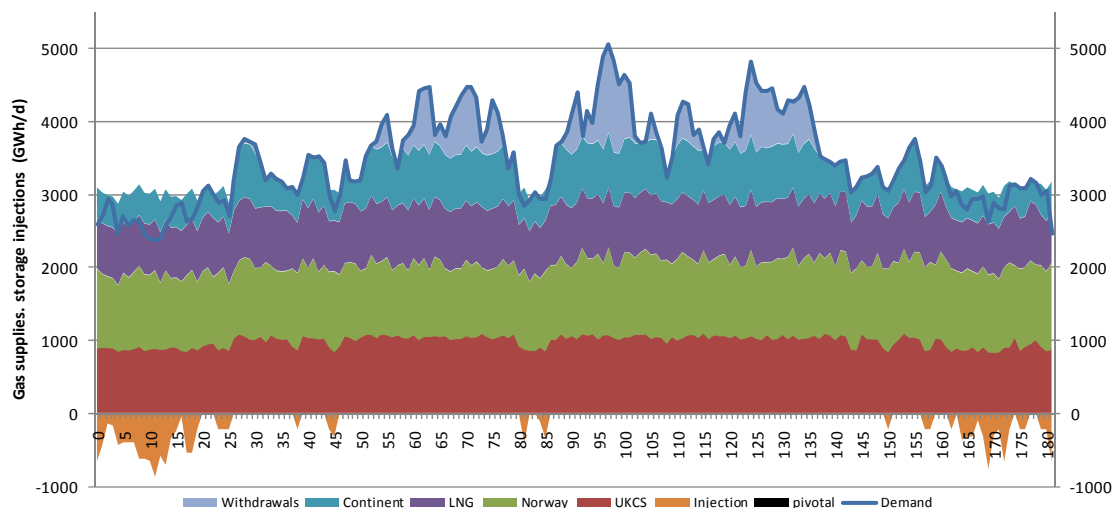
*Stress test scenario 2*

3.47. The second stress test scenario simulates a scenario where the cost of access to flexible supply from the continent and LNG imports are higher than the base scenario. This scenario retains the UKCS decline rate of the base test, but excludes a proportion of supplies from the continent and LNG imports. This scenario also removes the three remaining LNG storage facilities from the simulations as these are likely to be a much weaker competitive constraint on a facility like the EDFE Hill Top Farm gas storage facility.

**Figure 5: Stress test scenario 2 simulation of gas supplies for winter 2012/13**



**Figure 6: Stress test scenario 2 simulation of gas supplies for winter 2016/17**



3.48. Figures 5 and 6 illustrate stress test scenario 2. The scenario has the effect of reducing both the supply of alternative forms of flexibility and the availability to the

very top merit order gas available from the LNG storage facilities. This scenario indicates that EDF SA would not be pivotal in this scenario either.

### ***Conclusion***

3.49. Our analysis in all three cases indicates that EDF SA is unlikely to be pivotal on any winter day. We therefore consider it unlikely that EDF SA could take advantage of any temporary market power by withholding gas when the market needs it, in order to influence the price at which it can sell the gas on.

### **(c) Market concentration**

3.50. HHIs and the degree of change are commonly used to assess concentration, ranging from 10,000 for a monopoly to just above zero for perfect competition. Office of Fair Trading Guidelines categorise a market as 'concentrated' if its HHI exceeds 1,000 and 'highly concentrated' if its HHI exceeds 1,800.

3.51. Whilst such indicators do not provide conclusive evidence on the level of competition, they do offer pointers as to whether a market has the potential to deliver non-competitive outcomes i.e. whether market power can be realised by firms in that market. It is possible to conduct this test for both deliverability and capacity in the storage market.

