



**Distribution System  
Management Constraint  
Management Principles  
Statement**

# DISTRIBUTION CONSTRAINT MANAGEMENT PRINCIPLES STATEMENT

## Version Control & Modification History

Version number	Date of Issue	Details
V1.0	May 2005	First version
V2.0	March 2006	Part B – Constraint Management Tools updated to include diurnal storage and NTS inlet pressures  Part D – Management Services – Paragraph relating to Line Pack removed and updated to include Diurnal Storage resources  Minor housekeeping such as references to Transco updated and Network Code updated to Uniform Network Code
V3.0	March 2007	Part B – Constraint Management Tools updated to include Assured NTS inlet pressures.
V4.0	February 2008	Extended Assured Offtake Pressures in Glossary
<u>V5.0</u>	<u>February 2016</u>	<u>Minor amendments to format and text.</u> <u>Change to Gas Day definition in Glossary following Mod 0461</u>
<u>V6.0</u>	<u>March 2016</u>	<u>'System management' references replaced with Constraint Management</u> <u>Part A – Special Condition E1 changed to Special Condition 1A</u> <u>Part B – License Duties – Removal of paragraph relating to an externally audited statement</u> <u>Part B – Criteria – Removal of paragraph relating to gas trading systems</u> <u>Glossary – DN Incentive Schemes – Definition amended</u>



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**PART A: INTRODUCTION****1. Purpose of document**

This document sets out the Constraint Management Principles Statement ("the Statement") which Northern Gas Networks (~~Northern Gas Networks~~NGN) is required to establish in accordance with Standard Special Condition D5: "Licensee's procurement and use of Constraint Management services" of its Gas Transporters Licence ("the Licence") ("the Special Condition") and granted pursuant to section 7 of the Gas Act 1986 (as amended) ("the Act"). The purpose of the Statement is to describe the basis on which Northern Gas Networks will employ Constraint Management services for its Distribution system. National Grid produces a similar document for its National Transmission System. The Licence places an obligation on the licensee to operate the system in an efficient, economic and co-ordinated manner.

The Statement has been developed to accompany Northern Gas Networks DN incentive schemes and should be read in conjunction with its Distribution Procurement Guidelines.

For the avoidance of doubt the Guidelines refer to the DN's system balancing role and do not include energy balancing activities.

Northern Gas Networks recognises that its DN incentive schemes create commercial incentives that need to be considered in conjunction with its other obligations and therefore this document is designed to indicate the broad framework against which Northern Gas Networks will make Constraint Management decisions.

The document covers Northern Gas Networks distribution system and references to pipeline and network should be construed accordingly. Northern Gas Networks distribution system covers the following Local Distribution Zones (LDZ), as defined in Special Condition ~~1A~~1 of its licence:

- Northern
- North East

## 2. Northern Gas Networks Performance

In relation to responding to the DN incentive schemes and performing functions described in this document, Northern Gas Networks will seek at all times to follow the guidelines contained within and shall seek to act in good faith and in a reasonable and prudent manner in its dealings save to the extent that:

- there is any standard of performance already provided for by any statute, regulation or Licence condition to which Northern Gas Networks is subject; or
- the continued exercise of the discretions or functions described herein could cause Northern Gas Networks, in its reasonable opinion, to come into conflict with any provision of statute, the Licence or other regulation.

The Licence imposes on Northern Gas Networks an obligation to operate the system in an efficient, economic and co-ordinated manner. Ofgem has indicated that it would expect the obligation to be satisfied where Northern Gas Networks is responding to the ~~DN incentive schemes~~ commercial incentives in its SO incentive schemes. However Ofgem has indicated that Northern Gas Networks behaviour should be appropriately constrained by the economic, efficient and coordinated obligation, for example, when its commercial incentives are not biting - such as when revenues relating to one or more incentive schemes are, or are expected to be, either greater than the incentive cap or lower than the incentive collar.

