

Uniform Network Code – the summary

Foreword

For decades, homes and businesses across the nation have relied on gas as Britain's most dependable form of energy. GB's 20 million gas consumers have grown accustomed to instant, trouble-free delivery whenever they turn on a gas tap.

Thanks to that continuing dependability, most gas consumers had not noticed the way the gas industry has reinvented itself until the roll out of domestic competition. Competition has now been firmly established at the point of supply. From March 1996, the Transco Network Code was the legal hub around which the transportation of gas operated in GB, and Transco owned and operated all of the major gas networks across GB. This changed in May 2005 with the introduction of a Uniform Network Code (UNC) that allows for gas networks to be owned by companies other than Transco.

The UNC defines the rights and responsibilities for all users of gas transportation systems. It provides all system users with equal access to the transportation services.

The major concepts underlying the Uniform Network Code are that:

Gas transportation services should meet market requirements on a non-discriminatory basis.

System security and safety should be assured.

Pricing should reflect the real costs of the services concerned.

Robust computer systems are developed and maintained.

Daily energy balancing should be operated.

Shippers are incentivised to balance their own supply and demand.

The UNC will continue to develop in response to market requirements with an effective modification process in place.

This booklet summarises the regime which exists, at the time of going to press under the UNC.

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Introduction

Uniform Network Code (“UNC”)

A 'Network Code' is a legal document which forms the basis of the arrangements between a Gas Transporter (GT) and the Shippers whose gas it transports. The Network Code which is the subject of this document, is that involving the major gas transporters the Uniform Network Code.

Each GT is required by the terms of its GT Licences to prepare Network Codes and to publish a summary. This document provides that summary. It does not quote any of the terms of the full UNC and has no contractual effect as between GTs and the Shippers.

Copies of the full Uniform Network Code are available on the internet or in paper form from the address at the end of this booklet.

The Uniform Network Code Documents

The UNC consists of a number of sections. These are the Transportation Principle Document (TPD), Transition Document, Modification Rules, Offtake Arrangements Document and a General Section. In addition a number of other documents support the UNC. The purposes of these documents are described below.

Uniform Network Code Framework Agreement

By signing this document, each gas transporter and each Shipper wishing to use its network, enter into an agreement 'for the purposes of giving effect to and binding themselves by the Uniform Network Code'. The document itself is only a few pages long. It defines certain key terms, records the names and addresses of the parties and commits them to work with each other and with all the other parties to the Code.

Individual Network Code

An individual network code (or short form network code) is the network code each transporter, as required by licence. It is called a short form code because it contains no substantive terms and is given substance by incorporate by reference the terms of the UNC into it.

Ancillary Agreement

A "Uniform Network Code Ancillary Agreement" or "Ancillary Agreement" is an agreement between a transporter and Users (Shippers) that sets out terms of particular transportation arrangements not explicitly defined in the Code. Examples of Ancillary Agreements are Advanced Reservation of Capacity Agreements (ARCA's) and Agency Allocation Agreements.

Network Exit Agreement (NExA)

NExAs are agreements between a Transporter and other parties that set out terms and detailed provisions for taking gas off the System. NExAs generally include contractual requirements for the provision of certain information relevant to the use of the Transporter's system and may also define physical aspects of connections.

Transportation Principal Document

This is the document which individual network codes refer to. It contains over twenty sections covering several hundred pages, which define in precise legal detail the Uniform Network Code. Some sections cover the topics which are common to many contracts, e.g. the confidentiality obligations, mechanisms for resolving disputes and provisions to limit the legal liability of the signatory parties. Other sections cover the topics which are specific to gas transportation.

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Transition Document

This document defines those aspects of the UNC where interim arrangements were agreed prior to its introduction, and also on-going transitions in the regime. The Transition Document takes precedence over the equivalent sections of the TPD for the dates specified in the individual clauses or sections of the Transition Document.

Offtake Arrangements Document

This document defines the operational and technical arrangements at connections between the NTS and Distribution Networks and between Distribution Networks. This includes the form of bilateral Supplemental Agreements, which contain site-specific details eg. ownership of connection assets, measurement standards.

Modification Rules

The UNC and each of the individual Network Codes may need to change over time as experience is gained business conditions vary. A GT Licence granted by Ofgem requires the transporters to define and operate a mechanism to control this process - the Modification Rules. The Modification Rules enable:

Relevant Shippers, some third parties and the GTs to make proposals for change,

Shippers and other interested parties to make representations to proposed changes, and

for the GT to approach the Gas and Electricity Markets Authority requesting a decision to be made.

Modification Rules bring into being the Modification Panel which comprises Gas Transporters and shipper voting representatives plus non-voting representatives. The purpose of the Panel is to agree on the appropriate course of action under the Rules for each Modification Proposal and to recommend whether a proposed modification should be implemented.

Given suitable notice, a Joint Office of Gas Transporters convenes the Panel at least monthly to consider Modification Proposals, which have been received, in writing. The Panel may refer proposals to a Workstream, for a Review to gather further information and/or pass the proposal for Development. Finally the Gas Transporters are responsible for preparing Modification Reports, which recommend acceptance or rejection, and for obtaining Ofgem consent to changes.

A summary of the Modification Rules, for people needing further information without reading the full text, is available from the address at the end of this document.

UK Link Manual

One section of the TPD defines how gas transporters and Shippers communicate their business transactions to one another. This is generally done via UK Link, the computer system originally developed by Transco to which all major players have access.

The complete definition of the UNC requires a statement of the legal principles which govern it, plus the technical details of how these principles are implemented. For example, there are legal principles covering the operation of the computer network, and the hardware/software used to implement that network must also be documented.

However, it is not appropriate to combine both legal and technical information into the TPD. Therefore, the technical data has been documented separately with cross-references from the TPD.

For ease of use, these cross-references are to the 'UK Link Manual'. This is an umbrella term for the collection of documents which describe how UK Link works in practice and how it supports communication between gas transporters and other System Users.

To aid referencing from the UNC, an Overview Manual has been produced. This contains the most commonly required information and acts as a route map into the remaining documents.

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The Players

Before considering the business processes which underpin the UNC regime, here is a summary of who is involved in gas supply and what they do. The cast includes:

The Producers - they explore for gas, drill the wells and flow the gas out of the ground. Almost all operate off-shore. They send their gas along undersea pipes and hand it over to...

The Delivery Facility Operators - the companies who operate the gas processing facilities at terminals around the coast of Britain. The gas is landed from offshore fields, processed and delivered to...

The Gas Transporters – they operate parts of the network which transport the gas from the terminals to the 20 million gas consumers in England, Wales and Scotland. British Gas originally owned and operated the entire network. Prior to the start of the UNC, Transco plc had been the principal GT licence holder, but with the introduction of the UNC, new licences have been granted to reflect the introduction of the new gas transporters. The NTS will be operated by “Transco NTS”. Each LDZ will be operated by its relevant gas transporter. Each licence holder will be required to develop and operate its pipeline network in an efficient, economical and safe manner.

The Storage Operators - they are generally linked to the NTS and operate one or more facilities in which gas can be stored.

