

National Grid LNG Storage
2009 Annual Storage Invitation

Version 1.0

Document control

Version history

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1. Introduction

- 1.1. National Grid LNG Storage, the business unit within National Grid with responsibility for LNG storage operations, invites applications for Storage Capacity and Tanker Filling Slots in the National Grid LNG Storage Facilities for Storage Year 2009/10 in accordance with provisions of the Uniform Network Code and the information contained within this Annual Storage Invitation.
- 1.2. For Storage Year 2009/10 Storage Capacity and Tanker Filling Slots will be offered via a pay as bid tender process made up of two bidding rounds or stages ("Stage 1" and "Stage 2" respectively). Anyone wishing to apply for capacity, or Tanker Filling Slots, in either stage (the "Applicants") must return the completed application forms to National Grid LNG Storage by 12:00 hours on the relevant invitation close date these being:
 - a) Wednesday 1st April 2009 in respect of Stage 1; and
 - b) Monday 6th April 2009 in respect of Stage 2.

Each of the above dates shall be the "National Grid LNG Invitation Close Date" in respect of the stage in question. For the avoidance of doubt Applicants may submit application forms for both stages.

- 1.3. Commercial Operations communications will be via the National Grid LNG Storage Customer Access and LNG Management System ("CALMS"). A copy of the CALMS manual, which defines training, helpdesk and the transactions carried out, can be requested from National Grid LNG Storage.
- 1.4. Terms not defined in this Annual Storage Invitation have the meaning given in the Uniform Network Code.
- 1.5. Should the terms in this Annual Storage Invitation conflict with those in the Uniform Network Code then the terms of the Uniform Network Code shall take precedence.

2. Description of Services Available

General

- 2.1. Users may purchase Storage Capacity at any or all of the National Grid LNG Storage Facilities at Avonmouth, Glenmavis and Partington and Tanker Filling Slots at Glenmavis and Avonmouth.
- 2.2. Section Z of the Uniform Network Code further defines the storage services available.

Constrained Services

- 2.3. In 2009/10 National Grid only requires minimum inventory levels to be held at Avonmouth.
- 2.4. A copy of National Grid's Constrained Storage Statement is contained in Appendix 8 and gives details of Constrained Points and Constrained

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Threshold Demand Flows, Weekly Minimum Requirements and Transportation Credits. Additional rules regarding the use of these facilities are given in Uniform Network Code Section R4.

3. General Information

- 3.1. Quantities Available and Reserve Prices are given in Appendix 1.
- 3.2. Storage Injection, Withdrawal and Tanker Filling Charges are given in Appendix 2.
- 3.3. Carry Over Charges for Uncovered Gas in Store are given in Appendix 3.
- 3.4. Planned Maintenance Outages are given in Appendix 4.
- 3.5. Maximum Storage Capacity is given in Appendix 5.
- 3.6. Withdrawal Standby States, Lead Times, Standby Conditions and Charges are given in Appendix 6.
- 3.7. Monthly Injection Overrun Cap / Permitted Deliverability Overrun Charges is given in Appendix 7.
- 3.8. The Constrained Storage Statement is given in Appendix 8.
- 3.9. The Application Form for Storage Capacity is referred to in Appendix 9
- 3.10. The Application Form for Tanker Filling Slots is given in Appendix 10.

4. Quantities Available and Tender Details

- 4.1. In accordance with Uniform Network Code Section Z3.1.2, National Grid LNG Storage has elected to invite applications for Storage Capacity by way of a two stage tender process, on the basis of price, for allocation under Uniform Network Code Section Z3.5.
- 4.2. Applicants may tender a price for a number of “units of bundled capacity” in either or both tender stages.
- 4.3. For each tender stage, the number of units of bundled capacity available at each facility, the duration, injection rate and the relevant reserve price are as indicated in Appendix 1.
- 4.4. For Applicants applying for Tanker Filling Slots, there are 8 Tanker Filling Slots available at Glenmavis and at Avonmouth.

