

## Operating Margins Tender Information Report

### Introduction

This market report is for the 2009 Operating Margins (OM) tender for storage years 2009/10 – 2011/12. It is produced after the tender and is designed to give existing and potential OM participants an overall view of the tendered utilisation and availability prices; together with further detail on the type, size and characteristics of the tendered offers.

This report is structured into five sections recognising the additional complexity this year of the potential introduction of new forms of operating margins provision and the potential for the regulated pricing for Operating Margins services from NGLNG Storage to be suspended. The following provides an overview of each section.

#### **Section 1: The Operating Margins Requirement**

This section gives details of the Operating Margins requirement.

#### **Section 2: Tender Details – Number, Type, Size & Percentage of Requirement**

This section gives details of the tender offers received and compares them to the Operating Margins requirement.

#### **Section 3: Restrictions Lifted – Tendered Prices & Acceptances**

In this section, the assessment assumes that all providers are able to price freely and tenderers of demand reduction and supply increase are able to provide Operating Margins services. This section shows which offers we would have accepted in this scenario.

#### **Section 4: Restrictions in place – Tendered Prices & Acceptances**

In this section, the assessment assumes that National Grid LNG Storage is under a regulated price structure for its Operating Margins services. The assessment in this section also restricts the provision of Operating Margins only to those providers who are currently able to provide Operating Margins under the UNC and Safety Case (i.e. demand reduction and supply increase providers are not able to provide Operating Margins services). This section is representative of the

current codes, licences and Safety Case and therefore reflects the offers we have accepted to meet the Operating Margins requirement.

### **Section 5: Development of Operating Margins Provision**

In this section, the assessment covers new provider types only and considers the potential to contract for services in order to demonstrate the suitability of demand reduction and supply increase to provide Operating Margins services.

For further information regarding this product or for how and when to tender, please consult the following OM section on National Grid's information website:

<http://www.nationalgrid.com/uk/Gas/OperationalInfo/GasOperatingMargins/>

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**Section 1: The Operating Margins Requirement**

The Operating Margins Requirements for the 2009/10 storage year are as follows:

NTS Zone	Volume (GWh)
North	10
Scotland	78
Wales	0
West	117
South	93
National requirement	1032
<b>Total Requirement</b>	<b>1330</b>

Table 1: Operating Margins Requirement for the 2009/10 Storage Year

The Operating Margins Requirement is made up of different components, each of which must be able to be delivered within 12 to 24 hours depending on the requirement type. As the requirements are unlikely to be concurrent, though they could be consecutive, this can lead to bookings equivalent to over 24 hours of deliverability at a given facility in the lowest cost solution where a facility can deliver more than one component of the Operating Margins Requirement.

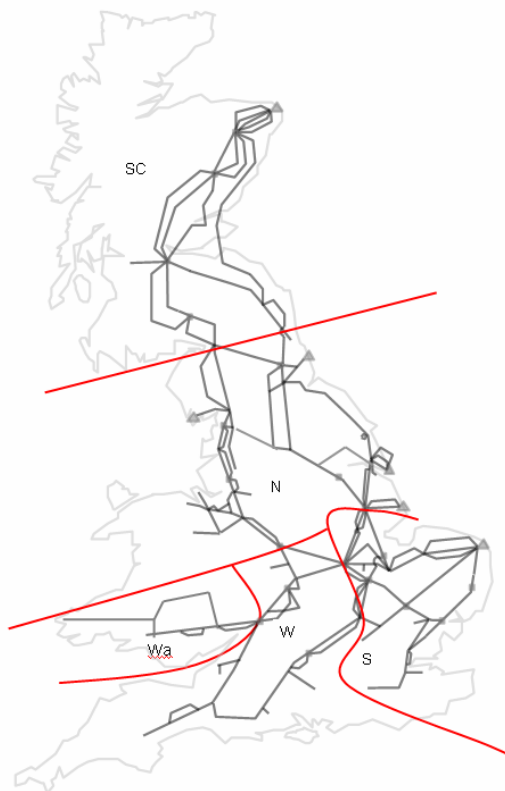


Figure 1: Map of Operating Margins Locational Zones

**Section 2: Tender Details – Number, Type, Size & Percentage of Requirement**

National Grid received 23 offers (17, 3 and 3 for Years 1, 2 and 3 respectively) for 5077GWh of Operating Margins services for the storage years 2009/10 to 2011/12.