The Shippers - a company with a Shipper Licence buys gas from producers, sells it to the Suppliers and employs the GTs to transport the gas to consumers. It may also store gas with a Storage Operator to help it manage the balance between its supplies and the consumer's demand. It's licence requires it to be reasonable and prudent in the way it uses the GTs pipeline Network.

The Suppliers - a company with a Supplier Licence contracts with Shippers to buy gas which they then sell to consumers. A Supplier may also be licensed as a Shipper. However, a Supplier which is not also a Shipper, has no direct relationship with the GTs.

The Regulator - The Gas and Electricity Markets Authority (GEMA) is a non-ministerial Government department and regulator of the GB onshore gas industry. The Office of Gas and Electricity Markets (Ofgem) supports GEMA. It grants the licences needed by the GTs, Shippers and Suppliers.

These are the major players in the business processes described in this brochure but there are also supporting roles for:

Gas Traders - companies which buy and sell gas from each other before it reaches the consumer. They operate in the OCM or other markets which provide ways of obtaining gas without needing a long term contract with a producer.

Allocation Agent(s) - they act for Shippers and calculate with them how much of the gas, which was input at an entry point or offtaken at an exit point, belonged to each shipper. They then inform Gas Transporters which uses the values when calculating transportation charges.

Shippers Agents - a Shipper may choose to employ an agent to carry out UNC processes on it's behalf, e.g. to inform Transco NTS of the quantity of gas the Shipper plans to transport each day.

Shrinkage Provider – a role included in each GT as each GT is responsible for obtaining the gas needed to fuel the compressors and balance any leakage in the transportation network.

Market Operator - is responsible for the provision and operation of the On-the-day Commodity Market (OCM).

Meter Reading Agents - companies which obtain meter readings from consumers' meters and provide them to Suppliers to enable the gas consumption to be billed (n.b. Shippers are obliged to obtain meter readings and pass them to Gas Transporters in order that each shipper can be billed by Gas Transporters).

Transco - part of National Grid Transco plc, owns and operates the National Transmission System (NTS). Transco owns and operates some of the distribution networks but is not retaining ownership of all distribution networks.

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Business Processes

The next sections describe in the individual business processes in the UNC regime. First though, here is a summary of how they fit together.

Contracts - before a new Shipper can buy transportation and storage services, it must get a licence from Ofgem and establish a Framework Agreement with the Gas Transporters.

Supply Point Administration - maintains records of each premises linked to the network. For example the Shipper(s) which is liable for its transportation charges, how much gas it uses in an average year and whom to contact in an emergency.

Capacity Booking - enables Shippers to book the transportation capacity they need from the Gas Transporters.

Capacity Trading - Shippers with spare capacity may offer it for sale so shippers requiring capacity can view what is on offer and make bids for part or all of it. The seller chooses which bid to accept and the Gas Transporters effect the transfer of entitlement.

Gas Nominations - by a certain time each day, a Shipper must inform Transco NTS how much gas it wishes to transport on the following day. This helps Transco NTS to plan and control the daily operation of the pipeline systems. Then, during the day, the Shipper can modify its nominations to take account of changes in supply or demand.

Measurement - collects meter reading data from around the networks. The large flows at strategic points are read daily by automated methods. The consumptions of smaller sites are measured at longer intervals.

Allocation - divides the actual gas flows recorded by Measurement among the Shippers according to rules in the UNC. Shippers pay commodity charges per unit shipped.

Daily Balancing - compares each Shipper's input and output allocations. If they are out of balance additional charges are made to recover the costs of correcting the imbalance.

Invoicing - Each month the Gas Transporters produce detailed invoices for the various types of charge on electronic media and delivers them to shippers via the shared data network.

On-the-day Commodity Market (OCM) - provides a screen based anonymous Gas Trading market in which the shippers and Gas Transporters (in their role as Shrinkage Providers) can post bids and offers to buy or sell gas either at the National balancing Point (NBP) or at specific locational points on the Gas Network.

Transco NTS use this market as a means of securing or disposing of gas in order to keep the System in balance.

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Important Concepts

There are a number of basic concepts which are central to understanding several of the business processes. They are described below.

The Network

The most efficient way to move large quantities of gas over long distances is in a large diameter pipe at high pressure. This method is used to take gas between the terminals, the storage facilities, several very large consumers of gas and specific regional sites for subsequent local distribution. The high pressure network is called the National Transmission System (NTS) and contains around 6,000 km of pipeline.

Gas leaves the high pressure system either via a NTS/LDZ offtake into a LDZ, or directly to a consumer connected to the NTS (a direct connect). Following passage through a NTS/LDZ offtake gas goes through a series of pressure tiers until it reaches the consumer or connected network. Each tier progressively reduces the pressure to that needed for safe operation of consumer appliances and to meet legislative requirements.

Meters

The Gas Transporter charges are based on a daily energy balance (see 'Frequency of Balance'). To support this process, meters are installed, which may be read remotely, at the input points and large offtakes on the network. Some meters provide a continuous reading; others (dataloggers) can be read on demand. These offtake meters provide the volume consumed each day so supply points with such devices are called Daily Metered (DM) sites.

With current technology, it is not practical or economic to install such devices at all 20 million supply points. Most of these still use traditional means and are read at monthly, six-monthly or even longer intervals. They are called Non-Daily Metered (NDM) sites.

Local Distribution Zone

To charge shippers for transporting the gas consumed by their NDM sites, the country is divided into zones for which the total output demand can be measured each day. These zones, called Local Distribution Zones (LDZ), are based on groups of offtakes from the NTS.

The daily measurements give the total consumption in an LDZ and the total consumption by the DM sites within it. The difference between these totals - the NDM consumption for each LDZ - is divided between the shippers, who supply gas to that LDZ, by applying an agreed formula.

Exit Zone

On a particular day, a supply point may receive its gas via any of the offtakes within its LDZ. However, on the day of highest demand (peak day) there is an optimum arrangement in which the offtake(s) serving each supply point can be identified precisely. The points for each offtake on a peak day are therefore grouped into another type of zone (an Exit Zone). This is then used as the basis for exit pricing.

Calorific Value

When you withdraw cash from a bank, you don't normally receive the same notes and coins that you originally deposited. Similarly, the gas used by a shipper's consumers is probably not the same gas that it bought from a producer.

This makes better sense if you do not think of the physical gas, but of the energy it represents. The shipper inputs a certain quantity of energy and its customers consume the equivalent quantity of energy. This is why the Gas Transporters account and invoice for the gas which they transport and store in energy units (kWh - kilowatt hours).

The ratio of energy to volume for gas is referred to as its CV (Calorific Value).

Each Gas Transporter is required to deliver gas within a fairly tight range of Wobbe Index (which is dependent on CV) to ensure the gas burns safely in consumer appliances. Some gas fields produce gas which is outside this range, but this gas can be mixed with other gas before or during its entry to the network

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to bring it within specification. The relationship between the volume of gas and its energy content is important to all gas pipelines which are designed to move a certain volume of gas. Shippers must therefore specify the CV of the gas when they nominate how much they intend to input to the network each day.