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5. Applications

Completion of Application Form(s)

- 5.1. For each tender stage, Applicants must submit a separate application on the Application Form(s) using the electronic application form, which can be found at www.nationalgrid.com/uk/Gas/Ingstorage/Auctions/ . Additionally, immediately following the relevant National Grid LNG Invitation Close Date, Applicants will be requested to submit the Application Forms electronically to National Grid LNG Storage to facilitate the capacity allocation process.
- 5.2. For each tender stage, the cover sheet must be completed, and the separate pages should be completed as appropriate. There is a limit of 25 primary bids that may be made for a facility.
- 5.3. For each primary bid, Applicants may make up to 2 conditional bids providing that the following conditions are satisfied:
 - a) Each of the conditional bids and the primary bid must be at different facilities; and
 - b) Each conditional bid must be less than or equal to either the previous conditional bid or primary bid; and
 - c) Each price bid must be greater than or equal to the clearing price at which the primary or conditional bid option applies.
- 5.4. Where Applicants are applying for units of bundled capacity each application must indicate, for each facility:
 - a) Which facility the application relates to; and
 - b) Which tender stage the application relates to; and
 - c) The number of units of bundled capacity which are being applied for; and
 - d) The unit price tendered in pence per bundled unit of Storage Capacity per annum for the primary bid, and conditional bids where appropriate (which must be stated to not more than four (4) decimal places) equal to or greater than the relevant reserve price.
 - e) The attribution of value between Storage Space, Storage Injectability and Storage Deliverability.
- 5.5. Applicants wishing to apply for Annual Tanker Filling Slots shall submit an application form to National Grid LNG Storage in the form set out in Appendix 10 indicating the number of Annual Tanker Filling Slots applied for and whether the slots are for Glenmavis or Avonmouth.

Submission of Application Form(s)

- 5.6. Applicants must complete the relevant application forms electronically. Users should then submit completed application forms:
 - a) By post to the address set out below; or

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Matt Golding
Sales and Marketing Manager
National Grid LNG Storage
Floor D3
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

b) By fax FAO: LNG Storage-Commercial Operations on 01926 656587

By no later than 12:00 hours on the relevant National Grid LNG Invitation Close Date and by email to **box.lngstorage@uk.ngrid.com** immediately following the relevant National Grid LNG Invitation Close Date. National Grid LNG Storage accepts no responsibility in respect of lost applications.

For the avoidance of doubt, postal and/or faxed application forms are valid applications and the email is requested to enable an efficient allocation process. Emails without a respective postal and/or faxed application form will not be considered.

- 5.7. For applications, all Applicants should clearly mark the sealed envelope or fax subject header and subsequent email subject header with their company name.
- 5.8. National Grid LNG Storage will not be required to consider applications submitted by an Applicant where the requirements of paragraphs 5.1 to 5.7 have not been satisfied.
- 5.9. An Applicant wishing to withdraw its application must notify National Grid LNG Storage in writing before 12:00 hours on the relevant National Grid LNG Invitation Close Date that it wishes National Grid LNG Storage to withdraw. Where an Applicant so notifies National Grid LNG Storage, National Grid LNG Storage will promptly confirm receipt of the Applicant's notification by telephone, withdraw the Applicants sealed envelope from the tender and return it unopened to the Applicant. Following a notification in accordance with this paragraph the Applicant may submit further applications in accordance with this paragraph 5.

Attribution of Value

- 5.10. The applicant's weighted average attribution of value shall be applied to the applicant's accepted tenders in relation to each facility and will be used:
 - a) To determine the Applicable Storage Deliverability Charge Rate for that facility for the purposes of Uniform Network Code Section Z6.6.2 ("National Grid LNG Storage Withdrawal Failure");
 - b) To determine the Applicable Storage Injectability Charge Rate for that facility for the purposes of Uniform Network Code Section Z5.7.2 ("National Grid LNG Storage Injection Failure");

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- c) To determine the Applicable Storage Space Charge Rate for that facility for the purposes of Uniform Network Code Section Z5.10.6 (“Storage Injectability Refund”);
- d) To determine the Applicable Storage Space Charge Rate for that facility for the purposes of Network Code Section Z7.1.2(a) (“Storage Overrun Charges”);

6. Capacity Allocation

- 6.1. As soon as practicable after 12:00 hours on the relevant National Grid LNG Invitation Close Date, National Grid LNG Storage will open all applications and verify that they comply with the provisions of paragraph 5.
- 6.2. The allocation process for Storage Capacity will be multi-staged. For each facility applications will be provisionally allocated in descending primary bid price order in accordance with Uniform Network Code Section Z3.5.5.
- 6.3. For any primary bids partially allocated or not allocated, and where a conditional bid has been made, a further stage will be held. At each stage the first conditional bid will become a primary bid, for a quantity equal to the quantity of capacity not allocated in the previous stage. A new provisional allocation will then be made.
- 6.4. The process will repeat working through conditional bids in the order given in the application form. The process will conclude when there are no unallocated primary bids with outstanding conditional bids. At this stage the provisional allocations will become final allocations.
- 6.5. For the avoidance of doubt:
 - a) Conditional bid options may displace another primary bid at a facility if the conditional bid is higher.
 - b) A bid may be partially allocated capacity across more than one facility, however the total quantity of capacity allocated will not be greater than the total quantity of capacity bid for.
 - c) Any unallocated capacity from Stage 1 will be rolled forward into Stage 2.
 - d) Any unallocated capacity from Stage 2 will be offered in accordance with paragraph 8.

