

# **Rough gas storage undertakings review**

Final report

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The Competition and Markets Authority has excluded from this published version of the report information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [X].

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## Final decision

### 1. Background to the review

#### ***Background***

- 1.1 On 27 October 2015, the Competition and Markets Authority (CMA) announced its decision to appoint a Group to undertake a review, under paragraph 16 of Schedule 24 to the Enterprise Act 2003, of the undertakings given in December 2003 by Centrica Storage Limited (CSL) and Centrica, and amended on 3 April 2006 and on 5 March 2012, in relation to the completed acquisition by Centrica of Dynegy Storage Limited and Dynegy Onshore Processing UK Limited ('the undertakings').<sup>1</sup>
- 1.2 The CMA launched a review of the undertakings because, having considered responses to its consultation<sup>2</sup> and the evidence presented by CSL, it considered there was a realistic prospect of finding a specific change of circumstances relating to the capacity elements of the undertakings.
- 1.3 The review has been undertaken by a group of CMA panel members, appointed by the CMA Panel Chair, and comprising: Marisa Cassoni, Martin Cave (Chair), Roger Finbow and Jon Stern. The group of panel members has been advised by a case team of CMA staff. The CMA, when appropriate, has also sought the advice of Ofgem, the sector regulator of gas and electricity markets in the UK.

#### ***The Rough gas storage facility***

- 1.4 Rough is the largest gas storage facility in Great Britain, used by market participants to store gas in the summer and deliver that gas to meet peak demand in the winter.
- 1.5 The Rough facilities commenced gas production and processing in 1975. In 1985, the gas field was converted by its then owners (British Gas), to store gas to meet seasonal supply/demand imbalances. There are seasonal variations in demand, which are a consequence of overall demand for gas in the winter being higher than in the summer. Variations in demand are particularly pronounced in relation to domestic customers.<sup>3</sup> Centrica Storage

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<sup>1</sup> See the [decision statement](#) (October 2015).

<sup>2</sup> See the [invitation to comment](#) (September 2015).

<sup>3</sup> Competition Commission (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility. See the Competition Commission's final report on the [CMA's webpages](#).

Limited (CSL), which owns and operates the facility, reports that Rough can meet approximately 10% of the UK's peak day demand.<sup>4</sup>

- 1.6 The Rough reservoir is a depleted gas field located approximately 29km (18 miles) off the east coast of Yorkshire, in Rotliegendes sandstone, 2.7km (9,000 feet) under the Southern North Sea bed. The reservoir itself is approximately 10km (6 miles) long by 3km (1.8 miles) wide and varies from 24 metres (80 feet) to 36 metres (117 feet) in depth.
- 1.7 The reservoir is relatively rare geologically, being formed of rock with broadly uniform porosity. This enables gas to flow through it. Most other reservoirs tend to be more 'compartmentalised', or small man-made caverns in the case of underground salt reservoirs. The porous rock that forms Rough is surrounded by non-porous rock, meaning that gas can be pumped into the rock formation and held under pressure (from the rock above), but cannot escape unless intentionally released. The gas is refined after it comes out of Rough to remove dirt and condensate.
- 1.8 Gas is injected and extracted by CSL via up to 30 wells, which have been drilled from the offshore platforms down into the reservoir below the seabed. The Rough facility comprises two offshore installations (47/3 Bravo and 47/8 Alpha), and a terminal at Easington, which is used for the injection and withdrawal of gas to and from the Rough reservoir (Figure 1.1):
  - (a) Gas is injected and withdrawn via the 47/3 Bravo (47/3B) platform. This is the main offshore complex, with up to 134 staff operating 24 wells across 3 linked platforms. This installation was built in the 1980s to enable gas storage (ie to permit gas injection as well as withdrawal).
  - (b) 47/8 Alpha (47/8A) has up to 6 wells, operated by up to 27 staff. It is used to maintain deliverability of gas (ie withdrawal) from the field during peak demand days. This smaller installation was the original platform, completed in 1975 for gas withdrawal only.
  - (c) The Easington terminal employs approximately 100 staff. Its main functions are to receive and separate natural gas from Rough and Centrica's York field.<sup>5</sup> The terminal processes the gas by separating it from a paraffin-like liquid condensate (which is treated and stabilised for

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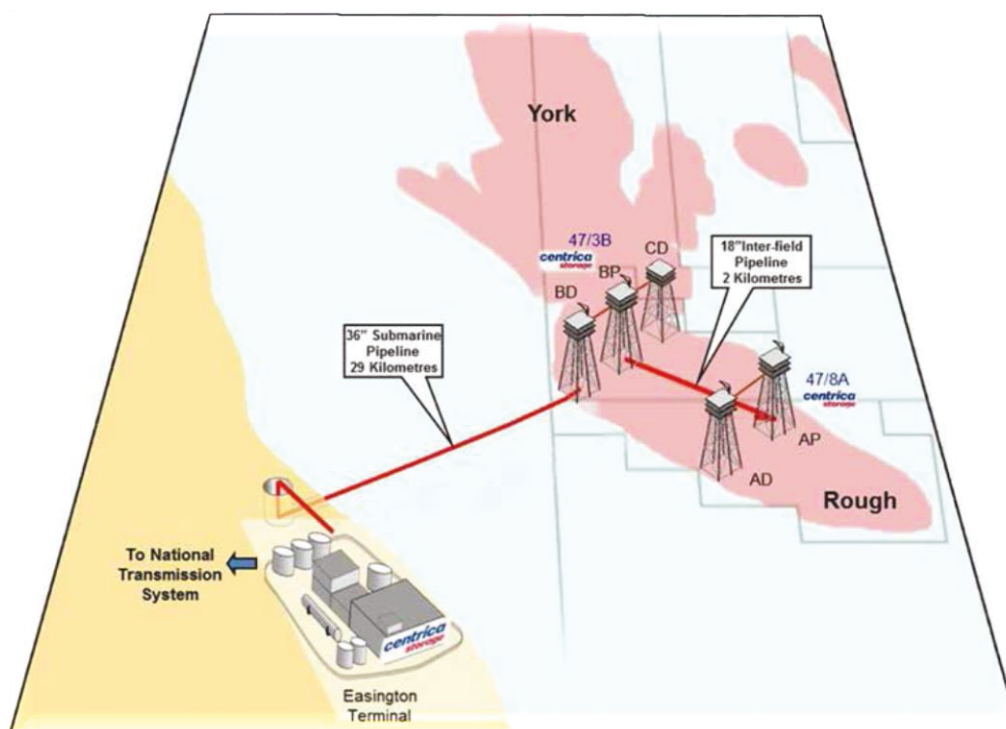
<sup>4</sup> [CSL website](#)

<sup>5</sup> In 2013, CSL started to operate a new gas processing stream, separate to that used for Rough facility, to process gas from Centrica's York field.

use in the petrochemical industry).<sup>6</sup> The gas enters the National Transmission System (NTS) through an entry point next to the terminal.<sup>7</sup>

- 1.9 During gas injection the installation uses one or two compression units to raise the gas to the pressure of the reservoir. During withdrawal mode it uses the gas pressure from within the reservoir to deliver gas to the onshore installation.

**Figure 1.1: The Rough Gas Storage Facility**



Source: CSL, [Rough Gas Storage Facility – An Operational Overview Version 4](#), December 2015.

- 1.10 Rough acts as a storage facility for gas shippers, gas producers, gas suppliers and traders allowing them to nominate gas for withdrawal into the NTS and inject gas into the reservoir on demand.<sup>8</sup> Any gas within the NTS is

<sup>6</sup> Condensate can, for instance, be used to dilute highly viscous heavier oils, such as bitumen, to make it easier to transport by pipeline. CSL told us that when gas is injected into Rough from the National Grid, it is dry gas. When gas is withdrawn from the reservoir, condensate is also produced as a result of the injected gas mixing with the native gas within the reservoir. As condensates are associated with the reservoir rather than gas injected into Rough, the revenues generated by the sale of condensate from Rough accrue to CSL. The volume of condensate from Rough varies from year to year and the revenues CSL receives depends on the composition of the condensate and the prevailing market price for the constituent products in the condensate. For instance CSL told us that revenues from Rough's condensate production were close to [£m] in 2013 and were [£m] in 2015.

<sup>7</sup> The NTS is the high pressure gas network which transports gas from the entry terminals to gas distribution networks, or directly to power stations and other large industrial users.

<sup>8</sup> Gas shippers buy gas from gas producers for sale to gas suppliers (which sell gas to businesses and consumers). Gas traders buy and sell gas before it reaches the consumer. See the Glossary for more information.

effectively homogenous and can be traded at a single notional point – the National Balancing Point (NBP).

- 1.11 CSL's customers generally use Rough in a seasonal fashion, injecting gas in the summer when prices are low and withdrawing during periods of high demand (typically winter) and on days when prices are favourable. Weather has an important influence on prices – for instance, warmer winters will typically mean lower winter prices and lower spreads and thus less value in storing gas. See Section 2 for more details on how storage facilities create value for market participants.
- 1.12 Customers can nominate withdrawal and injection on any day depending on their requirements throughout the year. Rough's flexibility enables customers to vary their use at short notice to take advantage of attractive spot prices and arbitrage versus forward markets.
- 1.13 The price of capacity at Rough is principally determined by the summer-winter spread – ie the difference between the average of the Quarter 2 and Quarter 3 contracts (April to September) and the following year's Quarter 1 contracts (January to March). This reflects the intrinsic value of buying gas in the summer, storing it, and then selling it in the winter. CSL typically sells gas storage services at negotiated prices set on the basis of this spread.<sup>9</sup>

#### *Rough's capacity*

- 1.14 Rough's stock is reported in terms of terawatt hours (TWhs) of energy that can be generated from the gas stored, and its working volume is set in billions of cubic feet (BCF).<sup>10</sup>
- 1.15 The gas in the Rough reservoir comprises (Figure 1.2):
- working gas, which comprises:
    - gas injected by CSL customers from the NTS; and
    - operational stock – gas held by CSL to meet its contractual obligations and its regulatory obligations to ensure the facility's integrity and efficiency (eg to maintain steady flows and to allow for outages);<sup>11</sup> and

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<sup>9</sup> See Section 2 for more details.

<sup>10</sup> 35.3 BCF is equivalent to 1bn cubic metres of gas, so Rough's capacity is approximately 3.7 billion cubic metres (BCM). Since 1 BCM of gas has an energy content of about 11.0 TWh, Rough can store approximately 41 TWh in energy terms.

<sup>11</sup> In 2014/15, at its maximum level, operational stock represented 2.35 TWh (5.8% of total available space).



- cushion gas – residual gas following conversion of the field, retained to provide pressure support. Some of this gas is recoverable, while the rest is unrecoverable.
- 1.16 The Rough reservoir is subject to the provisions of a production licence, granted by the Secretary of State for the Department of Energy and Climate Change (DECC), which sets upper and lower reservoir limits to which gas can be stored – ie the volume of working gas, or Net Reservoir Volume (NRV).<sup>12</sup> The Oil and Gas Authority (OGA)<sup>13</sup> sets these upper and lower limits and currently consents to:
- an upper NRV consent of 115 BCF; and
  - a lower NRV consent of –50 BCF,<sup>14</sup> following OGA's consent in July 2015 to increase this limit from –35 BCF.<sup>15</sup>
- 1.17 The maximum permitted NRV is therefore 165 BCF, with about 320 BCF of cushion gas (of which CSL told us about 126 BCF to 166 BCF is recoverable gas). In practice, the actual maximum volume Rough can hold depends on factors such as injection availability, customer utilisation, system pressures and carry-over.<sup>16</sup> The minimum depends on factors such as customer nominations, and operational stock. Before the current pressure issue (see paragraph 1.45 onwards) CSL reported that Rough could store 135.2 BCF (41.1 TWh).

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<sup>12</sup> Anyone who wants to explore for, drill for, or use a natural gas storage site in the UK's offshore area must hold a licence issued under Section 4 of the Energy Act 2008 by the Secretary of State (SoS) for Energy and Climate Change. In addition, a lease from The Crown Estate is needed for storage activities for all offshore areas, including the territorial sea, because the right to store gas in the offshore area is vested in the Crown by virtue of Section 1 of the Energy Act 2008.

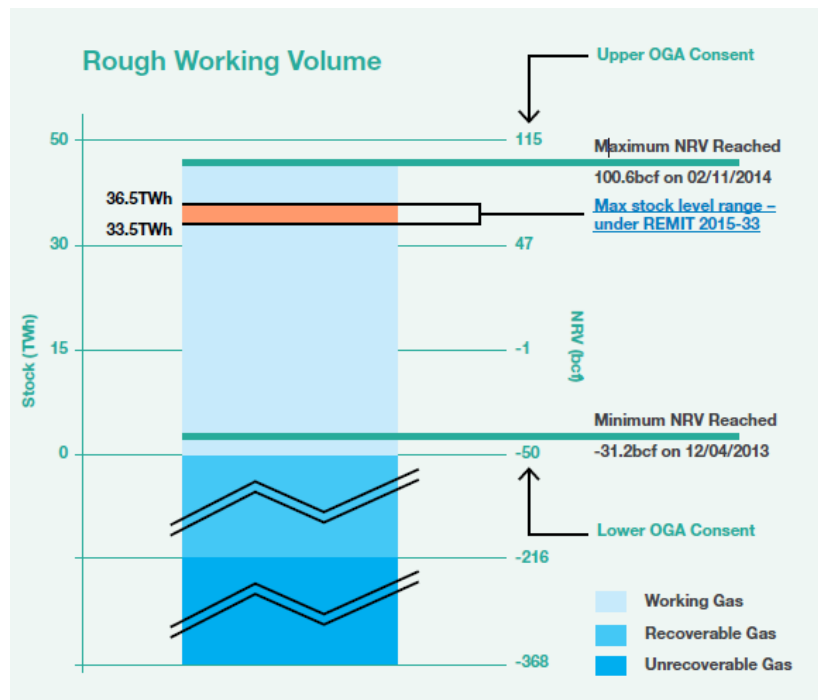
<sup>13</sup> The OGA has taken over some of the responsibilities of the SoS for the Department of Energy and Climate Change (DECC) in relation to oil and gas production and storage licences. Its role is to regulate, influence and promote the UK oil and gas industry. It was established as an Executive Agency of the DECC on 1 April 2015, giving it operational independence from the SoS and as an intended transitional step to incorporation as a Government Company and proposed transfer of certain of the SoS's functions.

<sup>14</sup> The –50 BCF NRV level is equivalent to the 'zero' stock level (in kWh) as reported on the National Grid website after adjustment for any gas held by National Grid for Operating Margins purposes (to maintain pressure in the system). The lower NRV consent is negative because it represents the extent to which the lower limit has been increased (ie cushion gas has been converted to working gas) since storage operations started at Rough.

<sup>15</sup> See [OGA Grant of Consent](#), July 2015. This consent enabled CSL to convert 15 BCF (4.62TWh) of cushion gas into working gas.

<sup>16</sup> Customers can carry over their stock in Rough at the end of a Storage Year, which runs from 1 May to 30 April.

**Figure 1.2: The Rough gas storage facility's capacity**



Source: CSL, [Rough Gas Storage Facility – An Operational Overview Version 4](#), December 2015.

Notes: Working gas in this diagram includes operational stock.

- 1.18 CSL operates Rough on the basis of a Storage Year, which runs from 1 May to 30 April. It offers access to the majority of storage services at Rough in Standard Bundled Units (SBUs) that give customers combined annual rights to injection, space and withdrawal capacity.
- 1.19 The physical characteristics of SBUs were based on the original capability, or 'shape', of Rough at the point at which it started operating as a storage facility, so each SBU is effectively a proportion of Rough's original physical capability. At that point in time, Rough could deliver 455 million SBUs and this was therefore established as its nominal capacity. An SBU is defined in terms of deliverability, with proportional quantities of space and injectability in line with the characteristics of the facility at the time they were defined. On this basis, an SBU provides:
  - Space – 66.593407 kWh
  - Deliverability – 1 kWh/day
  - Injectability – 0.351648 kWh/day
- 1.20 Given the physical characteristics of the SBUs, it would take approximately 190 days to fill the space (usually over the summer), and 67 days to empty it (usually over the winter).

## ***The Rough undertakings and Rough's capacity sales***

- 1.21 In November 2002, Centrica acquired from Dynegy Inc (Dynegy), a US energy company, two companies which owned and operated the Rough gas storage facility and associated assets: Dynegy Storage Ltd and Dynegy Onshore Processing UK Ltd.
- 1.22 In February 2003 the Director General of Fair Trading recommended that the merger be referred to the then Competition Commission (CC) because there was a significant prospect that the merger gave Centrica the ability and incentive to increase the price of storage through withholding capacity, and weakened the incentive to expand capacity at Rough. As Centrica was vertically integrated, with a leading position in several downstream markets, the Director General of Fair Trading considered that the acquisition might also lead to some lessening of competition in those markets.
- 1.23 In August 2003, the CC published its report on the completed acquisition.<sup>17</sup> The CC found that competition in the markets for flexible gas and domestic gas supply would be weakened as a result of the merger, with the likely consequence that prices would be higher than in the absence of the merger. The CC also concluded that innovation and investment at Rough would be lower than under another owner. Although there was some benefit to the public interest from Centrica owning Rough (being a known quantity with regard to operational experience, reputation and financial strength), the CC did not consider that this outweighed the adverse effects and concluded that the merger may be expected to operate against the public interest.<sup>18</sup> The CC concluded that to remedy the adverse effects identified, Centrica should offer undertakings regarding its behaviour as owner of Rough.
- 1.24 Following the 2003 report, undertakings were given by Centrica and CSL and accepted by the Secretary of State for the purpose of remedying or preventing the adverse effects on the public interest specified in the 2003 report. Key aspects of these included:
- ensuring non-discriminatory access to Rough for users;

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<sup>17</sup> Competition Commission, Centrica plc and Dynegy Storage Ltd and Dynegy Onshore Processing UK Ltd: a report on the merger situation, August 2003.

<sup>18</sup> The merger was referred to the CC under the merger provisions of the Fair Trading Act 1973 (FTA). The FTA was based on a public interest test, although in practice the underlying issue in the public interest test was a lessening of competition. This is based on the "Tebbit Doctrine" set out in 1984 by the then Secretary for State for Trade and Industry Norman Tebbit - '*references to the Monopolies & Mergers Commission would be made primarily, but not exclusively, on competition grounds, taking into account the international dimension of competition.*' See <http://researchbriefings.files.parliament.uk/documents/SN05374/SN05374.pdf> section 2. The CMA (and the CC before it) now takes its decisions using a 'substantial lessening of competition' (SLC) test under the merger provisions of the Enterprise Act 2002 (the Act).

- restrictions on Centrica's access to capacity; and
  - the legal, financial and physical separation of CSL from Centrica.
- 1.25 In November 2005, Centrica requested a variation of the original undertakings in order to enable a minor group restructuring of the Centrica Group. After considering advice on the proposed variation prepared by the OFT, the CC accepted the variation and the new, amended, undertakings ('the amended undertakings') came into force on 3 April 2006.
- 1.26 In 2011, following a request from Centrica to be released from the undertakings by reason of a change of circumstances, the CC conducted a review and decided to make a small number of variations to the undertakings, primarily in relation to Centrica's access to capacity.<sup>19</sup>

### *The main elements of the undertakings*

- 1.27 The main provisions of the undertakings currently in force are that CSL will be maintained legally, financially and physically separate from all other businesses of Centrica and that CSL must:
- (a) offer all Rough capacity for sale on a non-discriminatory basis;
  - (b) unless otherwise agreed with Ofgem, retain the Storage Services Contract (SSC)<sup>20</sup> for all sales of Rough capacity;
  - (c) unless otherwise agreed with Ofgem, sell Minimum Rough Capacity (MRC) in SBUs comprising combined rights to fixed units of space, injection and withdrawal;
  - (d) sell the following 'Obligated Capacity' before the start of the Storage Year (1 May):
    - (i) 455 million SBUs of MRC; and
    - (ii) at least 1.534 TWh of Additional Space;

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<sup>19</sup> CC (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility. See the CC's final report on the [CMA's webpages](#).

<sup>20</sup> The Storage Services Contract (SSC) is CSL's standard contract, to ensure all customers purchase on the same terms. CSL are only allowed to negotiate with customers on price, term (length of contract) and volume. The SSC can only be varied with the agreement of Ofgem and following consultation with market participants. See: Centrica Storage Ltd Contracts [webpage](#).

- (e) not sell more to Centrica per year than a maximum 'Specified Capacity' of:
  - (i) 25% of MRC; and
  - (ii) 1.534 TWh of Additional Space;
- (f) offer at least 20% of MRC (equivalent to 91 million SBUs) on annual contracts;
- (g) auction all unsold Obligated Capacity one month before start of the next Storage Year at a marginal cost reserve price;
- (h) offer for sale capacity that becomes available during the Storage Year;
- (i) facilitate the efficient operation and development of a secondary market in Rough capacity;
- (j) disclose information on storage operations to all market participants simultaneously;
- (k) ensure that no commercially sensitive information arising from the operation of Rough is passed directly or indirectly to any business of either Centrica or any other member of the Centrica Group; and
- (l) provide sales and operational information to Ofgem and the CMA for compliance monitoring purposes.

*Rough's sales process and the capacity obligations in the undertakings*

1.28 CSL is required to offer all Rough's capacity to users on the primary market. Given the assumed physical capabilities of Rough, it must therefore make a minimum of 455 million SBUs available for purchase, which is defined as MRC. The remaining space available at Rough can be sold unbundled. This includes:

- (a) Additional Space (AS), which is space into which gas can be injected over and above the MRC which has been created as the result of the operation of Rough by its previous owners and which can be quantified before the start of the Storage Year, following observations on the pattern and extent of customers' withdrawal nominations in the previous Storage Year. AS effectively lengthens the 67-day duration of an SBU. CSL can package it up with injection and withdrawal rights to maximise its value to customers (eg for shippers who do not have injection or withdrawal capacity);

- (b) Further Additional Space (FAS), which is the space into which gas can be injected over and above the MRC and AS, which can only be quantified and sold during the Storage Year;<sup>21</sup> and
- (c) Incremental Capacity, which is capacity created through new investment by CSL and is additional to MRC, AS and FAS. To incentivise CSL to invest, there are no restrictions on how much Incremental Capacity and FAS Centrica can buy.

1.29 CSL divides capacity into these different groups, according to its obligations under the undertakings. Table 1.1 summarises the volume that fell into each group before the current technical issues and subsequent consent from the OGA to expand the operating envelope of Rough. The undertakings apply different requirements to different groups of capacity (Table 1.1).<sup>22</sup> This table also sets out the maximum capacity potentially available to Centrica under the undertakings.<sup>23</sup>

**Table 1.1: The Rough gas storage facility – types of capacity<sup>24</sup>**

	<i>Total available capacity</i>	<i>MRC (SBU's)</i>	<i>AS*</i>	<i>IC† and FAS‡</i>	<i>Operational stock</i>	<i>Available to Centrica</i>	<i>Centrica % maximum</i>
Space (GWh)	40,700 <sup>25</sup>	30,300	4,398	3,657	2,345	12,766	31%
Withdrawal (GWh/d)	485	455		30		144	30%
Injection (GWh/d)	305	160		119	26	159	52%

Source: Based on data from CSL for the 2014/15 Storage Year.

Note: The volume of AS, Incremental Capacity and operational stock can vary from year to year.