CV is measured by calorimeters which are situated at the terminals and at other strategic points around the network. Most measurements are taken in volume terms and converted to energy units by applying the CV from the nearby calorimeter(s) following an agreed approach.

Who Maintains the Balance?

What goes into the system must come out. This gas industry variation of 'what goes up must come down' is obvious, but it raises an important question. Who is responsible for balancing the gas used by consumers with the gas which is input from the producers? The safety and efficiency of the system depends on the balance being consistently achieved.

Ideally each Shipper should control a balance for its own customers. If they don't, the transporters must restore the balance through measures such as purchases or sales of gas, which incur additional costs. Similarly, a Shipper causes extra costs if it ships much more or much less than it has previously stated.

Due to the weather, unplanned gas production restrictions and other uncertainties, it is not feasible to require every shipper to nominate exactly and to be in balance at all times. Therefore the UNC regime assigns responsibility as follows:

Transco NTS is responsible for ensuring the physical balance of the total system.

Each shipper is financially responsible for the costs incurred to manage an imbalance in its supply and demand or a difference between its gas nominations and actual flows.

Transco NTS financially incentivised to take efficient System Balancing actions within the OCM. The incentive encourages Transco NTS to buy or sell gas at close or better than the average price of gas traded on the OCM for that Gas Day.

Frequency of Balance

This raises another question. How often should Transco NTS check the balance for each shipper in order to charge those which are out of balance? Two main factors determine this.

The basic design of the network was established when a single company - British Gas - had monopoly control over supply and demand. In those circumstances, it would have been wasteful to build in the capacity to be significantly out of balance. Shippers who go out of balance, even for a day, put system security at risk and may cause significant extra costs.

On behalf of all its shippers, Transco NTS buys and sells gas to maintain the physical balance, gas prices vary day by day.

For shippers to understand and have responsibility for their own costs, it is appropriate for Transco NTS to make calculations and pass them to the shippers on a daily basis.

Local Operating Procedures

Gas Transporters and the Delivery Facility Operators (DFOs) have agreed 'Local Operating Procedures (LOPs)'. Their main purpose is the 'Daily Flow Notification (DFN)' in which a DFO tells Gas Transporters what flow it believes will enter the Gas Transporter's system at that Delivery Facility during the next day. Each time a DFO receives a significantly revised nomination from a producer, it sends a revised DFN to the Gas Transporter.

The DFN in conjunction with other information is used to set up the system and maintain a system balance.

National Balancing Point

Another requirement of the balancing regime is to have a name for the point at which balancing takes place. There is no single physical location which could be used, so a notional point to represent the NTS is assumed. This is called the National Balancing Point (NBP).

Transportation Services

What transportation services are available to a shipper? To understand that, we first need to consider the configuration of the pipelines.

To provide flexibility of operation and security of supply, there are often several routes to move the gas between a particular input and output. As a result, gas does not always flow in the same direction along each length of pipe.

It is not meaningful, therefore, to think of a shipper's particular quantity of gas as traveling along a particular route. The entry and exit points are known but what happens in between depends on several factors. For example, what other quantities are being transported that day? From where to where are they going? Are there any temporary constraints such as compressor maintenance which mean the gas uses an alternative route?

A shipper's fundamental requirement is to get gas to his customers by inputting and offtaking gas via the transportation system. The basic transportation services therefore enable a shipper to input gas into the NBP (entry service) and output gas from the NBP (exit service).

Engineering Services

There are a number of specialist engineering services which shippers may choose if it is appropriate to their sources of supply or customer portfolio, these include:

Compression services - raise the gas pressure to meet system entry or specific consumer requirements.

Pre-heating gas - some supply points are fed directly from the high-pressure system. When pressure is reduced, the gas temperature also falls. Transco NTS can heat the gas before handing it over so that after pressure reduction it is at the required temperature.

Frequency Response and Ramp Rate Notice Period - provide gas fired power stations with the facility to respond to grid requirements.

Detailed Processes (Non-Daily)

The principal operations of gas transporters are based round a daily cycle. However there are also business processes which occur once or at irregular intervals. Since these non-daily processes introduce further concepts which affect the daily operations, we will consider them first.

Getting Started

A potential shipper must first apply to Ofgem for a licence to ship gas. When it has a licence, it signs Framework Agreements with a transporter, agreeing to operate under the terms of the UNC. Each transporter expects to do business with any company which has obtained an Ofgem licence, subject to normal commercial checks.

The new company must then undertake the following activities (though not necessarily in the order shown):

Understand its rights and responsibilities under the UNC and organise itself to operate in that environment.

Arrange shipper services according to its framework agreement.

Sign customers and register their premises with the relevant transporter.

Arrange gas supplies. Some shippers play a trading role and choose not to book capacity.

Book entry capacity from Transco NTS and/or obtain it on the secondary market.

Learn how to use the supporting computer systems.

When these prerequisites are in place, it can enter its first gas nominations and receive its first allocations. In short, it can become a shipper.

Supply Point Maintenance

Gas Transporters are responsible for a computer database that records all sites ('Supply Points') and the appropriate shipper supplying gas to each of those Supply Points. Shippers communicate with GTs using a process called Supply Point Administration to ensure the currency of the database in respect of the shipper identified as supplying gas to individual Supply Points

For certain new Supply Points and for existing ones which consume more than 73,200 kWh a year, the shipper sends the Gas Transporter a Supply Point Nomination.

The Gas Transporter responds with a Transportation Offer - a quotation for the cost to the shipper of transporting gas to that Supply Point.

To accept the offer, the shipper sends the Gas Transporter a Supply Point Confirmation. This indicates that the shipper wishes to take responsibility for the transportation charges to that Supply Point from a specified date.

For existing Supply Points in the domestic market (i.e. consuming no more than 73,200 kWh) and certain New Supply Points, the shipper only sends a Supply Point Confirmation. In either case, the Confirmation must be received no more than 30 working days and not less than 15 working days before the intended start date (D-15). (except where there is no change to the shipper e.g. for 'new' 'Greenfield' supply points or where the shipper has indicated it no longer wishes to supply the Supply Point. In these cases only 8 working days are required.

For existing Supply Points, the gas transporter advises the incumbent shipper of the Supply Point Confirmation via a Withdrawal Notice. The shipper (and consumer) then has 7 business days or until the end of D-8 (whichever is the sooner) to raise an Objection Notification. Once received from the Shipper the transporter forwards this to the confirming shipper but takes no part in any subsequent negotiations between them.

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If there is no objection (or any objection has been withdrawn by the incumbent shipper by D-8), the Supply Point transfers on day D.

If the objection is resolved within 7 working days of the Confirmation Withdrawal Notice or by D-8 (whichever is sooner), the incumbent shipper submits an Objection Cancellation. The gas transporter informs the confirming shipper and again the transfer goes ahead.

If the objection is not resolved in the time allowed, the incumbent shipper retains responsibility for the Supply Point.

An incumbent shipper can voluntarily withdraw from a Supply Point although it remains liable for any charges until that Supply Point is taken over or isolated (or isolated for the purposes of ceasing the flow of gas). In this instance, the time between confirmation and transfer can be reduced from 15 to 8 working days.