For gas delivery arrangements, the tendered volume of OM gas is assumed to be equal to the maximum volume of OM that could be provided. This volume is calculated from the aggregate of the requirements that the tender offer can meet, subject to any tendered restrictions on the number or volume of utilisations.

Year 1 – 2009/10 Storage Year: Volume of Offers Received

The number of offers submitted for Year 1 is illustrated below in Table 2. National Grid received 2727GWh of offers for the Operating Margins services for the storage year 2009/10 against a total requirement of 1330GWh. The volume of offers is shown below as a percentage compared to the requirement volume, such that positive percentages show the surplus of offers compared to the requirement and negative percentages show the deficit of offers compared to the Operating Margins Requirement.

Requirement Type	Surplus / deficit to requirement of tender offers (%)	Number of offers submitted	Number of facilities where offers were submitted	Surplus / deficit to requirement of non-duplicated tender offers (%)	Surplus / deficit to requirement of non-duplicated tender offers compliant with safety case (%)
	(a)	(b)	(c)	(d)	(e)
North	2852%	8	6	2676%	2544%
Scotland	159%	2	1	30%	30%
South	-87%	1	1	-87%	-100%
West	167%	2	1	34%	34%
Supply Loss	59%	17	11	9%	-7%
Orderly Rundown	153%	10	6	78%	78%
Non-locational	1515%	17	11	1073%	951%
Total Surplus or Deficit to Requirement	105%	17	11	37%	22%

Table 2: Surplus & deficit of tender offers submitted relative to the OM Requirement by type for Year 1

Column (a) shows the surplus (or deficit) of the total volume of tender offers for Operating Margins services to the total requirement for each operating margins requirement type. The

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only requirement type that shows a deficit of offers on this basis is in the South Locational Zone.

Column (b) shows the number of offers submitted that could potentially be used for each Operating Margins requirement type.

Column (c) shows the number of facilities where Operating Margins offers were submitted. Where the number of offers exceeds the number of facilities, more than one offer was received for a given facility.

The maximum volume of offers that can be accepted for OM at a facility is governed by the characteristics of the facility concerned, independent of the number of tendering parties at the facility. Column (d) shows the surplus (or deficit) of the volume of tender offers for Operating Margins services restricted to the facility maxima to the total requirement for each operating margins requirement type.

The current safety case states that OM gas is gas held in storage. As part of the development of Operating Margins, offers were requested for non-storage based OM service provision to enable development under the safety case (see Section 4 for more details), however these offers cannot currently provide Operating Margins. It should be noted however that UNC modification proposal 0240 has been approved and is now in effect, which has amended UNC Section K (Operating Margins) to classify supply increase & offtake reduction as valid sources of OM (subject to subsequent demonstration of suitability to the HSE).

Column (e) shows the surplus (or deficit) of the volume of tender offers for Operating Margins services restricted by the facility maxima and current Safety Case restrictions to the total requirement for each operating margins requirement type. This column shows the percentage surplus or deficit of tender offers that could be accepted under current technical, code and safety case restrictions. The table shows a deficit of offers on this basis both in the South Locational Zone and for the Supply Loss requirement.

Year 1 – 2009/10 Storage Year: Types of Offers Received

As shown below in Figure 2, there has been a large increase in the volume of tender offers received through the Operating Margins service tender process when compared to recent years from both current service provider types and from new service provider types such as offtake reduction and supply increase offers. A large proportion of the increase in capacity offers is as a result of NGLNG Storage being able to tender.

