

Offtake Code Business Rules

V 1.0

Exit and Balancing Workgroup

28 January 2004

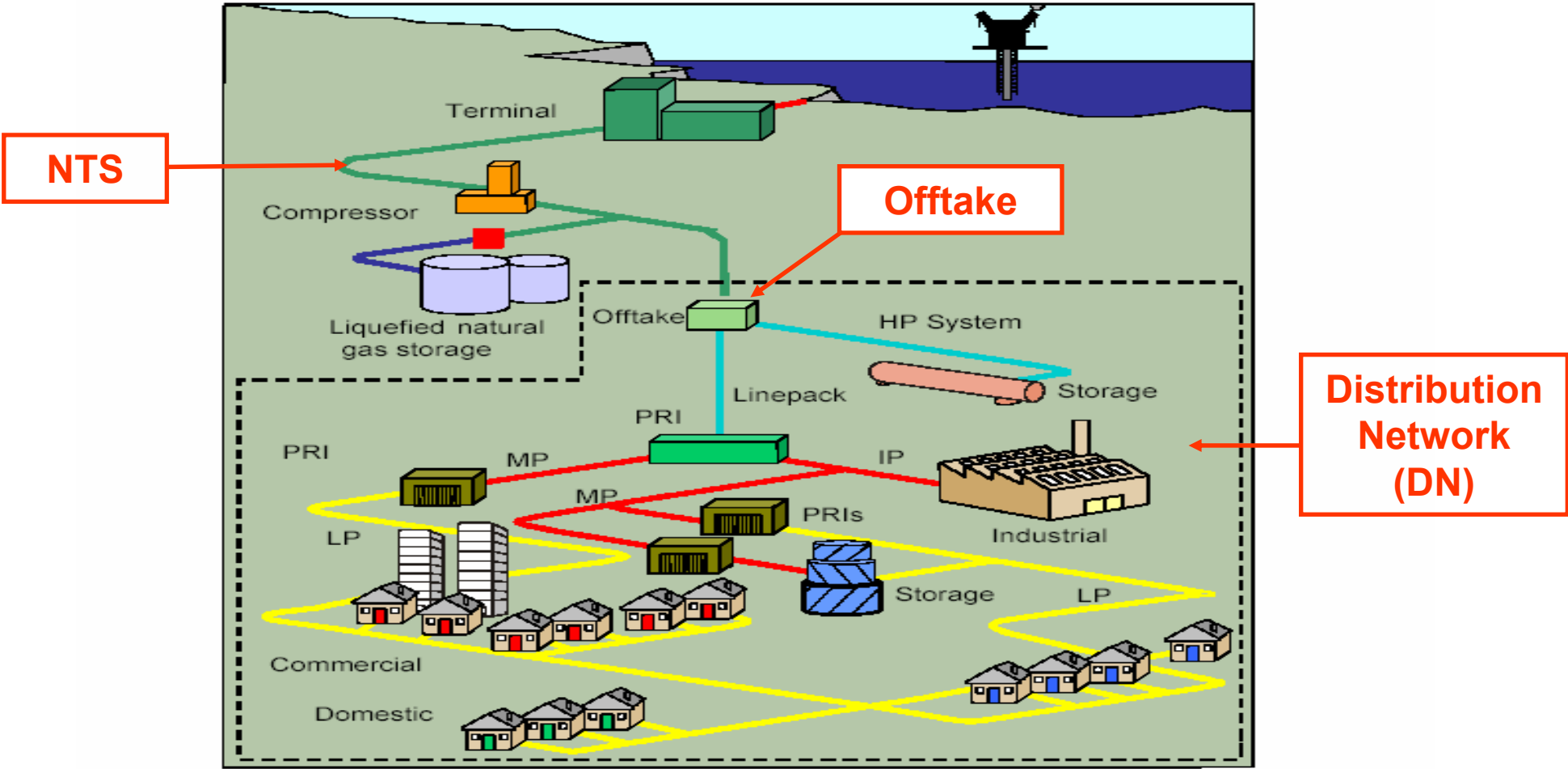
Mark Sutton

National Grid Transco

Agenda

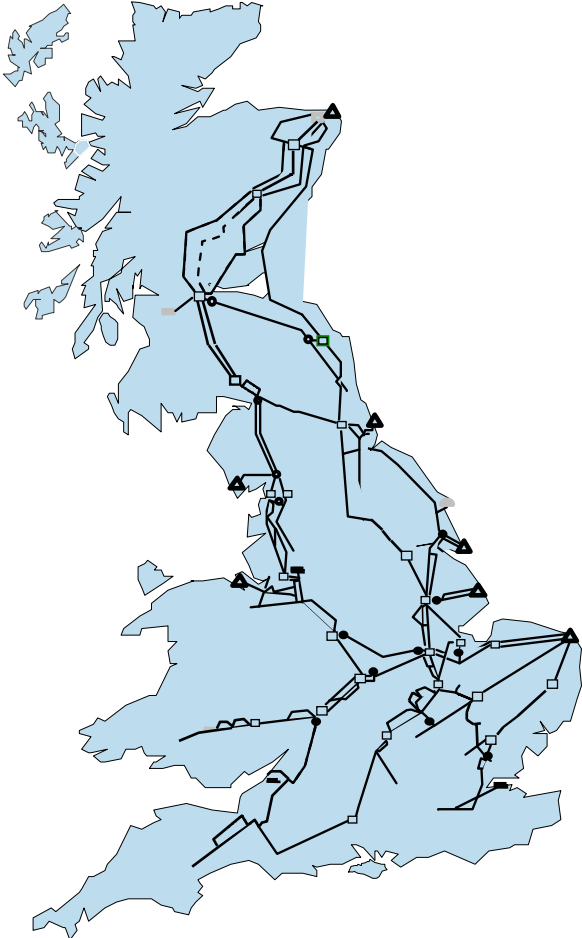
- Context for the Offtake Code Business Rules
- Section by section review
- Workgroups and way forward

Offtake Code Context



Offtake Code Context

National Transmission System



Distribution Networks and Local Distribution Zones



Distribution Networks, Local Distribution Zones and Offtakes

Distribution Networks (DNs) (8)	Offtakes (115)	Local Distribution Zones (LDZs) (13)	Offtakes (115)
Scotland	15	Scotland	15
North of England	24	Northern	15
		North Eastern	9
North West	11	North West	11
Wales and the West	15	Wales North	1
		Wales South	3
		South West	11
South of England	10	Southern	6
		South East	4
North London	4	North Thames	4
East of England	25	Eastern	11
		East Midlands	14
West Midlands	11	West Midlands	11

Offtake Code Purpose

Operator to operator agreement covering the operational and commercial arrangements at the NTS/ DN interface:

(1) Physical aspects of interface

- Capacity planning
- Operational flows
- Asset maintenance coordination
- Telemetry equipment
- Site sharing

(2) Information aspects of interface

- Ensuring Uniform Network Code can operate

Key difference between Offtake Code and Network Exit Agreements (NExAs):

- NExA terms feed to shipper and transporter rights/ obligations under Network Code
- Offtake Rights under Offtake Code are divorced from shipper rights because the Uniform Network Code provides for through ticketing across the NTS/ LDZ interface

Design principles for Offtake Code

- Builds on existing internal procedures
- Designed to operate consistently with today's balancing and exit regime
- Assumes no change to price controls

Offtake Code Business Rules Content

Offtake Code Business Rules

1. Parties and Definitions
2. Connection Facilities
3. Safety and Emergency
4. Measurement
5. Telemetry
6. Calorific Values
7. Maintenance
8. Offtake Rights Planning
9. Operational Flows
10. Gas Quality
11. Charges
12. Liabilities
13. Daily Demand Forecasting
14. Invoicing and Credit
15. Exchange of Information
16. Connections between LDZs
17. LDZ Direct Input Points
18. Other Provisions

Annexes

1. Connection Facilities
2. Utility Services
3. Measurement Equipment Permitted Ranges
4. Telemetry Specifications
5. Offtake Rights Request Template
6. Offtake Rights Allocation at the Date of this Agreement
7. Connections between LDZs
8. LDZ Direct Input Points

Related Agreements

1. Framework Agreement
2. Admission Agreement
3. Modification Rules
4. LDZ Connection Agreements
5. System Operation Managed Service Agreement

1. Parties and Definitions

Application

NTS and all DNs (all LDZs)