## 3. Change Process

The Guidelines have been developed by Northern Gas Networks and the form of the Guidelines has been approved by the Authority. It may only be modified in accordance with the processes set out in the Special Condition. Northern Gas Networks will monitor the operation and application of the Guidelines and it is Northern Gas Networks intention that it will meet with Users on a periodic basis to review the operation of the Guidelines and, where appropriate, to consider modifications to the Guidelines.

~~The Statement makes reference to a number of provisions contained in the Uniform Network Code.~~ In the event that any of the relevant provisions in the UNC are modified it may become necessary for Northern Gas Networks to seek an amendment to the Guidelines in order that it remains consistent with the UNC. Prior to any such amendment the UNC shall take precedence over the Guidelines.

For the avoidance of doubt, the Guidelines do not form part of the UNC.

## PART B: GENERAL PRINCIPLES

### 1. Licence Duties

In establishing the Statement the Licence requires Northern Gas Networks (NGN) to set out the principles and criteria by which it will determine, at different times and in different circumstances, which System ManagementConstraint Management services it will use to assist it in the operation of the distribution pipe-line system to which the licence relates, and for what purpose, and when it would resort to measures not involving the use of System ManagementConstraint Management services in the operation of the distribution pipe-line system. Furthermore in establishing the Statement Northern Gas NetworksNGN must do so in a manner consistent with its statutory obligations to develop and maintain an efficient and economic pipeline system for the conveyance of gas and avoid undue preference or undue discrimination in the connection of premises to the system or the conveyance of gas through the system.

Northern Gas NetworksNGN other principal regulatory obligation when carrying out the System ManagementConstraint Management actions is to take all reasonable steps to do so in accordance with the Statement.

Whilst the DN incentive schemes might be considered to be a primary driver for Northern Gas NetworksNGN to become more dynamic and responsive to developments in the market place, Northern Gas NetworksNGN is obligated, subject to the exclusions defined herein, to adhere to the Statement. Northern Gas Networks must periodically deliver to the Authority and each User an externally audited statement to determine whether Northern Gas Networks has deployed system management measures in accordance with the Statement. Additionally Northern Gas Networks is required to report whether any modification should be made to that Statement to reflect more closely the Northern Gas Networks practice.

### 2. Criteria

The Statement cannot set out the particular System ManagementConstraint Management measures to be employed by Northern Gas NetworksNGN in every possible operational situation.

The criteria applied in respect of deployment of System ManagementConstraint Management services will take account of the DN Incentives; the obligation to be economic, efficient and co-ordinated; risk management considerations; and the aims included in Part F of this document.

The Special Condition recognises that in certain circumstances it may be necessary to depart from the Statement but that such departures need to be considered before deciding whether the Statement needs amendment. The reasons for departing from the detail of the Statement may include:

- where circumstances exist where not to do so would prejudice the interests of safety;

- where operational information indicates insufficient time is available to employ particular measures in accordance with the detailed processes defined herein if required effects are to be achieved;
- where the Statement has been shown to be inappropriate; or
- where ~~Northern Gas Networks~~NGN considers it to be more economic, efficient or co-ordinated to do so.

### 3. ~~System Management~~Constraint Management Tools

The ~~System Management~~Constraint Management tools used by ~~Northern Gas Networks~~NGN are designed to ensure the economic, efficient and coordinated delivery of gas to networks and supply points connected to the Distribution system in accordance with the Gas Safety Management Regulations under demand conditions as stipulated by its Licence within the commercial framework prescribed by Uniform Network Code. It does this through the management of system capacity and provision of linepack on the Distribution system facilitated by:

- provision of pipe-line capacity or use of storage within the Distribution system
- procurement of flow capability products e.g. NTS (Flat) Offtake Capacity and NTS (Flexibility) Offtake Capacity from the National Transmission System
- submission of revised offtake profile notices to NTS to amend flows into the Distribution system
- provision of diurnal storage
- obtaining an assured NTS inlet pressure at each offtake from National Grid

~~Northern Gas Networks~~NGN use of such tools will be influenced by the financial implications of its incentive arrangements, the necessity to achieve timely gas flow rate changes on the system and its broader obligations.

~~Northern Gas Networks~~NGN shall have discretion in respect of which ~~System Management~~Constraint Management services envisaged within the Distribution Procurement Guidelines it may deploy.