### ***EDFE's view***

3.52. EDFE did not provide a view on the impact of an exemption on the level of market concentration.

### ***Ofgem's view***

3.53. The HHIs are difficult to calculate and forecast for several of our market definition scenarios, given that the capacity ownerships at Rough, Hornsea and IUK change from year to year, and that the ownership and control of flexible gas production at the UKCS is opaque. It is however possible to calculate the HHIs for storage (MRS and LRS). In doing so, we are interested in the potential change in HHI implied by the holding of capacity at the Hill Top Farm gas storage facility (assuming that all capacity is held by EDFE) compared to the base case where the Hill Top Farm gas storage facility is not built. For example, where market concentration was shown to change significantly as a result of the Hill Top Farm gas storage facility coming on line and EDFE acquiring all of its capacity, we would seek to explore further the potential for a market power problem to exist. We note that the outcome of this analysis may differ if capacity at the Hill Top Farm gas storage facility is awarded to third parties.

**Table 5– Changes in the HHI implied by the Hill Top Farm gas storage facility**

	Space	Deliverability
Before Hill Top Farm	681	1108
With Hill Top Farm	675	1118
Change	-6	+10

***Conclusion***

3.54. The results show that the construction of the Hill Top Farm gas storage facility is likely to lead to relatively modest estimated decrease in concentration in space and a modest increase in concentration in deliverability.

**(d) Vertically linked markets**

3.55. When examining market power in the flexibility market, it is also important to consider the impacts of market power in both the upstream and downstream related markets. If a facility owner/capacity holder has market power in one of the vertically related markets then it may be possible to use this market power to influence the market outcome in the flexibility market. One motivation for this could be to protect its position in the vertically related market by foreclosing the flexibility market, that is, by raising barriers to entry or expansion.

***EDFE's view***

3.56. EDFE did not provide a view on the impact of an exemption on vertically related markets.

***Ofgem's view***

3.57. EDFE is one of the six major vertically integrated energy supply companies who now supply over 99 per cent of the domestic gas market. EDFE also has a presence in the non-domestic non-daily metered (NDM) gas market although not in the daily metered (DM) gas market. We have considered the market share of EDFE in the domestic market based on the number of sites. For the both segments of the non domestic market we have considered the volume of gas supplied<sup>37</sup>, see Table 6 below.

<sup>37</sup> Note that analysis based on the number of sites provides an outcome in the same range as for the volume of gas supplied.

**Table 6 – EDFE retail market shares**

Domestic <sup>38</sup>	Non-Domestic <sup>39</sup>	
	NDM	DM
5-10%	0-5%	0%

3.58. These figures indicate that EDFE has a relatively modest share of both the domestic and non-domestic NDM retail markets.

### ***Conclusion***

3.59. These figures suggest that EDFE is unlikely to hold market power in the domestic retail gas market or in the NDM or DM segments of the non-domestic retail gas market. Therefore, given that vertical market power considerations are not likely unless a player has market power in at least one related market, we do not consider it likely that EDFE would be able to adversely influence the market for flexibility.

### **Market Operation**

3.60. The second area that we would generally expect to consider is the likely impact of an exemption on effective market signals and economic use of storage capacity. In relation to market signals, we have sought to establish that the exemption would not distort these by, for example, making the price formation mechanism less effective.

3.61. We have also given consideration to how the Hill Top Farm gas storage facility is expected to be used in practice. In general, when an exemption is granted, we would still anticipate that capacity at the exempt facility should be used when it is appropriate for it to be used. However, we note that nTPA provides some additional safeguards, for example, the publication by the storage operator of the main commercial conditions, the provision of non-discriminatory access, requirements to negotiate in good faith and the ability of the Authority to issue ex-post determinations when disputes arise over access (see Chapter 1 for details of the legal framework).

3.62. Therefore, for some facilities, in particular those that are not very small, information on the measures that storage operators have put in place to ensure that capacity is effectively used in the absence of nTPA, may be relevant to our consideration of the likely impact of the exemption on market distortion. For example, any potential market distortion that might otherwise be identified may be limited or eliminated by the availability of a secondary market.