Parties

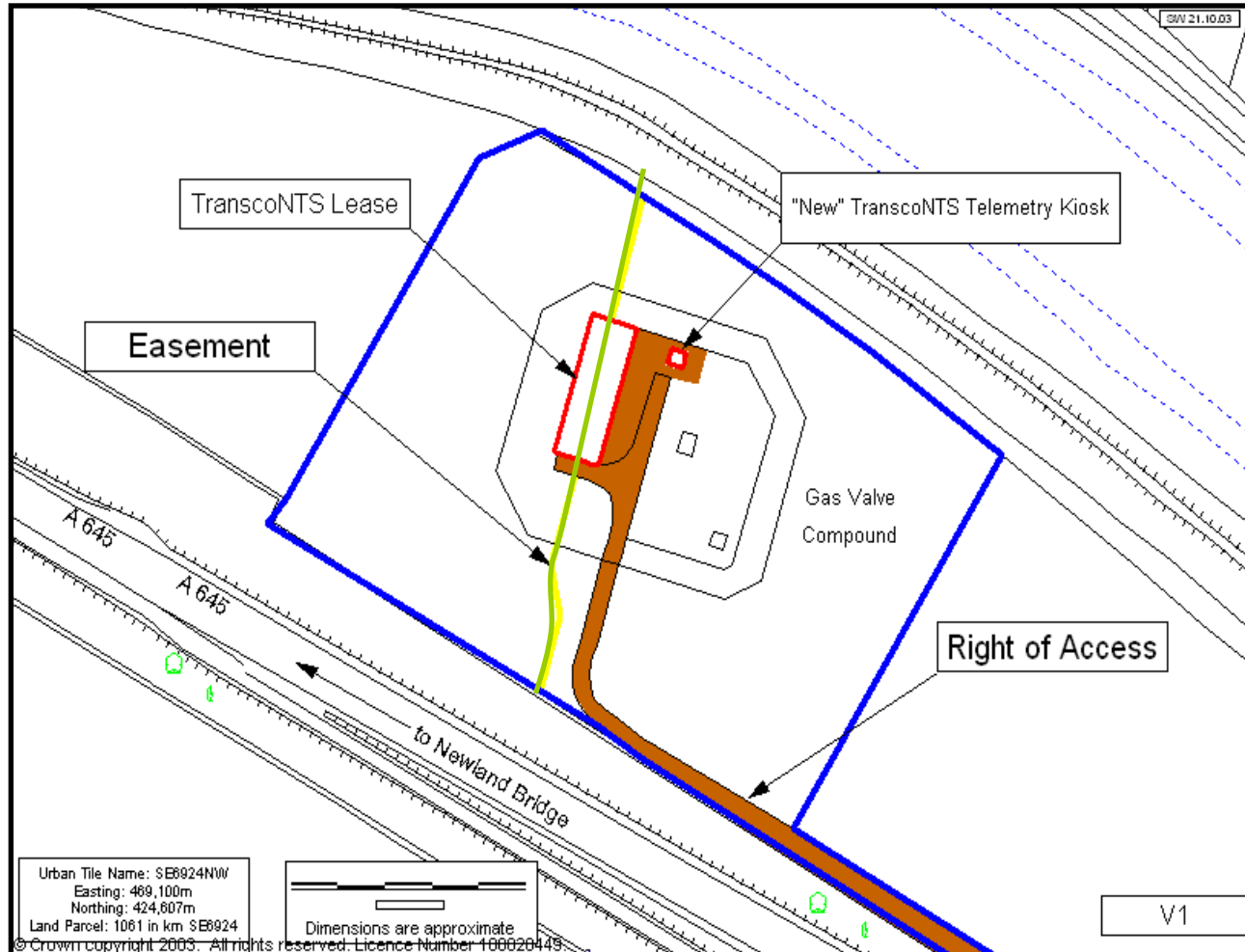
(1) NTSCo as NTS owner and operator

(2) Each DNCo as DN owner and operator (including Transco)

Key Definitions

- NTS, as Network Code
- LDZ, as Network Code
- DN, one or more LDZs

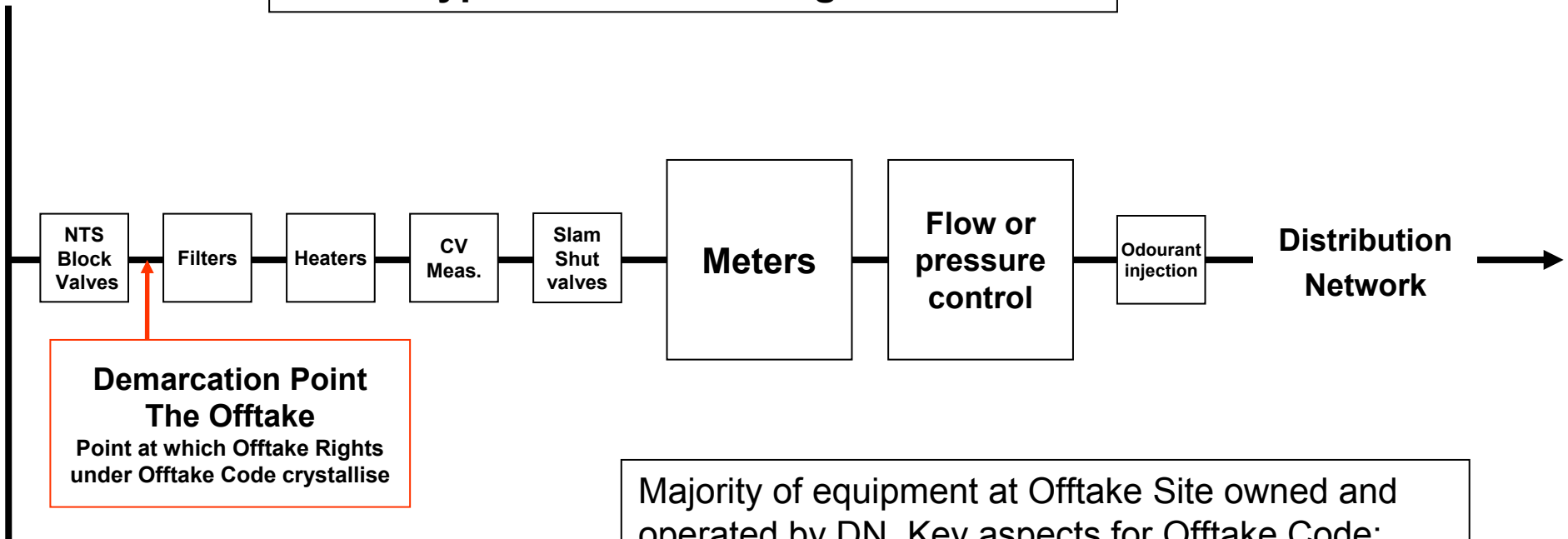
2. Connection Facilities



- Compound (Offtake Site) usually owned by DN
- Rights to retain NTS equipment on site and associated rights of access
- Rights to install NTS telemetry kiosk
- Additional land retained by NTS

2. Connection Facilities

Typical Offtake Configuration



Majority of equipment at Offtake Site owned and operated by DN. Key aspects for Offtake Code:

- Measurement equipment
- Flow control and telemetry

2. Connection Facilities

- Covers land, equipment and buildings at each Offtake Site
- Details ownership, equipment specification of Connection Facilities
- Normally DNCo will be the site owner.
- Rights granted to the other party to
 - Retain, install and replace equipment
 - Access rights
- Compatibility of both parties equipment
- Modification to plant and equipment
- Relocation of equipment
- New Connection Facilities covered under NTS Connection policy.
- Rights to install NTS telemetry kiosk
- Utility services to be provided
- Site security and safety rules

Annexes for each Offtake Site:

- Connection Facilities and Offtake Site details
- Utility services provided by DNCO at Connection Facility
- NTS Telemetry kiosk specification/requirements

3. Safety and Emergency

Existing Gas Supply Emergency Procedures

- Network Gas Supply Emergency Procedures (E1)
- Local Gas Supply Emergency Procedures (E2)
- Detailed Procedures (E3)

Development of procedures

- NTS produce E1 and format for E3
- DNs collectively produce E2
- Forum for ensuring consistency across E1, E2 and E3

Emergency Exercises

- All participate in exercises planned by NTS

Complying with procedures

- All comply with E1 and E2
- Each to complete E3 showing how it will comply

Emergency Avoidance

- Cooperation obligation

4. Measurement

Responsibility

- DN responsible for measurement

Measurement standards

- Technical standards for measurement by DN of:
 - Volume (inst. rate and integrated)
 - CV, Wobbe Index, relative density
 - Energy (inst. rate and integrated)
 - [composition]
 - Nitrogen and carbon dioxide (certain cases)
 - Pressure and temperature
- Annex specifies uncertainty limits for measured parameters for measurement equipment at each offtake site, based on capability of existing equipment

Validation

- Routine – every 12 months at DN cost.
- Exceptional – at NTS request by the end of the next day (or within 10 days if flow ceases) – if no fault found NTS pays, if fault found DN pays.