7. Notification

- 7.1. As soon as reasonably practicable following allocation of Storage Capacity and Tanker Filling Slots pursuant to Stage 1 of the tender process in accordance with paragraph 6, National Grid LNG Storage will deliver a letter to each Applicant (whether successful or not) confirming details of the quantities (if any) of Storage Capacity, and the number (if any) of Tanker Filling Slots, allocated to the Applicant.

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- 7.2. At 10:00 hours on Thursday 2nd April 2009, following the allocation of capacity pursuant to Stage 1 of the tender process, National Grid LNG Storage will publish the following information at www.nationalgrid.com/uk/Gas/Ingstorage :
- a) Weighted average price by volume of accepted bids at each facility; and
 - b) The volume of capacity to be rolled over to Stage 2 capacity (if applicable)
 - c) The number of Tanker Filling Slots to be rolled over to Stage 2 (if applicable)
- 7.3. As soon as reasonably practicable following allocation of Storage Capacity and Tanker Filling Slots pursuant to Stage 2 of the tender process in accordance with Paragraph 6, National Grid LNG Storage will deliver a letter to each successful Applicant confirming details of the quantities (if any) of Storage Capacity, and the number (if any) of Tanker Filling Slots, allocated to the Applicant in both Stage 1 and Stage 2.
- 7.4. At 10:00 hours on Tuesday 7th April 2009, following the allocation of capacity pursuant to both Stage 1 and Stage 2 of the tender process, National Grid LNG Storage will publish the following Stage 1 and Stage 2 information at www.nationalgrid.com/uk/Gas/Ingstorage:
- a) The weighted average price by volume of accepted bids at each facility
 - b) The clearing price at each facility
 - c) Percentage of capacity sold at each facility
 - d) The number of Tanker Filling Slots allocated

8. Residual sales of unallocated Units of bundled capacity

- 8.1. Any units of bundled capacity remaining unallocated after the Stage 2 tender process may be purchased from 10:00 hours on Wednesday 8th April 2009 under late-booking arrangements (Uniform Network Code Section Z3.7) for the remainder of the relevant Storage Year.
- 8.2. The late-booking charge rate (for the purposes of Uniform Network Code Section Z3.7.7) for a unit of bundled capacity at Avonmouth, Glenmavis and Partington will be the weighted average price of the top 50% by volume of accepted bids over both Stages for that facility plus 0.1 pence per unit of bundled capacity. Capacity will be allocated on a first come, first served basis.
- 8.3. Should any units of bundled capacity remain unallocated after Stage 2, the late-booking charge rates will be announced no later than 10:00 hours on Wednesday 8th April 2009.

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Appendices

1. Quantities Available and Reserve Prices (Stage 1 and Stage 2)
2. Storage Injection, Withdrawal and Tanker Filling Charges
3. Carry Over Charges for Uncovered Gas in Store
4. Planned Maintenance Outages
5. Maximum Storage Capacity
6. Withdrawal Standby States, Lead Times and Charges
7. Monthly Injection Overrun Cap / Permitted Overrun Charges
8. Constrained Storage Statement
9. Storage Capacity Application Form
10. Tanker Filling Slots Application Form

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Appendix 1

QUANTITIES AVAILABLE AND RESERVE PRICES

Facility	2009/10 Constrained Status	Bundled Units Available					Reserve Price (pence per bundled unit)		
Avonmouth	Constrained	Stage 1:	499,425,000	kWh	Injectability:	0.0030	kWh/d	Stage 1: 0.4094	
		Stage 2:	166,475,000	kWh	Space:	1	kWh		
		<small>(plus any rolled over capacity)</small>				Deliverability:	0.2147	kWh/d	Stage 2: 0.4094
		Total	665,900,000	kWh	Duration:	4.66	Days		
Glenmavis	Unconstrained	Stage 1:	204,675,000	kWh	Injectability:	0.0059	kWh/d	Stage 1: 0.3334	
		Stage 2:	68,225,000	kWh	Space:	1	kWh		
		<small>(plus any rolled over capacity)</small>				Deliverability:	0.3393	kWh/d	Stage 2: 0.3334
		Total	272,900,000	kWh	Duration:	2.95	Days		
Partington	Unconstrained	Stage 1:	259,200,000	kWh	Injectability:	0.0038	kWh/d	Stage 1: 0.3494	
		Stage 2:	86,400,000	kWh	Space:	1	kWh		
		<small>(plus any rolled over capacity)</small>				Deliverability:	0.4462	kWh/d	Stage 2: 0.3494
		Total	345,600,000	kWh	Duration:	2.24	Days		