### ***EDFE's view***

3.63. EDFE has provided Ofgem with supplementary information to that included in its application. This information provides EDFE's initial view and therefore may be

<sup>38</sup> Source: Gas suppliers (Jul-09)

<sup>39</sup> Source: Datamonitor's Q3 2009 B2B Market Share Monitor (Aug-09)

subject to change. This information has been provided to assist Ofgem in better understanding the impact of the facility.

3.64. In terms of the provision of information to the market, EDFE has indicated that it intends to provide information on entry and exit flows, and stock levels, as per the UNC rules in force at the time. It has also committed to publishing information and in accordance with the requirements of the Third Package once implemented, in particular under Article 19(4) of the Gas Regulation. This information will be published on its website or the relevant websites applicable at the time the information provision becomes necessary.

3.65. In terms of use of the facility, EDFE has indicated that it intends to operate the Hill Top Farm gas storage facility in a market responsive manner. It notes that, by extension, capacity utilization will be optimised to reflect market conditions either via own use or through third party access. EDFE considers this would contribute to enhancing supply security in the UK market.

3.66. At this stage we understand that EDFE intends to use the capacity at the Hill Top Farm gas storage facility principally for own use purposes. It considers that this approach would be consistent with a TPA exemption, were it to be awarded, and would not negatively impact the competitive status of the GB gas market. That said, EDFE has also indicated that were a third party to make a request for capacity, such a request would be duly considered. Given the size of the facility, EDFE did not think there would be any advantage to be gained from sterilizing capacity for any duration.

3.67. With regard to anti-hoarding or secondary capacity allocation arrangements, EDFE noted that it did not believe there would be any perceivable advantage to hoarding capacity at the Hill Top Farm gas storage facility particularly because, in its opinion, the Hill Top Farm gas storage facility is likely to be insignificant. EDFE has indicated that it will not rule out the introduction of secondary products i.e. UIOLI and interruptible services etc, noting that the provision of such services would be entirely market driven.

3.68. Further, to the extent that any capacity was offered to third parties either on a primary basis or through UIOLI or secondary markets, EDFE has committed to allocate this capacity on an objective, transparent and non-discriminatory basis.

### ***Ofgem's view***

3.69. We recognise that the information provided by EDFE on its anticipated use of the facility, transparency arrangements and anti-hoarding and secondary capacity arrangements represents EDFE's initial view at this point in time and may be subject to change in the future. Further, while we note that it is EDFE's intention to use the facility to meet its own flexibility requirements, nonetheless Ofgem welcomes the commitment from EDFE to use the facility in a market responsive manner i.e. that capacity at the facility will not be hoarded and that it is open to requests for third party access.



3.70. To the extent that capacity was offered to third parties in the primary market, we welcome EDFE's commitment to allocate this capacity on an objective, transparent and non-discriminatory basis.

3.71. We further note EDFE's intention to facilitate a secondary market and introduce appropriate anti-hoarding arrangements where this is required by the market.

3.72. It is worth reiterating that the peak deliverability of the EDFE facility from 2012 is large enough for its flows to be displayed on the real time information on NGG's website. This will add an element of transparency and enable the market to observe its use. In addition, Article 19(4) of Regulation (EC) 715/2009 will require EDFE as the operator of the Hill Top Farm gas storage facility to publish information, at least daily, on the amount of gas in its storage facility, inflows and outflows and the available storage. This Article also requires this information to be given to NGG so that it can be made public, at an aggregate level. We welcome EDFE's commitment to comply with the UNC transparency requirements in place at the relevant time and we would also expect it to comply with any additional EU transparency requirements that may also be in place.

### ***Conclusion***

3.73. We are of the view that an exemption from nTPA requirements at the Hill Top Farm gas storage facility will be unlikely to have an impact on effective market signals and economic use of storage capacity. This view is based on the information provided to Ofgem by EDFE. If there are significant changes to the way in which EDFE plans to use the facility, or if significant changes are made to EDFE's proposed transparency and/or anti-hoarding and secondary capacity arrangements, the Authority may review the impact of an exemption on effective market signals and economic use of storage capacity.