Error Correction

- Failure notification and error correction
- Disputes via expert

5. Telemetry

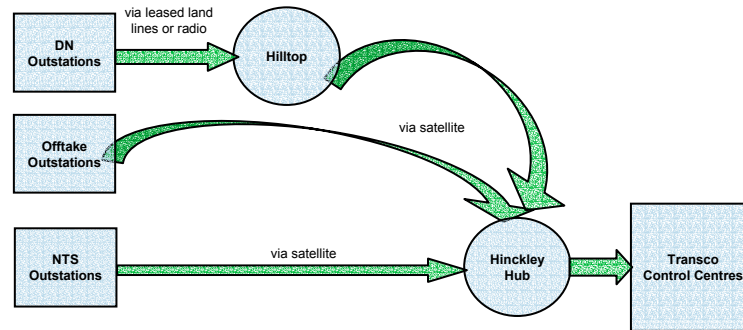
- Operational data from offtake sites, required for safe and efficient operation of the NTS
 - Flows
 - Pressures
 - Temperatures
 - Composition related measurements
 - Valve positions
- Override control capability in set circumstances
- Annex specifies measurements to be made and transmitted by DN for each offtake site
- For duration of SOMSA
 - DN transmits signals to NTS via satellite
- Post SOMSA
 - Rights for NTS to install telemetry kiosk
 - Signals routed to kiosk
 - Block valve and override control capability
- Resilience of telemetry system
- Telemetry failure cooperation

System Operation Managed Service Agreement (SOMSA)

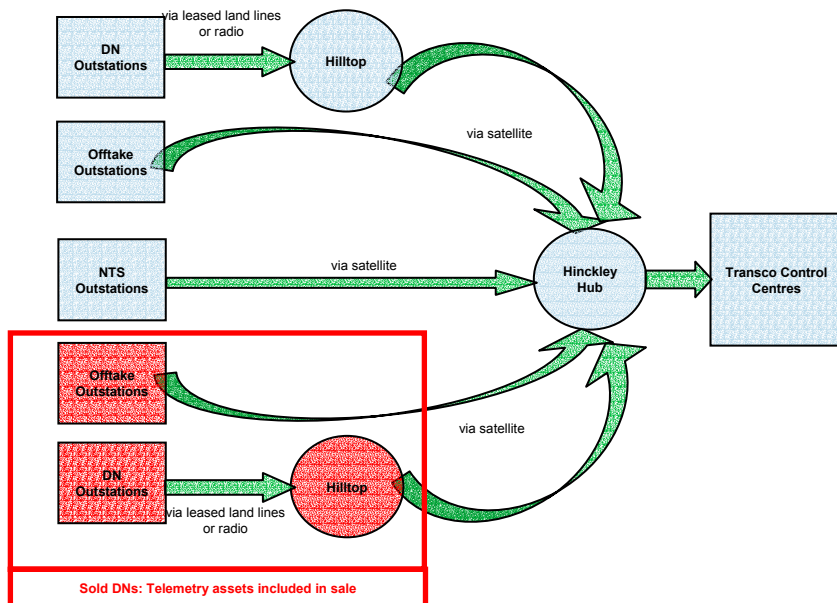
- Provision of system operation services by Transco until such time as DN develops SO capability and obtains safety case approvals

5. Telemetry

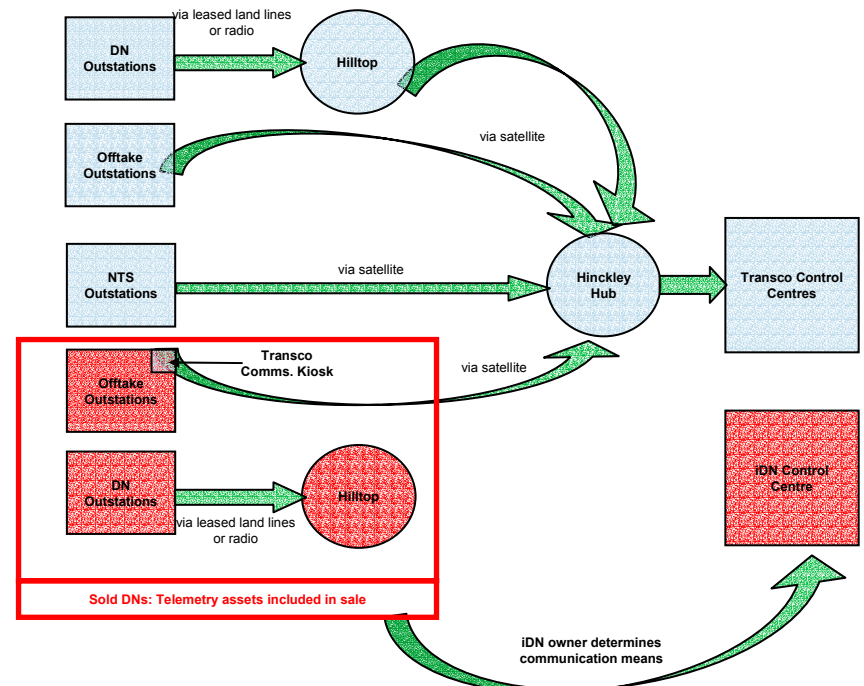
Existing telemetry arrangements



Telemetry arrangements during SOMSA



Telemetry arrangements post SOMSA



6. Calorific Values

Statutory obligations

- DN obligation under Gas (Calculation of Thermal Energy) Regulations to determine....
- Daily CV (FWACV or area CV)....
- for each LDZ....
- based on CVs for all inputs to the LDZ

Current process

- Centralised process involving substitution of other LDZ CVs if equipment failure

SO Incentive Scheme

- NTS bears costs of CV shrinkage



6. Calorific Values

CV Obligations

- DN responsibility

Interim arrangements (under Offtake Code)

- For remainder of formula period....
- DNs provide raw CV data
- NTS processes raw data to calculate CVs using FWACV method....
- ...including substitution using data from other locations if equipment failure and...
- Publication of CVs

Changes to current processes

- For example, election by DN to move away from FWACV methodology
- DN pays reasonable costs of NTS accommodating change

CV Shrinkage

- Parties to cooperate
- Reimbursement by DN of CV shrinkage costs incurred by NTS due to reasonably foreseeable circumstances associated with DN CV or volume measurement equipment

7. Maintenance

Relevant Maintenance

- Works that, in order to be conducted safely, require that:
 - the other party is aware of the works
 - the works are conducted in accordance with Safe Control of Operations (SCO) procedures
- Either party can determine if Relevant

Maintenance Planning

- 2 year programme as per Network Code
- Final programmes in March, updated in September
- Revisions at 5 days notice
- Payment for postponement (only for safety reasons) of other parties works

Types of Relevant Maintenance

- Flow maintenance
 - Revised Offtake Rights for set number of days per Offtake
- Measurement Equipment Maintenance
- Cooperative Maintenance (e.g. pigging)
 - Duty to cooperate
- Urgent Maintenance

8. Offtake Rights Planning

Planning Process

- Both NTS and DNs have 1 in 20 capacity obligations
- Rolling quarterly planning process
- DNs provide detailed demand information for next 5 years (with indicative information for following 5 years)
- NTS reviews demand data, determines its statutory obligations and produces Ten Year Statement accordingly
- NTS allocates Offtake Rights to DNs consistent with Ten Year Statement via a transparent process

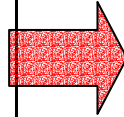
Offtake Rights and Parameters

- Key parameters for which values are established via the planning process :
 - Maximum daily quantity
 - Diurnal storage quantity, profile and maximum rate
 - “high” and “low” pressures
- These apply
 - For each offtake
 - For each LDZ
 - For each year (going 5 years out)
 - For each demand condition (i.e. different limits depending on throughput)
- Other parameters
 - Minimum rates (based on meters)
 - Ramp rates (fixed 50MW/min)