An incumbent shipper can also have a Supply Point isolated, re-connected or amend various details about it, e.g. to change the meter reading frequency or change the level of capacity booked at the Supply Point.

For Supply Points over 73,200 kWh, a shipper preparing a Supply Point Nomination can enquire about the current details held by the gas transporter.

Capacity Booking

When the shipper has signed the framework agreement, it can book or trade capacity.

In simple terms, a pipeline has a maximum capacity depending on the diameter of the pipe and the maximum rate at which gas can be pumped along it.

The transporters are allowed by Ofgem to earn a specified level of return on their assets. The (large) cost of building and extending these assets relates to the capacity they provide. The transporters' therefore aim to raise a significant percentage of revenue from capacity charges.

Transportation capacity is booked by shippers or assigned by the gas transporters' in three places:

At entry to the NTS from a sub-terminal or on-shore field (entry capacity),

*At all NTS exit points (NTS/LDZ offtakes and direct connects) (exit capacity),
and Within the LDZ (LDZ capacity)*

A shipper is responsible for obtaining its total NTS entry capacity at a level appropriate to its aggregate customer base. Shippers obtain their entry capacity by bidding for it through a series of capacity auctions, ranging from a long term release to on the day assessments, as follows :

1. Long Term Capacity. These auctions are held annually and make capacity available in quarterly (or 3 monthly) tranches or bundles. Shippers can obtain entry capacity for the period commencing two years after the time of the auction and up to a duration of fifteen years.
2. Medium Term Capacity. These auctions are also held annually and release capacity in monthly tranches for a two year duration (starting from soon after the completion of the auction). This allows shippers to obtain capacity prior to the time when their long term capacity takes effect, which may be of benefit to shippers following changes to their portfolio, for example. Monthly capacity is also released via RMSEC (Rolling Monthly System Entry Capacity) auctions which are held every month (in which capacity is made available for the succeeding month) subject to the amount of remaining unsold monthly capacity.
3. Daily Capacity. These auctions provide shippers the opportunity to bid for additional capacity to meet their needs for individual gas days. Capacity is offered on a firm and interruptible basis, again subject to the gas transporter's assessment of the capacity availability for the day in question.

Transco NTS may also buy back capacity rights when it is unable to transport all of the gas shippers wish to deliver.

The transporters are largely responsible for booking NTS exit capacity and LDZ capacity on behalf of shippers, on a month by month cycle for their DM sites, and on a daily cycle for their NDM sites.

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There are strong incentives to ensure shippers book sufficient capacity.

If a shipper delivers more than its entry entitlement on any gas day, an overrun charge is incurred at a rate which is linked to the market prices for capacity for the same period. If a shipper offtakes more than its exit entitlement at its firm DM sites, a charge, equivalent to 12 months capacity charge at a premium rate is incurred. Additionally, at exit, a tranche of capacity is booked for the shipper by the gas transporters to offset the risk of further capacity breaches.

If it exceeds its LDZ capacity entitlement for firm DM sites, it incurs the 12 month charge and must also pay at the higher capacity level from then on.

Capacity Trading

The second method of obtaining entry or DM exit capacity is to buy it from another shipper who has spare capacity. An efficient secondary market in capacity benefits several parties:

A shipper with spare capacity can recover its costs.

A shipper with insufficient booked capacity is able to ship its gas.

The efficiency of the commercial regime is optimised ensuring that capacity surpluses and shortfalls are matched and that the amount of annual capacity booked through the gas transporters' are appropriate to the requirements.

Once shippers have completed a capacity trade, the relevant details of the trade are registered with the gas transporters'. The relevant shippers' capacity holding positions are instantaneously updated by the gas transporters' taking account of the trade.

The Transporters' UNC regime therefore facilitates the following capacity trading process.

A shipper with spare capacity posts a 'Capacity Offer'. This specifies the quantity, location, duration and suggested price of the capacity.

A shipper who needs capacity can scan the list of outstanding offers. For each offer, it can see what 'capacity bids' have already been received though not who the bidders are.

It can then post a bid for some or all of the capacity for some or all of the duration. The bid price may be different to that requested on the offer.

Once a bid has been made, it cannot be amended but it can be withdrawn. If a bidder wishes to change any aspect of a bid, it must create a new bid. A bidder can have more than one bid against the same offer.

The offering shipper reviews the bids and may select one winning bid. The computer system then effects the transfer of entitlement.

Although capacity entitlement passes to the successful bidder, liability for payment of the capacity charges to the transporters' remains with the original owner.

The transporters' take no part in the financial settlement of the trade because it is the responsibility of the parties making the trade.

Two shippers may agree to trade capacity directly, i.e. without inviting and selecting bids. The selling shipper records the offer plus the name of the buying shipper. The buying shipper approves the transaction to confirm the trade.

Before the day

The daily cycle of gas transportation comes in three categories - getting ready for the gas flow day, operating during the gas flow day and accounting after the gas flow day.

First then, getting ready for the gas flow day.

Gas Nomination

A Gas Nomination (usually shortened to Nomination) is the means by which a shipper advises Transco NTS how much gas it wishes to transport on a certain day. Transco NTS use that information to schedule its daily operations.

There are three kinds of nomination:

*Into the NBP (National Balancing Point) on an entry service.
From the NBP on an exit service.
NBP to NBP for gas trading.*

A nomination specifies its type, location, date and quantity of gas (in energy units). For input nominations it must also specify either the CV or the quantity in volume units.

Output nominations for NDM sites are calculated using the same formula as is used to calculate their allocations of gas. This takes into account the total forecast demand so is done by the gas transporters, which has access to that data. However each shipper (or its agent) is responsible for the size of its nominations of all other types.

Note: Gas nomination and supply point nomination are both commonly abbreviated to nomination, even though they are different.

Gas Nomination Process

A shipper can record its nominations up to one month in advance and can also change them at any time during that period. It cannot withdraw them (for audit reasons) though it can set them to zero.

The nominations are finalised on the afternoon before the gas flow day to which they apply, according to the following approximate timetable:

By 13.00 shipper nominates for transportation to DM sites.

13.00 Transco NTS calculate the total forecast demand using the latest weather forecast.

14.00 Transco NTS calculate the forecast demand for NDM sites in each exit zone for each shipper and creates NDM nominations.

By 16.00 Shipper nominates for input at terminals.

In all cases shipper nominations must be approved by Transco NTS. Possible reasons for rejecting them include non-specification gas quality, gas trade nominations which do not match, credit worthiness, or transmission constraints resulting in zero flow.

To assist each shipper to manage its own balance, the computer maintains (and can display) a running total of the difference between their input and output gas nominations.

Daily Capacity

Additional to the quarterly and monthly entry capacity that shippers hold, Transco NTS provides a mechanism for shippers to buy or sell daily entry capacity, with Transco NTS acting as the counter-party for all such transactions. Following the initial demand forecast that takes place at 13:00 hours on D-

1, Transco NTS assesses its delivery capabilities and if they differ from the initial assessments upon which the availability of monthly entry capacity was based, it can either make any extra capacity available to shippers, or 'buy-back' capacity which shippers hold and wish to use.