3.74. Where there is a material impact such that nTPA at the facility becomes economically necessary for providing access to the system for the supply of customers, the Authority may review and potentially revoke any exemption granted.

### **Summary**

3.75. This chapter sets out our assessment of whether nTPA at the Hill Top Farm gas storage facility is economically necessary for providing efficient access to the system for the supply of customers. After having considered the relevant market definition scenarios, the analysis set out above leads us to conclude that nTPA at the Hill Top Farm gas storage facility is not economically necessary for providing efficient access to the system for the supply of customers.

## 4. Conclusion

### Chapter summary

This chapter sets out Ofgem's minded to decision to grant an exemption to EDFE for the proposed Hill Top Farm gas storage facility.

**Question 7:** Do you agree with our overall conclusion that an exemption should be granted to EDFE for the proposed Hill Top Farm gas storage facility?

**Question 8:** Do you agree with the drafting of the exemption order?

4.1. Based on the analysis set out in Chapter 2 and Chapter 3 above, it is Ofgem's initial view that nTPA at the Hill Top Farm gas storage facility is not technically and/or economically necessary for providing efficient access to the system for the supply of customers.

4.2. Ofgem is therefore minded to grant an exemption to EDFE for the proposed Hill Top Farm gas storage facility. Such an exemption would relieve EDFE of the obligation to offer access to third parties to its Hill Top Farm gas storage facility on a negotiated basis under section 19B of the Gas Act. A draft of the exemption order is presented in Appendix 3.

4.3. The Authority can review and revoke the exemption if there is a material change such that nTPA at the facility becomes technically and/or economically necessary for providing access to the system for the supply of customers. Further information on the circumstances when the Authority could revoke the proposed exemption is set out in section E of the draft exemption order. In the event that any of the circumstances occur which require the exemption to be withdrawn, Ofgem would be likely to issue a consultation document setting out the reasons for its proposed decision.

4.4. The exemption would be granted on the basis of the information provided by EDFE in its application<sup>40</sup> and further analysis undertaken by Ofgem. If there was a change to the commitments that EDFE has provided in its application, or if there was any change to the underlying data provided by EDFE as part of its explanation as to how it meets the relevant criteria, this could be grounds for the Authority to review and potentially revoke the exemption.

4.5. For the avoidance of doubt, Ofgem's analysis has been carried out against the criteria set out in the June 2009 Open Letter and is specific to the application that Ofgem is considering. Any decision that Ofgem may make in relation to this

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<sup>40</sup> Ofgem considers that any supplementary information provided to Ofgem by EDFE, in addition to the exemption application sent to Ofgem in February 2009, is considered to be part of the application upon which Ofgem's decision has been based.

application does not preclude or impact in any way on the operation of the Competition Act 1998 or the Enterprise Act 2002. Further, as the analysis contained in this document has been carried out in relation to a specific situation, the analysis may or may not necessarily be relevant to a consideration of any related issue that may arise, for example, under the Gas Act 1986, the Competition Act 1998 or the Enterprise Act 2002.

## Appendices

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## Appendix 1 – Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 5 February 2010 and should be sent to:

**Ian Marlee**  
**Partner, Trading Arrangements**  
**Ofgem**  
**9 Millbank, London, SW1P 3GE**  
**GB.Markets@ofgem.gov.uk**

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website [www.ofgem.gov.uk](http://www.ofgem.gov.uk). Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to publish a Decision document. Any questions on this document should, in the first instance, be directed to:

**Andrew Wallace**  
**Senior Manager, Trading Arrangements**  
**Ofgem**  
**9 Millbank, London, SW1P 3GE**  
**andrew.wallace@ofgem.gov.uk**

**CHAPTER: Two**

**Question 1:** Do you agree with Ofgem's approach to considering whether nTPA is technically necessary for providing access to the system for the supply of customers? If not, please explain why.

**Question 2:** Do you agree with our overall assessment that nTPA at the Hill Top Farm gas storage facility is not technically necessary for providing efficient access to the system for the supply of customers? If not, please explain why?