8. Offtake Rights Planning

Primary Offtake Rights

- The maximum daily quantity to be taken at an offtake
- 1 in 20 obligation
- NTS will invest to provide Primary Offtake Rights

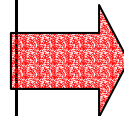


Primary Offtake Rights Allocation

- NTS allocates Primary Offtake Rights (the maximum daily quantity)
 - to each offtake, and
 - and for each demand condition in each of next five years
- Allocation to be consistent with Ten Year Statement plus updated supply/ demand information
- The Primary Offtake Rights allocated, when taken together with Secondary Offtake Rights (diurnal storage, pressure etc.) already committed, will in NTS' reasonable judgement, meet 1 in 20 licence obligation of NTS
- Allocation may or may not involve NTS incurring additional capex or opex

Secondary Offtake Rights

- Defined through the parameters
 - Diurnal storage quantity, profile and maximum rate
 - “high” and “low” pressures
- NTS will make Secondary Offtake Rights available to the extent NTS capable, but will not invest or incur additional operating cost to provide



Secondary Offtake Rights Allocation

- NTS provides indicative Secondary Offtake Rights availabilities
 - 100% probability of availability (commitment)
 - 50% probability of availability
 - 20 % probability of availability
- NTS allocates Secondary Offtake Rights....
 - to each offtake
 - for each demand range in each of next five years
-up to the levels requested by DN to the extent that.....
-the can be made available from NTS (based on primary Offtake Rights allocation and low availability/high probability case) and.....
-no additional capex or opex is required
- Sharing process if competing requests by different DN's
- Allocations for a particular year can not be reduced by NTS in subsequent planning rounds
- Year 3 allocation can not be less than 90% year 2 allocation

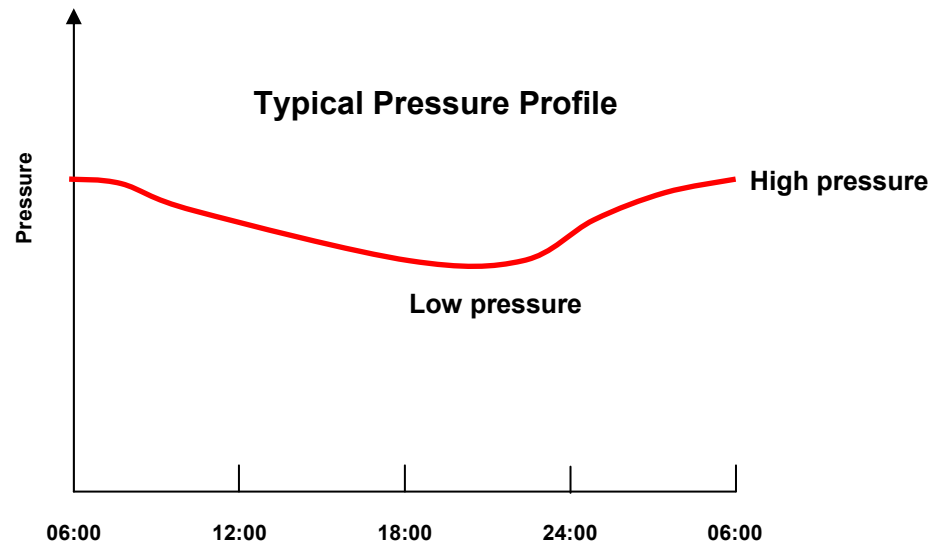
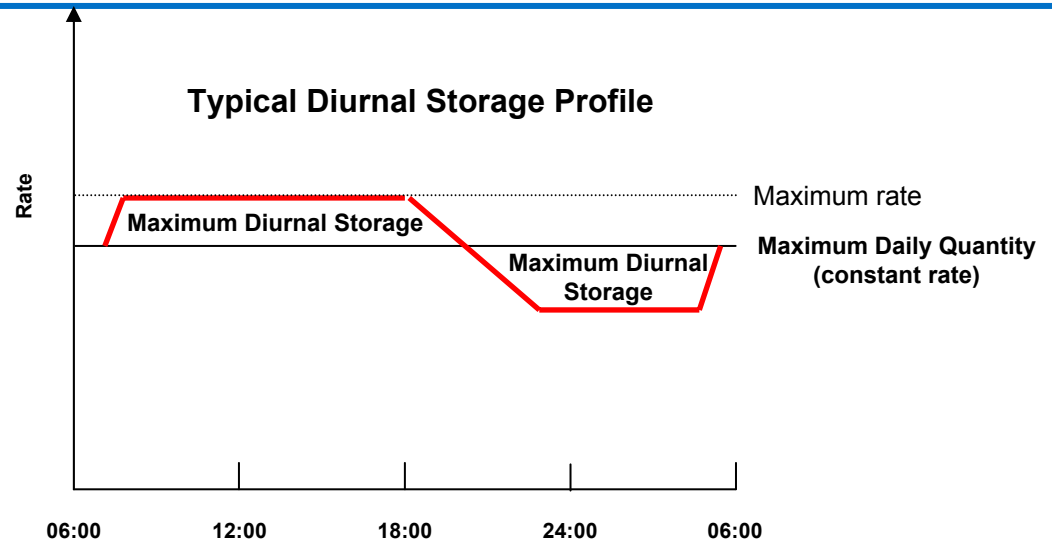
8. Primary and Secondary Offtake Rights

Primary Offtake Rights

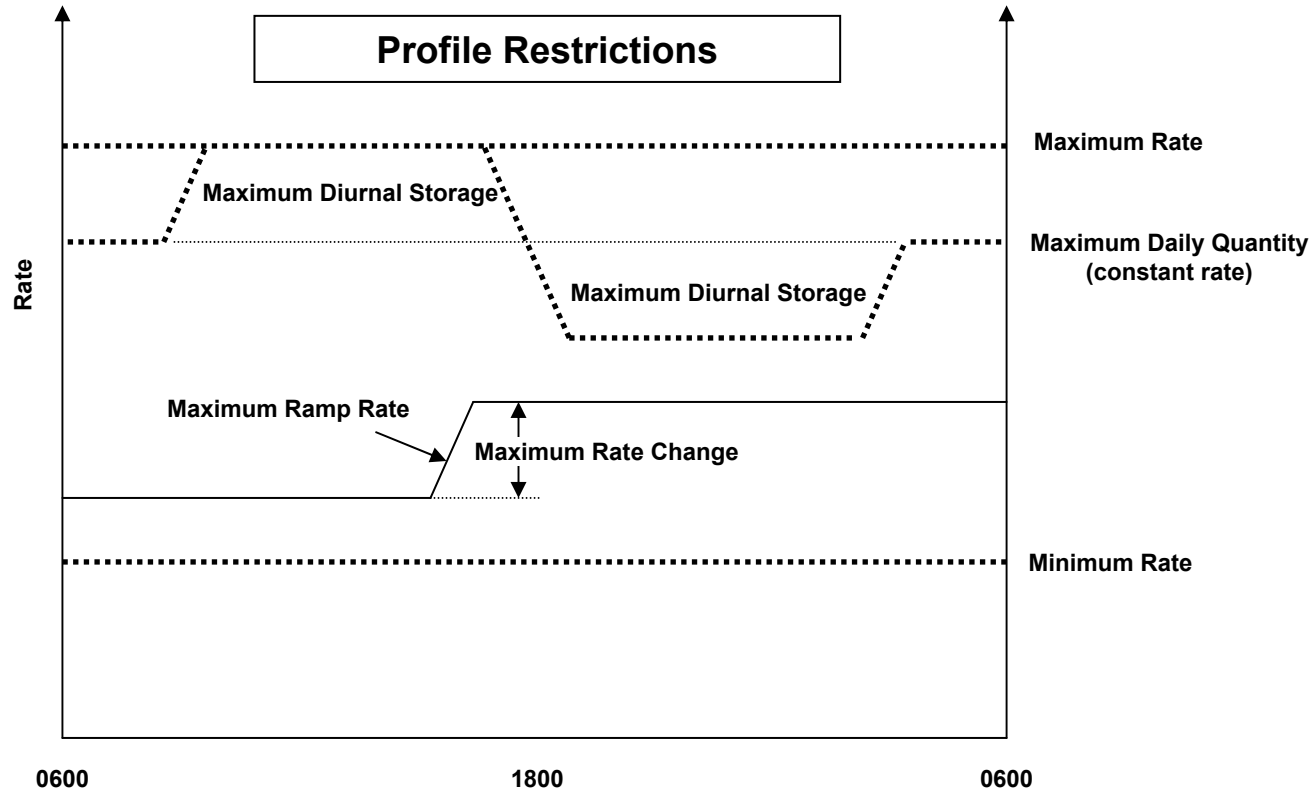
- Maximum Daily Quantity (constant rate)