\*Additional space.

†Incremental capacity.

‡Further additional space.

- 1.30 CSL sells gas storage services ahead of the Storage Year (Figure 1.3). Customers typically purchase AS only once all MRC has been sold. However, AS may be purchased earlier by customers.
- 1.31 CSL publishes indicative prices and indexation factors for each product and sells capacity on a negotiated basis, with a backstop auction for MRC and AS 30 days before the start of the Storage Year on 1 May. The auction process

<sup>21</sup> CSL defines FAS as first 20 million therms sold during the Storage Year (equivalent to 0.59 TWh).

<sup>22</sup> CSL uses sales from the 2005/6 Storage Year to set the boundaries for different categories, because that year had the highest space sales before investment creating Incremental Capacity.

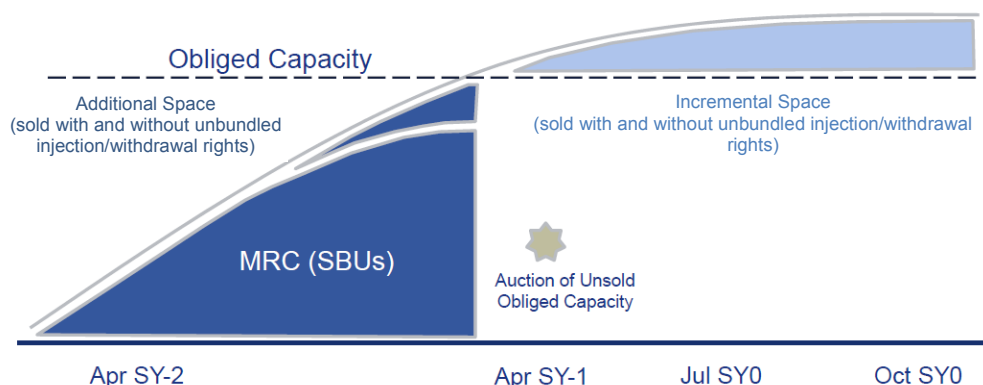
<sup>23</sup> For example, Centrica is entitled to 25% of 455 million SBU's (equivalent to 113.75 GWh of withdrawal per day) plus all Incremental Capacity (30 GWh per day), producing a maximum potential withdrawal availability in the 2014/15 Storage Year of 143.75 GWh per day. This represented 29.6% of total available withdrawal capacity (485 GWh per day).

<sup>24</sup> Injection and withdrawal represent maximum physical capacities. The maximum injection and withdrawal rates available vary based on the volume of gas in the reservoir. See Appendix 1 of [CSL's and Centrica's request for an indication of the CMA's prioritisation principles](#) (18 September 2015).

<sup>25</sup> Going into the 2014/15 Storage Year, the maximum Rough NRV was 40.7 TWh (40,700 GWh). During the 2014/15 Storage Year, Rough achieved a new maximum NRV of 41.1 TWh (41,100 GWh).

has never been triggered, but it would be run with a marginal cost reserve price, which is intended to incentivise CSL to sell capacity before auction.

**Figure 1.3: The Rough Gas Storage Year and sales**



Source: CSL.

1.32 CSL negotiates price, term and volume bilaterally with customers, and records and reports formal bids and offers. Centrica is treated like any other customer and buys through the same process. CSL offers Rough capacity to all market participants on a non-discriminatory basis. Once sold, rights are transferrable in the secondary market between customers who are signatories to the SSC.

1.33 As part of the MRC, CSL offers a range of products to the market:

- Standard products represent the bulk of its capacity sales and are sold under the SSC in SBUs on an annual basis:<sup>26</sup>
  - S-Store is delivered to Easington beach.
  - C-Store is bundled with throughput capacity delivered to the NBP in winter.
- Non-standard products, outside the SSC, include the following:
  - V-Store is a virtual storage service, sold in bundled units on an annual basis. It is more expensive than standard products because it has no exposure to *force majeure*, maintenance, cancellation, etc.

<sup>26</sup> Both S-Store and C-Store are offered as within-day and day-ahead variants. The latter are sold at a small discount because they are less flexible, since nominations have to be finalised before the gas day. CSL told us that for the 2014/15 Storage Year, C-Store and S-Store represented [X] of total space sold and [X] of total revenues. Unbundled space accounted for [X] of both total space sold and total revenues.

- I-Store is a counter-seasonal product, sold for the year from November to October. It also has no exposure to *force majeure*, maintenance, cancellation, etc.
- 30-day is a service designed to mimic a smaller facility with less space and more injection than a Rough SBU.
- Unbundled capacity, including Additional Space.

1.34 While the undertakings address CSL's obligation to sell capacity ahead of the Storage Year, the contracts that CSL enters into with its customers address its obligations subsequently to *deliver* its capacity during the Storage Year (including issues such as interruptability and *force majeure*).

### *Rough's clients and sales*

1.35 In the 2014/15 Storage Year, CSL had [X] customers (Table 1.2). A small number of customers accounted for a large proportion of Rough's capacity sales. Most customers purchased a small proportion of Rough's capacity: [X] bought less than [X] of space each.

**Table 1.2: Rough's clients and sales in the 2014/15 Storage Year**

<i>Customer</i>	<i>% Space 2014/15</i>
Customer 1	[X]
Customer 2	[X]
Customer 3	[X]
Customer 4	[X]
Customer 5	[X]
Customer 6	[X]
Customer 7	[X]
Customer 8	[X]
Customer 9	[X]
Customer 10	[X]
Customers 11+	[X]

Source: CSL.

1.36 CSL sells capacity based on annual or multi-year contracts and under the undertakings it must offer at least 20% of MRC (equivalent to 91 million SBUs) on annual contracts. Most contracts are for durations of one year, although a small number are multi-year. A substantial proportion of capacity ([X] SBUs or [X] of the MRC) for the 2014/15 Storage Year was sold as part of multi-year contracts which were agreed before 2013/14 Storage Year (ie the 2014/15 Storage Year capacity was at least the second year of a multi-year deal). This capacity was taken up by [X] customers.



## *The regulatory framework for gas storage*

- 1.37 Neither the operation nor the ownership of gas storage facilities is a licensed activity under the Gas Act 1986 ('the Gas Act'). However, since the undertakings were given in 2003, additional legislative provision has been made – most recently in accordance with the so-called EU Third Internal Energy Market Package,<sup>27</sup> which aimed to further liberalise EU energy markets. The various EU obligations as regards gas storage have been implemented in the UK through amendments to the Gas Act (the Gas Regulation having direct effect). The effect of the changes is that storage undertakings are prohibited from discriminating between storage users and are subject to requirements regarding third-party access.
- 1.38 In particular under the Gas Act, operators of offshore storage facilities such as Rough are prohibited from discriminating against applicants for storage rights<sup>28</sup> and are required to publish annually the main commercial conditions relating to storage rights.<sup>29</sup> Storage operators are required to consult market participants on changes to the conditions of storage and have regard to their needs. Any person seeking the right to store gas at a particular facility may apply to Ofgem to secure that right, providing he or she has first attempted to negotiate in good faith with the storage undertaking for a reasonable period of time. Ofgem is empowered to issue a notice securing storage rights for the applicant or to regulate storage charges, provided it is satisfied that such rights would not prejudice the efficient operation of the storage facility for the purpose of storing, on behalf of its owner, the quantities of gas which the owner requires.
- 1.39 Ofgem has powers to consider applications made by storage owners for exemption from certain provisions in the legislation regarding third-party access (a 'minor facility exemption').<sup>30</sup> Because neither Centrica nor the previous owners of Rough have applied for an exemption, the provisions of the legislation relating to third-party access apply to Centrica as the owner of Rough.
- 1.40 As identified above, the Gas Regulation has direct effect in the UK and places a number of obligations on storage owners. In setting their mix of services, storage owners are required to offer long and short term services, firm and

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<sup>27</sup> The Third Energy Package includes Directive 2009/73 EC (the Gas Directive) and Regulation (EC) No 715/2009 (the Gas Regulation) which are the relevant elements of the package that make provision relating to gas storage facilities.

<sup>28</sup> Section 8R Gas Act 1986.

<sup>29</sup> Section 19B Gas Act 1986.

<sup>30</sup> Section 8S Gas Act 1986.

interruptible services and bundled and unbundled services.<sup>31</sup> Storage owners are required to offer at least the maximum technical storage capacity from the facility to market participants, taking into account system integrity and operation;<sup>32</sup> this is to be on non-discriminatory terms with the storage operator having transparent capacity-allocation mechanisms. Whilst the undertakings set an Obligated Capacity with an auction of unsold Obligated Capacity, there is not a formal requirement under the regulations to sell all the capacity that is made available to the market. The regulations require transparency from gas storage facilities – requiring they provide information on the contracted and available storage and the basis on which that is calculated.<sup>33</sup> In practice this means the storage operator will need to make public the maximum storage capacity.

- 1.41 Ofgem is the UK national regulatory authority under the EU Third Internal Energy Market Package, and in that role may conduct proactive market surveillance and investigate and take action against a storage operator it suspects is not complying with its requirements. Ofgem publishes guidance on the regulatory regime for gas storage facilities in Great Britain, on which it has engaged with the market through consultation and open letters.<sup>34</sup>
- 1.42 Ofgem also monitors, investigates and takes enforcement action against suspected breaches of REMIT.<sup>35</sup> REMIT is an EU regulation on energy market integrity and transparency, in force since 28 December 2011. It provides a consistent EU-wide regulatory framework specific to wholesale energy markets that defines market abuse, requires effective and timely public disclosure of inside information by market participants and obliges firms professionally arranging transactions to report suspicious transactions.
- 1.43 As noted at paragraph 1.16, because Rough is an offshore gas field, its operator requires a gas production licence from the Secretary of State (DECC/OGA).<sup>36</sup>
- 1.44 Rough is also subject to health and safety regulation by the Energy Division of the Health and Safety Executive (HSE) (responsible for offshore oil and gas

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<sup>31</sup> Article 15 Gas Regulation.

<sup>32</sup> Article 17 Gas Regulation.

<sup>33</sup> Article 19 Gas Regulation.

<sup>34</sup> See '[Guidance on the regulatory regime for gas storage facilities in Great Britain \(version 2\)](#)', published on 24 September 2015.

<sup>35</sup> REMIT 'Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency' (No 1227/2011), see The Electricity and Gas (Market Integrity and Transparency) (Enforcement etc) Regulations 2013 for transposition to provide Ofgem's National Regulatory Authority (NRA) functions.

<sup>36</sup> The Energy Bill before Parliament would transfer the relevant functions of the Secretary of State to a new independent regulator, the Oil and Gas Authority.

industry on the UK Continental Shelf). A primary requirement for an offshore installation operator is to operate the installation safely. Rough is subject to the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996. This requires the well be operated safely with health and safety risks as low as is reasonably practicable<sup>37</sup> and requires independent verification of the condition of the well.<sup>38 39</sup> This framework is underpinned by guidance published by the HSE and industry guidance published by [Oil & Gas UK](#), a body representing the UK offshore oil and gas industry. While following such guidance is not compulsory, owners and operators would abide by this industry guidance or be in a position to explain why they had departed from it ('comply or explain').

### ***The request to review the undertakings***

- 1.45 In March 2015, following technical reports on the integrity of its wells, CSL announced a decision to limit the maximum operating pressure in Rough from 3,500psi to 3,000psi while it conducted tests to establish that it could operate the wells at the higher pressure. The background to CSL's decision is addressed further in Section 3.
- 1.46 This fall in pressure had the effect of limiting the maximum reservoir volume (space) to between 29 and 32 TWh (the maximum reservoir volume was 41 TWh in 2014) and decreasing injection performance (the rate at which gas can be transferred into the reservoir).
- 1.47 In July 2015, CSL informed the market that it would need to conduct further tests that will last until the end of the Summer 2016 injection season (between September and December 2016), before it will have sufficient information to determine if it can raise the maximum permitted operating pressure.
- 1.48 CSL told us that when it announced the reduced operating pressure in March 2015, it had already sold all the Obligated Capacity that it was required to sell for the 2015/16 Storage Year and that the pressure restriction meant it would not be able to inject and store enough gas to meet the quantities its customers were entitled to demand under the SSC for that year. CSL met this

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<sup>37</sup> Regulation 13 (General Duty), the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996.

<sup>38</sup> Regulation 18 (Arrangements for examination), the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996. Well examination relies on verification of a well's condition through record checks rather than physical inspection.

<sup>39</sup> See [The Offshore Installations and Wells \(Design and Construction, etc.\) Regulations 1996](#). The HSE publish [guidance](#) on the application of the regulations. Regulation 18 has been replaced by equivalent regulations in the [2015 Safety Case Regulations](#), but in key aspects the requirement is essentially unchanged.

mismatch by buying back some space from customers, hedging and its request to OGA to consent to a lower reservoir limit (see paragraph 1.16).

- 1.49 CSL considered that there was a risk it would also be physically unable to meet the capacity requirements in the undertakings for the 2016/17 Storage Year. But it did not consider that its actions to address the mismatch for 2015/16 were sustainable solutions for future Storage Years. For the 2016/17 Storage Year, therefore, CSL separately requested an indication of the CMA's approach to prioritisation of enforcement action if CSL were to undertake the compliance steps it identified for 2016/17.<sup>40</sup> CSL further submitted that, as an ageing asset, the performance of the assets that constitute the Rough storage facility could be expected to become less predictable, increasing the potential for CSL to be physically unable to meet the undertakings' capacity sales requirements in future years.
- 1.50 In September 2015, CSL and Centrica therefore requested a review of the undertakings by the CMA by reason of a change in circumstance. CSL and Centrica suggested a number of proposed variations to the undertakings to address the change in circumstance and to reflect their view that the physical performance of the assets of Rough could be expected to become less predictable.
- 1.51 Specifically, in its application, CSL and Centrica proposed that the undertakings be varied such that:<sup>41</sup>
- the CMA should have the power to vary the Obligated Capacity (ie MRC and/or AS) where the physical capabilities at Rough are reduced, such that the Obligated Capacity would be aligned with Rough's physical capabilities. The CMA should also be able to increase Obligated Capacity, but not above the historical level (ie 455 million SBUs of MRC or require CSL to sell more than 31.854 TWh of space ahead of the Storage Year);
  - the CMA could review the Obligated Capacity by its own initiative or following a request from CSL (in the latter case, the request would be considered approved if the CMA did not respond within one month);

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<sup>40</sup> See [CSL's and Centrica's request for an indication of the CMA's prioritisation principles](#) (18 September 2015). In this request, CSL proposed for the 2016/17 Storage Year an Exceptional MRC of 340 million SBUs and that it would sell no less than 0.13 TWh of Additional Space. The CMA published its response to this request, indicating that, provided the assumed facts set out in CSL's letter of 18 September 2015 were to continue to apply and the proposed actions set out in the letter were undertaken by CSL, CMA officials anticipated they would not recommend prioritising the taking of enforcement action. See: letter dated 22 September, '[Request for an indication of enforcement prioritisation](#)'.

<sup>41</sup> See [CSL and Centrica application for a variation to the undertakings](#) (September 2015). CSL subsequently amended its reference to 31.854 TWh of space to 31.834 TWh of space.

- Ofgem would also be allowed to vary the cap on Centrica (ie Specified Capacity) if the CMA decided to change Obligated Capacity (currently Ofgem can do this only if Rough's market power changes or Centrica's requirements for flexible gas change);
- the capacity defined as Additional Space would be fixed at 1.534 TWh, or such other amount as is permitted by the CMA in accordance with paragraph 2.10. The aggregate of space in Rough that is allocated to AS and MRC with respect to a Storage Year would not exceed 31.854 TWh; and
- the capacity defined as Further Additional Space (FAS – ie space becoming available during the Storage Year) should be incorporated into the definition of Incremental Capacity.

1.52 CSL subsequently clarified that its request was for a variation to address instances where Rough cannot fulfil its obligations for the next Storage Year (or Storage Years), rather than in-year issues which are regulated by the contracts it has entered into. During our review, CSL provided evidence and clarification of its request and details of its proposals, which we consider in Sections 3 and 4 respectively.

### ***The review of the Rough undertakings***

1.53 In accordance with its published guidance<sup>42</sup> the CMA sought views on whether it should carry out a review in the light of the issues raised by the parties and CMA's prioritisation principles.<sup>43</sup> The responses to this consultation and CMA's own assessment of the evidence, provided grounds for the CMA to consider there was a realistic prospect of finding a specific change of circumstances relating to the capacity. In October 2015, the CMA therefore announced its decision to appoint a Group to undertake a review, under paragraph 16 of Schedule 24 to the Enterprise Act 2003.<sup>44</sup>

### ***The focus of the review***

1.54 In conducting a review whether by reason of a change in circumstance, an undertaking is no longer appropriate and should be varied it is important to consider the context of the investigation.

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<sup>42</sup> CMA, [Remedies: Guidance on the CMA's approach to the variation and termination of merger, monopoly and market undertakings and orders](#) (CMA11).

<sup>43</sup> See the [invitation to comment](#) (September 2015).

<sup>44</sup> See the [decision statement](#) (October 2015).

- 1.55 The undertakings were put in place in 2003 to address the adverse effects of a merger. In 2003, the undertakings were considered by the CC to be a necessary and measured response to those adverse effects and were subsequently adopted by the Secretary of State. More onerous alternative remedies, such as divestment, were considered by the CC and not adopted. Since 2003 the undertakings have been amended twice, first on 3 April 2006 and on 5 March 2012. The task of the Group in this current review is not that of a merger or market investigation. The task is not to re-examine the conclusions reached in 2003 in relation to evidence then available, nor the variations adopted in 2006 and 2012. We have taken these conclusions, and the variations to the current undertakings as the starting point.
- 1.56 In November 2015, we published a statement setting out the issues the Group expected to focus on in its review.<sup>45</sup> The Group noted that neither CSL nor Centrica had suggested that there had been a material change in competitive conditions in the gas storage market since the last review. In addition, it noted that none of the respondents to the invitation to comment had suggested there had been any such changes.
- 1.57 In the absence of evidence of a wider change of circumstances, the Group stated that it was not intending to review the market for the provision of gas storage facilities and whether any such changes would warrant any variation to the undertakings.
- 1.58 The Group considered that the review should focus on addressing the implications for the capacity obligations in the existing undertakings of the potential for increasing variability in the performance of the facility. In doing so it would:
- assess the proposed amendments as suggested by CSL and Centrica and consider whether there were alternative approaches that better achieved the effect of the undertakings;
  - seek to ensure that the effect of these undertakings in remedying or mitigating the aspects of the merger which the CC considered may operate against the public interest were maintained; and
  - consider the implications of changes to the capacity-related undertakings for the gas transmission system and wholesale gas market.

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<sup>45</sup> See the CMA's [Review of the Rough Undertakings given by Centrica Storage Limited and Centrica - Statement of Issues](#), 5 November 2015.

- 1.59 In addition, the Group proposed to include within its review an assessment of the monitoring and compliance arrangements – to consider whether they are achieving the objectives initially intended and, if not, possible alternative arrangements.
- 1.60 The scope has been to examine whether there has been a change in circumstances, whether arising out of the current issue at Rough as regards capacity or due to longer term changes in the asset, which have been sufficient to cause the Group to determine that the undertakings (or any aspects of the undertakings) are no longer appropriate and the undertakings should be varied, and if so how.
- 1.61 Six parties responded to the Group's Issues Statement.<sup>46</sup> Their responses raised a range of issues which the Group has also taken into account in its review.
- 1.62 The Group held hearings with CSL and Ofgem, and conducted a site visit to the Easington Terminal operated by CSL. The review staff team held meetings with Ofgem, the HSE Energy Division, the Oil and Gas Authority (OGA) and with CSL's appointed Independent Wells Examiner.
- 1.63 The Group published its provisional decision and gave notice of its intention to accept varied undertakings (Notice of a proposal to accept undertakings) in March 2016.<sup>47</sup> The provisional decision found that as Rough ages, its performance may become increasingly unpredictable so that CSL cannot meet its capacity obligations. The Group provisionally decided to accept varied undertakings to introduce an Adjustment Mechanism which would allow Ofgem to vary the capacity obligations if CSL is able to demonstrate that there is an issue which will have a substantial impact on Rough's capacity.
- 1.64 Five parties responded to the provisional decision and notice.<sup>48</sup> The Group has taken into account their responses in this final decision. Where clarifications to the drafting of the undertakings have been adopted by the Group, it does not consider they are material modifications from the variations it proposed at the time of its provisional decision and it intends to proceed to accept varied undertakings from Centrica and CSL.

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<sup>46</sup> The respondents were: Centrica, CSL, EDF Energy, Ofgem, ScottishPower and SSE Hornsea Ltd. The CMA published their responses on its [case page](#).

<sup>47</sup> See [Rough Undertakings Review](#), CMA, 4 March 2016.

<sup>48</sup> The respondents were: Centrica, CSL, EDF Energy, Ofgem and SSE Hornsea Ltd. The CMA published their responses on its [case page](#).



## 2. Market background and future developments

### *Overview of the GB gas market*

- 2.1 This section provides an overview of the GB gas market and considers whether market conditions have changed substantially since the 2011 review of the undertakings. It provides some background on gas supply, gas demand and how market participants obtain flexibility in their supply of gas. It also analyses the economic factors that determine storage facilities' profitability. Finally, it assesses the likely future role of gas storage.

### *Gas supply*

- 2.2 Gas is received into the UK National Transmission System (NTS) from a number of different supply sources:
- (a) From fields located on the UK Continental Shelf (UKCS) and the Norwegian Continental Shelf (NCS), which enter the NTS via pipelines.
  - (b) From global gas fields (located, for instance, in the Middle East) which enter the NTS via import terminals for Liquefied Natural Gas (LNG) located at Isle of Grain on the north Kent coast, Dragon and South Hook (both located on the Welsh west coast). LNG is transported in specialised ships and then re-gasified prior to being input into the network.
  - (c) Via interconnector pipelines from mainland Europe. Specifically, the terminal located at Bacton in Norfolk receives gas from:
    - (i) Zeebrugge in Belgium, via the Interconnector UK (IUK) bidirectional pipeline; and
    - (ii) Balgzand in the Netherlands, via the one-directional Balgzand-Bacton Line (BBL).
- 2.3 Over time, the relative importance of the different sources of gas has changed significantly. The role of UKCS as a source of supply has decreased in recent years, because it is now relatively more costly to extract gas as reserves have depleted. Today, domestic gas accounts for approximately half of annual GB demand.<sup>49</sup> As domestic production has declined, GB's net exports via IUK

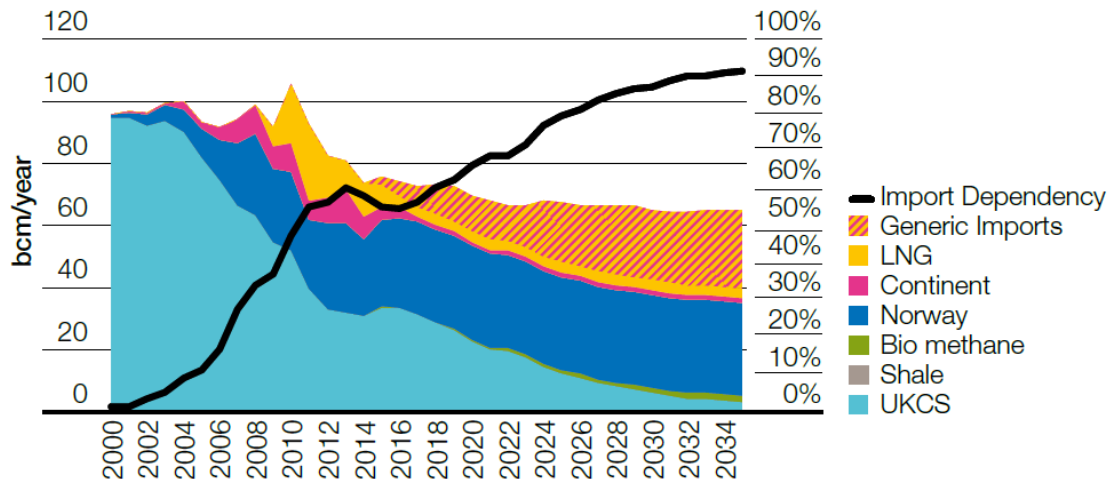
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<sup>49</sup> We note that in February 2016 a new gas plant in Shetland became operational. The plant is supplying gas from the fields located in the Laggan and Tormore, 125km North West of Shetland. It is estimated that the fields contain almost one fifth of the UK's remaining oil and gas reserves and are capable of providing about 8% of the UK's gas needs. See BBC (February 2016), [Total turns on gas from west of Shetland Laggan and Tormore fields](#).



have generally fallen.<sup>50</sup> The UK is becoming increasingly reliant on imports of gas, particularly from the NCS and, to a lesser extent, from mainland Europe.<sup>51</sup> National Grid Gas (NGG) considers that this dependence on gas imports is likely to increase further in future years, as illustrated by Figure 2.1.<sup>52</sup>

**Figure 2.1: Annual gas supply (slow progression scenario), 2000 to 2034**



Source: National Grid Ten Year Statement 2015.