**CHAPTER: Three**

**Question 3:** Do you consider that our market scenario analysis is appropriate? If not, please explain why.

**Question 4:** In particular, do you consider our three potential market definition scenarios to be appropriate? If not, please explain why.

**Question 5:** Do you agree with Ofgem's approach to considering whether nTPA is economically necessary for providing efficient access to the system for the supply of customers? If not, please explain why.

**Question 6:** Do you agree with our overall assessment that nTPA at the Hill Top Farm gas storage facility is not economically necessary for providing efficient access to the system for the supply of customers? If not, please explain why.

**CHAPTER: Four**

**Question 7:** Do you agree with our overall conclusion that an exemption should be granted to EDFE for the proposed Hill Top Farm gas storage facility?

**Question 8:** Do you agree with the drafting of the exemption order?

## Appendix 2 – The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.<sup>41</sup>

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly<sup>42</sup>.

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

1. the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
2. the need to secure that all reasonable demands for electricity are met;
3. the need to secure that licence holders are able to finance the activities which are the subject of obligations on them<sup>43</sup>;
4. the need to contribute to the achievement of sustainable development; and
5. the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.<sup>44</sup>

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

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<sup>41</sup> These are entitled "Gas Supply" and "Electricity Supply" respectively.

<sup>42</sup> However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

<sup>43</sup> Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.

<sup>44</sup> The Authority may have regard to other descriptions of consumers.

1. promote efficiency and economy on the part of those licensed<sup>45</sup> under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
2. protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
3. secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- the effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation<sup>46</sup> and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

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<sup>45</sup> or persons authorised by exemptions to carry on any activity.

<sup>46</sup> Council Regulation (EC) 1/2003



**Appendix 3 – Draft Exemption Order****GAS ACT 1986****SECTION 19A****EXEMPTION**

Pursuant to sub-section 19A(6)(a) of the Gas Act 1986 (the "Act"), the Gas and Electricity Markets Authority hereby gives EDF Energy Plc, as a person who expects to be an owner of a storage facility, an exemption from the application of section 19B of the Act, in respect of the Hill Top Farm gas storage facility located in Cheshire, North-West England, subject to the attached Schedule.

Ian Marlee  
Partner, Trading Arrangements  
Authorised in that behalf by the Gas and Electricity Markets Authority

[date]

**SCHEDULE**  
**PERIOD, CONDITIONS, AND REVOCATION OF EXEMPTION**

**A. Interpretation and Definitions**

In this exemption:

"the Authority"	means the Gas and Electricity Markets Authority established by section 1(1) of the Utilities Act 2000, as amended from time to time
"the Act"	means the Gas Act 1986, as amended from time to time
"the facility"	means the Hill Top Farm gas storage facility located in Cheshire, North-West England, being a final capacity of 1,070GWh
"facility owner"	means EDF Energy Plc in its capacity as owner of the facility
"facility operator"	means EDF Energy Plc in its capacity as operator of the facility

**B. Full description of the storage facility to which this exemption relates**

On completion the facility will provide 1,070GWh of space, a maximum injection rate of 175GWh/day and a maximum deliverability rate of 160GWh/d.

**C. Period**

Subject to section E below, and pursuant to section 19A(3)(a) of the Act, this exemption shall come into effect on the date that it is issued and will continue until it is revoked in accordance with Section E.

**D. Conditions**

Pursuant to sub-section 19A(3)(b) of the Act, this exemption is made subject to the following conditions:

1. The material provided by the facility owner to the Authority in respect of this exemption is accurate in all material respects.
2. The facility owner furnishes the Authority in such manner and at such times as the Authority may reasonably require, with such information as the Authority may reasonably require, or as may be necessary, for the purpose of:
  - (a) performing the functions assigned to it by or under the Act, the Utilities Act 2000, or the Energy Act 2004, each as amended from time to time; or
  - (b) monitoring the operation of this exemption.
3. The facility owner complies with any direction given by the Authority (after the Authority has consulted the relevant gas transporter and, where relevant, the Health

and Safety Executive) to supply to the relevant gas transporter such information as may be specified or described in the direction -

(a) at such times, in such form and such manner; and

(b) in respect of such periods,

as may be so specified or described.