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Appendix 2

STORAGE INJECTION AND WITHDRAWAL CHARGES

	Storage Injection (During Injection Period ¹) (p/kWh)	Storage Injection (Outside Injection Period) (p/kWh)	Storage Withdrawal (p/kWh)
Avonmouth	0.393	0.425	0.033
Glenmavis	0.418	0.424	0.038
Partington	0.555	0.597	0.032

TANKER FILLING CHARGES

Annual Tanker Filling Slot	£3714	per annum
Storage Withdrawal	£270	per tanker load

¹ As defined in Uniform Network Code Section Z5.1.1

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Appendix 3

CARRY-OVER CHARGES FOR UNCOVERED GAS IN STORE 2009

Carry-over Month	Charge (p/kWh/day)
May	0.0000
June	0.0002
July	0.0006
August	0.0012
September	0.0048
October	(mandatory withdrawals apply)

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Appendix 4

PLANNED MAINTENANCE – 1ST MAY 2009 TO 30TH APRIL 2010

Injection Outages

Site	Dates (inclusive)			Availability
Avonmouth	1 st January 2010	to	1 st April 2010	0%
Glenmavis	30 th November 2009	to	10 th March 2010	0%
Partington	1 st January 2010	to	31 st March 2010	0%

Withdrawal Outages

Site	Dates (inclusive)			Availability
Avonmouth	24 th August 2009	to	20 th September 2009	0%
Glenmavis	1 st May 2009	to	12 th July 2009	67%
	13 th July 2009	to	27 th September 2009	33%
Partington	13 th July 2009	to	7 th September 2009	0%

Tanker Bay Outages

Site	Dates (inclusive)			Availability
Glenmavis	8 th August 2009	to	16 th August 2009	0%
Avonmouth	15 th July 2009	to	1 st August 2009	0%

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Appendix 5

**MAXIMUM STORAGE INJECTABILITY, MAXIMUM STORAGE SPACE
AND MAXIMUM STORAGE DELIVERABILITY FOR 2009/10**

Table 5

Facility	Storage Injectability (kWh/d)	Storage Space (kWh)	Storage Deliverability (kWh/d)
Avonmouth	2,000,000	665,900,000	143,000,000
Glenmavis	1,600,000	272,900,000	92,600,000
Partington	1,300,000	345,600,000	154,200,000

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Appendix 6

**WITHDRAWAL STANDBY STATES, LEAD TIMES, STANDBY
CONDITIONS AND CHARGES**

Site	State	Withdrawal lead time	Cost per day
Avonmouth	1	1 hr	n/a
	2	2 hrs	£2000
	Normal	6 hrs	£0
Glenmavis	1	1 hr	n/a
	2	2 hrs	£2000
	Normal	4 hrs	£0
Partington	1	1 hr	n/a
	2	2 hrs	£2000
	Normal	8 hrs	£0
Standby Conditions:			
a) system demand is greater than 75% of estimated peak demand, or			
b) "bid to buy prices" for the Day are equal to the average summer gas price plus the injection commodity price plus the clearing price for each facility minus 0.1 p/kWh			
and at other times at the discretion of National Grid LNG Storage			

Notes

State 1: Typically when the site is withdrawing gas

State 2: When site is at a shortened withdrawal lead-time, but not exporting gas

Normal: Where site is not at a state ready for withdrawing gas

For the avoidance of doubt a User will not be able to request that a particular facility be moved to a lead time of 1 hour ("State 1") as a facility will only move to that state when it is already flowing.

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Appendix 7

MONTHLY INJECTION OVERRUN CAP

Months in 2009/10 Storage Year	Charge (p/kWh)
May	0.0000
June	0.0100
July	0.0170
August	0.0100
September	0.0100
October to April	0.0000

PERMITTED DELIVERABILITY OVERRUN CHARGES

Months in 2009/10 Storage Year	Charge (p/kWh)
June, July, August, September	0.0875
April, May, October, November	0.1825
December, January, February, March	0.3650

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Appendix 8

Constrained Storage Statement 2009/2010

This Statement is published in accordance with Section R of the Uniform Network Code.

Constrained Storage Facilities

Constrained Storage Facilities are situated on the parts of the NTS most remote from the beach terminals. On days of high demand some of the gas required at the extremity of the network may come from the local Storage Facility. This means that pipelines feeding that locality do not have to provide gas for the full demand on a peak day. The required capacity of the pipeline has therefore been reduced and investment saved. The use of storage to save on pipeline investment is known as transmission support.