Note: the 'slow progression scenario' is a scenario estimated by NGG where economic recovery is slow, the supply of shale gas remains marginal and production from the UKCS declines.

2.4 GB's imports of LNG depend on the global market for LNG. In many cases LNG only flows to GB when price differentials with other markets (eg Japan, South Korea and Taiwan) are attractive.<sup>53</sup> Since 2011, global demand for LNG has risen faster than supply and LNG deliveries have fallen.<sup>54</sup>

<sup>50</sup> We note, however, that exports via IUK vary year to year. GB also exports gas to Ireland via the one-way Moffat pipeline.

<sup>51</sup> The UK's import capacity is currently around 152 bcm per year (bcm/y). This is split into three near equal sources: the Continent (46 bcm/y), Norway (56 bcm/y) and LNG (49 bcm/y). National Grid notes that, to accommodate the increased import capacity, significant investment in new import infrastructure to replace declining domestic production has been brought forward. Investment in capacity has now stopped, because the existing infrastructure is projected to be capable of meeting demand into the future. However, National Grid notes also that there are four proposed import projects at present, all of them LNG terminals, with a combined capacity of more than 30 BCM. Although planning approval has been granted for some of them, there is uncertainty about when these projects might be completed. See National Grid, [Gas Ten Year Statement 2014](#) (November 2014) and [Gas Ten Year Statement 2015](#) (November 2015).

<sup>52</sup> National Grid [Gas Ten Year Statement 2015](#) (November 2015).

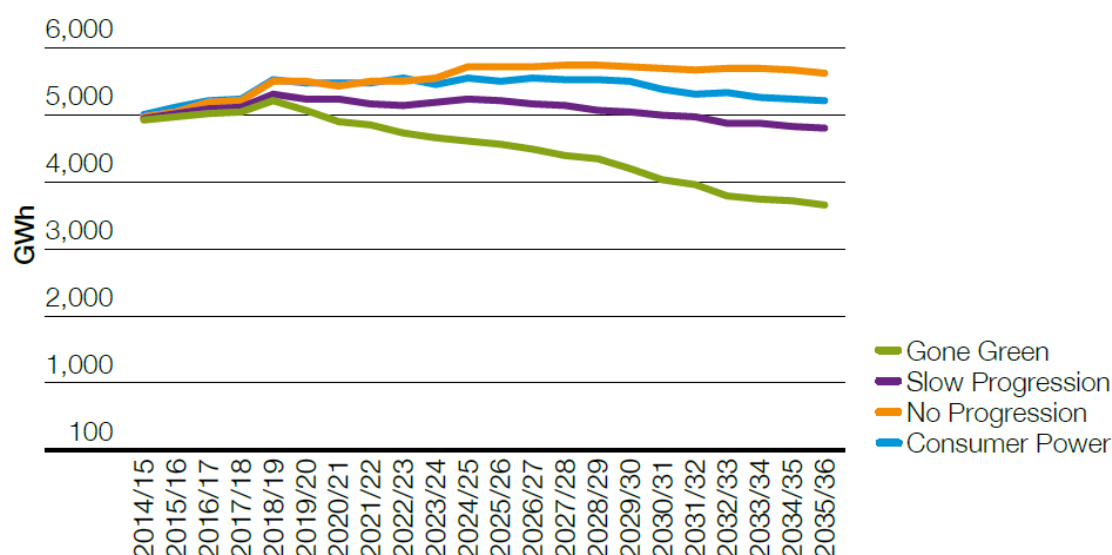
<sup>53</sup> For instance, the combination of the Japanese nuclear shutdown following the Fukushima disaster in March 2011 and increased demand from South America created a general tightness in global LNG markets that restricted flows of LNG to the UK. See Oxford Institute for Energy Studies, [The Role of Gas in UK Energy Policy](#) (July 2015).

<sup>54</sup> See Ofgem, [Wholesale Energy Markets in 2015](#). Specifically, LNG imports to the UK have declined by 45% from the 2011 peak and, by 2014, were 124 TWh. However, 2014 saw an increase in LNG imports to the UK by 21% compared with 2013, driven by increasing global supply and weaker than expected demand in Asia. See DECC, [Natural Gas Digest of United Kingdom Energy Statistics \(DUKES\)](#), Chapter 4 (July 2015).

## Gas demand

- 2.5 Gas demand in recent years has fallen across the three main types of consumers (ie domestic/commercial, industrial and generation).<sup>55</sup> National Grid estimates that the decline in the demand for gas is expected to continue, although to a lesser extent.<sup>56</sup> This is because, as renewable generation becomes more important, gas-fired power stations will be still needed to provide flexibility when renewable generation is insufficient.
- 2.6 Although demand for gas is expected to be lower, peak day demand might not follow the same trend, as demonstrated by National Grid's forecasts (Figure 2.2). As such, the need for gas flexibility might increase even if overall average demand falls.

**Figure 2.2: Estimates of 1-in-20 peak demand, 2014/15 to 2035/36<sup>57</sup>**



Source: National Grid.

Note: 1-in-20 peak demand denotes the highest demand that could be expected to be exceeded (whether on one or more days) only once in 20 years.

<sup>55</sup> Specifically, total gas demand (including colliery methane) decreased from 849 TWh in 2013 to 773 TWh in 2014, a 9% decline. See DECC, [Natural gas Digest of United Kingdom Energy Statistics \(DUKES\)](#), Chapter 4 (July 2015). Several factors contributed to the decline in gas demand, including warmer weather and energy efficiency improvements (for domestic and commercial customers), worse economic conditions (for industrial customers) and new renewable generation capacity (generation). For more details, see Ofgem, [Wholesale Energy Markets in 2015](#), p45.

<sup>56</sup> In the slow progression scenario, annual demand will decrease by around 5% by 2020. See National Grid [Gas Ten Year Statement 2015](#) (November 2015).

<sup>57</sup> The four National Grid scenarios are based on different assumptions about the role played by renewable generation and the speed of economic recovery. See the glossary for definitions of each.

## ***Flexible gas***

- 2.7 Flexible gas is gas where the amount supplied is able to vary in response to changes in gas demand. Gas demand (from domestic customers in particular) varies on a seasonal and daily basis and is very dependent on temperature. To meet this variable demand, shippers need to ensure that their gas supplies meet the demands of customers on the day.<sup>58</sup> As such, they need flexibility in their sources of gas: it would not be efficient to have sufficient production and import capacity to meet the highest levels of winter demand, since that would entail operating at very low levels of utilization in the summer.
- 2.8 Flexibility in gas sources is important to ensuring the security of the system – that is, to guarantee that gas supply always equates to gas demand. This means that market participants need access to gas supplies that can vary the amount of gas delivered on the day, to manage fluctuations in gas demand and their consequent exposure to volatile movements in gas prices. Different sources of supply have varying degrees of flexibility.
- 2.9 Some of the flexibility required is met by variations in the gas delivered from the supply sources listed in paragraph 2.2. In addition, another relevant source of flexibility is gas storage.<sup>59</sup> The various sources of flexibility have different characteristics and price drivers, but all compete to a greater or lesser extent as shown by Figure 2.3. Ofgem notes that, even in the winter, storage only makes up a small proportion of GB's total supplies.<sup>60</sup>

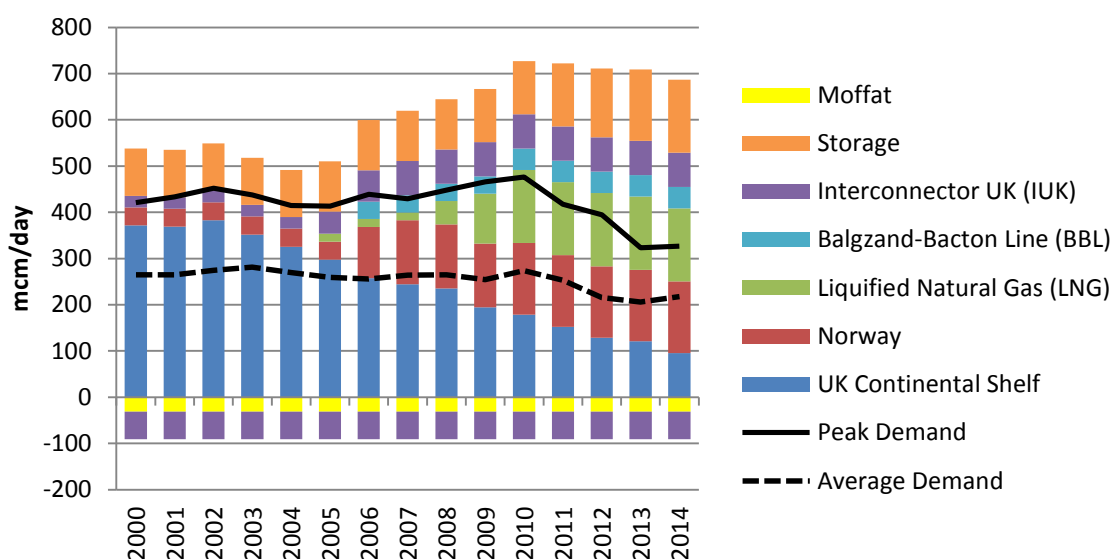
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<sup>58</sup> Overall, gas introduced in the system needs to be approximately equal to the gas that exits the system. Shippers are incentivised to balance their portfolios, through changes to flows and trading at the National Balancing Point (NBP). Shippers who are out of balance face cash-out charges, which are based on the cost of balancing the system. NGG, acting as System Operator, carries out residual balancing.

<sup>59</sup> Demand-Side Response (DSR) and Interruptible Contracts, such as a gas-to-oil switch in power generation in response to high gas prices can also be considered as a source of flexibility, although less relevant than the others listed above. Interruptible Contracts allow a supplier to interrupt supply of gas to a customer either for its own purposes or in respect of National Grid interruption rights.

<sup>60</sup> See Ofgem, [Wholesale Energy Markets in 2015](#).

**Figure 2.3: Gas supply and interconnector capacity, 2000 to 2014**



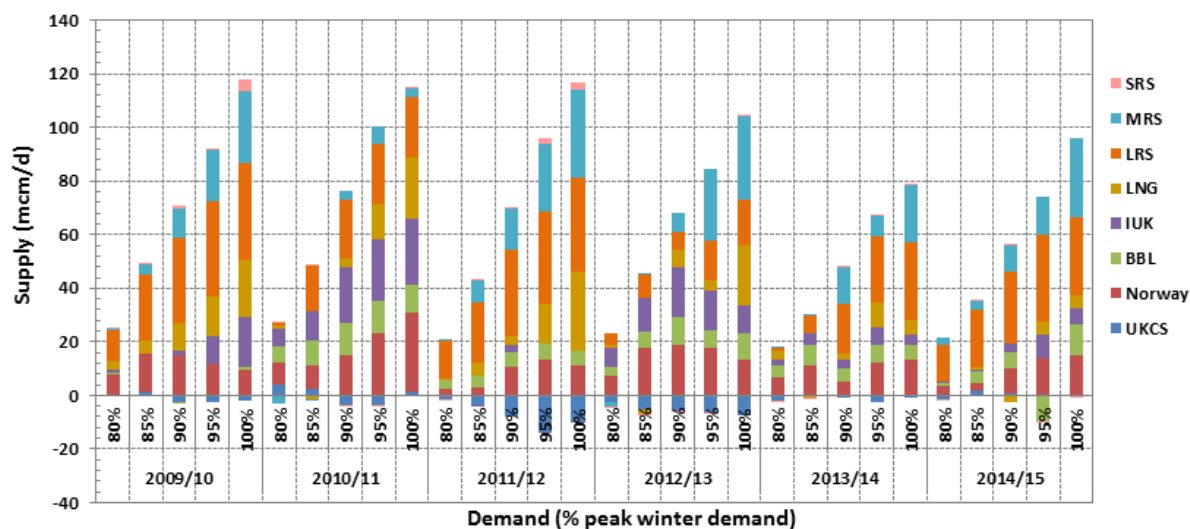
Source: National Grid, GIE, ENTSO-G (published as part of [Ofgem Wholesale Energy Markets in 2015 report](#)).  
Notes: Negative numbers denote imports. Moffat refers to exports to Ireland.

- 2.10 We note from Figure 2.3 that the fall in gas demand (both average and peak) and the increase in supply capacity, are likely to have reduced the likelihood of gas supply being unable to meet peak demand in the future, given available storage capacity.
- 2.11 However, the relative importance of storage as a source of flexibility is clearer when peaks in gas demand are considered in more detail. Figure 2.4 illustrates which sources of gas are used to meet demand when demand rises above 75% of peak. Gas from NCS and Europe provide baseload gas (ie the minimum amount of gas needed to meet non-peak demand) and their role in providing flexibility is limited, whereas storage provides a significant proportion of flexibility. While LNG and IUK provide some flexibility, this varies year-to-year.<sup>61</sup>
- 2.12 Storage facilities can be classified as Long-Range Storage (LRS) facilities; Medium-Range Storage (MRS) facilities; and Short-Term Storage facilities (SRS). The distinction is based on the facility's duration, ie the length of time for which gas can be withdrawn at maximum daily deliverability when the facility is full.<sup>62</sup> Rough is the only LRS facility in the UK. From Figure 2.4, we note that LRS and MRS facilities represent the main sources of storage flexibility.

<sup>61</sup> The UK's increased dependency on imported gas (see paragraph 2.3) is therefore unlikely to have a significant impact on the market for flexible gas.

<sup>62</sup> See the glossary for further details.

**Figure 2.4: Incremental changes (over 75% demand level) in peak day supply, 2009/10 to 2014/15**



Source: Ofgem analysis of National Grid data (previously published as part of Ofgem storage exemption consultations). LNG is Liquefied Natural Gas; IUK is Interconnector UK; BBL is Balgzand-Bacton Line; UKCS is UK Continental Shelf.

- 2.13 More relevant for the current review is to understand which sources of flexible gas, if any, can be considered to be competing with Rough. This issue was addressed by the CC in the 2011 review of the Rough undertakings.<sup>63</sup> The CC estimated, for each of the sources of flexibility, whether flows of gas were correlated with day-ahead gas prices.
- 2.14 The CC's analysis showed a positive and statistically significant relationship between flows and day-ahead prices for all sources of gas (ie all were considered as potential substitutes for Rough), with the exception of LNG and imports from Norway and BBL, which were not considered potential substitutes.<sup>64</sup>
- 2.15 Rough, however, appeared to be the most price-responsive source of flexible gas. While UKCS fields were responsive to prices (albeit to a lesser extent than Rough), their role as a source of flexibility was considered to be in decline. IUK was less price responsive than Rough, mainly because of contractual arrangements and security of supply restrictions.

<sup>63</sup> CC (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility. See the Competition Commission's final report on the [CMA's webpages](#).

<sup>64</sup> Specifically, the CC carried out a number of Ordinary Least Squares (OLS) regressions to explore the relationship between flows and prices in the winter months. For a given increase in prices, a higher flow implies that the source is more responsive to prices and thus it represents a better source of flexibility. For instance, a 1p per therm increase in NBP day-ahead prices was associated with a 9.761 GWh/day increase in flows, which was the highest coefficient among the different sources of gas. LNG was not considered to be a substitute for Rough, given the constraints from seasonal variations in LNG imports and strong constraints on its ability to respond to short-term demand variations.

- 2.16 Therefore, gas imported through the interconnectors is not flexible enough to represent a good substitute for Rough. We note in paragraph 2.3 that there are no plans to increase import capacity from the interconnectors and the plans to increase LNG capacity are at a very early stage. As such, we consider it probable that, in the medium term, the degree of substitutability between imports and Rough will remain low
- 2.17 We have not repeated the CC's analysis to assess whether the degree of substitutability of the different sources of flexibility has changed since its 2011 review. However, as shown in paragraph 2.12 and Figure 2.4, gas storage, and in particular Rough, represents an important source of flexibility to meet peak demand. As such, we consider it probable that Rough remains the most flexible source of gas for meeting peak demand and we have not found or received evidence that is not the case.

### Gas storage

2.18 Table 2.1 lists the storage facilities that are currently operating in GB.<sup>65</sup>

**Table 2.1: Existing gas storage facilities**

Owner	Site	Space (bcm)	Withdrawal (mcm/day)	Injection (mcm/day)	Duration (days)	Type and start date	Status
CSL	Rough	3.1	45	28	67	Depleted field (1985)	LRS
National Grid LNGS	Avonmouth*	0.08	13	0	6	LNG <sup>66</sup> (1978)	SRS
SSE	Hornsea	0.3	18	2	17	Salt cavern (1979)	MRS
EDF	Holehouse Farm	0.05	11	10.8	5	Salt cavern (2004 – 2008)	MRS
E.ON	Holford	0.2	22	22.1	9	Salt cavern (2011)	MRS
Scottish Power	Hatfield Moor	0.07	2	1.9	35	Depleted field (2000)	MRS
SSE & Statoil	Aldbrough	0.33	40	19.7	8	Salt cavern (2009)	MRS
Humbly Grove Energy	Humbly Grove	0.3	7	8.2	42	Depleted field (2005)	MRS
Storengy (GDF Suez)	Stublach	0.2	15	29.7	13	Salt Cavern (2013)	MRS
EDF	Hill Top Farm	0.02	2.1	5.5	10	Salt Cavern (2011)	MRS

Source: National Grid. Rough's space reflects the current MAASP issue.

\*Expected to close in April 2016.<sup>67</sup>

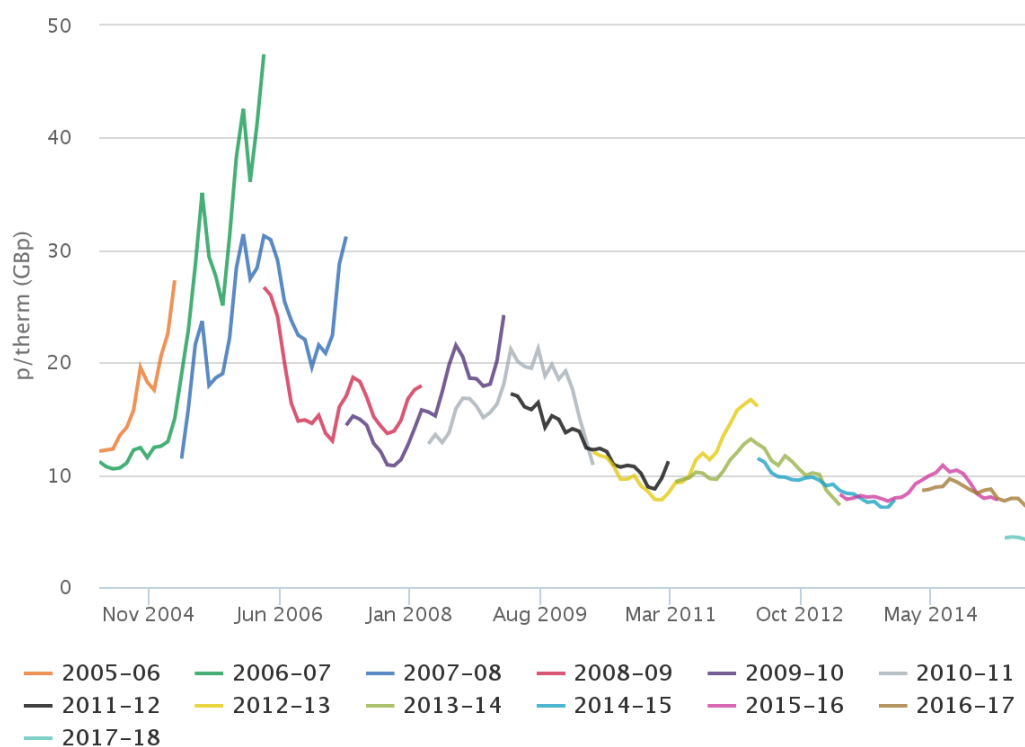
<sup>65</sup> Gas storage facilities can be located underground in either salt caverns, depleted gas fields or aquifers. The location of the facility broadly determines its characteristics and main usage. Facilities in salt caverns tend to be smaller in volume but have high injection and withdrawal rates. They also have low cushion gas requirements. As such, gas can be injected and withdrawn several times during the year (*multi-cycle* facilities). Facilities in depleted gas fields and aquifers are relatively large in terms of volume but have low injection and withdrawal rates. They also have high cushion gas requirements, and are better suited to seasonal flexibility (ie gas is injected in the summer and withdrawn in the winter). LNG facilities tend to be smaller in volume but have high injection rates. They are used to meet very high demand for short periods of time (*peak shaving* facilities) or to provide short-term back up in the event of a pipeline or compressor failure. See Le Fevre (2013) [Gas storage in Great Britain](#).

<sup>66</sup> In this case, LNG refers to an onshore facility where gas from NTS is condensed – not via ship delivery.

<sup>67</sup> National Grid decided to close the Avonmouth storage facility because of the significant levels of investment needed to continue operating the site in the long term. See [National Grid letter to stakeholders](#), February 2015.

- 2.19 Storage facilities create value for customers by allowing them to inject gas when the gas price is low and withdraw it when the gas price is high. Therefore, the variability of gas prices represents a crucial parameter to determine storage profitability. More precisely, the difference between forward price of gas in summer and winter denotes the *intrinsic* value of storage, while the day-to-day variation in gas prices denotes the *extrinsic* value of storage.
- 2.20 **Intrinsic value.** By purchasing storage capacity, shippers can trade forward to lock in the winter-summer price differential. They then use storage capacity to deliver against positions they have taken in forward markets. LRS facilities, such as Rough, are more appropriate to generate intrinsic value from seasonal variability in prices.<sup>68</sup> Figure 2.5 illustrates the evolution of the summer-winter spread over the past 10 years.