Secondary Offtake Rights

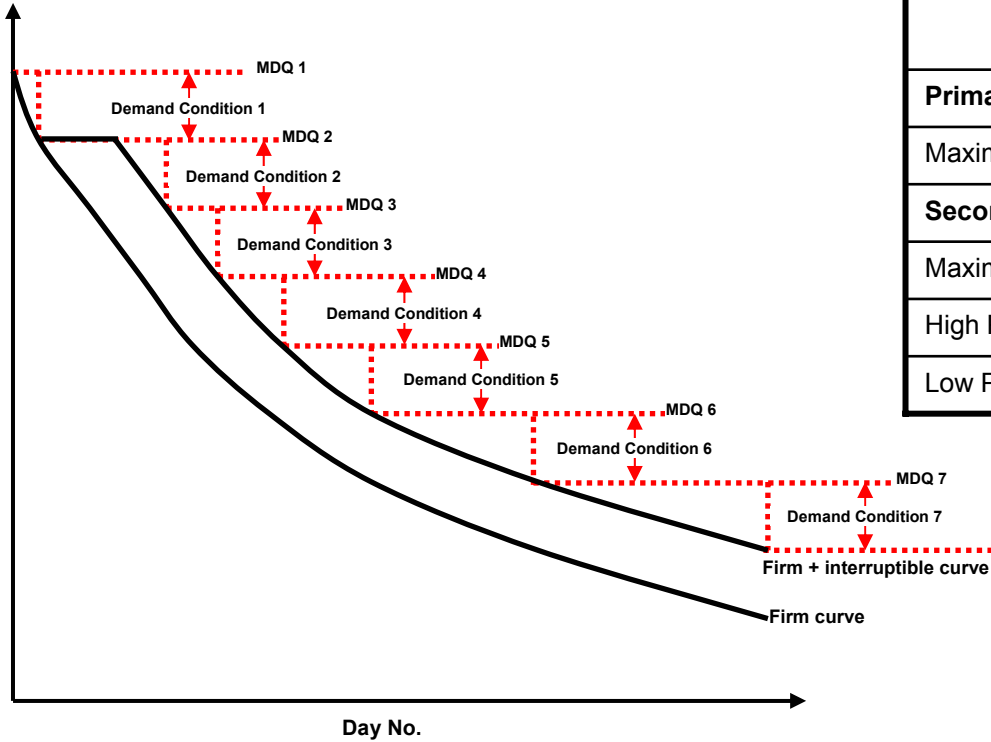
- Maximum Diurnal Storage Quantity
- Minimum “high” pressure in NTS
- Minimum “low” pressure in NTS



Offtake Parameter Application: Offtake Profile Notifications



8. Annual Offtake Rights Commitments



	Demand Condition						
	1	2	3	4	5	6	7
Primary Offtake Rights							
Maximum Daily Quantity	100	90	80	70	60	50	40
Secondary Offtake Rights							
Maximum Diurnal Storage	100	75	50	25	0	0	0
High Pressure	47	45	43	41	39	37	35
Low Pressure	45	43	41	39	37	35	33

8. Secondary Offtake Rights

- Diurnal storage and pressure are a by-product of NTS investment in transmission capacity
- For DNs, a means of avoiding significant investment
- Historically, where new diurnal storage capacity required by DN, more efficient to invest in DN rather than NTS projects
- Chargeable services in longer term, providing appropriate price signals and incentives for both parties

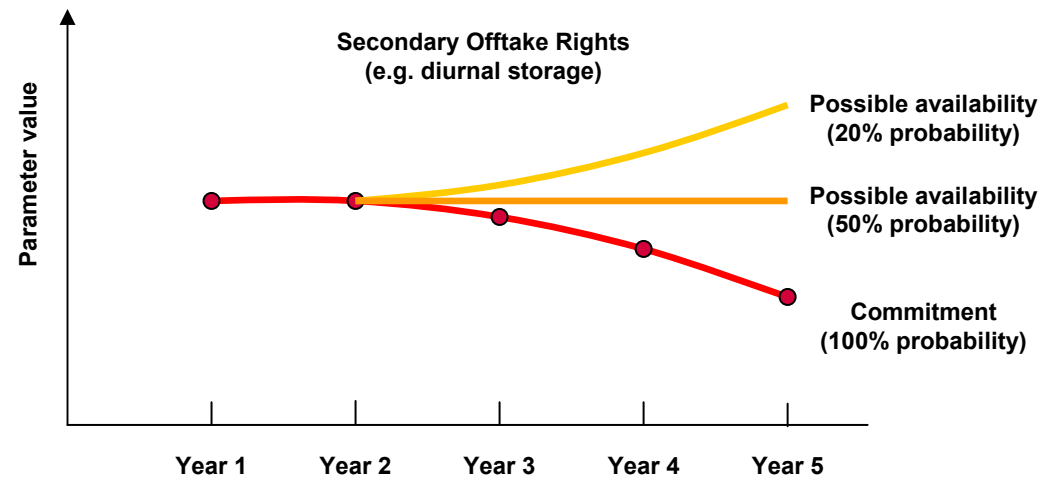
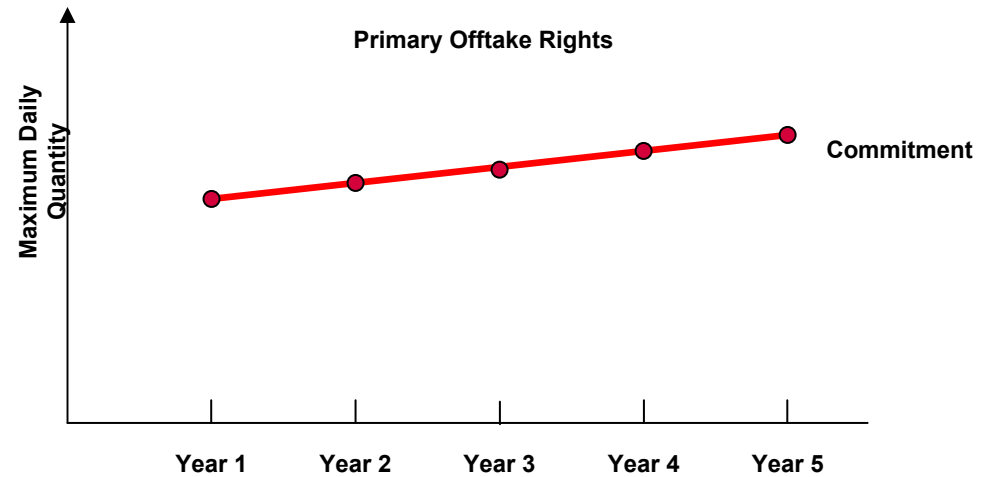
8. Forward Offtake Rights Commitments

Primary Offtake Rights Allocation

- Allocate MDQs consistent with statutory obligations to provide capacity
- Implied investment obligation

Secondary Offtake Rights Allocation

- Indication of probable availability
- Allocate parameter values based on capability of NTS (given MDQs) up to requested amount
- No investment or additional operating cost
- Rationing between based on existing committed values
- Allocations not lower than existing commitment
- Year 3 not less than 90% year 2