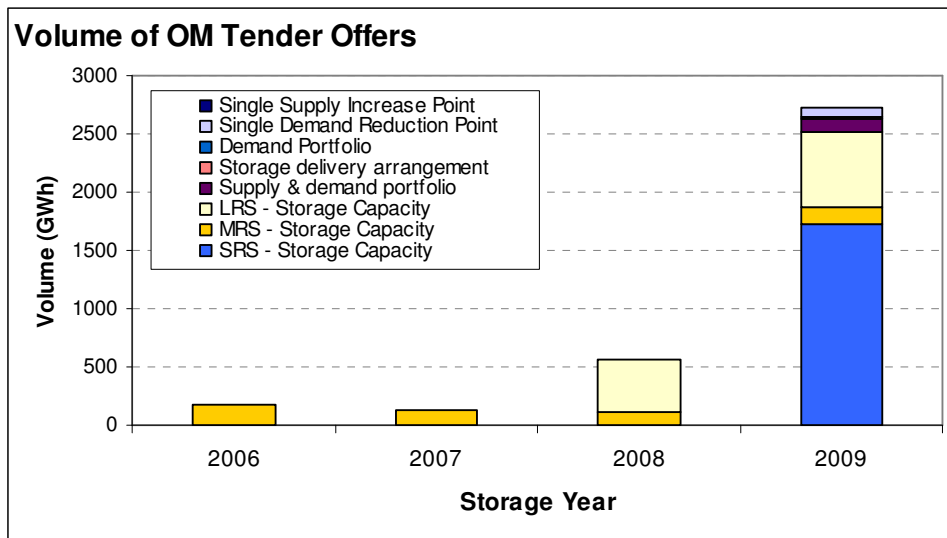


Figure 2: Volume of tender offers at annual tenders from each provider type for storage years 2006-2009

The majority of the volume of offers for OM services were capacity offers, however, offers were received from potential providers of gas delivery contracts that are not yet able to provide OM under the current Safety Case. The split between the different types of providers is shown below in Figures 3 and 4.

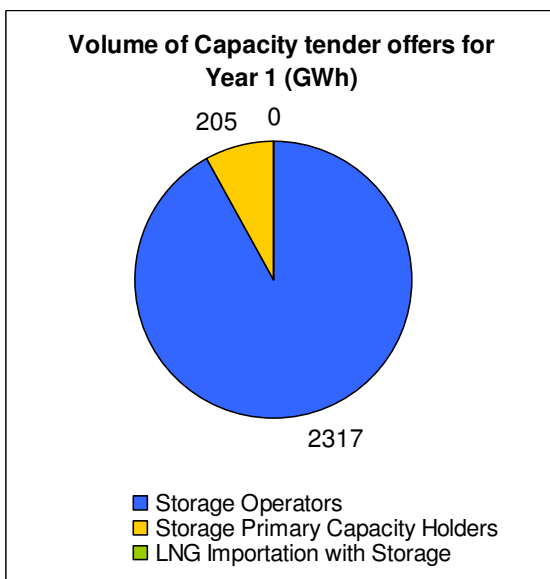


Fig 3: Volume of capacity tender offers by type

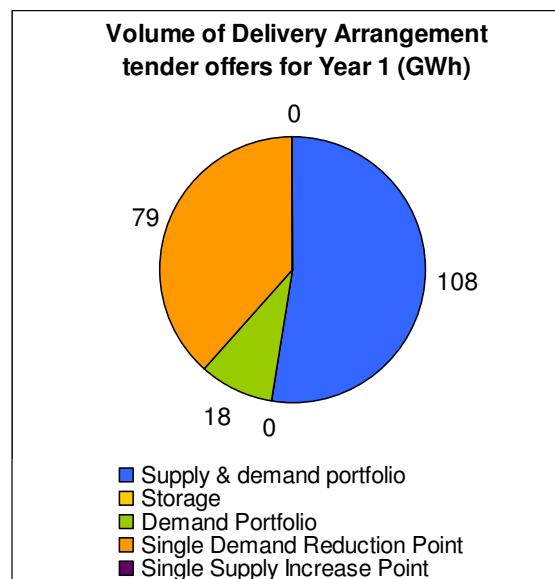


Fig 4: Volume of delivery tender offers by type

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### Years 2 and 3 – 2010/11 & 2011/12 Storage Years

The number of offers submitted for Years 2 and 3 is illustrated here in Table 3. National Grid received 1175GWh of offers for the Operating Margins services for each of the storage years 2010/11 and 2011/12 for requirements of 1385GWh and 1386GWh respectively. The volume of offers is shown below as a percentage of the 2010/11 requirement, such that positive percentages show a surplus of offers compared to requirement and negative percentages show a deficit of offers compared to the Operating Margins Requirement.