**Figure 2.5: NBP gas summer-winter spreads, 2005/6 to 2017/18**



Source: Ofgem calculations using data from ICIS. Information correct as of January 2016. Available on [Ofgem's webpages](#).

- 2.21 We note that the spread was relatively high during the period 2005 to 2010, being generally well above 20p/therm, when seasonal price volatility for gas

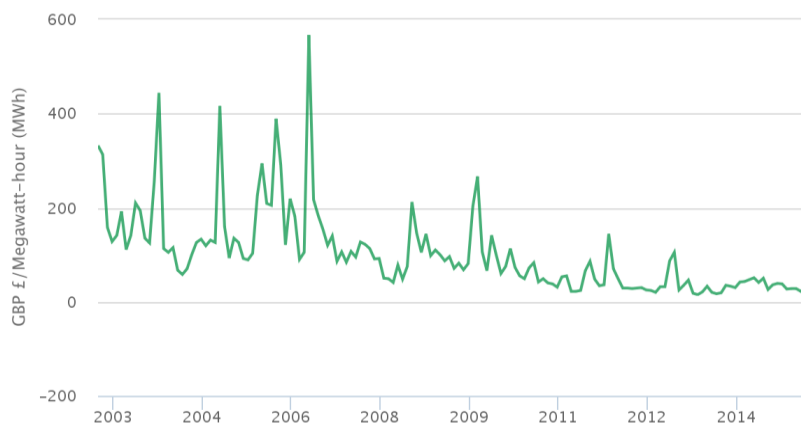
<sup>68</sup> The prices of SBUs sold at Rough follow the pattern of the summer-winter spreads. For an indication of the SBUs prices at Rough, see the [CSL website](#).



was relatively high.<sup>69</sup> Since then, the spread has generally declined and it is now around 6-7p/therm for 2016/17.

- 2.22 Several factors have contributed to this trend. Firstly, the increased import capacity provides additional flexibility and can often act as a substitute for storage, although the degree of substitutability may vary. Secondly, as shown in paragraphs 2.5 and 2.6, gas demand has declined, partly because of the economic slowdown. Finally, there has been increased convergence between UK and continental prices.
- 2.23 **Extrinsic value.** Shippers who purchase storage capacity can take advantage of short-term price volatility by varying their storage usage day-to-day. Fast-cycle storage facilities, such as MRS facilities, are more appropriate to generate value from day-to-day variability in prices. By contrast, LRS facilities are more appropriate for generating value from seasonal price differentials. SRS facilities, which have low injection rates, are mainly used to meet peak demand on the few coldest winter days and are less likely to be used to generate value from price volatility. Generally, the extrinsic value is relatively uncertain, so it is more difficult for shippers to lock-in by trading forward. We also note from Figure 2.6 that day-to-day variability of gas prices has declined over time.

**Figure 2.6: Price volatility of gas by month – Day-ahead contracts, 2003-2015**



Source: Ofgem calculations using data from ICIS. Information correct as of January 2016. Available on [Ofgem's webpages](#).

<sup>69</sup> Several factors during that period contributed to the seasonal volatility of gas prices (and thus the value of storage), including cold weather, UKCS deliveries being lower than expected, a fire at Rough in 2006 and uncertainty related to a dispute between Russia and Ukraine which restricted flows of gas to continental Europe. See Alterman [Natural Gas Price Volatility in UK and North America](#) (February 2012).



## *The future of gas storage*

- 2.24 In recent years, a large number of gas storage projects have been proposed, both for MRS fast-cycle facilities and for LRS seasonal facilities.<sup>70</sup> The majority of new projects were proposed during the period 2006-2010, when the level of the summer-winter spreads was sufficient to ensure a break-even return on new storage investments.
- 2.25 However, although many of these projects obtained planning permission, very few of them have reached the Final Investment Decision (FID) stage and some have been put on hold indefinitely.<sup>71</sup> Table 2.2 summarises the storage projects which are under consideration and their current status.

**Table 2.2: Proposed storage projects**

<i>Project</i>	<i>Operator/Developer</i>	<i>Location</i>	<i>Space (bcm)</i>	<i>Approximate max delivery (mcm/d)</i>
Deborah	Eni	Offshore Bacton	4.6	Planning granted, no FID
Islandmagee	InfrasStrata	County Antrim, NI	0.5	Planning granted, no FID
King Street	King Street Energy	Cheshire	0.3	Planning granted, no FID
Preesall	Halite Energy	Lancashire	0.6	Planning granted, no FID
Saltfleetby	Wingaz	Lincolnshire	0.8	Planning granted, no FID
Whitehill	E.ON	East Yorkshire	0.4	Planning granted, no FID
		<b>Total</b>	<b>7.2</b>	

Source: National Grid Gas.

Note: This list may not be exhaustive; other storage projects have at times been reported in the press.

- 2.26 We note that none of the storage projects listed above are operated by CSL. However, we also note that CSL considered developing new storage facilities, eg Baird in the Southern North Sea and Caythorpe in East Yorkshire, but in 2013 decided to put the two projects on hold. Centrica Group reported that the approximate cost to it of these decisions was £240 million.<sup>72</sup>
- 2.27 We understand that two factors have slowed the development of new storage facilities. Firstly, the combined decline in short-term and seasonal gas price volatility has reduced economic incentives to proceed with proposed projects.
- 2.28 Secondly, institutional factors have not provided additional incentives to proceed with proposals. In 2013 DECC decided not to introduce subsidies to facilitate construction of new storage capacity.<sup>73</sup> DECC's view was that gas storage, while important, only provided a small proportion of UK total supply,

<sup>70</sup> See Ofgem, [Wholesale Energy Markets in 2015](#), p42.

<sup>71</sup> This includes the new gas storage facility that ENI proposed developing at the Deborah field, a depleted gas field in the Southern North Sea near the Bacton terminal. In 2010, the government granted ENI a Gas Storage Licence for the project, which was designed to have a working capacity of 4.6 BCM, approximately doubling the UK's gas storage capacity.

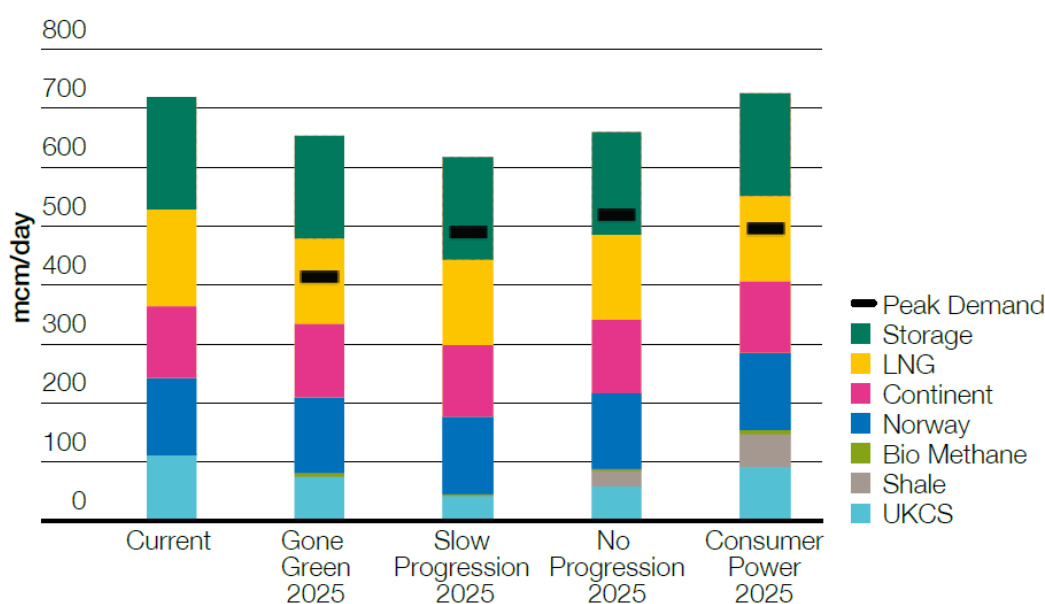
<sup>72</sup> See Centrica press release (September 2013): [Centrica announces decision not to proceed with Baird and Caythorpe gas storage projects](#).

<sup>73</sup> See DECC press release (September 2013): [Fallon: no new subsidy needed for gas storage - decision saves bill payers up to £750 million](#). DECC's decision followed a request by its Secretary of State to Ofgem to assess the potential risk to medium- and long-term gas security of supply in Great Britain and appraise potential further measures in the gas market which could enhance security of supply.

and does so in combination with other sources of supply. Based on the independent analysis commissioned, DECC considered that public subsidies to encourage more gas storage were not cost-effective. The benefits of building more storage (ie to offset price volatility and avoid the cost associated with supply disruption) were estimated to be lower than the cost of building additional storage. In addition, DECC's view was that subsidising storage would have distorted the GB gas market by crowding out investment in alternative gas supply sources.

- 2.29 National Grid's analysis suggests that the current level of physical supply capacity (including the existing storage capacity) is more than enough to satisfy peak gas demand.<sup>74</sup> Figure 2.7 estimates peak demand and peak supply in 2025 for the Future Energy Scenarios developed by National Grid.<sup>75</sup> We note that National Grid forecasts that estimated peak demand for 2025 will remain below peak supply, even in the less favourable scenarios (ie No Progression and Slow Progression).<sup>76</sup>

**Figure 2.7: Peak demand and supply under different scenarios**



Source: National Grid Gas.

<sup>74</sup> See National Grid [Gas Ten Year Statement 2015](#). National Grid assessed, in its [Winter Outlook report 15/16](#), the impact of reduced storage capacity at Rough on the security of supply for winter 15/16. Taking into account all the sources of flexibility, it estimated that the total supply potentially available was 613 mcm/d, while it forecast peak demand in the coldest scenario (1-20 peak demand) would be 465 mcm/d. Therefore, it estimated the supply margin to be approximately 148 mcm/d.

<sup>75</sup> National Grid has developed four Future Energy Scenarios, following industry feedback, which focus on the energy trilemma (sustainability, affordability and security of supply).

<sup>76</sup> National Grid noted in its [Gas Ten Year Statement 2014](#) that there may be other commercial reasons for developing new storage capacity. For example, there may be a case for operators to develop storage to make best use of shale gas, or to support a power generation market with increasingly intermittent low carbon generation.

## ***Centrica's position in domestic retail markets***

- 2.30 The CC's findings in 2003 were related to Centrica's position in the domestic gas supply market coupled with the unique position of Rough in the gas storage market. In particular, the CC noted that Centrica's ownership of Rough would give it the ability and incentive to behave in ways that would disadvantage its downstream rivals, including potential retailers willing to enter the downstream gas market.<sup>77</sup> The CC's review of the undertakings in 2011 concluded that Centrica continued to have a strong position in the domestic retail gas supply market.<sup>78</sup>
- 2.31 In response to the Invitation to Comment issued in September 2015,<sup>79</sup> no parties suggested that there had been a material change in competitive conditions in the gas storage market since the 2011 review.
- 2.32 Similarly, none of the stakeholders who responded to our Issues Statement suggested that the review should address the implications of changes to market and competitive conditions for the Rough undertakings.<sup>80</sup> Respondents broadly agreed that there had been no significant changes since the last review. Others noted that there had been some market changes which the review should take into account in considering the capacity issues, but did not suggest that in themselves these changes constituted an issue the review should address.
- 2.33 We have considered whether Centrica's position has changed since the CC's 2011 review. Table 2.3 shows that, although Centrica's share of domestic gas supply has fallen since 2011, it remains, by a considerable margin, the largest supplier of gas and electricity to domestic customers.

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<sup>77</sup> See Competition Commission [Centrica plc and Dynegy Storage Ltd and Dynegy Onshore Processing UK Ltd: A report on the merger situation](#) (August 2003), paragraphs 2.170 and 2.171.

<sup>78</sup> See Competition Commission [Review of Undertakings given by Centrica following its acquisition of the Rough gas storage facility – Final Report](#) (April 2011).

<sup>79</sup> See the [Invitation to comment](#) (September 2015) and the [Decision statement](#) (October 2015) on the CMA's case page.

<sup>80</sup> See responses to the [Issues statement](#) (November 2015) on the Rough gas storage undertakings review case page.

**Table 2.3: UK market shares for domestic gas and electricity sales**

<i>Gas domestic supply %</i>			
<i>Supplier</i>	<i>April 2003</i>	<i>July 2010</i>	<i>June 2015</i>
Centrica (British Gas)	63	44	37
EDF	5	8	9
E.ON	11	13	12
RWE npower	9	11	9
SSE	7	17	13
Scottish Power	4	7	9
Independent	1	0	11

<i>Electricity domestic supply %</i>			
<i>Supplier</i>	<i>April 2003</i>	<i>July 2010</i>	<i>June 2015</i>
Centrica (British Gas)	23	24	24
EDF	16	13	12
E.ON	22	17	16
RWE npower	16	15	11
SSE	13	19	16
Scottish Power	9	12	11
Independent	1	0	10

Source: Ofgem. Available on [Ofgem's webpages](#).

Note: Market shares have been rounded.

## **Conclusion**

2.34 Our analysis of the market for flexible gas suggests that, despite the decline in gas demand and changes in the composition of gas supply, the market for flexible gas is broadly unchanged since the 2011 review. Gas storage, and in particular Rough, which is the only LRS facility in UK, still represents an important source of gas flexibility, particularly when peaks in demand need to be met (see Figure 2.4). Worse economic conditions (ie the decline in the summer-winter spread) have reduced the profitability of existing storage facilities, which in turn may impact incentives to continue to invest in facilities to maintain or increase capacity. Similarly, the economic conditions have delayed the construction of new facilities. Hence, Rough is likely to continue to represent an important asset for the UK's energy market. Moreover, Centrica's position in the retail gas market has remained substantially the same as at the time of the CC's 2011 review. As such, we conclude that the main competition concerns identified in the 2003 and 2011 reports, and which resulted in the undertakings, are likely still to be relevant.

## **3. Consideration of the change in circumstance**

### **Introduction**

3.1 In a review of undertakings, the CMA will consider whether there has been a change of circumstance such that the undertaking is no longer appropriate in

dealing with the competition problem and/or adverse effects which it was designed to remedy.<sup>81</sup>

- 3.2 In this Section we consider whether there has been a change of circumstance such that the current undertakings are no longer appropriate. In this instance, CSL told us that the requirement in the undertakings for CSL to sell the current Obligated Capacity ahead of the Storage Year is no longer appropriate.
- 3.3 We consider whether there is a change of circumstance which affects CSL's ability to sell Obligated Capacity, rather than how it affects CSL's ability to deliver capacity in-year because, under the undertakings, the delivery of the capacity CSL has sold is regulated by the contracts it has entered into.
- 3.4 We have considered two potential changes in circumstance, which are:
- (a) those related to the immediate capacity issue discussed in paragraphs 1.45 to 1.49; and
  - (b) those relating to the Rough storage facility as an ageing asset.

### ***Nature of the immediate change in circumstance***

- 3.5 CSL told us that the immediate change of circumstance is a limitation on the maximum operating pressure of the Rough wells from 3,500psi to 3,000psi<sup>82</sup> while it conducts tests to establish that it can operate the 24 wells on the 47/3B platform at the higher pressure.<sup>83</sup>
- 3.6 CSL limited the pressure in March 2015 based on a report from CSL's independent Wells Examiner in February 2015, which stated that the Maximum Allowable Annular Surface Pressure (MAASP) of the Rough wells' A-annuli had been calculated to be 3,000psi.<sup>84</sup>
- 3.7 The wells in Rough consist of a series of concentric tubes with spaces between them (Figure 3.1); and include the following:
- (a) Production tubing:
    - (i) The central tube is the production tubing. Gas is injected into and withdrawn from the reservoir through the production tubing. The limit

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<sup>81</sup> *Remedies: Guidance on the CMA's approach to the variation and termination of merger, monopoly and market undertakings and orders (CMA11)*, paragraphs 2.4 & 2.5

<sup>82</sup> CSL reports well pressure in pounds per square inch (psi).

<sup>83</sup> CSL told us that key components in the 6 wells on the older 47/8A platform had been tested to a higher pressure when built and that the wells were therefore not affected by the pressure issue.

<sup>84</sup> CSL, Well Integrity Review, 11-12 February 2015, conducted by Chris Dykes International Limited (CDIL). The 2015 review applies to the activities undertaken in the 2014 calendar year.

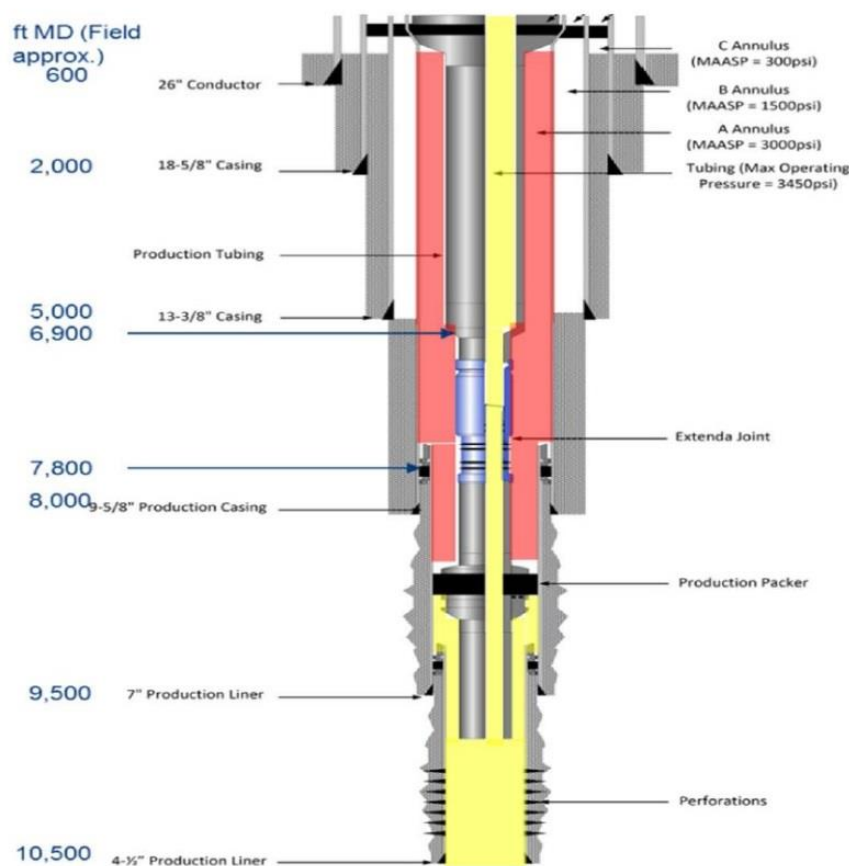
on the pressure in the production tubing tube is called the Maximum (Allowable) Operating Pressure (MAOP/MOP).

- (ii) The maximum pressure recorded in the tubing is the Closed-in Wellhead Pressure (CIWHP).

(b) Annuli:

- (i) The spaces between the concentric tubes are called annuli. The space between the production tubing and the next tube (known as production casing) is called the A-annulus, the space between the production casing and the next is the B-annulus, etc.
- (ii) Rough's wells each have three annuli. Maintaining the pressure integrity of the annuli is necessary to maintaining the structural integrity of Rough's wells.
- (iii) The limit on the pressure in the annuli is called the Maximum Allowable Annulus Surface Pressure (MAASP).

**Figure 3.1: Well structure**



Source: CSL.

- 3.8 CSL's independent Wells Examiner told us that he had found that the operating pressure, or Closed-in Wellhead Pressure (CIWHP), of Rough had been increased over time (with extra compressors used to increase capacity). He reported that the maximum CIWHP achieved with the compressors had been 3,450psi – exceeding the MAASPs CSL had quoted for the wells (which were up to 3,000psi). He was concerned that if gas in a well leaked out of the production tubing into the A-annulus, the latter had not been rated to withstand the pressure and might burst, and that this could lead to loss of the platform. He recommended that CSL conduct a risk review to demonstrate that operational risk levels are at a level that is As Low As Reasonably Practical (ALARP).<sup>85</sup>
- 3.9 The HSE told us that the injection pressure of wellheads should not exceed MAASP limits, and that if the integrity of annuli were compromised, this could result in a major accident initiator with potential for the loss of the installation.
- 3.10 CSL told us that Rough's wells had been operated at a pressure above MAASP limits since 1988. CSL had increased the operating pressure by around 3% following investments made in 2009 which created Incremental Capacity.
- 3.11 CSL also told us that through the mid- to late-2000s, the well integrity specialism within the offshore well engineering profession increasingly sought to ensure a consistent approach from the construction to the abandonment of wells. As part of these developments, there was an emerging view that the secondary envelope (A-annuli) should be rated to above the pressures that are operated in the primary envelope (production tubing), acting as a further barrier in the case of failure in the primary envelope. This approach grew to become a consensus across the industry and had effectively been adopted as practice by CSL in March 2015 on receipt of the 2015 Well Integrity Review.
- 3.12 CSL noted that previous Examiners had noted some MAASP-related issues but told us that these were isolated issues affecting specific wells, rather than the systemic risk that the A-annulus MAASP was lower than the production tubing pressure, as identified by the Well Examiner in his 2015 Well Integrity Review.
- 3.13 Reducing the operating pressure appears to be a proportionate response to the recommendation from CSL's independent Wells Examiner, as well as

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<sup>85</sup> ALARP describes the level to which The Health and Safety Executive (HSE) expects to see workplace risks controlled. See [HSE guidance](#).

being consistent with complying with the HSE's regulation of offshore platforms.

3.14 However, the reduction in maximum operating pressure to 3,000psi had the following consequences on Rough's capabilities:

(a) A limit on the maximum reservoir volume to between 29 TWh and 32 TWh, down from 41 TWh in 2014.

(b) A reduction in the injection performance.<sup>86</sup>

3.15 The effect of this reduction in reservoir volume and injection performance was a substantial mismatch between the Obligated Capacity in the undertakings and the capacity that Rough can physically deliver.

### *Conclusion*

3.16 CSL's response to the risk of the operating pressure being higher than the MAASP was to reduce the operating pressure. The CMA finds that the need to operate Rough at a significantly reduced pressure for a sustained period of time has resulted in a substantive reduction in available capacity and that this constitutes a change of circumstance which means that CSL would be unlikely to meet the requirement to offer the capacity it was obliged to for the 2016/17 Storage Year.

### ***Rough as an ageing asset***

3.17 CSL further told us that Rough is an ageing asset, which has outlasted its original design life of 25 years. Rough's wells are over 40 years old (in the case of the 47/8A platform) and over 30 years old (in the case of the 47/3B platform).

3.18 CSL told us that the process of ageing increases operational risks, due to processes such as the effects of corrosion and shrinkage on equipment, which are, to an extent, out of CSL's control. Given these factors, the reliability of Rough is likely to worsen over time.

3.19 CSL suggested a range of events that could impact on Rough's physical capabilities and the likelihood and frequency of such events arising increases

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<sup>86</sup> CSL also told us that although lowering the OGA consent to –50 BCF had offset some of the space and injection capacity reduction from the lower operating pressure, it had also impacted on withdrawal.