Whilst not required as part of the requirements of this document ~~Northern Gas Networks~~NGN may also utilise interruption in accordance with the terms of the Uniform Network Code for the purposes of ~~System Management~~Constraint Management. The Uniform Network Code allows for interruption to be used for:

- ~~System Management~~Constraint Management purposes, i.e. to address a Transportation Constraint ;
- emergencies; or
- testing.



#### 4. Timing of Actions

~~Northern Gas Networks~~NGN will determine whether measures will be employed close to the time of gas flow taking account of programmed system inputs, forecast outputs and/or projected key pressures for each Gas Day and as a result of information received for the Gas Day from all sources including LOPs (with connected facility operators) and User Nominations. By taking account of the information received from these sources ~~Northern Gas Networks~~NGN will make operational decisions and apply the decision-making processes set out in this document.

~~Northern Gas Networks~~NGN may also take actions well ahead of the Gas Day. This may be to reduce the size or cost of actions, or to improve the estimated risk profile against the DN Incentive Schemes given the expectation of possible prompt ~~System Management~~Constraint Management action requirement being necessary close to, or during, the Gas Day. ~~Northern Gas Networks~~NGN may use any other information, or its own assessments, to assess whether such actions would be appropriate.

#### 5. Information Provision

Where ~~Northern Gas Networks~~NGN deployment of ~~System Management~~Constraint Management services has a primary impact upon Users' exposures, for instance on Users charges, ~~Northern Gas Networks~~NGN will, as soon as reasonably practicable after such deployment, indicate to Users the impact of such deployment on charges.

In respect of ~~System Management~~Constraint Management services where such deployment only has a secondary effect on Users, ~~Northern Gas Networks~~NGN will have discretion as to what information about the deployment of ~~System Management~~Constraint Management services it publishes and when.

Sufficient information to establish the basis for any charges will be either released to support invoiced amounts or made available to an industry or Ofgem appointed auditor to confirm the validity of the charges.

#### 6. Emergency Procedures

Under the circumstances defined in National Grid Emergency Procedure documentation Network Gas Supply Emergency Procedures (E/1) and the Local Gas Supply Emergency Procedure (E/2) under which Emergency Procedures would be invoked, the processes and procedures in that document shall supersede all considerations arising from this statement.

**PART C: STATEMENT UNDERLYING ~~SYSTEM MANAGEMENT~~CONSTRAINT  
MANAGEMENT ACTIONS**

Not used

**PART D: ~~SYSTEM MANAGEMENT~~CONSTRAINT MANAGEMENT****~~System Management~~Constraint Management Services**

Services include:

**Capacity Tools**

~~Northern Gas Networks~~NGN may use NTS capacity services (NTS (Flat) Offtake Capacity and NTS (Flexibility) Offtake Capacity for the purposes of ~~System Management~~Constraint Management.

**Storage Service Tools**

~~Northern Gas Networks~~NGN may procure any storage service from storage facility owners or operators, or any other market, mechanism or contract relating to physical or commercially based storage products for the purposes of ~~System Management~~Constraint Management where such storage facilities are connected to the pipeline system owned by the DN.

**Demand and Supply Management Services**

~~Northern Gas Networks~~NGN may incentivise Users or end consumers to enter into contracts to affect desired gas flow offtake or delivery into the system in accordance with the terms of the Uniform Network Code.

**Other Commercial and Contractual Tools**

~~Northern Gas Networks~~NGN may develop further services or enter into contracts that will enable it to better manage both its operational and commercial risks.

**~~Northern Gas Networks~~NGN Diurnal Storage resources**

~~Northern Gas Networks~~NGN will provide diurnal storage from its own dedicated resources and storage sites as required to meet the gas demands of customers, including storage available from Linepack, low pressure and high pressure storage vessels, and other means at its disposal. All such storage will be used and, where necessary, replenished in the same gas day

**PART E: SYSTEM MANAGEMENT CONSTRAINT MANAGEMENT TOOL  
DEPLOYMENT AHEAD OF THE DAY**

Rather than wait for imminent gas flows for ~~System Management Constraint Management~~ actions it may be appropriate for ~~Northern Gas Networks~~NGN to deploy tools ahead of the gas day. This may be assessed on risk management, efficiency or cost grounds, amongst other considerations (as described elsewhere).