Requirement Type	Surplus / deficit to requirement of tender offers (%)	Number of offers submitted	Number of facilities where offers were submitted	Surplus / deficit to requirement of non-duplicated tender offers (%)	Surplus / deficit to requirement of non-duplicated tender offers compliant with safety case (%)
North	203%	1	1	203%	203%
Scotland	25%	1	1	25%	25%
South	-100%	0	0	-100%	-100%
West	58%	1	1	58%	58%
Supply Loss	-60%	3	3	-60%	-60%
Orderly Rundown	16%	3	3	16%	16%
Non-locational	509%	3	3	509%	509%
Total Surplus or Deficit to Requirement	-15%	3	3	-15%	-15%

Table 3: Surplus & deficit of tender offers submitted relative to the OM Requirement by type for Years 2 and 3

All of the tender offers for OM services received for 2010/11 and 2011/12 were capacity offers from existing provider types and are therefore already able to provide OM under the current Safety Case.

**Section 3: Restrictions Lifted – Tendered Prices & Acceptances**

In this section, the assessment assumes that all providers are able to price freely and tenderers of demand reduction and supply increase are able to provide Operating Margins services. In this scenario, 1237GWh of offers have been accepted for Year 1.

The assessment of the tender offers through the 2009 Operating Margins tender was designed to find the lowest cost solution. The costs assessed include the holdings contract costs (e.g. space or deliverability contracts as tendered) as well as the estimated re-profiling, standby and utilisation costs.

		Year 1	Year 2	Year 3
Capacity Arrangements	Weighted Average Offer Price per unit of space (p/kWh)	2.500	1.994	2.038
	Minimum Offer Price per unit of space (p/kWh)	0.341	0.341	0.341
	Maximum Offer Price per unit of space (p/kWh)	1969.353	1725.047	1788.745
Gas Delivery Arrangements	Weighted Average Offer Price per Unit of OM Gas available (p/kWh)	1.275	n/a	n/a
	Minimum Offer Price per Unit of OM Gas available (p/kWh)	0.441	n/a	n/a
	Maximum Offer Price per Unit of OM Gas available (p/kWh)	5.556	n/a	n/a
	Weighted Average Offer Price per unit of deliverability offered (p/kWh/day)	2.180	n/a	n/a
	Minimum Offer Price per Unit of deliverability offered (p/kWh/day)	0.662	n/a	n/a
	Maximum Offer Price per Unit of deliverability offered (p/kWh/day)	8.333	n/a	n/a

Table 4: Prices offered through the OM tender

		Year 1	Year 2	Year 3
Capacity Arrangements	Weighted Average Accepted Offer Price per unit of space (p/kWh)	2.788	n/a	n/a
	Minimum Accepted Offer Price per unit of space (p/kWh)	0.341	n/a	n/a
	Maximum Accepted Offer Price per unit of space (p/kWh)	1969.353	n/a	n/a
Gas Delivery Arrangements	Weighted Average Accepted Offer Price per Unit of OM Gas available (p/kWh)	0.709	n/a	n/a
	Minimum Accepted Offer Price per Unit of OM Gas available (p/kWh)	0.441	n/a	n/a
	Maximum Accepted Offer Price per Unit of OM Gas available (p/kWh)	1.017	n/a	n/a



	Weighted Average Offer Price accepted per unit of deliverability (p/kWh/day)	1.063	n/a	n/a
	Minimum Offer Price accepted per Unit of deliverability offered (p/kWh/day)	0.662	n/a	n/a
	Maximum Offer Price accepted per Unit of deliverability offered (p/kWh/day)	1.525	n/a	n/a

Table 5: Prices that would have been accepted through the OM tender in this scenario

For gas delivery arrangements, the price per unit of OM gas available has been calculated using the assumption that the volume of OM Gas available is equal to the maximum volume of OM that could be provided within the offered parameters. The offers at under 6p/kWh have been plotted separately in Figure 6 to enable the lower priced offers to be seen.