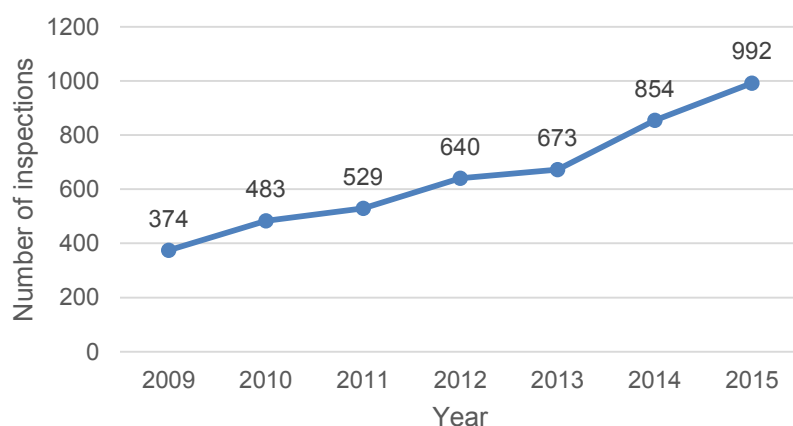


as Rough continues to age.<sup>87</sup> Further, CSL submitted that the current change in operating pressure and immediate physical changes to the facility are consistent with the general change to the nature of the facility as an ageing asset.

3.20 We asked CSL to provide examples of developments to date, additional to the current capacity issue that could support its claim that Rough's capacity might be becoming more unpredictable. CSL told us about the following examples:

(a) The number of safety inspections CSL carries out has increased steadily from 374 in 2009 to 992 in 2015 (see Figure 3.2).

**Figure 3.2: Number of safety inspections per year**



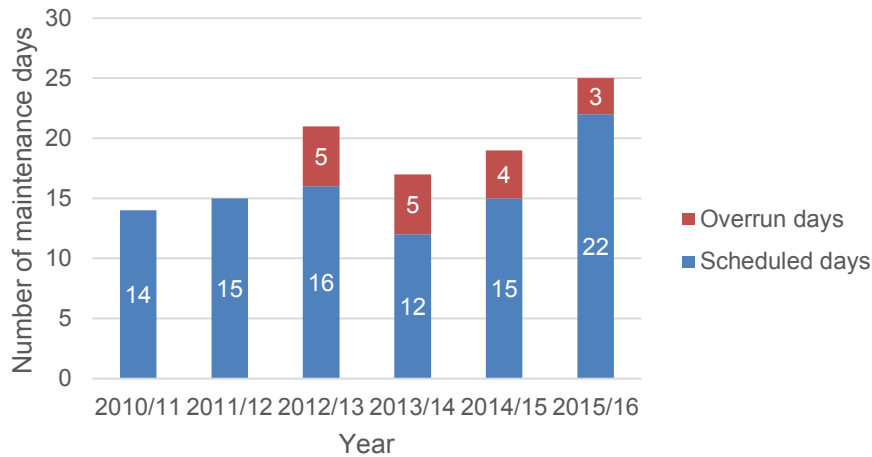
Source: CSL.

(b) The number of maintenance days CSL has taken annually has increased from 14 days in 2009/10 to 25 in 2015/16 (see Figure 3.3).<sup>88</sup>

<sup>87</sup> CSL told us that incidents with no link to ageing could also affect its ability to meet the capacity obligations in the undertakings in the future. CSL gave an example of a recent risk, where a large cargo vessel had lost power during a severe storm and was dragging an anchor towards Rough's 36-inch pipeline. If the anchor had damaged the pipeline, this could have put Rough offline for six to seven months, with impacts across more than the current Storage Year. Whilst Rough's inability to deliver capacity during this period might be met through *force majeure* clauses in the Storage Services Contract, under the undertakings CSL would still be required to sell the Obligated Capacity for the next Storage Year.

<sup>88</sup> The SSC allows CSL to spread its scheduled maintenance days over a three-year period. Where it exceeds its annual scheduled days, these are 'overruns'. CSL told us that it would potentially need to buy gas on the market whenever it overran its scheduled maintenance days.

**Figure 3.3: Number of maintenance days per year**



Source: CSL.

(c) In December 2015 CSL notified the market that it would suspend withdrawal on the 47/8A platform for the 2015/16 withdrawal season.<sup>89</sup> This was because the platform needed repairs [✂]. The 47/8A platform is only used for withdrawal during peak demand. However, CSL said that it would not be an unreasonable assumption that it may need to carry out similar maintenance on the larger 3B platform in around 10 years' time, and that this could affect Rough's capabilities in terms of both injection and withdrawal.

(d) We also note that from 2012 to 2015 the number of REMIT assessments published by CSL increased year-on-year. Multiple REMIT assessments can relate to the same REMIT notice, and each REMIT notice relates to a single event (outage). These data suggest that the number of events that impact on Rough's physical capabilities has been increasing over time, but should be treated with some caution since reporting can be affected by changes in policies and procedures.

3.21 The HSE told us that Rough, like any machinery, was likely to degrade as it aged and that CSL's suggestion that the variability of Rough's performance would increase with time was credible. Additionally, the HSE said that Rough was likely to degrade at a higher rate than typical gas production sites and gas storage sites on land for two reasons.

(a) The cyclical withdrawal and injection at Rough exerts a greater pressure on the storage facility infrastructure, over a longer period of time, than would be expected in a gas production facility where the pressure in the

<sup>89</sup> See: 47/8A suspended for 2015/2016 withdrawal season. CSL estimated that, based on current operations, the anticipated impact on Rough withdrawal over the 2015/2016 withdrawal was approximately 8% of its maximum withdrawal capability (this impact will decline as reservoir pressure declines).

gas reservoir decreases as it is depleted. The OGA concurred with this point, and commented that as Rough ages its performance could become impaired to some degree.

- (b) The HSE said that the offshore nature of Rough means that is likely to corrode at a higher rate than typical gas storage sites on land, as the saline environment and higher temperatures in the wells from produced gas accelerates rates of corrosion; and that storage sites using man-made salt caverns or onshore depleted fields are shallower and have lower operating temperatures and are not subject to these harsh saline marine conditions.

- 3.22 CSL's independent Wells Examiner told us that as Rough gets older, it will degrade and its integrity will become less reliable and predictable. He also said that issues he identified in the 2015 Well Integrity Review, in addition to the main issue with the A-annuli MAASPs, were indicative of Rough being an ageing asset. Its rate of degradation could be estimated, but was hard to predict without more, and more frequent, baselining.
- 3.23 CSL told us that the current change in operating pressure was consistent with the general change to the nature of the facility as an ageing asset. We note that the reduction in pressure was triggered by CSL's decision to operate the wells within their established MAASPs. However, while degradation from ageing may have occurred, this will not be clear until CSL's testing programme is complete. In principle, CSL's testing of the MAASP limits of Rough's wells, could show that the wells:
- (a) have degraded to the extent to which they would require investment to raise the MAASP to 3,500psi, and that this level of degradation is:
    - (i) similar to historic levels of degradation; or
    - (ii) higher than historic levels of degradation, and indicative of the fact that Rough is ageing and will become more unpredictable in its operating parameters; or
  - (b) have not degraded to the extent to which they require investment, beyond the existing maintenance regime and that they can be re-rated to 3,500psi.

### *Conclusion*

- 3.24 Taking the evidence as a whole, we have found that as Rough ages its performance may become increasingly unpredictable, such that the capacity available to be offered in advance of the Storage Year will be less than that

required to be offered under the undertakings. We find that this constitutes a change in circumstance.

- 3.25 In terms of CSL's submission that the current capacity issue is an indication of ageing, due to the uncertainty of the results of CSL's testing programme, and our finding in the preceding paragraph in relation to change of circumstance due to ageing, we have not found it necessary to conclude whether the current mismatch between operating pressure and MAASP is evidence of degradation or ageing.

## **Conclusions**

- 3.26 The CMA finds two changes of circumstance:

- (a) CSL's response to the risk of the operating pressure being higher than the MAASP was to reduce the operating pressure. The CMA finds that the need to operate Rough at a significantly reduced pressure for a sustained period of time has resulted in a substantive reduction in available capacity and that this constitutes a change of circumstance which means that CSL would be unlikely to meet the requirement to offer the capacity it was obliged to for the 2016/17 Storage Year.
- (b) Having regard to the evidence at paragraphs 3.17 to 3.23 we have found that as Rough ages its performance may become increasingly unpredictable, such that the capacity available to be offered in advance of the Storage Year will be less than that required to be offered under the undertakings. We find that this constitutes a change in circumstance.

## **4. Addressing the change of circumstances**

### ***The focus of our consideration***

- 4.1 In Section 3, we have concluded that two changes in circumstances relevant to the capacity obligations in the undertakings have occurred (see paragraph 3.26). In this Section, in light of the changes of circumstance we have identified, we determine whether the undertakings can remain in place in their current form, or whether they need to be revised, or whether CSL and Centrica need to be released from them.
- 4.2 In addition to the approach set out in the CMA's adopted guidance [CC8: Merger Remedies: Competition Commission Guidelines](#), we consider in this

case that the option most appropriate to address the changes in circumstances should:

- (a) be capable of dealing with future events that are likely to inhibit significantly CSL's ability to deliver capacity in the next Storage Year (or Storage Years). This is appropriate because of our finding that there is an increased likelihood of variability in Rough's performance, which constitutes a change of circumstance;
- (b) continue to provide more certainty to the gas market, by allowing participants to know the amount of capacity Rough is obliged to sell or offer for sale for the next Storage Year so that they can make informed decisions; and
- (c) be aligned with the findings of the Competition Commission's 2003 and 2011 reports, including the requirement to limit Centrica's access to Obligated Capacity without limiting CSL's incentives to expand Rough's capacity.

4.3 In light of our decision on whether there have been changes of circumstances which affects CSL's ability to sell Obligated Capacity (rather than to deliver in-year capacity that CSL has sold), the options we have considered are not designed to address potential mismatches between the asset's physical capacity and contractual obligations that may occur within a certain Storage Year, ie when the Obligated Capacity for that Storage Year has already been sold. This is because the undertakings are intended to require CSL to offer for sale to customers a certain amount of storage capacity, but do not require CSL physically to deliver such capacity. The SSC, which customers of Rough are required to sign, specifies how CSL manages in-year capacity mismatches. CSL told us that it is [REDACTED].

### ***Options requiring no changes to the undertakings***

- 4.4 Firstly, we have considered whether CSL would be capable of managing the likelihood that Rough's performance may become increasingly unpredictable (implying that CSL would be unlikely to meet the requirement to offer the capacity it was obliged to) without changing the terms of the current undertakings.
- 4.5 In its application for a variation of the undertakings,<sup>90</sup> CSL told us that it had managed the initial in-year mismatch between contractual commitments with asset capability for the 2015/16 Storage Year by buying back space from

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<sup>90</sup> See [CSL and Centrica application for a variation to the Undertakings](#).

existing customers, by implementing a bespoke hedging programme and by securing the OGA's consent to increase the minimum lower NRV consent to –50 BCF (see paragraphs 1.16 and 1.48). Furthermore, it indicated that some potential discrepancies between regulatory or contractual obligations and Rough's actual capabilities could be managed, to a certain degree, by amending the SSC or by introducing new non-SBU products.<sup>91</sup>

4.6 CSL told us that, generally, it manages any mismatch between its physical capacity (due to outages) and customers' nominations for injection or withdrawal through management decisions, and using clauses in customer contracts:<sup>92</sup>

- (a) For expected maintenance, CSL tries to schedule works when customers will not need that capacity (for instance, repairs are carried out on withdrawal equipment in the summer, when customers are less likely to need withdrawal).
- (b) If CSL is aware of maintenance that needs to be carried out, at least a day in advance, CSL can use cancellation or maintenance days to the extent permitted by the contracts.<sup>93</sup>
- (c) For unexpected and expected maintenance, CSL can buy gas in the market to deliver any mismatch between its customers' nominations and Rough's physical capabilities.
- (d) CSL can decide to buy back capacity from customers.
- (e) CSL's contracts also include *force majeure* provisions. In the case of an unpreventable event or circumstance which results in the failure of CSL to deliver on its contracts, CSL's liability for not delivering is removed.

4.7 However, CSL suggested that these existing mechanisms are insufficient to address outages where CSL loses a significant volume of capacity over a

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<sup>91</sup> The undertakings require CSL to consult with the market and to seek Ofgem's approval before implementing any changes to the SSC or introducing new products.

<sup>92</sup> Centrica's Annual Reports for 2013 and 2014 reported that Rough's 'asset reliability' was 96%. See: [Centrica Annual Report and Accounts 2014 - Energy for a changing world](#); and [Centrica Annual Report and Accounts 2013 - Helping people today, securing energy for tomorrow](#). CSL told us that the figure on 'asset reliability' reflected CSL meeting customers' nominations, rather than the 'availability' of the asset which in 2014 was [X] and for 2015 was [X]. CSL explained that when capacity is not physically available at Rough it may not need to enter the market if there is sufficient capability to meet customer nominations or if works are scheduled for when customers are unlikely to use the capacity. However, CSL may also take a range of commercial actions to address the mismatch between nominations and physical capabilities, such as using maintenance or cancellation provisions in the SSC, or buying and selling gas.

<sup>93</sup> These provisions allow CSL to call up to 15 injection cancellation days in a Storage Year, 25 days of injection maintenance a Storage Year, with a maximum of 60 days over a 3 year period; and 20 days withdrawal maintenance per Storage Year with a maximum of 50 days over a 3 year period.

substantial period of time – such as ongoing management of the current MAASP issue, where it incurred costs in the order of [REDACTED] to meet its contractual obligations for the 2015/16 Storage Year and has sought a review of the undertakings. As noted in Section 1, CSL stated it had absorbed these one-off costs but does not believe this is a sustainable solution for variations in capacity that persist into future Storage Years.

- 4.8 CSL told us that it had operated Rough with a mismatch between the capacity it was obliged to sell prior to the start of the Storage Year and the capacity that could actually be delivered by Rough.<sup>94</sup> CSL said it had accepted this risk in 2003, when it acquired Rough, but told us that the nature and the magnitude of the risks attached to complying with such obligations today, as well as changes to the regulatory environment, render this level of risk no longer appropriate. As well as harming the financial viability of CSL's business, CSL considers that being required to sell capacity that is not asset backed<sup>95</sup> and then repurchasing it at an inflated price seems to contradict the obligation on storage facility owners in the Gas Act to operate their facilities 'in a manner that is secure, reliable and efficient'.<sup>96</sup>
- 4.9 Alternatively, CSL could potentially manage changes to Rough's capabilities by investing more in the facility (for instance, by increasing its expenditure in maintenance).<sup>97</sup> CSL told us that [REDACTED] it was considering ways to increase its capacity. We asked CSL about its record of investment in Rough and its plans for future investment. CSL told us that it had spent between [REDACTED] and [REDACTED] each year since 2006 (RPI adjusted) and expects to spend between [REDACTED] and [REDACTED] each year for the next three years (2016 to 2018).
- 4.10 However, CSL told us that, notwithstanding any level of investment, the amount of maintenance CSL can physically carry out is limited by a number of factors:
- (a) CSL told us that weather conditions limited how much maintenance it could conduct.
  - (b) CSL told us that it had a limited amount of accommodation on the offshore platforms, within which to accommodate maintenance workers,

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<sup>94</sup> In 2009, CSL increased the capacity of Rough by investing in the facility, in order to increase Incremental Capacity.

<sup>95</sup> 'Asset backed' means that the capacity CSL offers is delivered through Rough, as opposed to being bought in the market.

<sup>96</sup> Gas Act 1986, section 11A(2).

<sup>97</sup> In commenting on the Issues Statement, EDF Energy stated that the CMA should be certain that the reduced storage capacity is indeed permanent and not temporary and this would require due consideration of the possibility of future investment to address at least some of the problems of the facility.

and was therefore restricted in the amount of maintenance it could conduct at any one time.

- (c) CSL also told us that some maintenance requires shutting down the platforms completely. Currently CSL conducts an annual shutdown during September, but told us that as Rough ages, the amount of work it needs to carry out during this shutdown is increasing.

- 4.11 We note that a decision by us on whether or not to vary the Obligated Capacity element of the undertakings would not constrain CSL's ability to use one or more of the measures identified in paragraphs 4.5 and 4.6 to address in-year mismatches between Rough's capabilities and CSL's obligations in the future.
- 4.12 However, we have concluded that none of the above options, alone or in combination, would solve the underlying problem that major events may reduce substantially Rough's capabilities for prolonged periods so that it cannot meet its capacity obligations under the undertakings. This is consistent with our finding that the current pressure issue constitutes a change of circumstance which meant that CSL would be unlikely to meet the requirement to offer the capacity it was obliged to for the 2016/17 Storage Year (see paragraph 3.26).
- 4.13 Therefore, leaving CSL to manage its obligation to offer capacity, in the event of a major capacity issue, through one or more of the instruments above would not sufficiently address either of the two changes in circumstances we have identified. Consequently we considered removing or varying the undertakings.

### ***Removal of the undertakings***

- 4.14 Secondly, we have considered whether CSL and Centrica can be released from the undertakings. In principle, releasing the undertakings would ensure that CSL would be able to adjust immediately the storage services available at Rough to the facility's effective capacity – ie to address changes in Rough's physical capabilities, while continuing to be obliged to meet CSL's obligation to offer the maximum technical storage capacity under the Gas Regulation.
- 4.15 However we have not received, or found, evidence that the undertakings are in general no longer appropriate and need to be released. We consider that release would be inconsistent with our analysis of the market for flexible gas (see paragraph 2.34). We conclude that the economic environment and market conditions have not changed significantly since the 2011 review, and that Centrica's position in the gas market is not significantly different such that



the effects of the merger which the undertakings were designed to address would no longer persist.

- 4.16 We also note that no parties, including CSL, had suggested in response to the Invitation to Comment or the Issues Statement that our review should address the implications of changes to market and competitive conditions for the undertakings. As we note in Section 2, some respondents agreed that there had been no significant changes since the last review and that this underlined the importance of retaining the undertakings. Others noted that there had been some market changes which CMA should take into account in considering the capacity issues, but did not suggest that in themselves these changes constituted an issue the review should address.
- 4.17 Given these considerations we have concluded that it is appropriate that the undertakings remain necessary and should remain substantially in place.

### ***Variations to the undertakings***

- 4.18 Thirdly, we have considered whether it would be appropriate to vary the current terms of the undertakings and, if so, how.
- 4.19 We have considered whether a permanent or temporary variation to the current amounts of Obligated Capacity and Specified Capacity would suffice to address the changes in circumstance. While both options could address the change of circumstance caused by the current pressure issue, neither would be sufficiently flexible to address the potential, of which we have found there is an increased likelihood, for events that reduce substantially Rough's capabilities for prolonged periods.
- 4.20 We considered whether the undertakings could be varied to include a mechanism that allows for the adjustment of the Obligated Capacity to be more aligned with Rough's revised physical capabilities (ie its maximum technical storage capacity) in response to an event that has a substantial impact on Rough's capacity. Such an adjustment would be capable of either reducing or subsequently increasing the capacity elements, and would be designed to be an appropriate and proportionate process where variation to the capacity requirements within the undertakings might be expected to take place from time to time (rather than conducting a review of the whole undertakings each time such an event occurs). As noted by Ofgem, this approach could be expected to reduce unnecessary costs to the regulator and CSL. Our expectation is that such a mechanism would only be applied in the rare situation that there had been, or there is expected to be, a change which had, or would have, a substantial impact on Rough's capacity.

- 4.21 In principle, an 'Adjustment Mechanism' could be triggered and concluded in a relatively short timeframe. This could deal with issues that may substantially affect Rough's capacity for prolonged periods, and therefore limit any distortive effects on the gas market arising from uncertainty. Such a mechanism would also be in keeping with the existing undertakings, which already include a mechanism for Ofgem to adjust the Specified Capacity, as well as for Ofgem to agree to a proportion of MRC being sold in the form of non-SBU products (and to agree to the use of alternative forms of contract other than the SSC for these), and to alter the SSC.
- 4.22 Taking all of these factors into account, incorporating into the undertakings an Adjustment Mechanism that can be operated from time to time is the most appropriate way to deal with our finding (paragraph 3.26) that as Rough ages its performance may become increasingly unpredictable, such that the capacity available to be offered in advance of the Storage Year will be less than that required to be offered under the undertakings. We therefore decide that the undertakings should be varied to include an Adjustment Mechanism to change the Obligated Capacity in the event of issues that may significantly affect Rough's capacity for prolonged periods.
- 4.23 We note that an Adjustment Mechanism might raise some risks that may need to be mitigated. Specifically, risks may arise in relation to the possibility that:
- (a) CSL may have an incentive to use an Adjustment Mechanism to seek reductions in Obligated Capacity and increase price.
  - (b) CSL may have reduced incentives to maintain and invest in the facility.
  - (c) Centrica may be enabled to access a greater proportion of storage capacity relative to the current undertakings.
  - (d) CSL might use the mechanism to artificially reduce its risk profile.
- 4.24 The next section describes how we have decided to implement the Adjustment Mechanism and explains how the risks identified above have been mitigated.

### ***Implementation of the Adjustment Mechanism***

- 4.25 Having decided that the undertakings should be varied to include an Adjustment Mechanism, we describe below how we have decided to implement this, for each of the following factors:
- (a) Who should act as the decision maker.

- (b) The basis for triggering the mechanism and the evidence required.
- (c) How changes to Obligated Capacity should be considered.
- (d) How consultation should be addressed.
- (e) The timings for the mechanism.
- (f) Other capacity-related issues arising from the adoption of the mechanism.

4.26 We then explain how the potential risks identified in paragraph 4.23 have been mitigated.

#### *Who should act as decision maker*

4.27 Both the CMA and Ofgem have a role under the current undertakings. On efficiency grounds, we consider that it would be appropriate for only one of these bodies to be the decision maker in respect of whether and how to apply the Adjustment Mechanism. We have decided that Ofgem is best placed to perform this role on the following grounds:

- (a) Ofgem already has a role in relation to adjusting key elements of the obligations on CSL and Centrica in response to developments (see paragraph 4.21). Extending Ofgem's existing role under the undertakings is therefore in keeping with existing arrangements.
- (b) Ofgem, as the relevant sector regulator has the most immediate access to information and knowledge of the gas market generally and gas storage specifically.
- (c) Ofgem, in respect of its monitoring role under the Gas Regulations and the undertakings, has more regular contact with CSL and receives more information than the CMA.
- (d) If the role were to be assigned to the CMA, it would in any case need to rely significantly on inputs from Ofgem (under Section 34 of the Gas Act). Assigning the role to Ofgem does not, therefore, add significantly to Ofgem's burden than the alternative of assigning the role to the CMA.

4.28 In its response to the provisional decision, Ofgem confirmed that it was content to take on the role of decision maker for an Adjustment Mechanism that functions as set out in the provisional decision.