The buying and selling of firm capacity by Transco NTS in respect of a gas day is conducted through a series of auctions held at both D-1 and periodically within each gas day. Shippers can place bids for a given day's capacity up to 7 days ahead of the day, which are valid only for the gas day in question. This allows shippers the opportunity to buy and sell daily capacity with Transco NTS on a frequent basis for any particular gas day.

In addition to daily firm capacity, Transco NTS makes available daily capacity on an interruptible basis. The availability of interruptible capacity at an entry point is based on Transco NTS's assessment of the firm capacity which is unlikely to be utilised by the holders (Use it or Trade it). Bids for interruptible capacity can be made up to seven days in advance of the gas day and interruptible capacity is allocated by way of a single auction held between 13:00 and 15:00 hours on D-1.

The provision of these mechanisms in both daily firm and interruptible capacity provides greater flexibility to both Transco NTS and shippers in optimising the capacity availability to shippers' requirements as the system capability alters.

Gas Trading

Gas Trading was mentioned previously as one of the types of Gas Nominations. Why is it important and how does it work? Gas Trading 'on the system' is another way to overcome capacity restrictions. One shipper with spare entry capacity inputs gas then sells it to another shipper with sufficient exit capacity. It also allows a specialist role, i.e. a 'wholesaler' of gas who inputs it to the system under an entry service and sells it on.

Gas Trading can also be used to help manage gas imbalances. During the gas day, two shippers who find they will have opposite imbalances, can arrange a trade to bring each of them into better balance.

Having agreed a trade, the two parties each create a gas nomination which specifies the other party instead of the usual entry or exit point.

If the two nominations match, the system recognises this and Transco NTS approves the trade. However, Transco NTS takes no part in its financial settlement.

Shippers can also trade gas on the OCM for a gas day between 12.00 on D-1 and 03.35 on D. The OCM is made up of 3 markets, "NBP Title", "NBP Physical" and Physical Locational. Trades within the "NBP Title" market effectively transfers title to gas between the Trading Partners. Physical trades are accompanied by a requirement on the initial trading party to make a corresponding renomination(s) within a predetermined time. Locational Trades have the same accompanying requirement as physical trades except that the resultant renominaiion must be at the location specified in the trade.

Having completed a Trade on the OCM the Market Operator will submit details of trading positions to Transco NTS from which the Shipper nominations position is deemed and adjusted accordingly.

During the day

Renomination

From 18.00 on the previous gas day until 03.59 on the current day - and subject to Transco NTS approval - shippers are able to amend existing nominations or create new ones. Both new and amended nominations made during this period are called Renominations.

On output, shippers may renominate their DM sites to take account of changes in demand e.g. interruption (see later) or changes in the weather (causing a change in consumption). Similarly The GTs recalculates the NDM nominations whenever it receives a changed weather forecast (up to four times a day).

Having renominated on output, a shipper will aim to amend its input nominations to correspond. In addition, difficulties of supply may cause a shipper to renominate downwards at one entry point and increase or create a nomination at another. Finally, shippers may create input or output renominations to trade gas on the day.

Physical Operations

GT operations staff aim to be ready to respond in good time whenever there is a change in demand. To assist them, they receive frequent weather forecasts which they convert to forecasts of gas demand. They also have access to shippers' input and output nominations and to the current status of all parts of the network.

Often, the renomination process outlined above copes with a change in demand. If it doesn't, another response is to vary the pressure of the gas in the pipeline (line pack). However, sometimes the expected change is too big for this technique alone to keep the pressure within its target range. This is normal - it does not happen every day but some days it can happen several times.

There is usually some hours' notice in which to plan the response. If the pressure appears to be dropping, then either more gas must be input or some large load(s) must be removed. If the pressure appears to be rising, the opposite action is taken.

It is shippers which own the gas and supply the large loads. How should GTs decide which shipper to ask for help to keep the pipeline operating safely? The UNC defines a market-based solution to the problem, using the OCM.

GT's use of the OCM for balancing

The OCM was introduced as a replacement for the Flexibility Mechanism in October 1999. GT's use of the OCM is summarized below and described in the diagram.

When a shipper has a clear idea of its supply and demand on a particular day, it may decide to use the OCM to buy from or sell gas to GTs for system balancing. This buying and selling is normally considered from the point of view of the shipper. For this purpose the shipper would normally make NBP Physical Trades.

To start the process the shipper makes a NBP Physical Bid on the OCM. This specifies whether it is a buy or a sell, the date(s) to which it applies, the quantity of gas, how quickly it could be implemented and, most importantly, the price per kWh. The shipper might also make Physical Locational bids which can be selected by Transco NTS when it needs to increase or reduce flows at a particular location.

The shipper enters the bid on the OCM to which GTs and all the other shippers who subscribe to the OCM have access. They can see the bids which have already been made, though not who made them.

A shipper can withdraw a bid at any time (e.g. to re-bid at a different price) except when it has been accepted.

The 'best' bid is normally chosen on price, i.e. lowest for a sell trade, highest for a buy trade. This may be overridden when operational requirements demand, e.g. to get gas quickly or in a

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particular location where a locational bid would be selected.

The OCM informs the successful bidder who is required to arrange for the change to be implemented. In the case of a physical trade this includes making a flow renomination on AT-LINK. If it fails to do so, it is likely to incur additional scheduling & imbalance charges or in the case of a late flow renomination a physical renomination incentive charge.

Unaccepted OCM bids become redundant at 03.35 on the gas day to which they apply.

Finally the shippers are billed or receive credit for their accepted bids on a subsequent invoice which is sent out by the Market Operator.

Daily Capacity

As discussed within the previous section 'Before the Day', shippers have the opportunity to adjust their level of entry capacity entitlement for a given gas day by placing 'buy' or 'sell' bids with Transco NTS both within and before the gas day.

As with quarterly and monthly entry capacity, shippers can also alter their capacity entitlement by trading their daily entry capacity with other shippers.

Interruption

There are occasions when Gas Transporters need to interrupt the supply to sites in strategically important areas of the system, for example

To relieve a transportation constraint at a particular point of the network

When depletion of peak storage could compromise the security of supply for the rest of the winter (in accordance with Emergency Procedures)

To prepare for such eventualities, Gas Transporters make arrangements with shippers whereby certain of the shipper's large and very large DM sites are declared to be 'interruptible'. In exchange, the shipper is exempt from NTS exit and LDZ capacity charges for these sites. Gas Transporters can then require those sites to interrupt their use of gas at short notice up to an agreed number of days per year.

Gas Transporters choice of interruptible sites must not discriminate in favour of, or against, any shipper or group of shippers. For a specific situation, its choice can depend entirely on operational necessity but on average over the gas year, it must treat all shippers equitably.

When a situation requiring interruption arises, Gas Transporters provides each shipper with a total interruptible requirement and a list of suitable sites. The shipper may request changes to the list of sites provided that the revised list would achieve the same result. It is then responsible for instructing all its affected sites to interrupt their use of gas.