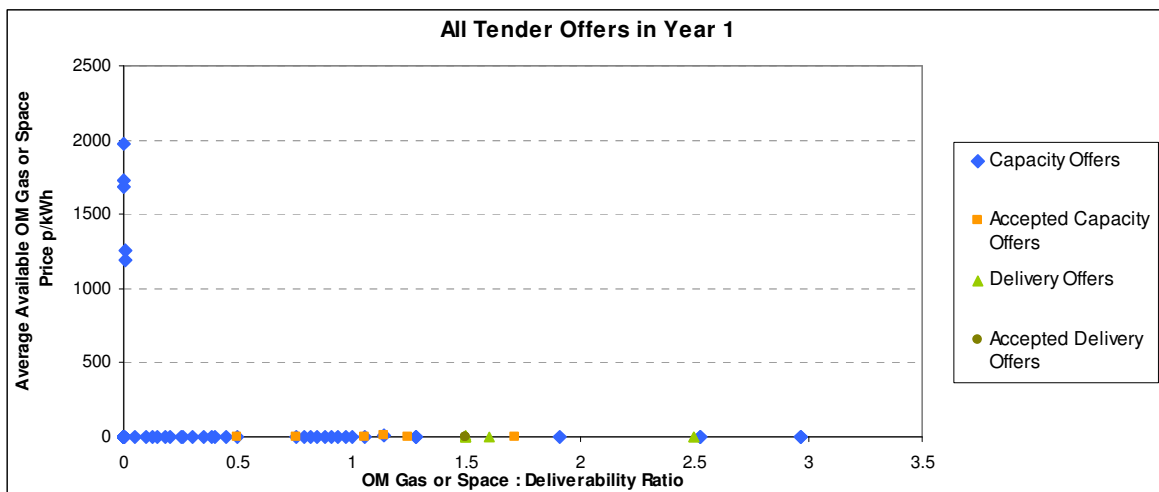


Figure 5: Prices offered through the OM tender

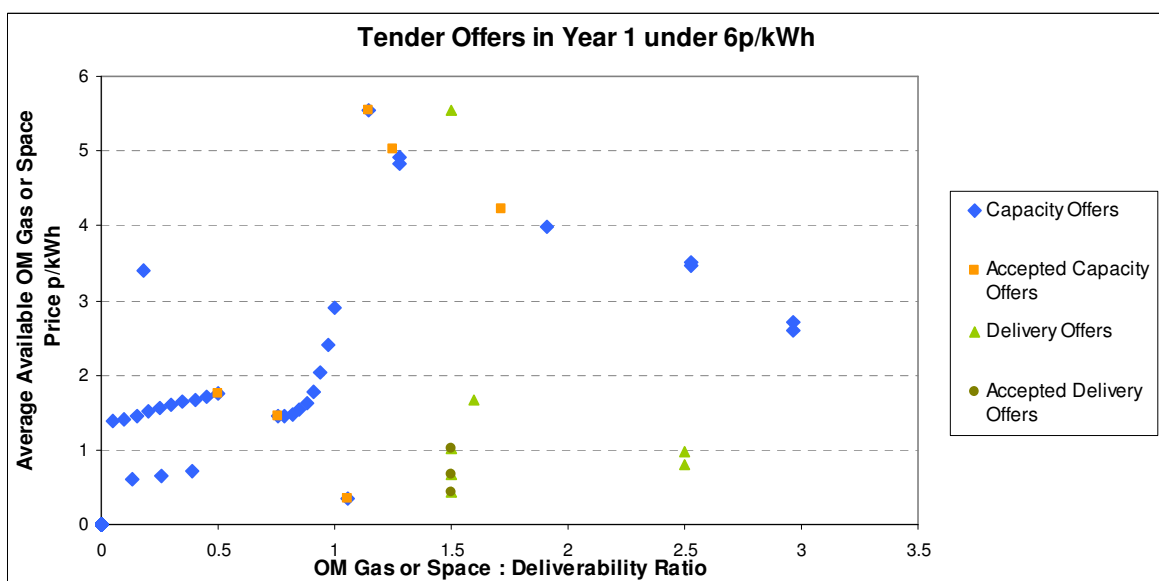


Figure 6: Prices under 6p/kWh offered through the OM tender

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For the avoidance of doubt, this section represents an assessment based on a scenario where the provision of Operating Margins services from NGLNG Storage is not subject to regulated pricing and the current Safety Case restriction that Operating Margins requirements must be met by gas-in-store is not in place. Bookings have not been made on the basis of this assessment.