8. Offtake Rights Planning Summary

Planning Process

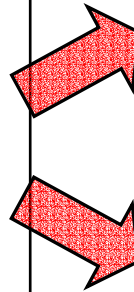
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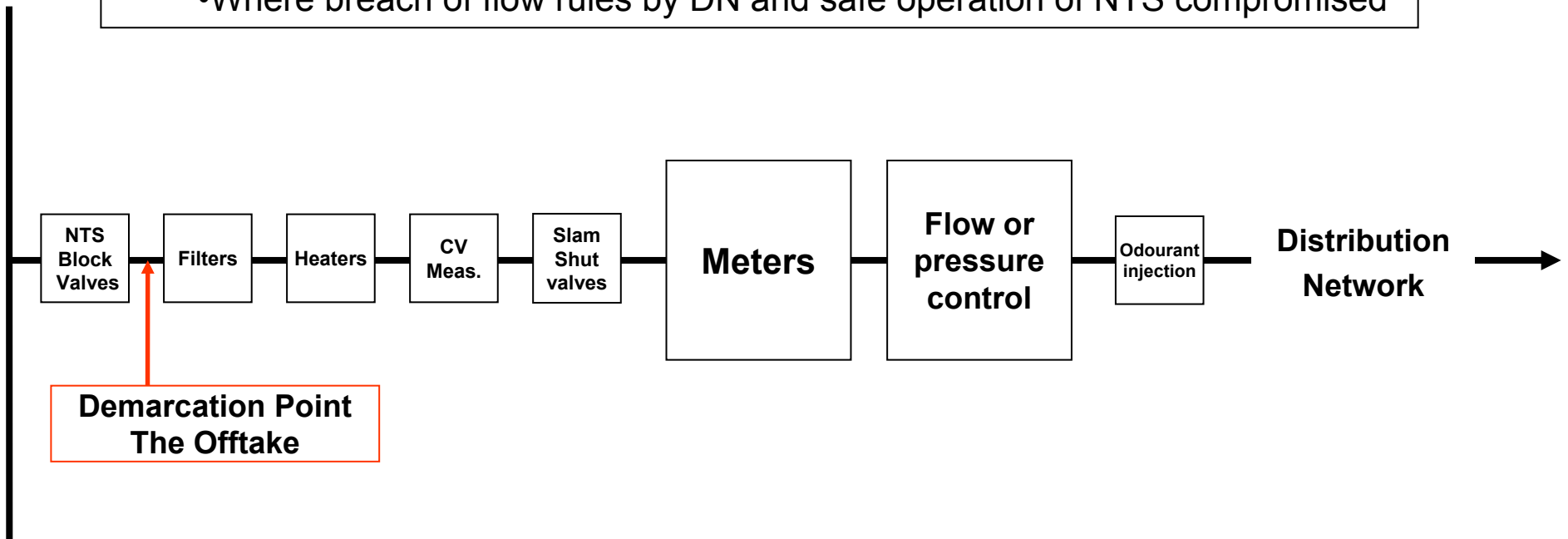
Secondary Offtake Rights

- Defined through the parameters
 - Diurnal storage quantity, profile and maximum rate
 - “high” and “low” pressures
- NTS will make Secondary Offtake Rights available to the extent NTS capable, but will not invest or incur additional operating cost to provide



9. Flow Control

- Flow through Offtake notified and controlled by DN, subject to...
- Override control by NTS:
 - On instruction by Network Emergency Coordinator
 - Where breach of flow rules by DN and safe operation of NTS compromised



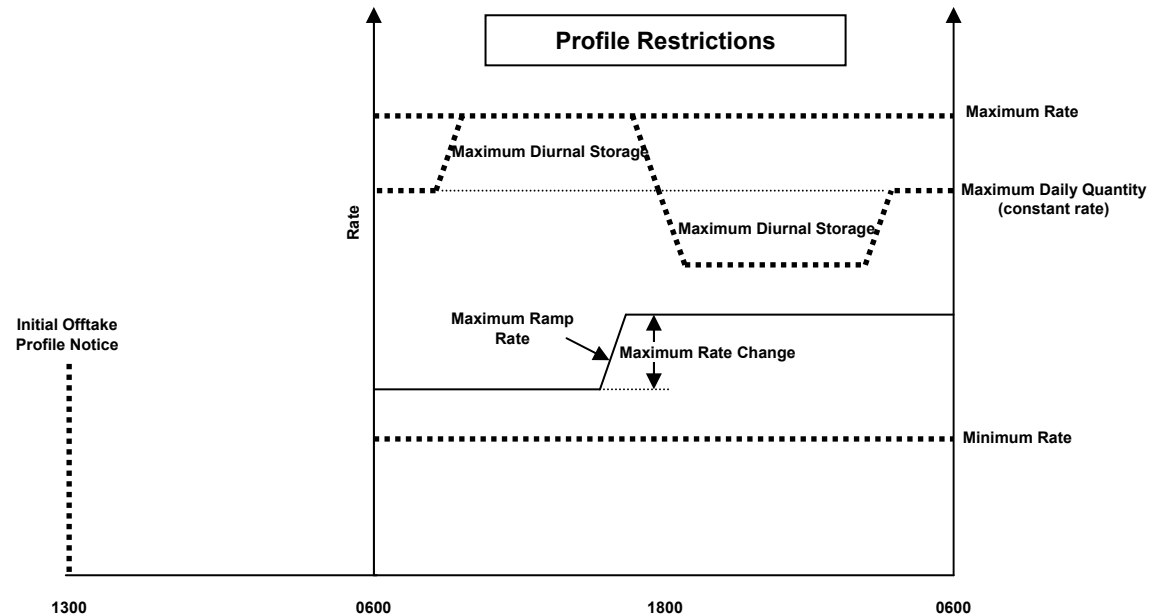
NTS Feeder

9. Operational Flows

Offtake Profile Notices

Notification Process

- Initial notice 1300 D-1
- All profiles to be within restrictions unless agreed otherwise
- Revisions at any time subject to variation rules
 - DN rights to vary
 - NTS rights to vary
- Quantities notified to be consistent with DN demand forecasts, taking account of any required stock changes
- Notifications at Offtake level via Offtake Profiler system
- Profile notified determines obligations of both parties (Prevailing Flow Rate)



9. Offtake Groups and High Demand Days

NTS and LDZ Offtake Groups

NTS Groups

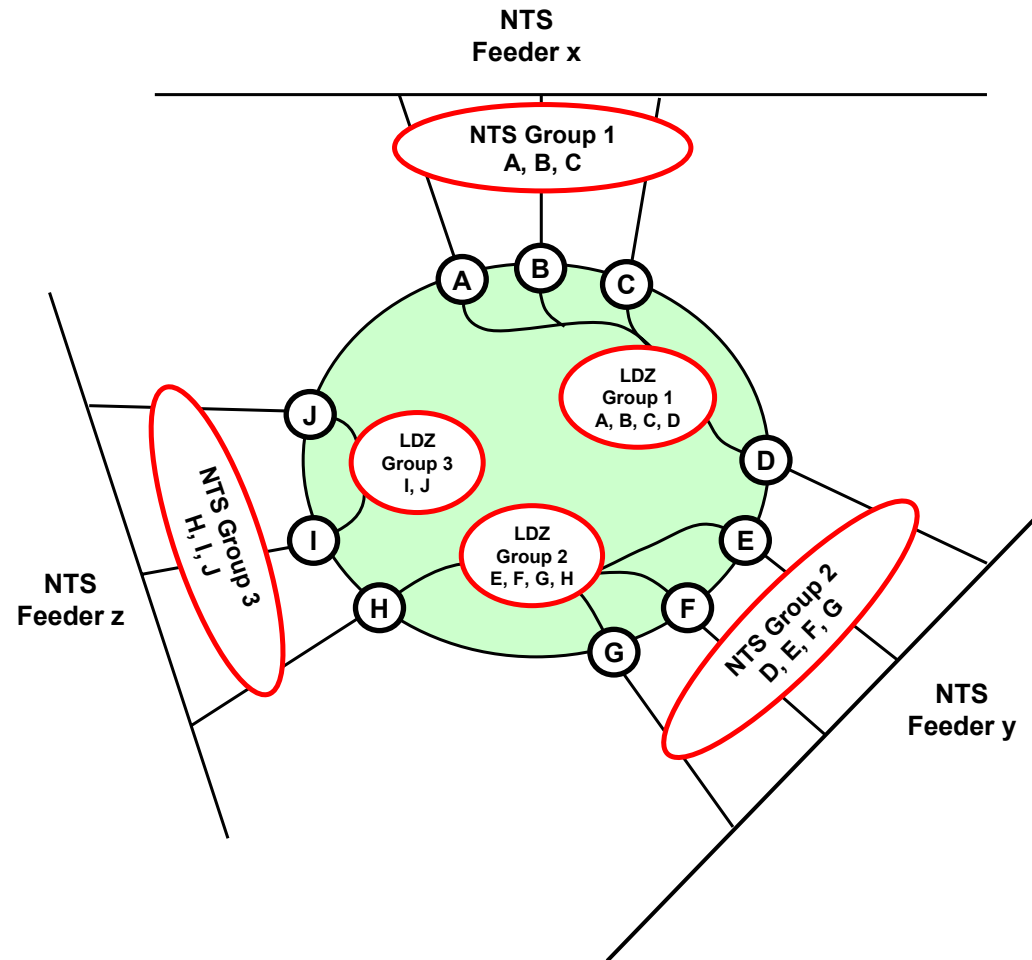
- Offtakes where flows can be swapped without impact on the NTS
- More flexible rights for DN to change flows within NTS Groups