### *The basis for triggering the mechanism and the evidence required*

- 4.29 We propose that at any time during a Storage Year, either CSL or Ofgem could trigger the Adjustment Mechanism. Third parties, such as customers, could ask Ofgem to trigger it if they have relevant information. Where, following a reduction in Obligated Capacity, CSL determined that the available capacity of Rough had subsequently substantially increased, it would be required to trigger the mechanism.
- 4.30 Although in principle the mechanism could be triggered at any time during the Storage Year, because relevant events varying capacity could happen at any time, CSL told us that it would be desirable for it to have certainty of the capacity it must sell for the next Storage Year by 1 October. We note that in order to meet such timescales, any request to review the Obligated Capacity would need to be received in sufficient time for a decision to be made (including consultation).
- 4.31 Where applications are made later in the Storage Year such that Ofgem cannot decide by 1 October, we note that CSL may have already commenced sales before Ofgem makes a decision on what CSL is obliged to sell for the next Storage Year. In such circumstances, the nature of the issue and the timing of the application would determine whether Ofgem is able to make a decision before the point at which CSL must sell unsold Obligated Capacity at auction. Therefore, it is possible that CSL may need to meet at least some difference between Obligated Capacity sold and Rough's physical capabilities in the next Storage Year by means such as those identified in paragraphs 4.5 and 4.6. For the avoidance of doubt, if the nature and the timing of the issue are such that a decision cannot be made by the beginning of the next Storage Year, any changes to the Obligated Capacity would apply only to the year after the next Storage Year.
- 4.32 As soon as CSL becomes aware of an issue where it considers there is reasonable likelihood that it will trigger the Adjustment Mechanism, it should alert Ofgem to this possibility and provide an explanation of the issue and potential impacts.
- 4.33 The mechanism would apply in response to actual physical changes, and changes that either have occurred or may be expected to occur (for instance, essential works which are necessary to preserve Rough's ability to meet its future capacity obligations).<sup>98</sup> For the avoidance of doubt, the Adjustment

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<sup>98</sup> We note, however, that by allowing events that 'will' occur to trigger the mechanism, there is the risk that CSL might successfully apply for a reduction for Obligated Capacity identifying an event which will occur which

Mechanism applies to any events that reduce or increase Rough's capacity, not only those related to the age or potential degradation of the facility.

4.34 In its response to the provisional decision, CSL submitted that

...if Ofgem increases the Obligated Capacity due to an expected increase in Rough's capabilities that does not eventuate, it could result in Ofgem setting volumes of Obligated Capacity that are substantially in excess of the Rough's actual capabilities. This is likely to lead to the types of costs and risks to CSL that the proposed mechanism is intended to address and, consequently, any upward adjustment of Obligated Capacity should only be implemented once there is a high degree of certainty that an increase in capacity will in fact occur.

We accept this point and note the determination of whether a situation 'may be expected' to occur has been central to the operation of both the Fair Trading Act 1973 under which this remedy was put in place and the Enterprise Act 2002 which followed it. As noted in footnote 98, Ofgem will be assisted through the independent verification mechanism. If Ofgem decides to increase Obligated Capacity in response to an anticipated increase in Rough's capacity, this decision should be made on the same strength of expectation as a decision to reduce Obligated Capacity in response to an anticipated decrease in Rough's capacity.

*CSL to demonstrate substantial impacts on its ability to meet its obligations*

4.35 We consider that the mechanism should be triggered only by events that substantially impact on CSL's ability to meet the capacity obligations for the next Storage Year, both in terms of amount of capacity affected and/or the period over which the issue is sustained. This would be consistent with the requirement that only 'substantial changes' to either the factors that affect Centrica's requirements for flexible gas, or in Rough's market power can trigger an adjustment to the Specified Capacity.<sup>99</sup>

4.36 For the avoidance of doubt, we consider that the mechanism would be triggered only rarely, on an exceptional basis. The mechanism would only be triggered when CSL considers that it can clearly demonstrate a substantial

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subsequently does not in fact occur, meaning that capacity would be higher. We consider that the independent verification mechanism set out in paragraph 4.43 would help the regulator to identify whether this risk is likely to materialise.

<sup>99</sup> See clause 3.6(a) of the current undertakings.

impact on its capacity and that alternative actions available to it will not suffice to address this. In this connection we note the following:

- (a) CSL would still be bound by existing regulation to offer the maximum capacity available at Rough, taking into account system integrity and operation.
- (b) CSL can continue to meet its obligations to its customers (or not meet them where provided for under its contracts) in case of non-substantial impacts by one or more of the measures identified in paragraphs 4.5 and 4.6. We would expect CSL to fully utilise these measures (alone or in combination as appropriate to the circumstances) in advance of applying to trigger the Adjustment Mechanism. These measures include:
  - (i) using *force majeure* provisions in the SSC, if applicable;
  - (ii) buying back capacity from its customers, at reasonable prices;
  - (iii) the use of hedging;
  - (iv) buying gas in the market, to the extent that this is compatible with existing regulation;
  - (v) invoking 'cancellation days' clauses in the SSC; and
  - (vi) scheduling maintenance for periods when customers will not require capacity.
- (c) CSL told us that the burden of seeking to trigger the mechanism for adjusting the Obligated Capacity as well as the need to preserve its credibility and reputation in the market was such that it would not seek to exercise it frivolously or lightly.
- (d) CSL also told us that other than the current pressure constraint, in the three years preceding 2015 there were no events which resulted in a significant reduction in Rough's physical capabilities such that it significantly increased the mismatch between Rough's physical capabilities and customer entitlements for future Storage Years. CSL told us that had it would have approached the CMA earlier, if it had experienced an event such as the MAASP issue earlier.

- (e) The current MAASP issue, which resulted in a reduction in Rough's maximum fill capacity of approximately 22% to 29%<sup>100</sup> would likely be considered substantial in the consideration of whether the mechanism should be triggered.
- (f) In the event that the mechanism appears not to be functioning as expected, we also note that the CMA has a duty to keep under review its existing remedies and that parties can request that it consider whether remedies remain appropriate.<sup>101</sup>

4.37 We considered whether a quantification of the amount of capacity and the length of the issue which would be required to trigger the Adjustment Mechanism would help to limit the circumstances where it could be triggered. However, we found that allowing more flexibility in the definition of the events that may trigger the mechanism would be consistent with the fact that a storage facility is a complex asset, where changes in the quantity of available space can also impact on withdrawal and injection capabilities. On balance, we therefore conclude that having a more flexible definition of the type of events that might trigger a review would be most appropriate.

4.38 As we noted at paragraph 4.8, CSL told us that it had operated Rough with a mismatch between CSL's obligations and Rough's physical capabilities and that whilst it had accepted this risk when it acquired Rough, this level of risk was no longer appropriate. CSL suggested that the undertakings should include an overarching principle that CSL should not be obliged to sell capacity that cannot be physically backed by Rough. We do not agree with this proposal on the following grounds:

- (a) Adopting a principle of CSL never having to supply capacity that is not physically backed would conflict with our decision that the Adjustment Mechanism could only be triggered by events that have a substantial impact. In other words, there may be occasions where events mean that CSL is unable to offer physically-backed capacity, but the impacts are not sufficiently substantial to warrant triggering the use of the Adjustment Mechanism. On these occasions, we note the alternative actions available to CSL to meet the shortfall (see paragraphs 4.5 and 4.6).
- (b) The undertakings were introduced to address competition concerns that we consider remain relevant (see paragraph 2.34). The principle that CSL

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<sup>100</sup> See [CSL and Centrica application for a variation to the undertakings](#) (September 2015). This noted that the pressure limitation had the effect of limiting the maximum reservoir volume (the space into which gas can be injected) to between 29 and 32 TWh (in 2014, the maximum reservoir volume was 41 TWh).

<sup>101</sup> Under sections 92(1), (2) and (3) and 162 (1), (2) and (3) of the EA02; sections 88(4) and (5) of the FTA (as preserved in Schedule 24 of the EA02).

never has to supply capacity that is not physically backed would introduce a potential risk that CSL is less incentivised to maintain and repair Rough, which would not be in keeping with the purpose of the undertakings.

#### *The evidence required*

- 4.39 As a general principle, CSL would be required to provide evidence that a change has occurred, or is expected to occur, that will have a substantial impact on Rough's capabilities. As part of demonstrating that a change has a substantial impact, CSL would need to demonstrate that alternative options for managing the capacity mismatch (including those listed at paragraphs 4.5 and 4.6) would not be appropriate.
- 4.40 CSL would be required to submit to Ofgem sufficient evidence that demonstrates the change may be expected to have a substantial impact on Rough's physical capabilities. This is likely to include reservoir data, modelling, internal and external reports and documents (according to the nature of the issue). CSL would also need to demonstrate that a variation of the Obligated Capacity would leave Centrica no better or worse off relative to the current undertakings.
- 4.41 CSL should also submit evidence of how the capacity issue affects its own financial risk profile and how an amendment to the capacity requirements of the undertakings would change its financial risk profile. We would also expect CSL to provide evidence relating to its historic and planned investment and maintenance programmes, together with evaluations of alternative actions available to CSL to rectify the capacity issue.
- 4.42 In its response to the provisional decision, CSL submitted that in considering the application of the mechanism Ofgem should have regard to Rough's status as a commercial asset and, in particular, not require CSL to develop Rough in a way which is uneconomic. We agree and note that Ofgem, in its hearing stated that '...fundamentally, [it] wished for CSL to behave and make its decisions on maintenance and repair as if it was an independent separate storage operator'.<sup>102</sup> We therefore expect that Ofgem, when making decisions on the application of the Adjustment Mechanism, would have regard to Rough's status as a commercial asset.
- 4.43 CSL will be required to appoint one or more independent third party advisers, unless Ofgem has indicated that it is content for CSL not to do so. We would expect CSL to notify Ofgem of its proposals for verification in advance, to

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<sup>102</sup> [Rough gas storage undertakings review: summary of hearing with Ofgem on 17 February 2016.](#)



allow Ofgem to decide whether to comment. Unless Ofgem directs CSL not to appoint independent third party advisers(s), the process for selecting the independent third party would be as follows:<sup>103</sup>

- (a) CSL would identify a small number of appropriate independent experts (their identity would depend on the nature of the issue, but there would need to be at least two experts for different categories of issue / professions), as well as providing sufficient information for Ofgem to be able to verify their suitability;
- (b) Ofgem could select one of these experts or choose a different one; and
- (c) The experts would be appointed to act on behalf of Ofgem, and CSL would remunerate and reimburse them for all reasonable costs properly incurred in accordance with the terms and conditions of their appointment.

4.44 We would expect Ofgem to share non-confidential versions of the experts' reports with CSL.

4.45 The same process would apply when the application was for Obligated Capacity to be decreased or increased.

#### *Annual report on Rough's physical capabilities*

4.46 In addition, CSL proposed that it could demonstrate that the capabilities of the asset had not changed on an annual basis by including an assurance in the independently verified Annual Injection Report which it provides every January to Ofgem (under undertaking 9.1(ii)).

4.47 CSL proposed that this assurance would address the physical capabilities of Rough for the previous 12 months in terms of the three metrics of storage capacity: injection, space and withdrawal. It would identify the occurrence of any change and the magnitude of any such change. CSL proposed to engage further with Ofgem and the CMA concerning the details of its approach.

4.48 We agree that this approach would provide additional assurance and decide that CSL should add this assurance to the existing report.

4.49 In its response to the provisional decision, EDF noted that the '...undertaking's effectiveness depends on the evidential standard required for CSL to make a successful application for a capacity adjustment based on a hypothetical. This could potentially create some problems given asymmetric

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<sup>103</sup> This process is similar to that used by the CMA for the appointment of a monitoring trustee in a merger inquiry.

incentives between the regulator and the regulated.’ EDF asked the CMA to consider how this issue could be addressed. We agree that there will inevitably be informational asymmetries between CSL and Ofgem. However, we consider that paragraph 4.36 adequately sets out the constraints and flexibilities within which both will continue to operate – including existing regulatory requirements and the other means by which CSL can meet its obligations. Furthermore, we consider that the evidential approach we propose will adequately address any risks arising. This includes the evidence required at paragraphs 4.39 to 4.41, the use of independent third party experts (paragraph 4.43), the consultation requirements (paragraphs 4.59 to 4.61), CSL’s proposals for an annual report (paragraphs 4.46 to 4.48) and Ofgem’s existing evidential and analytical role.

#### *How changes to Obligated Capacity should be considered*

- 4.50 CSL, in its application, would be required to propose to Ofgem a revised value of the Obligated Capacity that it would be able to sell and indicate how it intends to split this revised value between MRC (in the form of SBUs) and AS (or other Non-SBU products if such products have been approved by Ofgem) and consequential revised values for Specified Capacity.
- 4.51 CSL would need to show that the revised value of the Obligated Capacity corresponds to at least the maximum technical capacity of Rough and the proposed split of capacity represents a suitable offer to customers. Furthermore, CSL would need to explain, with reference to the evidence it has submitted, how its application supports its proposal for the revised values.
- 4.52 In its response to the provisional decision, CSL noted that in its draft proposed changes to the undertakings, the CMA had adopted the drafting of ‘maximum technical storage capacity’ which is found in Article 17 of the Regulation (EC) No 715/2009.<sup>104</sup> CSL considered that adopting the same drafting to describe capacity was appropriate in principle. However, it submitted that adopting this drafting could potentially require CSL to bundle all injection and withdrawal capacity available during a Storage Year with space attributable to the Obligated Capacity. CSL suggested that this could, in turn, lead to a significant volume of unbundled space (in excess of the Obligated Capacity) without sufficient unallocated firm injection rights to fill it. The intention is that Obligated Capacity corresponds to at least the maximum technical capacity of Rough *in terms of space* up to 31.834 TWh and the CMA has decided that the drafting of the undertakings will be amended to make this clear.

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<sup>104</sup> [Regulation \(EC\) No 715/2009](#).

- 4.53 As discussed in paragraph 4.40, CSL would also need to demonstrate that the revised values of the Obligated Capacity, Minimum Rough Capacity, Additional Space and the Specified Capacity would leave Centrica no better or worse off relative to the current undertakings. To allow for circumstances where Centrica might be better or worse off relative to the current undertakings as a result of changes to the Obligated Capacity, we consider it appropriate to amend undertaking 3.6 to include in the list of circumstances that ‘a substantial change in the Minimum Rough Capacity and/or Additional Space’ could allow Ofgem or Centrica to trigger the mechanism to adjust the Specified Capacity.
- 4.54 We note that Centrica, in its response to the Issues Statement, stated that in relation to MRC, Ofgem should not be allowed to vary the Specified Capacity cap on Centrica if the Obligated Capacity is changed; and considered that in this respect the cap should stay unchanged. For the avoidance of doubt, we have decided that the Specified Capacity cap should largely remain as defined in the undertakings.<sup>105</sup> However, we have also decided to amend the undertakings to allow Ofgem to vary the Specified Capacity if, following the application of the Adjustment Mechanism to vary Obligated Capacity, the consequence was that that Centrica was better or worse off relative to the current undertakings.
- 4.55 We note that Ofgem, in its response to the Issues Statement, stated that the CMA should consider the criteria for deciding changes to the Obligated Capacity in order to increase transparency in the market. We agree in principle with this statement but we also note it would be complex to set out *ex-ante* in the revised undertakings how the revised Obligated Capacity must be calculated. This is because, the events that may affect CSL’s ability to meet the capacity requirements could have very different impacts on space, withdrawal and injection. It would not therefore be practicable to set out a precise model for reviewing the Obligated Capacity that would be able to encompass all potential changes to Rough’s physical capabilities.
- 4.56 However, to mitigate the risk that CSL’s proposed revision of the Obligated Capacity might not be in the interests of customers, CSL would be required to demonstrate in its application that the proposed Obligated Capacity corresponds to at least the maximum technical capacity in terms of space and would meet customers’ needs to the greatest extent possible. Furthermore, we note that Ofgem could require CSL’s proposed new Obligated Capacity to be subject to independent verification as set out in paragraph 4.43.

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<sup>105</sup> The definition of Specified Capacity has been amended to restrict Centrica’s ability to purchase Incremental Capacity in terms of space below 34.7 TWh of space. See paragraphs 4.70 to 4.85.

- 4.57 We recognise that there is the potential risk that, if the issue that has triggered CSL's application is particularly severe and CSL has already sold a significant amount of MRC on long-term contracts, there may be insufficient storage capacity to meet the current requirement in the undertakings for CSL to sell at least 20% of MRC on annual contracts. In these circumstances, CSL would be required to specify in its application how it intends to meet the needs of customers which buy capacity on an annual basis (typically smaller customers or new entrants).
- 4.58 In its response to the provisional decision, CSL also submitted that in setting the Obligated Capacity, Ofgem should ensure that the assumptions used to determine Rough's physical capabilities were based on its underlying 'operational parameters' rather than actual performance at a particular point in time. We agree that any consideration and application of the Adjustment Mechanism should take into account Rough's performance over the medium- and long-term.

*How consultation should be addressed*

- 4.59 In commenting on the CMA's Statement of Issues, SSE Hornsea Ltd stated that requests from CSL to the CMA should be made public upon application to allow the market to analyse and factor the implications. We agree that applications from CSL should be made public, subject to statutory confidentiality requirements, and consider that third parties need to be consulted during the process. We consider CSL's proposed approach to consultation to be appropriate. Specifically, we agree with CSL's proposal that their application for review should include a non-confidential summary of the reasons for the request, explaining the rationale and justifications for the requested changes to CSL's obligations.
- 4.60 By default, CSL should conduct consultations, but should notify Ofgem of its intention to consult, using the non-confidential material it provides, at least 10 working days in advance – to allow Ofgem the opportunity to decide whether to conduct the consultation itself. Ofgem should also be able to direct CSL to consult the market at other points in the application process, if it considers this necessary. CSL should make available to Ofgem the responses to the consultation and Ofgem should decide whether these should be published and where (on CSL's website or Ofgem's website).
- 4.61 Depending on the nature of the issue, consultation of third parties could take place at different stages of the process, with Ofgem deciding when would be most appropriate.

### *The timings for the mechanism*

- 4.62 In its response to the Issues Statement, SSE Hornsea Ltd noted that the requirement on Ofgem to decide on the application request within one month, as proposed by CSL in its application for a review of the undertakings, was tight, given the technical complexity of such a request. We agree and we additionally note that, given the heterogeneity of issues that may affect Rough's capacity, it would not be appropriate to specify a fixed timeframe for Ofgem to make a decision on the application.
- 4.63 In its response to the provisional decision, CSL submitted that a period of one month following the close of the specified consultation should be sufficient for Ofgem to make a decision. It noted that this period was consistent with the provisions of Annex 1, paragraph 4 of the undertakings (consultation on proposed changes to the SSC). We consider that consultations on proposed changes to the SSC are not equivalent to those on capacity issues, which could relate to, or require, potentially complex analysis. Furthermore, consultations for the Adjustment Mechanism may give rise to new issues that cannot be addressed within one month. However, to ensure that the market has enough certainty on the amount of storage services available at Rough our expectation is that Ofgem would respond to the request as soon as reasonably practicable having regard solely to the complexity of the issue.
- 4.64 CSL submitted, in its response to the provisional decision, that Ofgem should set out the reasons for its decision to accept, reject or vary an application to adjust the Obligated Capacity. We agree and, in addition, expect that Ofgem would wish to publish a non-confidential version of its decision.
- 4.65 CSL also noted our proposed paragraph 7 of Annex 11 to the undertakings, requiring CSL to give Ofgem at least two working days' notice of its intended announcement of Ofgem's decision. CSL submitted that, if it was obliged to delay publication of the decision for more than two days, this could amount to a breach of REMIT. We have removed from paragraph 7 of Annex 11 the requirement for CSL to give notice to Ofgem before making its announcement of Ofgem's decision. As we note in paragraph 4.64, we would expect Ofgem would wish to publish a non-confidential version of its decision, so the need for Ofgem to see how CSL is reporting its decision is unlikely to be necessary.
- 4.66 Finally, we note that any approved change to the Obligated Capacity would relate only to the Storage Year, or Storage Years, following Ofgem's decision and it would not operate retrospectively. Any change to it would remain in place for as long as set by Ofgem (ie Ofgem could decide to make a temporary change) and/or until a subsequent application of the Adjustment Mechanism.

*Other capacity-related issues arising from the adoption of the mechanism*

- 4.67 Currently, the undertakings require CSL to sell the Minimum Rough Capacity (455 million SBUs, which comprise of a specific amount of daily injection rights, daily withdrawal rights and space, equivalent to 30.3 TWh) and at least 1.534 TWh of Additional Space (ie the Obligated Capacity). Based on the current definition of the SBU, therefore, this capacity corresponds to at least 31.834 TWh of space.
- 4.68 In its original proposals, CSL proposed that Obligated Capacity should be fixed at 31.834 TWh as the historic baseline. Ofgem noted that CSL's proposals included definitional changes that had the effect of fixing Additional Space (AS) at 1.534 TWh. Ofgem considered that this could result in a larger volume of space being classed as Incremental Capacity ahead of the Storage Year, to which Centrica has unrestricted access. SSE Hornsea Ltd also noted that CSL's proposed redefinition of Additional Space as '1534 GWh or such other amount as is permitted by the OFT' would result in a dilution of the limits on Centrica's Specified Capacity cap.
- 4.69 In its response to the Issues Statement, SSE Hornsea Ltd also suggested that, for simplicity, Centrica's access to capacity at Rough should be limited to 25% of MRC plus AS (plus FAS). We note that allowing Centrica unrestricted access to the capacity created by investment at Rough was included in the undertakings to maintain CSL's incentives to expand Rough's capacity. We therefore consider that this suggestion would not be aligned with the intention of the undertakings.
- 4.70 However, we note that the introduction of an Adjustment Mechanism could lead to a potential scenario in which Obligated Capacity is reduced but subsequently is increased. CSL's original proposal meant that once physical capacity exceeded 31.834 TWh, the additional capacity above this level that previously could have been classed as Additional Space could instead be considered to be Incremental Capacity and thus available to Centrica without restrictions.
- 4.71 In response to these concerns, CSL proposed:
- (a) retaining the Obligated Capacity as 31.834 TWh, which would continue to determine the volume CSL must auction if it is unsold 30 days before the Storage Year;
  - (b) setting a new Incremental Capacity baseline at 34.7 TWh, which was the maximum NRV achieved by Rough (90.4 BCF) in the 2005/06 Storage Year under CSL's ownership, but before the impacts of significant investment to enhance the physical capabilities of Rough; and

- (c) as currently required by the undertakings, retaining the Specified Capacity cap on Centrica so that of the Obligated Capacity it can purchase up to 25% of MRC and 1.534 TWh of Additional Space; but up to 100% of Incremental Capacity.
- 4.72 In the event therefore, that Obligated Capacity was at first reduced but subsequently increased again, it would be capped at 31.834 TWh and any additional capacity becoming available ahead of the Storage Year beyond this level (and up to the Incremental Capacity baseline of 34.7 TWh) would be treated as Additional Space that CSL would be required to offer under the Gas Regulations, but which Centrica could not buy. Capacity available within the Storage Year between 31.834 TWh and 34.7 TWh would be treated as Incremental Capacity but Centrica Group's entitlement to this capacity would be limited to 25%. If capacity increased above the new Incremental Capacity baseline of 34.7 TWh, this would be treated as Incremental Capacity to which Centrica would have full access.
- 4.73 CSL made additional proposals on the link between Centrica's access to Incremental Capacity and the Incremental Capacity baseline. Specifically, CSL proposed that Centrica would be subject to different Specified Capacity caps depending on whether the additional capacity was made available ahead of or within Storage Year; and that if Centrica did not purchase its Specified Capacity of Additional Space ahead of the Storage Year it would be entitled to buy Incremental Capacity within the Storage Year equivalent to the Specified Capacity of Additional Space that it had not purchased. We consider that these additional details would have added only marginal benefits to the proposal, at the cost of more complex monitoring requirements for CSL and the regulator. On balance, we have decided that a mechanism similar to that set out in paragraphs 4.71 to 4.72 is sufficient to address stakeholders' concerns that Centrica could access a greater proportion of storage capacity relative to the current undertakings.
- 4.74 Our provisional decision was that:
- (a) CSL will continue to be required to sell the following Obligated Capacity before the start of the Storage Year:
    - (i) 455 million SBUs of MRC; and
    - (ii) at least 1.534 TWh of Additional Space;
  - (b) the Specified Capacity cap on Centrica's access to Obligated Capacity will be retained, so that it can purchase up to 25% of MRC and 1.534 TWh of Additional Space; and that

- (c) In addition, the definition of Specified Capacity will be varied such that Centrica can access no Incremental Capacity until 34.7 TWh of space has been sold ahead of the Storage Year, but will be able to access 100% of Incremental Capacity above this level.
- 4.75 In the event, therefore, that Obligated Capacity was at first reduced but subsequently increased again, it would be capped at 31.834 TWh. Any additional capacity becoming available ahead of the Storage Year beyond 31.834 TWh and up to 34.7 TWh would be Incremental Capacity that CSL would be required to offer, but which Centrica could not buy. Centrica would have full access to any Incremental Capacity above 34.7 TWh.
- 4.76 In its response to the provisional decision, Centrica submitted that the proposal set out above at paragraph 4.74(c) would mean that it would immediately be worse off, because its access to the injection and withdrawal of Incremental Capacity would be ‘...limited solely on the basis of a consideration of how much space has been purchased before the start of the Storage Year’. Centrica asked the CMA to: ‘...retain Centrica’s existing rights to access Incremental Capacity on the “no better, no worse” principle which the CMA has outlined. In essence, this would mean retaining Centrica’s existing rights to buy the other elements of Incremental Capacity, apart from Space.’ CSL also commented on this issue and submitted that the changes to the undertakings clarify that ‘...the limitation imposed by the Specified Capacity applies to space only...’.
- 4.77 We accept that, as drafted in the provisional decision, the changes to the definition of Specified Capacity would have the effect of placing an additional restriction on Centrica’s access to the injection and withdrawal elements of Incremental Capacity and that this restriction might have immediate effect because it would not depend on the application of the Adjustment Mechanism.
- 4.78 However, we identified some potential risks from accepting the parties’ proposal to retain the cap on space while setting no restrictions on Centrica’s access to Incremental injection and withdrawal rights. Specifically, we identified the potential that an issue affecting space, but not injection or withdrawal, could lead to a reduction in Obligated Capacity in terms of space, while leaving a significant amount of unbundled injection and withdrawal available. In such a scenario:
- (a) Centrica could have greater access to Incremental injection and withdrawal rights than under the current arrangements and could potentially hold on to more of these rights to the detriment of other users of Rough; and



(b) Centrica's incentives to invest in and repair Rough to return Obligated Capacity to the historic level might also be reduced in such a scenario because, by doing so, it could lose the additional access to the unbundled injection and withdrawal rights and return to a position where it could only access 25% of these rights (which are sold bundled in SBUs as MRC).