**Section 4: Restrictions In Place – Tendered Prices & acceptances**

In this section, the assessment assumes that National Grid LNG Storage is under a regulated price structure for the provision of Operating Margins services at the prices set out in C3 of the Gas Transporter Licence in respect of the NTS. The assessment in this section also restricts the provision of Operating Margins only to those providers who are currently able to provide Operating Margins under the UNC and Safety Case (i.e. demand reduction and supply increase providers are not able to provide Operating Margins services). The restrictions on the types and prices of service providers reflect the restrictions currently in place and the offers we have accepted. In this scenario, 1127.5GWh of offers have been accepted for Year 1.

The assessment of the tender offers through the 2009 Operating Margins tender was designed to find the lowest cost solution. The costs assessed include the holdings contract costs (e.g. space or deliverability contracts as tendered) as well as the estimated re-profiling, standby and utilisation costs. The pricing of a tender offer affects its place in the stack of offers and therefore the volumes and prices accepted at other facilities are influenced by the pricing of services at NGLNG Storage’s facilities. Tables 6 and 7 show the offers tendered and accepted under the tender, not including OM services from NGLNG Storage booked through the UNC process at regulated prices.

		Year 1	Year 2	Year 3
Capacity Arrangements	Weighted Average Offer Price per unit of space (p/kWh)	0.784	0.341	0.341
	Minimum Offer Price per unit of space (p/kWh)	0.341	0.341	0.341
	Maximum Offer Price per unit of space (p/kWh)	18.900	0.341	0.341
Gas Delivery Arrangements	Weighted Average Offer Price per Unit of OM Gas available (p/kWh)	n/a	n/a	n/a
	Minimum Offer Price per Unit of OM Gas available (p/kWh)	n/a	n/a	n/a
	Maximum Offer Price per Unit of OM Gas available (p/kWh)	n/a	n/a	n/a
	Weighted Average Offer Price per unit of deliverability offered (p/kWh/day)	n/a	n/a	n/a
	Minimum Offer Price per Unit of deliverability offered (p/kWh/day)	n/a	n/a	n/a
	Maximum Offer Price per Unit of deliverability offered (p/kWh/day)	n/a	n/a	n/a

Table 6: Prices offered through the OM tender not including NGLNGS at regulated prices

		Year 1	Year 2	Year 3
Capacity Arrangements	Weighted Average Accepted Offer Price per unit of space (p/kWh)	0.582	n/a	n/a
	Minimum Accepted Offer Price per unit of space (p/kWh)	0.341	n/a	n/a
	Maximum Accepted Offer Price per unit of space (p/kWh)	2.179	n/a	n/a
Gas Delivery Arrangements	Weighted Average Offer Price per Unit of OM Gas available (p/kWh)	n/a	n/a	n/a
	Minimum Accepted Offer Price per Unit of OM Gas available (p/kWh)	n/a	n/a	n/a
	Maximum Accepted Offer Price per Unit of OM Gas available (p/kWh)	n/a	n/a	n/a
	Weighted Average Offer Price Accepted per unit of deliverability (p/kWh/day)	n/a	n/a	n/a
	Minimum Offer Price Accepted per Unit of deliverability (p/kWh/day)	n/a	n/a	n/a
	Maximum Offer Price Accepted per Unit of deliverability (p/kWh/day)	n/a	n/a	n/a

Table 7: Prices accepted through the OM tender not including NGLNGS at regulated prices