Where the facility owner is prevented from complying with such a direction by a matter beyond its control, it shall not be treated as having contravened the condition specified in this paragraph.

In this condition:

"information"	means information relating to the operation of the pipe-line system which is operated by a relevant gas transporter
"relevant gas transporter"	means any holder of a gas transporter licence under section 7 of the Act owning a transportation system within Great Britain to which the facility is connected or with whom the facility operator interfaces with as a system operator

4. Should any of the grounds for revocation arise under section E of this exemption, the Authority may, with the consent of the facility owner, amend this exemption rather than revoke the exemption.

5. The Authority may, with the consent of the facility owner, amend this exemption.

6. This exemption is transferable to another facility owner where the Authority has given its written consent to such a transfer. For the avoidance of doubt, all of the conditions contained in this exemption order continue unaffected in respect of any facility owner to whom this exemption order may be transferred (and as if the transferee was substituted in the definition of "facility" and "facility owner").

## **E. Revocation**

Pursuant to sub-section 19A(4) of the Act, this exemption may be revoked in the following circumstances:

1. This exemption may be revoked by the Authority by giving a notice of revocation to the facility owner not less than four months before the coming into force of the revocation in any of the following circumstances:

(a) where:

(i) the Authority considers that the use of the facility by other persons is necessary for the operation of an economically efficient gas market;

(ii) the facility owner has a receiver (which expression shall include an administrative receiver within the meaning of section 251 of the Insolvency Act 1986, as amended from time to time) of the whole or any material part of its assets or undertaking appointed;

(iii) the facility owner has entered administration under section 8 of and Schedule B1 to the Insolvency Act 1986;

(iv) the facility owner has found to be in breach of any national or European competition laws, such breach relating to the facility; or

(b) the facility owner has failed to comply with a request for information issued by the Authority under paragraph D2 above and the Authority has written to the facility owner stating that the request has not been complied with and giving the facility owner notice that if the request for information remains outstanding past the period specified in the notice, the exemption may be revoked; or

(c) the facility owner has failed to comply with a direction issued by the Authority under paragraph D3 above and the Authority has written to the facility owner stating that the direction has not been complied with and giving the facility owner notice that if the direction remains outstanding past the period specified in the notice, the exemption may be revoked.

2. This exemption may be revoked by the Authority with the consent of the facility owner.

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## Appendix 4 – Glossary

### A

#### Anti-hoarding arrangements

Transparent mechanism(s) that allow unused capacity to be made available to the market so as to maximise the use of a facility.

### B

#### Balgzand Bacton Line (BBL)

BBL is an interconnector that flows gas from Balgzand in the Netherlands to Bacton in the UK. It currently transports gas only one way: from the Netherlands to the UK.

#### Base load

Part of the gas supply that is flowing on most days, and prone to only small variations.

### C

#### Competitive constraints

Competitive constraints are factors that prevent a firm from profitably sustaining prices above competitive levels. Where there are no effective competitive constraints, market power can arise.

#### Cycling (storage)

Cycling is successive injection and withdrawal of gas within a season at a storage facility. Cycling usually refers to multiple successive refill and withdrawal cycles within the winter, as opposed to a unique summer refill followed by winter withdrawal.

### D

#### Daily Metered (DM) sites

Meters with data-loggers installed at NTS off take points provide Gas Transporters with the volume of gas consumed each day. Supply points with such meters are called DM sites.

#### Deliverability

Deliverability refers to storage exit capacity i.e. from the storage facility to the transmission system.

#### Demand-side response (DSR)

DSR is achieved when electricity and gas users reduce a proportion of their demand in response to a high price or some other event such as an overload.

#### Duration

The time it takes to empty a storage facility from when it is full assuming maximum deliverability.

#### F

##### Flexible beach

That proportion of domestic gas production that offers more flexible supply.