If a site fails to interrupt as required, the shipper incurs a substantial charge. If the failure to interrupt puts the system at risk, Gas Transporters can take steps to disconnect that site and charge the shipper for its reconnection.

After the day

Gas Transporters have transported the gas. Now all that remains is to work out how much gas actually flowed and to whom it belonged so that the appropriate charges can be made.

Measurement

The gas day ends at 06.00 and shortly afterwards, the DM readings (volume, energy and CV) become available. They are taken at the following locations:

Terminals and on-shore fields.

NTS offtakes.

DM sites.

Storage injection and withdrawal.

If any reading is unavailable e.g. because of a meter or line fault, the computer system provides an estimated value.

At about 16.00 on the day after the gas flow day, these readings and estimates are passed to the Allocation process.

If a corrected value becomes available later (up to five days after the gas flow day), it is used to re-run the Allocation process.

Allocation

The first stage is to allow for three uses of gas which are not the responsibility of shippers. These are:

Stock change - a change in the pressure in the pipeline between the start and end of the day.

Own use gas (OUG) - the gas taken from the pipeline to drive the compressors or pre-heat gas for pressure reduction.

Unaccounted for gas (UAG) - the gas which is lost through leakage or measurement errors.

Gas flows in different parts of the network are allocated in different ways. This process takes place in the evening following the gas day. Each shipper can then inspect its own allocations.

Terminals and On-shore Fields

An agent for each terminal is appointed by the shippers using that terminal to manage allocation as follows.

Gas Transporters calculate default allocations based on the nominations

The producers inform each shipper how much they have delivered to the terminal.

The shippers advise the agent of their claims.

Gas Transporters advise the agent of the measured quantity via the shared computer system.

The agent checks that the measured and claimed quantities tally and co-ordinates the resolution of any mismatches.

The agent records the claims on the shared system. Providing they total to the measured quantity, these claims replace the default values.

This is normally completed within seven days after the gas flow day though the business rules allow certain types of change until 15 days after the following month-end.

DM (Daily Metered) Sites

The quantity shown by the meter readings from DM sites are allocated to the respective shippers.

NDM (Non-daily Metered) Sites (Demand Attribution)

For every NDM site, the Gas Transporter record the LDZ in which it is located, the shipper who supplies it, its designated pattern of consumption and how much gas it used in the previous year. In this way the Gas Transporter can calculate how much each shipper expects to supply to each LDZ on a particular day in normal weather.

In each LDZ, there are daily measured values for the total demand (at its NTS offtakes) and the daily-metered demand (from the DM sites within it). The difference is the NDM demand for that particular LDZ.

So, by applying suitable factors to allow for the actual weather, GTs can divide the NDM demand between the shippers in an equitable way.

This process takes place in the evening following the gas day. Each shipper can then inspect its own allocations.

Inputs	Outputs
<i>Measured at a terminal</i>	<i>Measured at a DM site</i>
<i>Withdrawn from storage</i>	<i>Injected into storage</i>
<i>Bought in a gas trade another shipper or a GT</i>	<i>Sold in a gas trade with with another shipper or a GT</i>
	<i>Attributed at an LDZ for NDM</i>

Balancing

As soon as the Allocation process is complete, a balance is struck for each shipper between: The results of the Balancing process are made available to shippers along with the allocations.

Output allocations are re-calculated if revised meter readings are received within five days. Input allocations may be changed as described in 'Terminals and On-shore Fields'. Whenever an allocation changes, the corresponding balance is re-calculated.

Shippers who input more than their outputs are paid for the extra gas; shippers who input insufficient gas are charged. These payments and charges are based on the prices of trades on the OCM, which are outside the shippers' control. They are likely to pay more than normal for the gas they buy and receive less than normal for the gas they sell. They therefore effectively pay a charge for being out of balance.

Reconciliation

The Demand Attribution formula gives an estimate of what was consumed at NDM supply points, but it is only an estimate. When an actual reading is taken at a NDM site, its value is passed on to the Gas Transporter. Knowing the true consumption, it is now possible to compare attributed and actual consumption for the period since the previous reading and calculate, for large sites, the difference (an NDM reconciliation variance).

Smaller NDM ("domestic") supply points are not individually reconciled. Instead they are reconciled in aggregate within each LDZ. The calculation is based on the difference between the total LDZ demand and the energy billed to other sites in the LDZ.

If datalogger readings are not received within five days, the corresponding charges are based on a default value. Therefore, when the correct value is received, a DM reconciliation adjustment is raised.

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Charging

Except where stated, the Gas Transporter calculate the charges each day. These include:

Capacity - for entry, exit and LDZ capacity.

Commodity - for transporting gas to the NTS exit and within the LDZ.

Customer - for costs associated with the shippers' supply points

Capacity overrun (monthly), flexibility overrun or supply point ratchet (monthly) - when a shipper ships more than its capacity entitlement.

Scheduling - based on the difference between the nominated and delivered quantities.

Some transactions may result in either payments or charges:

An imbalance caused by supplying too much produces a payment supplying too little creates a charge.

Reconciliation may produce a rebate or an extra charge.

Adjustments associated with the correction of erroneous data may be positive or negative.

Late settlement of a transporters invoice generates an interest charge; late settlement of a payment by a transporters generates an interest payment.

The final rule in this area is that Transco NTS must not make or lose money from maintaining the system balance. Therefore each month items such as the total receipts and payments for accepted bids, imbalances and scheduling charges are netted out. Each shipper then receives a debit or credit in proportion to the amount of gas it shipped that month. However, Transco NTS is incentivised to maintain the system balance at minimum cost.

Invoicing

Much of the data on which these charges and payments are based (e.g. allocations and balances) is made available to shippers on the day following the gas day to which it relates.

They are not necessarily the final values as there may be an agreed period to allow for revised readings, claims, etc. However, they give shippers an early indication of the likely charges/payments and allow many queries to be raised and resolved before the invoices are raised.

The generation of GT invoices follows a monthly cycle. Separate invoices are produced for the separate elements at different times throughout the month to spread the administrative workload.

The volume of data in a typical invoice can be quite large. Invoices are therefore transmitted to shippers as electronic files via the IX (Information 'e-Xchange) network. Shippers can then load these files into their own computer systems for validation and settlement.

The data created by the daily cycle of processes is also used to monitor and improve performance. For example:

Liabilities/Standards of Service

The UNC contains Standards of Service which are currently focused mainly on Supply Point Administration activities, UK Link system availability and operational query resolution.

GT and shipper performance is reported monthly to shippers and Ofgem. For certain Standards of Service where transporter's performance per shipper, averaged over a month, falls below planned performance levels, compensation payments known as 'liabilities' are made to those shippers affected.

These Standards of Service are continually reviewed against actual performance and where necessary adjusted according to an agreed mechanism, ensuring that Gas Transporters remain incentivised to deliver a service which is focussed on the needs of the Industry.

Audit Arrangements

The GT Licence requires Transco NTS to publish a statement setting out the steps it will take to maintain an Operational Balance. Among other things, these identify the various network-balancing techniques, e.g. the OCM, interruption, and the circumstances under which they will be used. The licence also contains a provision for audits of Transco NTS's compliance with the statement. The results of the audits are made available to shippers.