LDZ Groups

- Offtakes where flows can be swapped without impact on the DN
- More flexible rights to for NTS to change flows within LDZ Groups

High Demand Days

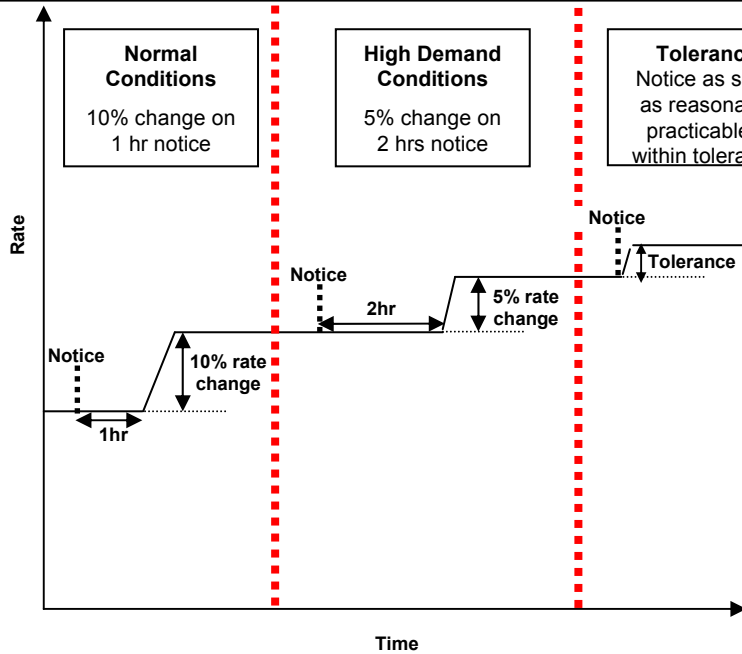
- Triggered by demand levels:
 - Nationally
 - Locally
- Both parties have reduced rate change rights and increased notice periods



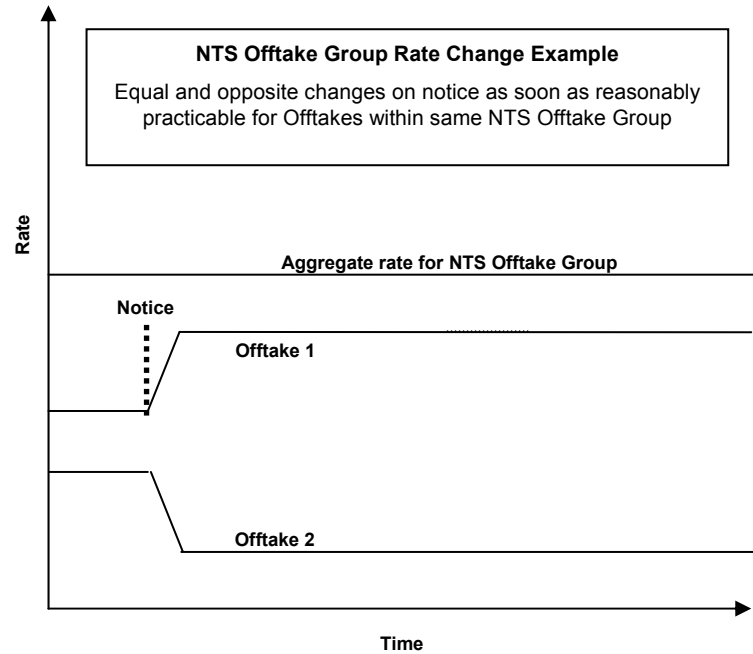
9. DN Rate Change Rights

Rate Change Limitations

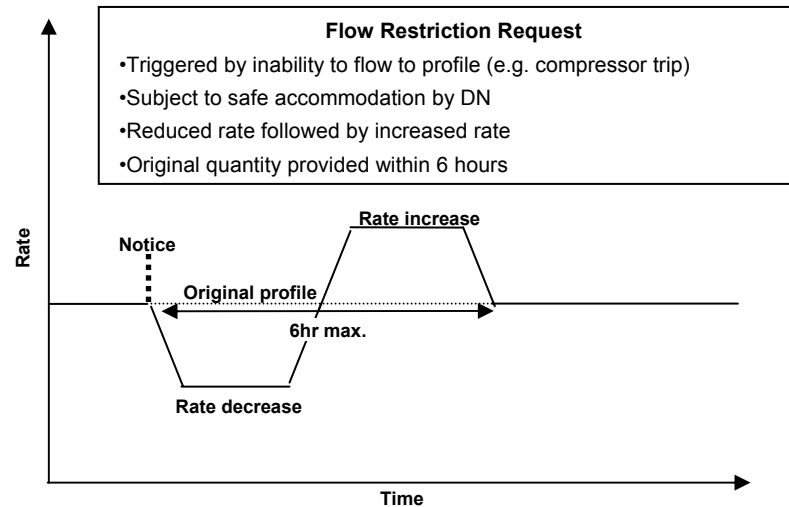
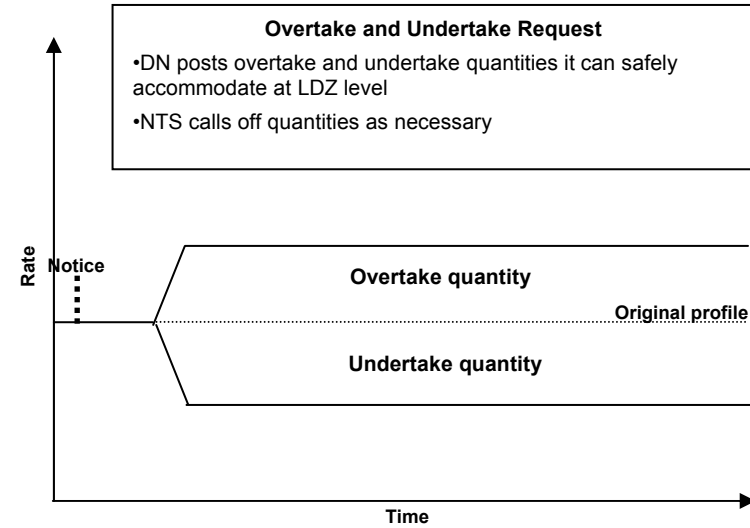
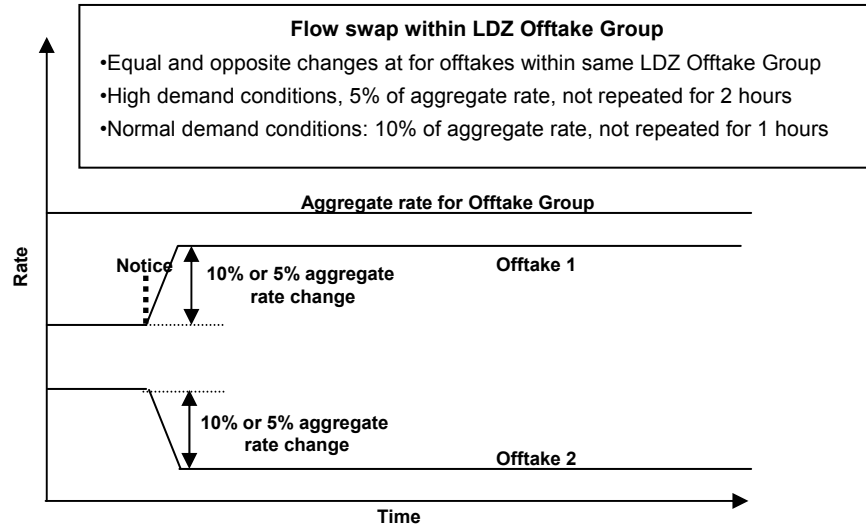
- Rates changes at individual Offtakes not within an NTS Offtake Group
- Aggregate rates at Offtakes within NTS Offtake Groups