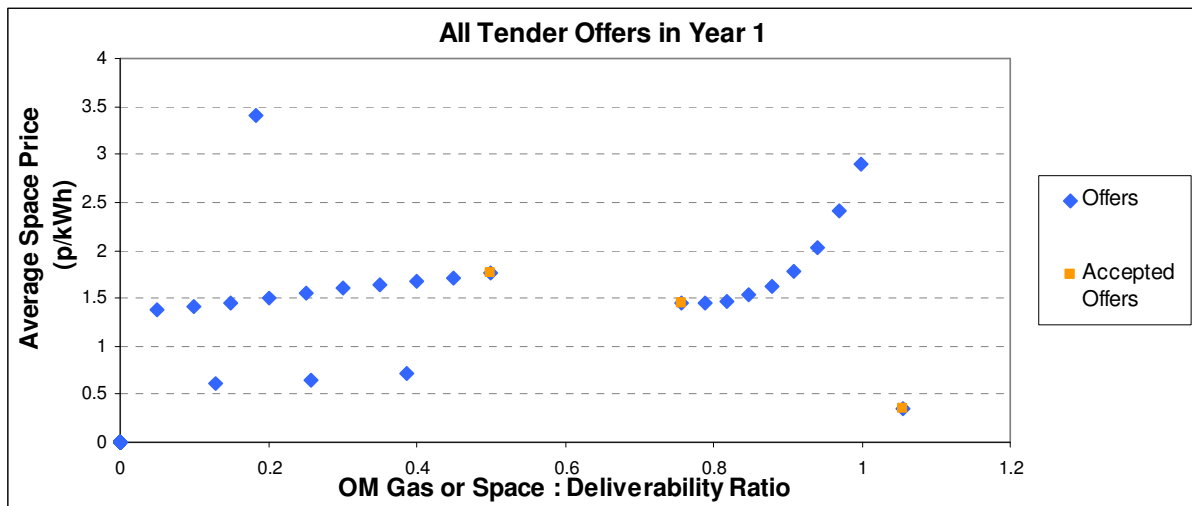


Figure 7: Prices offered through the OM tender

The volume of OM services that has been accepted through the tender for 2009/10 is less than the Operating Margins requirement. This was caused by an insufficient volume of deliverability being tendered to meet the supply loss requirement and due to more economic bi-lateral options being available. As a result, some Operating Margins services were booked through bi-lateral contracts.

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Operating Margins services have not been booked through this tender for 2010/11 and 2011/12 because the offers were not considered economic given that further competition may be in place in future years for OM service provision from new facilities, both of current and potential provider types.

## Section 5: Development of Operating Margins Provision

National Grid received 7 offers for 120GWh/day of Operating Margins services for the storage year 2009/10 for a gas delivery service from potential provider types. These gas delivery service offers are not valid sources of Operating Margins under the current Safety Case.

Two offers have been accepted for 36GWh/day of gas delivery service to be delivered by increasing supply and/or reducing offtake to enable a demonstration of the suitability of these provision types to the HSE. The gas delivery services are being procured in addition to the OM services that are required to meet the Operating Margins Requirements.

In order to demonstrate the suitability of the new provision types, it is expected that the contracts will be used to test the service from communication lines to physical call off and that further work will be done to establish whether the new gas delivery service types are as robust as gas held in storage.

Each tenderer offered a price associated with the availability of a level of gas delivery along with an Utilisation Price for the volume of gas utilised. The utilisation price can either be at a fixed price or subject to indexation. Facilities may also define a minimum utilisation length.

All of the tenders for the gas delivery service were compliant with the minimum requirements for the service and tendered an indexed rather than a fixed utilisation price based on indexes that are related to the price of generating from an alternative fuel, the cost of being out of balance in the electricity balancing mechanism and / or the spread between gas and electricity prices (spark spread).

		Year 1	Year 2	Year 3
Gas Delivery Arrangement Offers	Weighted Average Offer Price per Unit of OM Gas available (p/kWh)	1.275	n/a	n/a
	Minimum Offer Price per Unit of OM Gas available (p/kWh)	0.441	n/a	n/a
	Maximum Offer Price per Unit of OM Gas available (p/kWh)	5.556	n/a	n/a
	Weighted Average Offer Price per unit of deliverability offered (p/kWh/day)	2.180	n/a	n/a
	Minimum Offer Price per Unit of deliverability offered (p/kWh/day)	0.662	n/a	n/a
	Maximum Offer Price per Unit of deliverability offered (p/kWh/day)	8.333	n/a	n/a