- 4.79 We consulted CSL and Ofgem on these potential risks and concluded that while they were real, safeguards existed to reduce both their likelihood and impact.
- 4.80 In terms of Centrica being incentivised to purchase a large proportion of unbundled injection or withdrawal rights following a reduction in Obligated Capacity, we note that it would need to outbid other buyers and would be unlikely to be able to secure significant benefit from additional injection and withdrawal without being able to buy more space. Space without injection and withdrawal rights has generally less value and CSL would also have to make unused injection and withdrawal available to the market under the 'Use It Or Lose It' (UIOLI) provisions in the undertakings.<sup>106</sup> The anti-hoarding provisions of EU Gas Regulation also ensures that all unused capacity needs to be offered to the market. Furthermore, undertaking 10 requires CSL to submit to the CMA and Ofgem all details of all Individual Capacity Sales for each month, including sales of unbundled withdrawal and injection rights, so that possible hoarding of injection and withdrawal rights would be identifiable.
- 4.81 In terms of the reduced incentive on Centrica to invest in returning Rough to its Obligated Capacity, we note that in practice such an approach would mean Centrica Group trading off the marginal value of increased access to injection and withdrawal for Centrica against the ongoing overall loss of capacity CSL would be able to sell to the whole of its client base. We also note that the same factors as those described in paragraph 4.80 would incentivise CSL and Centrica to return Rough to the historic Obligated Capacity.
- 4.82 We considered whether an alternative approach would be to place similar caps on Centrica's access to incremental injection and withdrawal as the cap we proposed for space, so that Centrica would not be able to buy either incremental injection or withdrawal ahead-of-year until the historic injection or withdrawal had been sold by CSL. However, injection in particular is subject to a wide range of external factors such as stock levels, weather and carry over, which mean that in practice its daily and annual value varies. A simple cap on injection would not effectively capture these variations; and a more complex

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<sup>106</sup> Any unused injection, withdrawal and space (use it or lose it) capacity can be sold to customers as an interruptible service. These products are typically sold at a day-ahead stage or within the gas day. See: [CSL website](#).

cap, to allow for these effects, would be difficult to design and to monitor for limited marginal benefit.

- 4.83 We have therefore decided to clarify in our final decision that the Specified Capacity cap on Centrica's access to Incremental Capacity would apply only to space and not to its access to Incremental injection or withdrawal.
- 4.84 We also note that, as drafted, the provisional decision would require CSL to wait until 34.7 TWh of space had been sold before it could sell any element of Incremental Capacity (space, injection or withdrawal) to Centrica. This was not the intention and could potentially be more restrictive than under current circumstances. We have therefore clarified that Centrica's access to Incremental Capacity would depend on 34.7 TWh of space being made available to the market rather than on CSL having sold it. Centrica's access would not, therefore, depend on CSL having first sold Obligated Capacity, but instead on CSL's decision whether and when to sell Incremental Capacity to Centrica, given CSL's need to meet the Obligated Capacity requirements in the undertakings.
- 4.85 In summary, our final decision is therefore that:
- (a) CSL will continue to be required to sell the following Obligated Capacity before the start of the Storage Year:
    - (i) 455 million SBUs of MRC; and
    - (ii) at least 1.534 TWh of Additional Space;
  - (b) the Specified Capacity cap on Centrica's access to Obligated Capacity will be retained, so that it can purchase up to 25% of MRC and 1.534 TWh of Additional Space; and
  - (c) in addition, the definition of Specified Capacity will be varied such that Centrica can access no Incremental Capacity in terms of space unless 34.7 TWh of space will be made available to the market ahead of the Storage Year, but will be able to access 100% of Incremental Capacity above this level.
- 4.86 We also note that defining Obligated Capacity in terms of total space and not in SBUs, could lead to a potential scenario in which CSL might be incentivised to propose changes to Obligated Capacity such that a significant portion of Obligated Capacity might be allocated to Additional Space (which it does not have to offer bundled with injection and/or withdrawal rights). Furthermore, a single customer may have the incentive to purchase most of these rights in order to prevent other customers from accessing space. However, we

consider that the same safeguards as those described in paragraph 4.80 would act to deter, and in any case help to identify, any potential hoarding of capacity by CSL customers.

- 4.87 Under the current undertakings, to incentivise CSL to invest in Rough to increase capacity, Centrica has unrestricted access to Incremental Capacity, which is capacity created through new investment by CSL and is additional to MRC, Additional Space and Further Additional Space. In response to our Issues Statement, both Ofgem and SSE Hornsea Ltd identified a need to clarify how ‘investment’ would be addressed, and the implications for Centrica’s access to capacity, in relation to changes in Rough’s physical capacity and, in particular in the event that Obligated Capacity was increased (subsequent to a reduction in Obligated Capacity). SSE Hornsea Ltd suggested clarifying the definition of investment included in CSL’s proposal to understand whether Centrica’s purchasing power could increase. We note the concerns and we consider that, by setting a numerical value for the Specified Capacity cap (see paragraph 4.85), we are providing greater clarity around the point above which Centrica has unrestricted access to Rough’s capacity.
- 4.88 As we note above, the concept of Incremental Capacity was introduced in the undertakings to incentivise CSL to maintain and invest in Rough. CSL suggested that its new Incremental Capacity baseline would also provide incentives for it to invest in Rough to increase capacity to exceed this new baseline.
- 4.89 In its response to the provisional decision, SSE Hornsea Ltd was concerned that changes to the undertakings could allow Centrica more access to Incremental Capacity than before. In particular, it noted that there was no limit on the quantity of Incremental Capacity after the Storage Year begins that CSL may sell to the Centrica Group or the Centrica Group may purchase from CSL. SSE proposed that ‘...any additional capacity between 31.834 TWh and 34.7 TWh becoming available after 1 May is offered to the market in a public, transparent and non-discriminatory manner.’ However, we note that the undertakings have only ever addressed Centrica’s access to Rough’s capacity ahead of the Storage Year and, for the reasons set out at paragraph 4.3, the Adjustment Mechanism likewise only addresses sales ahead of the Storage Year. Within the Storage Year, there has been no restriction on Centrica’s access to capacity and it can seek to purchase Incremental Capacity alongside CSL’s other clients. Furthermore, CSL is already required to offer to the market capacity that becomes available within year (see undertaking 4).
- 4.90 We consider that our amendments adequately address the concerns third parties have raised and are aligned with the findings of the Competition Commission’s 2003 and 2011 reports, including the requirement to limit

Centrica's access to Obligated Capacity without limiting CSL's incentives to expand Rough's capacity. We therefore decide to adopt these proposed changes to the capacity elements of the undertakings.

- 4.91 In summary, therefore, Ofgem would be able to increase or decrease either Minimum Rough Capacity or Additional Space for the next and/or subsequent Storage Years upon the application of CSL or on Ofgem's own initiative on the basis of the following factors:
- (a) There has been, or will be, a substantial change in Rough Capacity which will affect the next, and/or subsequent, Storage Years.
  - (b) Provided that the sum of the varied Minimum Rough Capacity (whether in SBUs or Unbundled Units) and Additional Space must be at least the Maximum Technical Storage Capacity of Rough in terms of space, which can be calculated in advance of the Storage Year, but not more than 31.834 TWh.
  - (c) The variation as between Minimum Rough Capacity (whether made up of SBUs or Unbundled Units) and Additional Space must be an appropriate offer for customers of CSL.

*Further Additional Space (FAS)*

- 4.92 In its request for a variation of the undertakings, CSL proposed that Further Additional Space (FAS) should be incorporated into the definition of Incremental Capacity. It stated that the difference between the treatment of Further Additional Space and Incremental Capacity was minimal, and that the only time it draws a distinction is in meeting reporting obligations under the undertakings.
- 4.93 Ofgem considered that CSL had not provided enough evidence to support its proposal. It acknowledged that FAS could fall to zero when Obligated Capacity is reduced, but did not consider it to be appropriate to remove the definition since, should Rough's capacity be restored, FAS would again be a valid measure. It also noted that there is an added requirement to offer for sale FAS in accordance with undertaking 2.2(c) on either a fixed or indexed pricing which does not apply to Incremental Capacity. CSL told us that it offers all capacity on either a fixed or indexed pricing irrespective of which category it falls into under the undertakings. However, it proposed that the volume of FAS could alternatively be defined as its maximum numerical amount of 0.59 TWh.
- 4.94 SSE Hornsea Ltd in its comments on our Issues Statement suggested that FAS should be incorporated into AS rather than moved into Incremental

Capacity, and be offered to the market in the first instance on a fair and transparent basis. However, we have concluded that it would not be appropriate to incorporate FAS into AS, because FAS is already available for sale to all customers and there is no reason to reduce Centrica's existing rights of access to FAS.

- 4.95 We accept the fact that FAS can become zero when Obligated Capacity is reduced, but we agree with Ofgem that FAS may become relevant should Rough's capacity be restored. Furthermore, the definition remains relevant given its different treatment in the undertakings. We have therefore decided that the definition of FAS should be retained but that it would be appropriate to set a numerical value for it at the level proposed by CSL of 0.59 TWh.
- 4.96 In its response to the provisional decision, SSE Hornsea Ltd suggested that the definition of FAS be amended to state that it is space created by investment at Rough. We have decided not to make this change because FAS is not space created by investment, but instead additional space that became available within year. Furthermore, as we note above, we have decided to set a numerical value for FAS, so this change would not be accurate.

#### *The definition of MRC*

- 4.97 In its response to the Issues Statement, SSE Hornsea Ltd suggested amending the definition of the MRC in the undertakings from SBUs to a volumetric measure, to simplify reporting and give the market greater clarity.
- 4.98 In response to this comment, CSL noted that, although there would be merit in establishing express volumes in relation to all the space components of capacity referred to in the undertakings, it would be difficult to set volumes in relation to injection and withdrawal. Moreover, Ofgem noted that changes to the definition of SBU might affect the characteristics and the value of the products purchased by existing customers, particularly those who have signed long-term contracts. We agree with the points made by CSL and Ofgem and have decided that it would not be appropriate to change the definition of MRC to a volumetric measure.

#### ***Conclusions on the capacity obligations in the undertakings***

- 4.99 We have decided that the most appropriate way to address the two changes of circumstances relevant to the capacity obligations is through a variation of the undertakings.

4.100 Specifically, we have concluded that the undertakings should be amended to include an Adjustment Mechanism such that Ofgem can vary the Obligated Capacity. We envisage that such mechanism would be triggered only in rare circumstances where CSL can demonstrate a substantial impact on Rough's capacity and that alternative actions available to it will not suffice.

4.101 In paragraph 4.23, we identified the following four risks:

- (a) CSL may have an incentive to use the Adjustment Mechanism to seek reductions in Obligated Capacity to reduce supply and increase price.
- (b) CSL may have reduced incentives to maintain and invest in the facility.
- (c) Centrica may be enabled to access a greater proportion of storage capacity relative to the current undertakings.
- (d) CSL might use the mechanism to artificially reduce its risk profile.

4.102 We consider that our decision on the implementation of the Adjustment Mechanism mitigates such risks in the following ways.

4.103 In relation to (a), in order to trigger the Adjustment Mechanism, CSL will need to demonstrate to Ofgem, with reference to various evidence, supported by independent third-party verification, that a change has occurred, or may be expected to occur, that will have a substantial impact on Rough's capabilities. This approach mitigates the risk that CSL will be able successfully to use the Adjustment Mechanism to reduce Obligated Capacity in circumstances where this is not warranted. In addition, the requirement for CSL to trigger the Mechanism, as well as Ofgem's ability to do so, in the event of an increase in capacity, subsequent to Ofgem having decided that there should be a reduction in Obligated Capacity, further mitigates the risk that CSL will be able to artificially constrain supply.

4.104 In relation to (b), we note that CSL's incentives to invest in the facility are related to the concept of Incremental Capacity, which allows Centrica to access up to 100% of Rough's capacity. In terms of CSL's incentives to maintain capacity, the Adjustment Mechanism application and verification requirements, along with the changes to Specified Capacity described below, mitigate these risks.

4.105 In relation to (c), the Specified Capacity cap on Incremental Capacity of space ensures that, when Obligated Capacity decreases and then increases ahead of the Storage Year, Centrica cannot access this extra space unless CSL makes an amount of space that exceeds this level available to the market. Moreover,

we have amended the undertakings to allow Ofgem to vary the Specified Capacity cap when there is a substantial impact on Rough's capacity.

- 4.106 In relation to (d), the evidence CSL is required to submit to trigger the mechanism includes details on its financial risk profile (comparing the status quo with its proposed approach), which can be subject to independent verification from an expert third party.

### **Monitoring and compliance**

- 4.107 The undertakings require CSL to provide sales and operational information to Ofgem and the CMA for compliance monitoring purposes. Our review has provided an opportunity to consider whether these undertakings remain appropriate, in light of a number of changes of circumstance.
- 4.108 In its response to our Statement of Issues, Ofgem noted that there were significant overlaps between the compliance and monitoring carried out by Ofgem under the Gas Act and its monitoring of the undertakings. It agreed it would be prudent to review these arrangements to make sure they remained fit for purpose.
- 4.109 CSL, in its response to our Statement of Issues, considered that current monitoring and compliance requirements were appropriate and said that it had recently taken steps to improve compliance. However it welcomed efforts to streamline monitoring requirements and suggested we consider whether the requirements in the Third Energy Package (TIEP) and the introduction of REMIT, have rendered the undertakings, in part, no longer appropriate.<sup>107</sup> It therefore identified possible opportunities to address potential duplication. We address these suggestions within our consideration below.
- 4.110 CSL also suggested that the undertakings could be amended to recognise that Centrica has created a centralised Centrica Group Ethics and Compliance function. We consider this request and whether it has any impact on the effectiveness of compliance with the undertakings.
- 4.111 Finally, as we noted in our Issues Statement, we were made aware by Ofgem and CSL that there had been potential issues related to the effectiveness of the monitoring and compliance arrangements. Specifically, in 2015 we were made aware that CSL [X]. We have therefore considered what changes if

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<sup>107</sup> In the 2011 review of undertakings, the CC took the view that requirements in the TIEP were less stringent than those in the undertakings and also untested at that time. Competition Commission (2011), *Review of undertakings given by Centrica following its acquisition of the Rough gas storage facility Final Report*, paragraphs 8.1 and 8.44.

any may assist in ensuring CSL's contractual arrangements can be effectively monitored.

#### *Current monitoring and compliance requirements in the undertakings*

- 4.112 Some of the undertakings address the general nature of the relationship between CSL, Centrica and Ofgem and the OFT, which we have not considered in this review. Specifically, undertaking 8 sets a General Obligation on Centrica and CSL to furnish promptly to the OFT and/or Ofgem such information as is considered necessary to monitor the undertakings within 10 working days of a written request (unless otherwise agreed). Undertaking 18 requires CSL and Centrica to co-operate fully with the OFT and Ofgem when monitoring compliance with, and investigating potential breaches of, the undertakings. Undertaking 19 requires that Centrica and CSL will comply promptly with such written directions as OFT or Ofgem may give to take steps to secure compliance and to refrain from meeting specific requirements in the undertakings. Undertaking 20 requires that Centrica will procure that all members of the Centrica Group will comply with the undertakings; and that it shall ensure that any Affiliate or agent of Centrica shall comply.
- 4.113 The undertakings also stipulate a number of monitoring and compliance requirements on CSL and Centrica as set out below, and which we have considered for this review.

#### *Undertaking 9 – Verification of Additional Space and Further Additional Space*

- 4.114 Undertaking 9 requires CSL to provide Ofgem with:
- (a) the details of the highest and lowest net reservoir volume for the previous Storage Year;
  - (b) a yearly report on the previous injection season which will include information prescribed in Annex 7 to the undertakings, and which will have been verified by a third party engineer; and
  - (c) such information necessary to verify the level of Additional Space and Further Additional Space.
- 4.115 Undertaking 9 was included in the undertakings in 2003 to enable Ofgem to verify the amount of Additional Space. In the 2011 review of undertakings, Centrica said that the information it was required to provide to Ofgem under



undertaking 9 was necessary to monitor compliance with the undertakings.<sup>108</sup> In 2011 Ofgem said that it was unsure whether information it received under undertaking 9 would be covered by Article 19 of the Gas Regulation.<sup>109,110</sup>

#### *Undertaking 10 – Monthly report of Individual Capacity Sales*

4.116 Undertaking 10 requires CSL to provide the CMA and Ofgem with monthly Individual Capacity Sales in the format shown in Annex 8 to the undertakings. The reporting of Individual Capacity Sales includes each sale by customer, date and time (of bids and final offer), term, price, volume and form of allocation (ie bilateral negotiation or auction).

4.117 The 2003 version of the undertakings required that the OFT and Ofgem should be sent details of all deals done by CSL (undertaking 10) as an additional safeguard to ensure that any discrimination could be detected given that there was no requirement that sales be via a single auction. In the 2011 review of undertakings, Centrica said that the information it was required to provide to Ofgem under undertaking 10 was necessary to monitor compliance with the undertakings.<sup>111</sup> Ofgem said that there was no direct equivalent of undertaking 10 in the Third Energy Package and it regarded this as a particularly important mechanism for tracking CSL's sales profile, especially because it could request information on CSL's sales of Further Additional Space and Incremental Capacity.<sup>112</sup>

#### *Undertakings 11, 12, 13 and 14 – Information Publication and Disclosure*

4.118 In summary, these undertakings address the following:

- (a) Undertaking 11 requires CSL to publish the Weighted Average Price of Capacity at the beginning of each Storage Year on CSL's STORIT system.<sup>113</sup>

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<sup>108</sup> CC (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility, paragraph 8.52.

<sup>109</sup> CC (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility, paragraph 8.53.

<sup>110</sup> Regulation (EC) No 715/2009.

<sup>111</sup> CC (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility, paragraph 8.52.

<sup>112</sup> CC (2011), Review of Undertakings given by Centrica following its acquisition of the Rough Gas Storage Facility, paragraph 8.55.

<sup>113</sup> The STORIT system is CSL's web-based information service through which CSL receives customer nominations, allocates capacity, supports trading in the secondary market and publishes information on operations at Rough.

- (b) Undertaking 12 requires that information relating to storage operations is disclosed by CSL to all market participants simultaneously on CSL's STORIT system.
- (c) Undertaking 13 requires CSL to publish gross nominations on at least four occasions each day on CSL's STORIT system.
- (d) Undertaking 14 requires that CSL ensures all publications on the STORIT system pursuant to the undertakings include the date and time of publication.<sup>114</sup>

#### *Undertaking 17 – Centrica's Audit Committee*

4.119 Undertaking 17 requires the Centrica Audit Committee (CAC) to provide the Centrica Board with an annual compliance report. The Centrica Board then produces a compliance report on receipt of the report from the Audit Committee. Both reports are sent to the CMA and Ofgem. The report prepared by the CAC includes an account of:

- (a) steps taken during the year to ensure compliance with the undertakings; and
- (b) instances where a breach or potential breach of the undertakings has been identified, and any steps taken as a consequence.

#### *Other reporting requirements*

4.120 Separately from the undertakings, CSL also provides a public annual Gas Act compliance report to Ofgem, which includes measures CSL has taken to:

- (a) maintain its independence from Centrica Group; and
- (b) manage and appropriately disclose commercially sensitive information.<sup>115</sup>

4.121 As noted in paragraphs 1.37 to 1.42, there are other reporting requirements on CSL in relation to the regulation of gas storage, including the requirement to publish annually the main commercial conditions relating to storage rights and information on the contracted and available storage as well as the basis on which this is calculated. In practice this means CSL must make public Rough's maximum storage capacity. In addition, REMIT requires effective and timely public disclosure of inside information by market participants and

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<sup>114</sup> CSL did not comment on Undertaking 14 and we have therefore not considered it in our review.

<sup>115</sup> See for example: Annual Gas Act Compliance Report for the Compliance Year 1 September 2014 to 31 August 2015, Centrica Storage Ltd, December 2015.

obliges firms professionally arranging transactions to report suspicious transactions.

