Demand Derivation, Forecasting, Estimation & Attribution

The attached has been produced to provide some clarity in respect of the terminology used in recent DN disposal workgroups.

Systems or process name	Description	License/Network Code or "Operational" Responsibility	Service Provider	Comments
Demand derivation				
Long-term demand forecasts (Planning demand forecasts)	• Determination of aggregate LDZ forecasts (10 years)	DN	DN	• Forecasts derived taking account of econometric forecasts and local knowledge particularly in respect of new large load growth • Service provided by short term forecasting team in Hinckley
Short-term demand forecasts	• Determination of short term demand forecasts (few days ahead)	DN	ACC	• Used to inform DN system configuration, interruption likelihood assessment etc • Models developed to feed combination models used in each LDZ
	• Determination of day-ahead and within day LDZ forecasts	DN	ACC	• Forecasts made by DNs submitted to NTS to inform National demand projections and system operation • Services delivered via SOMSA
Demand derivation system2	• Determines local forecasts of gas demand / load growth at sub-LDZ level	DN	DN	• Outputs required to inform highly localised (sub-LDZ) investment plans

Systems or process name	Description	License/Network Code or "Operational" Responsibility	Service Provider	Comments
				• Data feeds from S&M database (AQ data) plus connection enquires, local demands scaled consistent with aggregate LDZ forecasts
Demand estimation	• Satisfies Network Code Section H 1-4 including o Weather variable (CWV) determination o Definition of EUCs and associated ALPs/DAFs/load factors (NB: demand estimation is not about demand forecasting, rather it is about providing information/data that feeds other processes eg CWV – demand forecasting models, ALPs/DAFs – demand attribution and AQ derivation, load factors – to derive capacities for transportation billing some of the demand forecasting requirements are defined in Network Code Section H 5 but these are dealt with above in the demand forecasting activity)	DN	NTS NDM Data-Logger Recorder Input To Be Provided By DNs	• Work accomplished via formal Network Code Sub-Committee DESC Outputs critical input to • Demand attribution (both forecast and allocation mode) (within AT-Link) • AQ determination (within S&M) • Supply point capacities (within S&M) The above three areas impact both energy balancing and transportation invoicing NB: NTS envisage providing the service to iDNs via the Demand Estimation Service Agreement (DESA)
Demand Attribution Process	• "slicing up the NDM cake to supply point level"	DN	NTS	• Service is delivered by AT-Link • Satisfies Shipper requirements for NDM nominations, AT-Link generates automatic forecasts as required by NC that generate shipper nominations • After the day AT-Link calculates "allocations" that are used for daily imbalance and transportation charging

NB: The above matrix is designed to illustrate the business processes associated with Demand derivation/forecasting/estimation/attribution. The diagram included with the “Principal Agency Systems and Interfaces” presentation was designed to define the Agency systems and those that interface with it. Therefore it does not include systems outside of Agency ‘interests’.

Invoicing systems

Invoicing ’95 is the primary system used to produce shipper invoices. This system produces, and will continue to produce, all NTS, DN transportation invoices as well as energy balancing invoices. This system is part of UK-Link and is therefore subject to the change control processes that are defined within Section U of the Network Code.

Invoicing ’95 receives inputs from other systems including: Sites and Meters Database, Billing 2000, CSEPS, Unique Sites and AT-Link. For transportation and energy settlement the only interface with shippers is via IX.

However the transporters, both Networks and Transmission, will have requirements for other invoices and associated processing outside of those transportation and energy balancing invoices required under the Network Code. These, for example, may relate to back office invoicing activities not directly associated with Transportation revenue invoicing to shippers. This may include invoicing for engineering works, the processing of invoices from suppliers (including in future Agency invoices for services delivered) and the delivery of invoices for other services not provided to shippers (eg SOMSA and DESA).

Firm load shedding database

The firm loadshed database is currently a system operated by the networks. The inputs to this system are provided by data download from Sites & Meters database and the Priority Consumer database, both of which we envisage will be operated by the Agency. The firm loadshed database is accessible by any Network (in respect of their connected load) and therefore assists Networks in undertaking incident management processes by providing emergency contact details supplied by Shippers under SPA processes.

Demand Estimation

The demand estimation processes are those associated with sections 1-4 of Section H of the Network Code. These are anticipated to be a DN responsibility being critical to the attribution of gas and therefore critical to the DN in respect of capacity and commodity charging. This service has been delivered by the Charging and Forecasting Team within the UKT Commercial directorate which will continue under the Demand Estimation Service Agreement.

Agency/Shipper interface

The primary UK-Link shipper interfaces are via IX and AT-Link/RGTA. The Agency proposal is designed to maintain the primary Shipper interface unchanged, irrespective of the IT systems and process ownership. The proposed model retains the

existing file structures and on-line systems access, currently provided under the NGT integrated model preserving a single interface.

AT-Link

At-Link is critical to NTS' commercial operating environment serving key functions for the NTS including

- Auction and buy-back of capacity mechanisms
- Exit capacity bookings
- Provision of nominations of gas flow into and out of the NTS
- After the day allocations of gas (at both entry and exit).

The system is therefore critical to the NTS in its performance of its system management activity. Specifically it is important to recognise that whilst DFN information may be a particularly important input to the energy balancing decision making process the data available via AT-Link provides important complementary information. For example, the system provides for updated NDM nominations and so enables assessment of responses from shippers, AT-Link being the only means by which NTS can assess individual responses (assuming shippers both respond and supply updated Trade and/or physical nominations in a timely manner). The use of AT-Link information extends to a broader range of system management activities.

The AT-Link system therefore provides an essential tool for the system operator providing information both ahead of the day and within day. A primary function of the system is to provide nomination data about intended physical flows on and off of the system. Users of the system at day ahead and within day are primarily those in Gas National Control Centre (GNCC) and those in shipper offices responsible for gas sourcing and scheduling.

The AT-Link system also provides the means of recording NBP trades and enables the derivation of individual shipper daily imbalances. Furthermore the AT-Link system has a role generating shipper allocations in respect of gas offtaken from the system necessary to support the transportation billing functions of both NTS and the DNs.

The system therefore has an additional role providing data to support the energy settlement process ("a market facilitation" function) and for transportation billing (to support transporters recovering their revenues).