Under the UNC, Transco NTS is not allowed to profit or lose from the activities it undertakes to balance the network (known as balancing neutrality). Each month, it distributes any profit or loss as a payment or charge on each shipper's invoice. Since the calculation of the charges/payments is not fully transparent to shippers, the Network Code contains a provision for regular financial audits to demonstrate that balancing neutrality is being calculated correctly. Again the results are made available to shippers.

Information

To promote the efficient and transparent running of its pipeline network, Transco NTS produces and distributes to shippers the following types of daily or monthly report:

Shipper operations reports - summarise, for each shipper, such things as its balancing performance, scheduling performance, capacity booking and trading activity, nomination and renomination activity and accepted flexibility bids.

Network operations reports - provide aggregated information about such aspects as the forecast and actual demands, accepted flexibility bids, imbalance charge prices, patterns of supply at subterminals and the use by Transco NTS of top-up storage, balancing margins, operating margins etc. They analyse trends over a month and from month to month.

Storage

The transportation system has a number of storage facilities connected to it, and in general these are treated in the same way as other inputs and outputs. The types of storage facility in use in Great Britain are:

- **LNG (Liquefied Natural Gas)** There are currently four LNG storage facilities around the country. Gas is cooled until it becomes liquid (at -160 degrees Celsius) and stored in insulated metal tanks. Each tank holds about 10 million therms, and there are between one and four at each site. The LNG facilities have high deliverability compared to the volume stored, and can be generally be emptied in around 5 days.
- **Salt cavities** - These are created by dissolving underground salt layers. One example is the Hornsea facility in East Yorkshire where 9 large cavities have been created 1800 metres below ground, providing about 120 million therms of storage.
- **Depleted gas fields** - gas is compressed back into the field for subsequent use. The offshore Rough facility connected to the Easington terminal is by far the largest, with a total capacity of more than 1,000 million therms. Onshore fields can also be used.

The LNG Storage facilities are operated by a ring-fenced business unit in Transco plc, and the terms of its services are included in the UNC and summarized below. Other storage facilities are operated by other companies.

Uses of Storage

Storage has three main uses:

Supply and demand matching

Gas production facilities are designed to vary their output rates to accommodate changes in demand. However it would be uneconomic to provide sufficient production capacity to meet high levels of demand. Storage helps shippers better match supplies to demand throughout the year and in some cases is used purely as a trading tool.

Operating Margins

Transco NTS ensure the safe operation of its system by using storage (particularly LNG) to deal with operational incidents such as:

- Large changes in demand forecasts;*
- Sudden loss of offshore supplies;*
- Compressor trips (breakdowns) and breaks in the pipeline;*
- Orderly run down if supplies are exhausted*

This is known as Operating Margins and rules for its use are included in the UNC.

Transmission Support

Storage facilities close to areas of high gas demand increase the capacity to supply demands in those areas, avoiding unnecessary pipeline investment. Facilities that provide this service are designated as Constrained Storage Facilities in the UNC. Transco NTS has the right to order gas flows from these facilities when demand is high (“constrain on”). Gas stocks in these facilities must be maintained at appropriate levels, depending on the time of year, so that gas can be made available when required.

In recognition of this service, shippers booking a storage service at these facilities receive a “transportation credit” from Transco NTS.

At present there are two Constrained Storage Facilities Avonmouth LNG and Dynevor Arms LNG. When the system was designed, LNG facilities were placed close to centres of demand and at the extremities of the pipeline system to avoid uneconomic investment in pipeline capacity and to provide security of supply.

Transco LNG Storage

As described above, LNG has an important role in ensuring the safe and economical operation of the transportation system. It also offers storage services to shippers, characterised by high output rates and short lead-times, and therefore well suited to a “peak shaving” role, meeting short duration peak demands. Any shipper who is short of gas on a peak day will be exposed to cash-out, maybe at extremely high prices. LNG is a good way of insuring against this possibility.

In addition to Operating Margins, Transco LNG Storage offers two specific types of service to shippers:

A constrained service at Avonmouth, and Dynevor Arms. Although Transco NTS has the right to “constrain on”, this will be only at times of high demand when shippers typically require additional gas, especially if their consumers are in the relevant areas. Shippers providing this system support receive transportation credits from Transco NTS, which reduce the effective cost of a constrained LNG booking.

An unconstrained service at Partington and Glenmavis. Customers are able to withdraw previously injected gas at high rates whenever they wish.

Storage at LNG Terminals

Currently there is one LNG Terminal on the System at Isle of Grain where frequent deliveries of LNG shipments allow the site to perform the same functions as other Terminals. Substantial quantities of storage are utilised to minimise the docking times of the ships whilst providing consistent hourly and daily flows of gas into the System. This storage is also used for Operating Margins.

Constrained, Firm and Safety Monitors

The GT networks are designed to cope with the highest demand that can be expected :
On one single day in 20 years. This is known as the 1-in-20 peak day security criteria.

Shippers are incentivised by the transportation credit described above to book constrained storage sites in preference to unconstrained sites. The rules also ensure that storage stocks are kept at sufficient levels throughout the winter to ensure that there is sufficient gas to fulfill the Transmission Support role. These levels are known as “monitors” and typically stay at a high level from early October to mid January then steadily reduce to zero by the end of March.

The same concept is used so that shippers have information on the level of storage stocks required to meet the demands associated with the 1 in 50 Severe Winter (i.e. a Winter of Severity only to be expected to occur one Winter in 50). Transco NTS publish two monitor types:

- Firm gas monitors which are the storage stock requirements associated with all firm demand for a 1 in 50 Severe Winter.
- Safety monitors which are the storage stock requirements associated with 1 in 50 demand that cannot be readily isolated such as priority loads (e.g. hospitals) and domestic loads.

Transco NTS also produces weekly snapshots of storage stocks so that shippers can take appropriate action to prevent these stocks falling below the monitor levels. Both monitors and stocks are published as aggregates by “Storage Type” groupings. Facilities with similar withdrawal “durations” (i.e. no of days from full to empty at full withdrawal rates) are grouped together.

If the Safety Monitor is approached Transco NTS will increase the frequency of publishing stock information and if shippers do not respond by taking steps to conserve stocks Transco NTS, in its role as Network Emergency Co-ordinator, will initiate emergency procedures which allow direct control of demand and storage withdrawals.

Computer System Support

Computer system support is critical to the success of the UNC regime. The large volumes of data, the complexity and detail of the processes and the required speed of response mandate the use of modern computer and telecommunications systems.

The regime has some other characteristics which affect the computer systems.

Each organisation affected by the regime originates some of the data. For example, shippers confirm their supply points, make gas nominations and flexibility bids; GTs measure gas flows, accepts flexibility bids and calculates daily balances.

Each such organisation needs to see data created by others, e.g. Transco needs to see shippers' nominations, shippers need to see GT allocations.

Each shipper needs to see data which concerns its own business but should not be allowed to see other shippers' data.

The best way to meet these requirements is for the service provider and its customers to share a single computer system. Most of the gas transportation and storage industry shares one system - UK Link.