### *Consideration of current monitoring and compliance requirements*

#### *Undertaking 9 – Verification of Additional Space and Further Additional Space*

- 4.122 CSL proposed removing the requirement to provide Ofgem with the details of the highest and lowest net reservoir volume for the previous Storage Year (undertaking 9.1(i)). It suggested that the Gas Act and REMIT require CSL to publish information about Rough's stock levels on a daily basis, which shows how Rough is being used on every day of the Storage Year, and allows any interested party to determine the maximum and minimum fill levels achieved by Rough in a given Storage Year. Ofgem told us that it agreed that information on the maximum and minimum reservoir volumes is available elsewhere, although these are published in energy terms, rather than BCF. It saw merit in maintaining this reporting alongside the proposed annual verification of Rough's capability (see paragraphs 4.46 to 4.48).
- 4.123 CSL also suggested removing the requirement to provide Ofgem with such information necessary to verify the level of Additional Space and Further Additional Space (undertaking 9.2) on the grounds that Ofgem also has monitoring and information gathering powers under Sections 34 and 34A of the Gas Act. Ofgem told us that this reporting requirement did not necessarily constitute an additional burden on CSL.
- 4.124 We acknowledge the fact that there may be overlap between undertaking 9.1(i) and information available to the market, and undertaking 9.2 and Ofgem's other information gathering powers. However we have not found these undertakings are burdensome for CSL to comply with, and undertaking 9 has an additional purpose in informing the market and future potential market entrants, about Ofgem's role in verifying the level of Additional Space and Further Additional Space. We agree with Ofgem's comments and therefore decide that undertaking 9 should be retained unchanged.<sup>116</sup>

#### *Undertaking 10 – Monthly reporting of Individual Capacity Sales*

- 4.125 CSL recognised the detail of individual capacity sales differed somewhat from the general reporting obligations required under the Third Energy Package

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<sup>116</sup> However, as noted at paragraphs 4.46 to 4.48, we have decided that CSL should include additional assurance that the capabilities of Rough had not changed in the independently produced and verified Annual Injection Report which it provides every January to Ofgem (under Undertaking 9.1(ii)).

and REMIT. However, CSL questioned whether the reporting obligations in undertaking 10 remained appropriate and necessary in light of the transparency obligations achieved by REMIT, the experience of the Third Energy Package and the overarching steer towards minimising unnecessary regulatory burden.<sup>117</sup>

4.126 We note that the current monthly monitoring of individual capacity sales provides evidence as to how CSL has been selling capacity from month to month, to allow monitoring that capacity is sold on a non-discriminatory basis. In the 2011 review of undertakings, Ofgem said that the monthly reporting was a ‘particularly important mechanism to track CSL’s sales profile’.

4.127 Ofgem told us that the monthly reports remain important for its monitoring responsibilities, and that there is no equivalent reporting requirement elsewhere – for instance in relation to bids and offers for capacity, which are not captured under other reporting requirements such as the REMIT regulations. In view of the ongoing importance of the monthly reports we have not found we need to vary or release the requirement for monthly reporting.

4.128 As we noted at paragraph 4.111, CSL [§]. We considered whether a change to the monitoring of contracts could improve compliance.

4.129 We also noted that it is important to ensure that data are reported in a format to maximise clarity of information and ease of compliance monitoring. A number of CSL’s sales requirements and restrictions are stipulated on a yearly basis, but cannot currently be assessed without aggregating the monthly reports. Assessing sales on a yearly basis would provide a more readily understandable means for CSL to demonstrate its compliance and for Ofgem and CMA to monitor whether CSL has been selling capacity in a discriminatory way. This may become increasingly important if it is necessary for CSL to use the Adjustment Mechanism we have found appropriate, and it is necessary to verify they have complied with the new limits set.

4.130 We therefore decide that, in addition to monthly reporting, CSL should produce a yearly sales report collating Individual Capacity Sales, to improve the effectiveness of current monitoring. This yearly report would be supplied by CSL to CMA and Ofgem shortly after the end of each Storage Year and include the following:

- (a) Details of Individual Capacity Sales (as is currently detailed in Annex 8 to the undertakings) for the Storage Year in question. This would include

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<sup>117</sup> CSL cited the government’s response to the Consultation on the Strategic Steer to the Competition and Markets Authority, December 2015 (p11), that ‘...the overall competition regime is coordinated and regulatory practices complement each other’.

both annual contracts and multi-year contracts for capacity sold within the Storage Year and ahead of the Storage Year (in effect, all sales of capacity for the Storage Year would be captured). This would allow Ofgem or the CMA to determine whether CSL was selling capacity in a discriminatory way across the entire Storage Year, rather than just from month to month.

- (b) A sum total of sales ahead of the Storage Year in question, which would allow the CMA and Ofgem to verify that the Obligated Capacity has been sold.
- (c) A sum total of sales of Obligated Capacity in SBUs and non-SBU products, to allow the CMA and Ofgem to ensure that CSL has complied with the obligations in the undertakings for selling capacity in SBUs (except where it has obtained permission from Ofgem not to do so under undertaking 2.3b).
- (d) A sum total of sales of Obligated Capacity to Centrica, to allow the CMA to ensure that Centrica are purchasing no more than the Specified Capacity for any given Storage Year.
- (e) A sum total of annual contracts and multi-year contracts, to allow the CMA and Ofgem to verify that no less than 20% of Obligated Capacity has been sold on annual contracts for any given Storage Year.
- (f) An indication of the contract type for each Individual Capacity Sale, to allow the CMA and Ofgem to verify that CSL is only using the SSC, or contracts agreed with Ofgem. This is additional information, not currently received under undertaking 10, to help ensure that CSL complies with the requirement under undertaking 2.4 to retain the SSC for all sales of Rough capacity (subject to approved exemptions as detailed in undertakings 2.6 and 2.7). This information will also facilitate the CMA's and Ofgem's monitoring of the contractual requirements in the undertakings.

#### *Undertakings 11 and 13*

- 4.131 For the same reasons as those it cited in relation to undertaking 10 (paragraph 4.125), CSL questioned whether the reporting requirements in undertakings 11 and 13 were appropriate and necessary.
- 4.132 Ofgem told us that undertakings 11 and 13 relate to information that is important in allowing the market to understand the price of Rough capacity and behaviour of the Rough facility. Ofgem said that without these undertakings, this information would not otherwise be available to market

participants. We find that the information provided under undertakings 11 and 13 remain important in order to maintain market transparency and protect against potential discriminatory behaviour. Given the fact that this information is not provided under other regulatory obligations, we have decided to retain the undertakings unchanged.

### *Undertaking 12*

- 4.133 CSL also suggested that undertaking 12 be deleted because it has to publish general information about Rough's availability on its website (or another public platform, eg the National Grid website). CSL said that REMIT requires a web-based platform that can support RSS feeds and other specific information fields that CSL cannot provide using STORIT. This in turn means that the undertakings' preference that CSL use STORIT to publish operational information creates an inconsistency with CSL's other regulatory obligations.
- 4.134 CSL stated that the CC recognised in 2011 that undertaking 12 was largely duplicated in the Third Energy Package (para 8.56 of the Final Report), a position which has been further reinforced through the introduction of REMIT.
- 4.135 Ofgem told us that undertaking 12 requirements are additional to those of the Third Energy Package as it explicitly includes an obligation to publish information simultaneously to all market participants. We consider this requirement important to maintain market transparency and protect against potential discriminatory behaviour.
- 4.136 In our provisional decision, we accepted CSL's argument that the specification in the undertakings to publish this information on STORIT is potentially unnecessary and potentially duplicates efforts with CSL requirements under REMIT. However we acknowledged that multiple undertakings (7, 11, 12, 13 and 14) require CSL to publish information on STORIT. We considered there may be benefits for all market information provided for by the undertakings to be found in one location. We decided to retain undertaking 12, but invited comments on whether the requirement to publish information on STORIT is necessary, and whether it would be beneficial for the undertakings to mandate that CSL publish this information on its website (as are its REMIT notices).
- 4.137 In response to our provisional decision, CSL asked us to reconsider our decision not to amend undertaking 12 so that it could decide to publish details of Rough's availability on its website, STORIT or third party websites (rather than being limited just to publication on STORIT). We have considered this issue further and have decided that there is merit in adopting an approach whereby CSL is required to make the information it is currently obliged to publish on STORIT publicly available – whether on its website or on STORIT.

We have therefore decided that the drafting of the relevant undertakings (7, 11, 12 and 13) should be amended to require CSL to make the information it publishes publicly available on its website or on STORIT. For the avoidance of doubt the undertaking would not prevent CSL making the information available on both its website and on STORIT.

#### *Undertaking 17 – Annual compliance reporting*

- 4.138 The introduction to CSL's Gas Act compliance report notes that '...in general, the requirements of the undertakings go beyond the requirements set out in the Gas Act; for example, they require CSL to be maintained financially and physically separate from other businesses of the Centrica Group as well as being legally unbundled. Further, the compliance programme CSL follows to ensure ongoing compliance with the undertakings facilitates monitoring and compliance with the requirements of the Gas Act'.<sup>118</sup>
- 4.139 CSL's annual report on compliance with the undertakings includes information not contained within the Gas Act compliance report. In particular, this includes:
- (a) reporting of events that involve potential sharing of commercially sensitive information;
  - (b) reporting of CSL's staff and training policy, which demonstrates that all employees are familiar with the requirements in the undertakings; and
  - (c) detail of announcements that CSL has made as regards the status of storage capacity.
- 4.140 Although there is duplication of material between the Gas Act compliance report and the undertakings compliance report, we consider that it remains necessary for the CMA to receive the additional material in the undertakings compliance report, in order to effectively monitor CSL's compliance with the undertakings. For example, reporting of CSL's staff and training policy helps to evidence the fact that CSL staff are aware of restrictions on sharing commercially sensitive information with Centrica, which is a requirement under undertaking 6.<sup>119</sup>

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<sup>118</sup> Annual Gas Act Compliance Report for the Compliance Year 1 September 2014 to 31 August 2015, Centrica Storage Ltd, December 2015.

<sup>119</sup> Undertaking 6 requires Centrica and CSL to ensure that no commercially sensitive information arising from the operation of Rough or Easington is passed directly or indirectly to any business of either Centrica or any other member of the Centrica Group which from time to time carries on gas supply, shipping, trading, storage procurement activities or asset operations. It also requires that Centrica and CSL will ensure that the staff of all

4.141 We therefore decide to make no changes to the current compliance reporting requirements contained in undertaking 17.

*Centralised compliance structure*

4.142 During our review, CSL told us that there is scope to amend parts of the undertakings to help Centrica and CSL streamline their compliance obligations. In particular, Centrica and CSL requested that the Undertakings be amended to recognise that Centrica has created a centralised Centrica Group Ethics and Compliance function which it expected would enhance and harmonise co-ordination of undertakings compliance across the line of separation between CSL and Centrica. CSL stated that this function is headed up by the Centrica Group Ethics and Compliance Officer who reports to the Group General Counsel and is responsible for compliance across the Centrica Group. CSL and Centrica proposed that for the purposes of his or her compliance accountabilities, in respect of the undertakings, he or she will report to the Centrica Audit Committee (CAC).

4.143 To this effect, CSL subsequently proposed that undertaking 17 be amended such that the CAC would engage the Centrica Group Ethics and Compliance Officer to liaise with the respective compliance teams of CSL and Centrica on an ongoing basis and assist the CAC in conducting its independent quarterly review and annual report. CSL suggested that the CAC could also engage this individual to provide day to day oversight of CSL and Centrica compliance and therefore facilitate the conduct of the CAC's compliance reviews.

4.144 In response to CSL's initial proposals, Ofgem noted that while it did not oppose the change in principle, CSL's proposal had the effect of making compliance a shared service, and that absent sufficient safeguards this could raise concerns about the protection of sensitive data.

4.145 In relation to the protection of sensitive information, CSL proposed adding to undertaking 6 a specific recognition that the definition of commercially sensitive information (CSI) includes information disclosed to the Centrica Group Ethics and Compliance Officer for compliance oversight; that this individual would be bound to keep the information confidential; and that if they disclosed it to a third party or used it for purposes other than compliance oversight, this would constitute an infringement of the undertakings.

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members of the Centrica Group are bound by a code of conduct which prohibits the disclosure of commercially sensitive information to, and the solicitation or use of commercially sensitive information by, staff of any business of Centrica (or the business of any member of the Centrica Group, other than CSL) which carries on gas supply, shipping, trading, storage procurement activities or asset operations.



4.146 We note that the role of the Centrica Group Ethics and Compliance Officer is consistent with undertaking 5.3(e)i which permits Centrica and CSL to share regulatory and audit personnel. We acknowledge that the role could enable a more consistent approach to compliance with the undertakings across both Centrica and CSL. We consider that the additional proposals by CSL for the protection of CSI are sufficient. We therefore have decided to accept CSL's proposals in relation to a centralised compliance structure.

***Other changes to the undertakings***

4.147 In response to the Issues Statement, Ofgem suggested amending the undertakings to account for the following institutional changes:

(a) A change to the definition of Gas Day to mean a period of twenty-four consecutive hours commencing at 5.00am on a given calendar day and ending at 5.00am on the following calendar day.

(b) References to the OFT and to named individuals at CSL and Ofgem who are no longer employed.

4.148 CSL also identified some specific Centrica business units referred to in the undertakings which no longer exist, such as Centrica Energy.

4.149 We have concluded that the undertakings should be amended to reflect such institutional changes. In its response to the provisional decision, CSL suggested some minor textual amendments to our proposed changes which we have accepted in this final decision and which will be incorporated into the amended undertakings.

## Glossary

<b>1-in-20 peak day security criterion</b>	The requirement on National Grid to plan its system to cope with the highest demand that could be expected to be exceeded (whether on one or more days) only once in 20 years.
<b>Additional Space</b>	Space into which gas can be injected over and above the <b>Minimum Rough Capacity</b> . Under the current undertakings, it must be at least 1.534 <b>GWh</b> per year. Additional Space is quantified before the beginning of each <b>Storage Year</b> .
<b>Annulus / Annuli</b>	In gas well structure, a well is made up of concentric pipes of tubing. The central tube is the <b>production tubing</b> (where gas flows through). The space between tubes are <b>annuli</b> , and act as lines of defence, should the central tube break/leak.
<b>ALARP</b>	As Low As Reasonably Practical. ALARP describes the level to which the <b>HSE</b> expects to see workplace risks controlled.
<b>BCF</b>	Billion cubic feet. A measure of volume. Rough's working volume is approximately 135 BCF.
<b>Centrica</b>	Centrica is the parent company of <b>CSL</b> , and is active in gas production, trading, storage and supply. <b>CSL</b> 's trading and supply entities (eg British Gas) are customers of <b>CSL</b> 's gas storage products.
<b>CSL</b>	Centrica Storage Limited. CSL is the company that operates the Rough gas storage field. It is legally, financially and physically separate from its parent company, <b>Centrica</b> .
<b>CIWHP</b>	Closed In Wellhead Pressure. The maximum recorded pressure in the <b>production tubing</b> at the wellhead.
<b>Consumer Power (Low Carbon)</b>	A National Grid scenario defined in the Future Energy Scenarios (FES) document whereby compared to the <b>Gone Green</b> scenario more money is available and there is less emphasis on sustainability. There is higher economic growth and society has more disposable income which results in higher uptake of electric vehicles, and more renewable generation at a local level

<b>Cushion Gas</b>	Gas that must remain in a storage facility to maintain sufficient pressure for it to operate.
<b>Cycle (or turnover rate)</b>	The number of times in a year that a storage facility can be emptied and filled.
<b>Day-ahead market</b>	A form of near-term market where products are traded for delivery in the following day.
<b>DECC</b>	The Department of Energy and Climate Change.
<b>Deliverability</b>	The rate at which gas can be withdrawn from a storage facility (expressed in <b>GWh/day</b> ).
<b>DSR</b>	Demand-side response. A short-term change in the use of gas or electricity by consumers following a change in the balance between supply and demand.
<b>Duration</b>	The length of time for which gas can be withdrawn at maximum daily <b>deliverability</b> when a storage site is full.
<b>Flexible gas</b>	Gas where the amount supplied is able to vary in response to changes in gas demand.
<b>FES</b>	Future Energy Scenarios. National Grid's annual industry-wide consultation process encompassing questionnaires, workshops, meetings and seminars with market participants to seek feedback on National Grid's latest scenarios
<b>FAS</b>	Further Additional Space. Space in Rough into which gas can be injected over and above the <b>MRC</b> and <b>Additional Space</b> . Further Additional Space becomes available during the <b>Storage Year</b> .
<b>Gone Green</b>	A scenario defined in the <b>FES</b> document whereby the 2020 renewables target is met.
<b>HSE</b>	Health and Safety Executive. The HSE is the regulatory body for ensuring the safety of offshore rigs and production sites. To this end, it enforces the offshore installations and wells (design and construction etc.) regulations 1996.
<b>Incremental Capacity</b>	Capacity created at Rough through investment in storage operations by <b>CSL</b> . The current undertakings place no limits

on how much Incremental Capacity **Centrica** can purchase from **CSL** (see **Specified Capacity**).

<b>Injectability</b>	The rate at which gas can be injected in a storage facility (expressed in <b>GWh/day</b> ).
<b>LNG</b>	Liquefied Natural Gas. LNG is natural gas (predominantly methane, CH <sub>4</sub> ) that has been converted temporarily to liquid form for ease of storage or transport.
<b>Low Carbon Life</b>	A scenario defined in the <b>FES</b> document whereby, compared with the <b>Gone Green</b> scenario, more money is available and there is less emphasis on sustainability. There is higher economic growth and society has more disposable income which results in higher uptake of electric vehicles, and more renewable generation at a local level.
<b>LRS</b>	Long range storage facilities. Storage facilities that are able to deliver gas from their maximum stock at full capacity for a <b>duration</b> of more than two months. These facilities are particularly suitable for providing seasonal flexibility.
<b>MAOP/MOP</b>	Maximum (Allowable) Operating Pressure. The maximum pressure that gas and fluid inside <b>production tubing/annuli</b> can reach, before the well operator must take steps to reduce the pressure.
<b>MRS</b>	Medium range storage facilities. Storage facilities with the capability to deliver gas from their maximum stock at full capacity for between five and 70 days.
<b>MRC</b>	Minimum Rough Capacity. The capacity that <b>CSL</b> has to offer for sale each <b>Storage Year</b> , as required in the undertakings. It comprises 455m <b>SBU</b> s.
<b>NBP</b>	National Balancing Point. A notional point on the <b>NTS</b> where gas can be traded between counterparties and their daily imbalances are calculated. <b>Shippers</b> face charges based on the cost of balancing the system if they are out of balance and are therefore incentivised to balance their own portfolios by the end of each day through changes to flows and trading at the <b>NBP</b> .
<b>NGG</b>	National Grid Gas. NGG is the transmission owner and system operator, and is responsible for the real-time safe

and efficient operation and control of the NTS in Great Britain.

<b>NTS</b>	National Transmission System. High-pressure gas system consisting of terminals, compressor stations, other pipeline systems and offtakes. The origin and destination of the gas in the NTS is irrelevant: once the gas has entered it, it can exit anywhere; and gas for a specified exit can come from any entry point. Any gas within NTS is effectively homogenous, so it can be traded at single notional point – see <b>NBP</b> .
<b>No Progression</b>	A scenario defined in the <b>FES</b> document whereby, compared with <b>Gone Green</b> , there is less money available and less emphasis on sustainability. There is slower economic recovery and government policy and regulation remains the same as today, with no new targets introduced.
<b>Nomination</b>	Notification by a <b>shipper</b> of the amount of gas it wishes to flow into or out of the transportation system or other piece of gas infrastructure (for example, interconnector, or storage facility), or the amount of gas a <b>producer</b> or <b>shipper</b> wishes to deliver/take under a contract.
<b>Obligated Capacity</b>	<b>MRC</b> plus at least 1,534 <b>GWh</b> of <b>Additional Space</b> . <b>CSL</b> are obliged to offer this capacity to the market yearly, in accordance with the current undertakings.
<b>OGA</b>	Oil and Gas Authority. The OGA has taken over some of <b>DECC</b> 's responsibilities in relation to oil and gas production and storage licences. Its role is to regulate, influence and promote the UK oil and gas industry.
<b>Oil &amp; Gas UK</b>	A body representing the UK offshore oil and gas industry
<b>OM gas</b>	Operating Margins gas. OM gas is used to maintain pressure in the system before other market balancing measures become effective in case of an incident (eg supply loss, pipe break, compressor failure). OM gas can be provided by range of operators, including storage facility operators and capacity holders; <b>LNG</b> facility operators and capacity holders. OM is procured by National Grid through an annual tender process. Traditionally, OM is provided by <b>LNG</b> storage facilities and storage facilities.

<b>PSI</b>	Pounds per square inch. A measure of pressure.
<b>Operational stock</b>	Gas held by CSL to meet its contractual and regulatory obligations to ensure the facility's integrity and efficiency (eg to maintain steady flows and to allow for outages).
<b>Producer</b>	A company that extracts gas from an onshore or offshore field and delivers it to a terminal.
<b>Production Tubing</b>	The central tube in a well through which gas is injected and withdrawn.
<b>REMIT</b>	Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency. REMIT defines market abuse, requires effective and timely public disclosure of inside information by market participants and obliges firms professionally arranging transactions to report suspicious transactions.
<b>Shipper</b>	A company holding a shipper's licence granted by Ofgem. Gas shippers buy gas from <b>producers</b> and sell the gas onto <b>suppliers</b> . They are defined as an entity which introduces, conveys and takes out gas from a pipeline system.
<b>SRS</b>	Short-range storage facilities. Storage facilities with the capability to deliver gas from their maximum stock at full capacity for less than five days. For example, <b>LNG</b> storage facilities (ie onshore facilities where gas from NTS is condensed – not via ship delivery), which are able to provide a high rate of <b>deliverability</b> but have very low injection rates, and therefore are generally used for 'peak shaving' on the few coldest winter days.
<b>Slow Progression</b>	A scenario defined in the <b>FES</b> document whereby the 2020 renewable energy target for 2020 is not met. The scenario assumes that, although regulations and targets are similar to the <b>Gone Green</b> scenario, there is less economic growth and this slows delivery of environmental policy and targets.
<b>Specified Capacity</b>	The amount of Minimum Rough Capacity and <b>Additional Space</b> that CSL is allowed to sell to <b>Centrica</b> ahead of the <b>Storage Year</b> . Under the current undertakings, Specified

	Capacity is 25% of <b>MRC</b> and 1.534 <b>TWh</b> of <b>Additional Space</b> .
<b>SBU</b>	Standard Bundled Unit. An SBU comprises of a specific amount of daily injection rights, daily withdrawal rights and space.
<b>SSC</b>	Storage Services Contract. The standard contract <b>CSL</b> is required to use when negotiating storage contracts. <b>CSL</b> can only negotiate with customers on price, term (length of contract) and volume.
<b>Storage Year</b>	The Storage Year runs from 1st May to the following 30th April and consists of an injection season (during the summer) and a withdrawal season (during the winter), although customers can choose to use their injection/withdrawal rights whenever they wish. <b>CSL</b> sells capacity at Rough on annual or multi-year contracts (typically comprising a combination of injection rights, withdrawal rights and space).
<b>STORIT</b>	The STORIT system is <b>CSL</b> 's web-based information service through which <b>CSL</b> receives customer <b>nominations</b> , allocates capacity, supports trading in the secondary market and publishes information on operations at Rough.
<b>Supplier</b>	A company holding a supplier's licence granted by Ofgem. Suppliers contract with <b>producers</b> to buy gas that is then shipped through National Grid network (by a <b>shipper</b> ) for supply to consumers. A supplier may also be licensed as a <b>shipper</b> .
<b>Therm (thm)</b>	Unit of heat energy approximately equivalent to the energy generated by burning 100 cubic feet of natural gas.
<b>TWh/GWh</b>	Terawatt hour/Gigawatt hour. Units used to measure energy (including the energy content of gas). 1,000 GWh equates to 1 TWh.