Table 8: Prices offered through the OM tender

		Year 1	Year 2	Year 3
Gas Delivery Arrangements Offers Accepted	Weighted Average Offer Price per Unit of OM Gas available (p/kWh)	0.672	n/a	n/a
	Minimum Offer Price per Unit of OM Gas available (p/kWh)	0.441	n/a	n/a
	Maximum Offer Price per Unit of OM Gas available (p/kWh)	0.800	n/a	n/a
	Weighted Average Offer Price per unit of deliverability offered (p/kWh/day)	1.667	n/a	n/a
	Minimum Offer Price per Unit of deliverability offered (p/kWh/day)	0.662	n/a	n/a
	Maximum Offer Price per Unit of deliverability offered (p/kWh/day)	2.000	n/a	n/a

Table 9: Prices accepted through the OM tender

The price per unit of OM gas available has been calculated using the maximum useful volume of OM that could be provided within the offered parameters, including any utilisation restrictions.

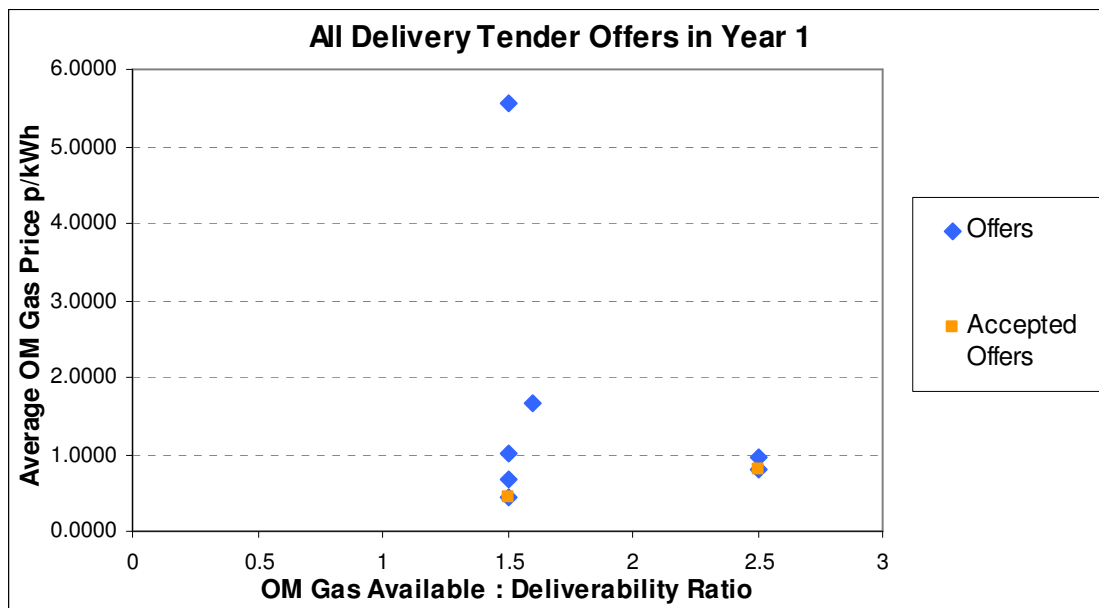


Figure 8: Prices offered through the OM tender by new provider types

**Appendix Terminology**

<b>Term</b>	<b>Definition</b>
C3	Special Condition C3 “Restriction of Prices for LNG Storage Services” is a licence condition in National Grid Gas’ Gas Transporter Licence in respect of the NTS
GWh	Gigawatt hour – equivalent to one million kilowatt hours (kWh)
HSE	Health and Safety Executive
kWh	kilowatt hour
OM	Operating Margins. Operating Margins gas is used to maintain National Transmission System (NTS) pressures in the immediate period following operational stresses and before market balancing measures become effective.
NTS	National Transmission System
UNC	Uniform Network Code
Year 1	Storage year 2009/10 commencing on 1 <sup>st</sup> May 2009
Year 2	Storage year 2010/11 commencing on 1 <sup>st</sup> May 2010
Year 3	Storage year 2011/12 commencing on 1 <sup>st</sup> May 2011