#### G

##### Gas storage facility

Any facility designed to take gas (inject) from the NBP and release it (deliver) at a latter point in time. We may distinguish between Short, Medium and Long range storage facilities.

#### H

##### Herfindahl-Hirschman Index (HHI)

HHIs are a measure of market concentration.

#### I

##### Injectability

Injectability refers to storage entry capacity i.e. from the transmission system to the storage facility.

##### Interconnector

An interconnector is a pipeline linking two consumption markets, as opposed to pipelines linking a gas field and a consumption market.

##### Interconnector UK (IUK)

A gas interconnector that links Zeebrugge in Belgium and Bacton in Great Britain.

#### L

##### Liquefied Natural Gas (LNG)

The fluid state of natural gas, it can be obtained industrially by cooling down natural gas. Used essentially in dedicated tanker ships to transport gas overseas in a much reduced volume.

### LNG importation terminal

LNG importation terminals are the terminals where LNG vessels can be offloaded.

### Long Range Storage (LRS)

LRS facilities tend to be able to deliver gas at full capacity for more than 70 days.

### Langeled

Underwater pipeline bringing gas from Norway (Sleipner) to the UK (St Fergus).

## M

### Medium Range Storage (MRS)

MRS facilities tend to be able to deliver gas at full capacity for between 5 and 70 days. Such facilities are more prone to cycling.

### Minor facilities exemption

Exemptions granted on the basis that Article 19 of the Second Gas Directive does not apply as nTPA is not economically and/or technically necessary for providing efficient access to the system for the supply of customers.

## N

### National Balancing Point (NBP)

The NBP is the virtual unified trading point of the GB gas transmission network.

### National Grid Gas (NGG)

NGG owns and operates the National Transmission System throughout Great Britain and owns and operates a significant Gas Distribution network throughout part of England.

### Negotiated Third Party Access (nTPA)

Negotiated Third Party Access (nTPA) refers to arranging supply contracts on the basis of voluntary commercial agreements negotiated in good faith.

### Non-daily Metered (NDM) sites

Supply points with meters installed that are read at monthly, six monthly or at longer intervals are called NDM sites.

**R****Regulated Third Party Access (rTPA)**

Regulated Third Party Access (rTPA) refers to a system of access based on published tariffs and/or other terms and obligations, as determined by the relevant regulatory authority.

**S****Secondary capacity allocation**

Involves mechanism(s) by which unused capacity is offered to shippers on the secondary market.

**Short Range Storage (SRS)**

SRS facilities tend to be able to deliver gas at full capacity for up to 5 days. They are normally LNG facilities that are able to flow gas at very short notice, but take a very long time to refill.

**T****Tampen**

Underwater pipeline bringing gas from Norway (Stratfjord) to the North Sea UK pipeline system (FLAGS).

**Ten Year Statement (TYS)**

The TYS is published in line with Special Condition C2 of National Grid's Gas Transporters' Licence and Section O of the Uniform Network Code. It is published annually and provides a ten-year forecast of transportation system usage and likely system developments.

**Third Party Access (TPA)**

TPA means access by third parties to transmission and distribution networks, and gas and LNG storage facilities. The requirements of TPA are met either through a negotiated (nTPA) or regulated TPA (rTPA) regime.

**U****United Kingdom Continental Shelf (UKCS)**

The UK Continental Shelf is the region of waters surrounding the United Kingdom, in which the UK claims the rights to minerals.

**Use it or lose it (UIOLI) arrangements**



Arrangements that ensure there are incentives to “use capacity” at a facility or otherwise “lose capacity” at a facility whereby any unused capacity is made available to the market.

**V****Vesterled**

Underwater pipeline bringing gas from the Heimdal Riser platform in the North Sea to St. Fergus near Peterhead in Scotland.

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## Appendix 5 – Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

**Andrew MacFaul**  
Consultation Co-ordinator  
Ofgem  
9 Millbank  
London  
SW1P 3GE  
andrew.macfaul@ofgem.gov.uk