For example, it may be that gas flows at particular points are expected to exceed the capability of the system and so, rather than wait until close to gas flow to achieve the aims defined in Part F, it may be appropriate to consider deployment of ~~System Management Constraint Management~~ tool(s) at an earlier stage. ~~Northern Gas Networks~~NGN will seek to develop and implement such tools wherever it appears viable to do so, taking account of its obligations to maintain a safe and secure system and its risk/reward profile defined in the context of the DN incentive schemes. ~~Northern Gas Networks~~NGN may also seek to develop new tools and liquidity to improve the effectiveness, range or cost of ~~System Management Constraint Management~~ services in the longer term.

The deployment of such tools will be at the discretion of ~~Northern Gas Networks~~NGN and will be guided by consideration of the incentive schemes subject to ~~Northern Gas Networks~~NGN other obligations.

**PART F: DAILY ~~SYSTEM MANAGEMENT~~ CONSTRAINT MANAGEMENT CONSIDERATIONS**

The following represents the aims of ~~System Management~~ Constraint Management processes close to the time of gas flow:

- To maintain linepack levels and other key operational parameters within predetermined operating ranges at all times within the Gas Day whilst ensuring safe operation.
- To address exit constraints where flows are forecast to exceed assessed system capability.
- To implement interruption and give notice of potential interruption conditions.
- To identify potential operational or commercial requirements to use storage services.

## PART G: GLOSSARY

<b>Capacity Constraint</b>	A constraint affecting part of the System which results in the gas flows in that part of the System needing to be restricted
<b>Gas Day</b>	The period from 05 <del>6</del> 00 hours on one day to 05 <del>6</del> 00 hours on the following day
<b>LDZ</b>	Local Distribution Zone
<b>Linepack</b>	The volume of gas within the DN pipelines calculated to facilitate delivery of gas to networks and supply points connected to the distribution system in accordance with the gas safety Management Regulations under demand conditions as stipulated by its GT Licence.
<b>LNG</b>	Liquefied Natural Gas
<b>LOPs</b>	Local Operating Procedures agreed between National Grid and Delivery Facility Operators
<b>MCM</b>	Million Cubic Metres
<b>NTS</b>	The National Transmission System
<b>NTS Offtake (Flat) Capacity</b>	Is capacity which a Distribution Network operator is treated as using in causing or permitting gas to flow from the NTS at a rate which (for a given daily quantity) is even over the course of a Day
<b>NTS Offtake (Flexibility) Capacity</b>	Is capacity which a Distribution Network operator is treated as using or releasing from utilisation in causing or permitting gas to flow from the NTS to the extent that (for a given Daily Quantity) the rate of offtake or flow is not even over the course of a Day
<b>OCM</b>	On the Day Commodity Market - Trading System or contingency balancing arrangements
<b>Projected Closing Linepack</b>	The expected end of Gas Day linepack level
<b>Diurnal Storage</b>	Is the quantity of gas required in any given gas day that will balance the input (supply) to match the gas demand at the parts of the day where that demand exceeds the supply. This gas will then be put back into store over night with a net storage use effect across the day of zero. It should be noted that diurnal storage can take several forms including internal LDZ storage, either low or high pressure, and NTS swing.

**DN Incentive Schemes**

Incentive schemes contained within the calculation of NGN allowed revenues set out in Part B of Special Condition 1B of its Licence to incentivise~~Incentive schemes established by Ofgem to incentivise~~ certain operational and/or commercial behaviours on ~~Northern Gas Networks~~NGN as Distribution Network Operator.

**Assured Offtake Pressures**

For each day in any Gas Year, the Assured Offtake Pressures are the 0600 and 2200 pressures specified for that Gas Year in the Offtake Capacity Statement. The pressure at any time of any day will not be higher than the 06:00 hrs value but will never be less than the 22:00 hrs value.