At present the LNG Storage Facilities at Avonmouth and Dynevor Arms are Constrained Storage Facilities. Users who book the Constrained LNG storage service from National Grid LNG Storage at these facilities agree to provide transmission support gas to National Grid on days of very high demand. They also agree to retain a minimum inventory level of gas in store so that transmission support gas is available all winter.

For the 2009/2010 Storage Year, National Grid requires minimum inventories to be maintained only at the Avonmouth facilities.

Minimum Inventory Percentages (Unified Network Code Section R)

For each week in the Winter Period a User's gas-in-storage in each Constrained Storage Facility shall not be less than the percentage of the User's Available Storage Space indicated below. These percentages have been calculated from the constrained volumes required and the Storage Space available after allowing for Operating Margins requirements.

OM Requirement 194.5GWh			
Week commencing 6.00am on:	Avonmouth	Week commencing 6.00am on:	Avonmouth
05-Oct-09	7%	04-Jan-10	7%
12-Oct-09	7%	11-Jan-10	7%
19-Oct-09	7%	18-Jan-10	7%
26-Oct-09	7%	25-Jan-10	7%
02-Nov-09	7%	01-Feb-10	7%
09-Nov-09	7%	08-Feb-10	7%
16-Nov-09	7%	15-Feb-10	7%
23-Nov-09	7%	22-Feb-10	0%

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30-Nov-09	7%	01-Mar-10	0%
07-Dec-09	7%	08-Mar-10	0%
14-Dec-09	7%	15-Mar-10	0%
21-Dec-09	7%	22-Mar-10	0%
28-Dec-09	7%	29-Mar-10	0%

Threshold Demand Flow

National Grid may make Constrained Storage re-nominations in respect of a Constrained Storage Facility (in accordance with Section R of the Uniform Network Code), in respect of any day when the forecast flow at the relevant Constrained Point exceeds the Constrained Threshold Demand Flow indicated below.

Constrained Threshold Demand Flow		
Facility	Constrained Point	Flow Rate (mcmd)
Avonmouth	Flow through Aylesbury Compressor Station	55.1

Transportation Credit

In recognition of the transmission support obligations, Users who book the Constrained LNG storage service receive a transportation credit from National Grid; this reflects the saved investment in the pipeline system. The transportation credit is subtracted from the price of deliverability for the storage service. Details of transportation credits are given in the National Grid Gas Transportation Charges document. The current credits that have been calculated according to NTS GCM 14 are reproduced below and are applicable from 1st May 2009.

Facility	Credit Rate based on Capacity	Credit Rate based on Annual Shipper Storage Space Volume
	(pence per peak day kWh per day)	(p/kWh)
Avonmouth	0.0041	0.3213

NB. The total CLNG credit payable is independent of the OM space booked at Avonmouth.

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Appendix 9

2009/10 STORAGE CAPACITY APPLICATION FORM

See electronic bid sheet at:

www.nationalgrid.com/uk/Gas/Ingstorage/Auctions/

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Appendix 10

2009/10 TANKER FILLING SLOTS APPLICATION FORM

To National Grid LNG Storage

1. Name, address and registration number of applying company:

("the Applicant")

2. Applicant's Contact Details

Name and Position Held:

Address (if different from Company address):

Telephone Number:

Fax Number:

3. Application

The Applicant wishes to Purchase and Use Storage Services for Natural Gas from National Grid LNG Storage as specified in the attached Application Form (or such smaller quantities as may be allocated under the terms of the Uniform Network Code and the 2009 Annual Storage Invitation)

4. Validity of Application

The Applicant hereby applies for Storage Services from National Grid LNG Storage, which application may not be withdrawn after the National Grid LNG Invitation Close Date (12:00 hours on Monday 6th April 2009). As soon as reasonably practicable after the National Grid LNG Invitation Close Date, National Grid LNG Storage will confirm to the Applicant the allocation of Storage Capacity. By applying for the Storage Services, the Applicant agrees to accept the provisions governing operation of Storage Services contained in the Uniform Network Code and the 2009 Annual Storage Invitation. "2009 Annual Storage Invitation" means National Grid LNG Storage's letter and enclosures dated 27th February 2009.

Signed on behalf of the Applicant _____

Position _____

Date _____

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2009/10 TANKER FILLING SLOTS APPLICATION FORM**

FACILITY – GLENMAVIS / AVONMOUTH*

(* - Delete as appropriate)

NAME OF APPLICANT

Non- Price Invitation - Application for Tanker Filling Arrangements

Annual Tanker Filling Slots Number applied for at £3,714 per slot per annum