The applications which constitute UK Link are operated by GTs but are used by its customers for many of the core functions of their businesses. Some of the transactions operate on-line. Other applications receive or produce batches of records in standard formats. Most shippers have therefore developed interfacing systems to produce the inputs to UK Link or make use of its outputs.

The UK Link applications share a common database so that each transaction only needs to be entered once by the organisation which originates it. Standard security facilities restrict each system user to the types of transaction and the data which affects it.

The Operations sub-system provides real-time control of the pipeline network; Demand Estimation derives the parameters needed for the calculation of NDM nominations and allocations.

Within UK Link,

AT Link manages the energy balancing, entry and exit capacity regime, giving shippers on-line access to their data

Supply Point Administration enables shippers to take responsibility for the transportation charges to each of their consumers

Invoicing and Reconciliation calculate GT invoices and send them to shippers, and

Sites & Meters maintains the database of the premises linked to the network, on which all the other sub-systems depend.

Information 'Xchange Network (IXN)

This is the physical communications infrastructure which allows GTs and UK Link Users to communicate with each other. Here, the term 'network' is used to refer to the combination of the hardware with the software and services which control and support it.

The IXN is a Wide Area Network (WAN) consisting of 'gateways' sited at GTs and UK Link User premises. The GT gateways are linked to the computers, on which the UK Link applications run.

The UK Link User gateways provide the entry points to the WAN, via two leased lines for resiliency. UK Link Users can connect their gateway to their internal Local Area Network (LAN) to provide access via PCs from a number of different locations.

The specifications of the gateways vary according to the requirements of the individual UK Link User. GTs provide a number of compatible configurations which are described in the UK Link Overview Manual.

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Shipper Information Service/Active Notification

The shipper Information Service (SIS) operates like a bulletin board. It holds information of general interest to the gas industry such as weather reports, maintenance schedules, contacts and news. This information is available to all shippers when they log on to the service.

However there are situations when GTs need to notify shippers of exceptional events at short notice. e.g. the start and end of alerts and emergencies.

In such circumstances, it would be inappropriate for GTs simply to post this information on the SIS. Instead GTs transmit messages over a mobile radio network to a remote messaging device held by each shipper. This device acknowledges all successful transmissions.

GTs can therefore quickly detect messages that are either not delivered or not acknowledged and attempt to make contact by other means, e.g. telephone or fax.

THE UNC MODIFICATION RULES

Introduction

The Modification Rules have been set up to facilitate the process of making changes to the Code where it is seen that such a change would better facilitate the relevant objectives. They have been designed to allow due consideration to be given to all proposals either to change the Code or to review it, and allow Users and other relevant parties the opportunity to make representations about each proposal. In any event the Network Code cannot be changed without the consent of the Authority (Ofgem).

Proposals

Proposals can be made by Users and Transporters to modify or review the Uniform Network Code or a Transporter's Short Form Code (which is defined in the Modification Rules as an Individual Network Code); however only a relevant Party to an individual Short Form Code can raise a modification proposal to that Code. Any Modification Proposal or review proposal should be in writing and must clearly state which Code and part of that Code it refers to and the purpose of the proposal. Any proposal can be withdrawn before the Modification Report is finalised and presented to the Authority.

Normally proposals will follow a standard process of consideration, however, if a proposal is deemed urgent, and the Authority agrees, the standard process can be by-passed either in part or in whole.

Since the Modification Panel can vary timescales there is no fixed period for proposals to be dealt with. However, for proposals passing through the standard process it will normally take between 6 and 12 months before approval is given to amend the Code. The time taken is dependent both on the complexity of the proposal and the time it is in the development work group phase. No proposal can stay in the development work group phase for more than 6 months without the approval of the Panel or more than 12 months without the approval of the Authority.

The Modification Panel

Modification Proposals or reviews are normally channeled through the Modification Panel, which has been set up to ensure that all interested parties' views are represented. Membership of the Panel is drawn from a cross-section of the community, Transporters (up to 5 members), Users (up to 5 members), Ofgem, Independent Transporters, Suppliers and Terminal Operators (1 member each if appointed), and consumers via Energywatch (up to 2 members). Voting rights are restricted to the principle parties involved, Transporters and Users there is also a non-voting Chairman. Members can, if they wish, nominate an alternative to represent them in their absence, this alternative will have the same rights as a full member whilst in this role.

The Transporters will also appoint a Secretary and a deputy secretary to attend Panel meetings who's role is purely administrative and as such do not have any voting rights. The Secretary will issue notices convening meetings and include the agenda and all relevant material for discussion at that meeting. The normal notice period for meetings will be a minimum of 10 working days. Copies of all documentation will also be sent to each User. Users may send an observer to any Panel meeting if they so wish.

The Panel will normally meet monthly, when they will discuss matters relating to proposals for review or Modification Proposals and, where appropriate, decide the course of action to be taken. The Panel are responsible for proposing a Subject Matter Expert to author the Modification Report for any Proposal that is to proceed to consultation.

The Process

Unless regarded as Urgent each Modification Proposal will be considered by the Panel which may decide that the proposal should proceed directly to consultation, or that the proposal should proceed into the development phase or that the proposal should first be discussed by a workstream. .

When a proposal is passed to the development phase, the Panel will agree to the constitution of a development work group and its terms of reference. The terms of reference may change from time to time whilst the proposal remains with the work group, as directed by the Panel. Monthly progress reports will be considered by the Panel and the work of the group will culminate with the production of the development

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work group report which will be presented to the Panel. This report will contain all the relevant details of the Modification Proposal, the implications for the Network Code Regime, Users and Transporters, the systems and procedures affected, the resources required, alternative approaches, the cost of making the change and an estimate of the time taken to make the change. The Panel will consider the report and advise on the preparation of a draft modification report by a relevant Subject Matter Expert (SME) for circulation for representations following which the report will be finalised by the SME. The Panel will consider and approve final Modification Report, and make a recommendation to the Authority whether the Proposal should be implemented or not.

At any stage throughout the process a Modification Proposal can be referred for review (subject to the review procedures) or referred to the Authority for a view whether to continue with the development, implement as it stands or abandon the work without further development. If the Panel considers it appropriate review proposals can be converted into Modification Proposals. Once completed a proposal, approved (by the Authority), will be implemented.

Representations

Giving adequate publicity to proposals is a key objective of the Modification Rules. In considering the desirability and overall impact of a proposed modification it is essential to obtain the opinions of all Users and other interested parties. At various stages throughout the process Users and other interested parties will be invited to comment on each proposal and any draft report associated with that proposal. The time period for comment is fixed, generally 15 working days, after which no further representations will be considered.

Where any finalised document is presented to the Authority, the Transporters will be obliged to take account of those representations and attach them to the appropriate document.

Conclusion

We hope this booklet has helped you gain an insight into the UNC regime, which has been operational since May 2005, for gas transportation within the UK.

Consultation continues between all parties in the gas industry to ensure that the commercial regime remains appropriate and equitable to all users of GT's gas transportation systems.

The UNC continues to develop in response to market requirements with an effective modification process in place

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