Subject to LDZ rate change cap
5% on 2hrs notice October- March

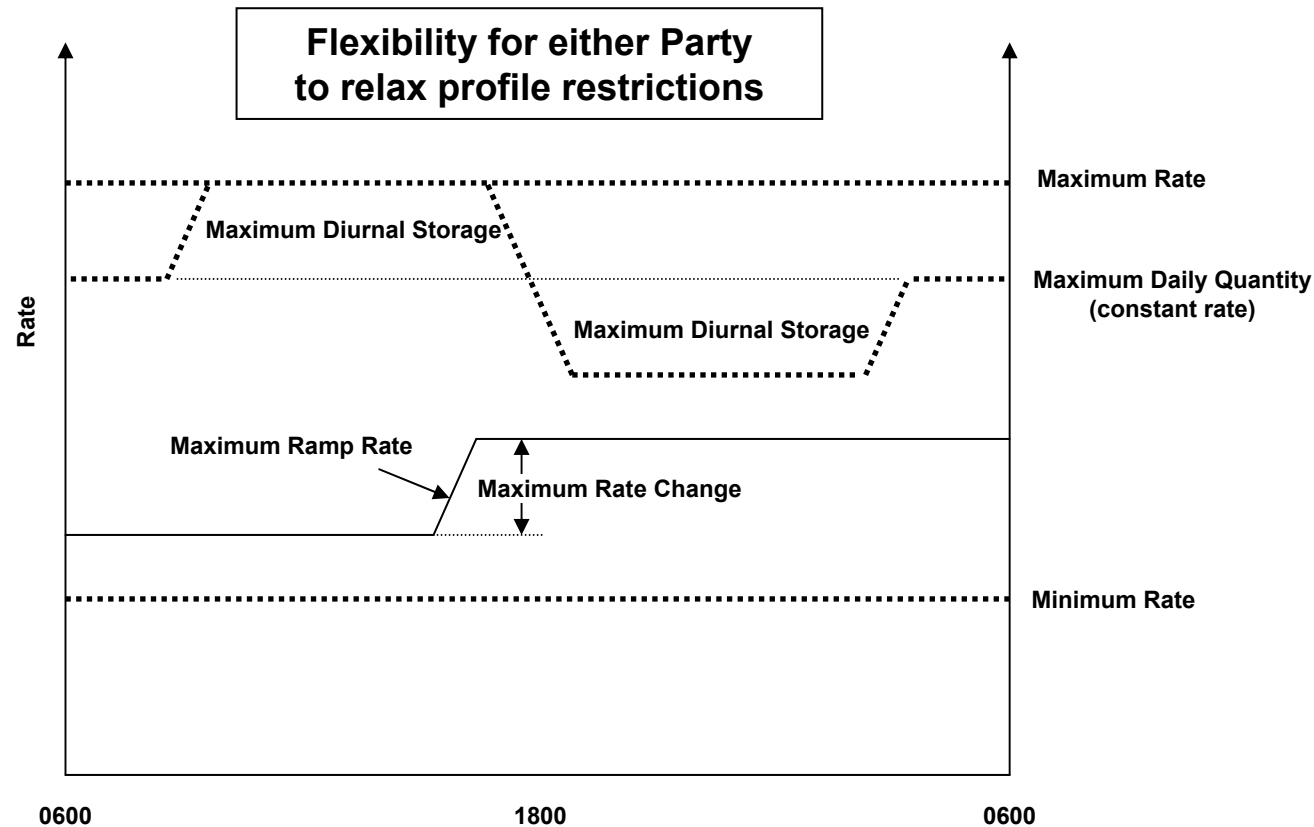


9. NTS Rate Change Rights



9. Reduced Restriction Profiles

- Either party can request relaxation of parameters
- Other party can only refuse on grounds of safety or appreciable increase in operating cost
- Evidence for refusal basis can be requested



9. Interruption

Key Principle

- Maintain existing processes

NTS Interruption

- If interruption triggered as per by Network Code then NTS can interrupt DN supply points
- Equitability objective

DN Interruption

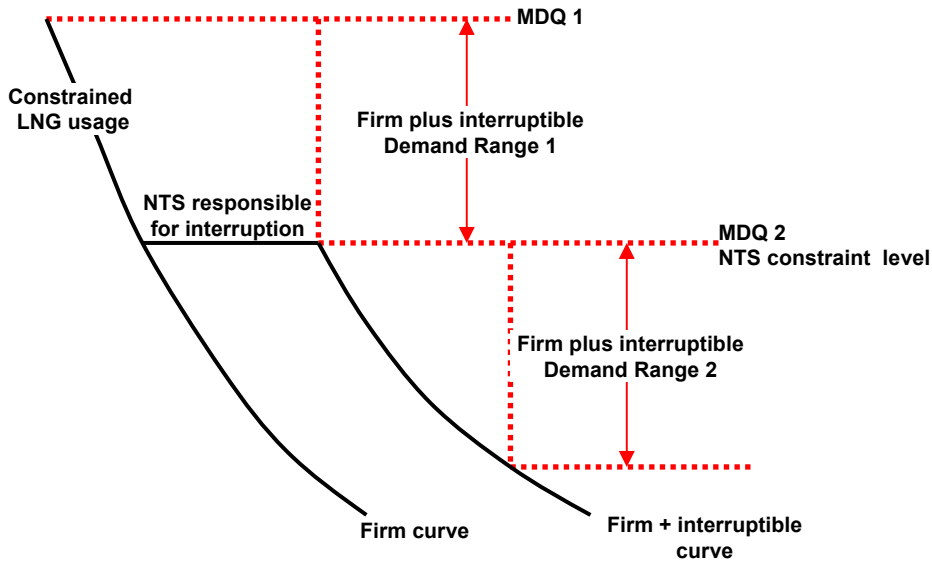
If interruption triggered in DN as per by Network Code (NSLs) then DN informs NTS, and NTS exercises rights on behalf of DN

9. Interruption, Offtake Rights and NTS constraints

Current Approach

NTS Responsible for Interruption

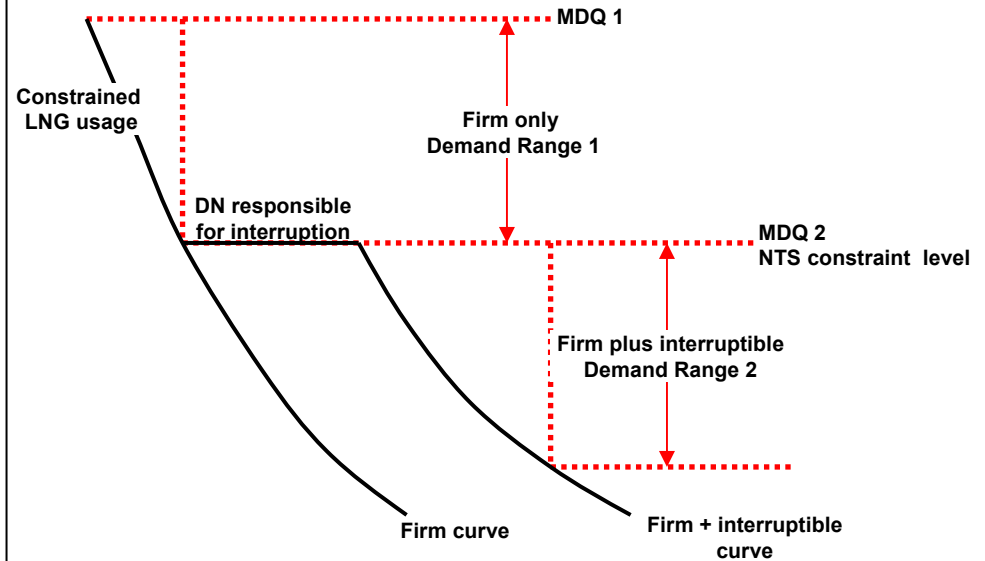
NTS owns interruption rights and interrupts to maintain demand levels within MDQ 1



Alternative Approach

DN Responsible for Interruption

DN owns interruption rights and interrupts to maintain demand levels within MDQ 2



9. Flow and Pressure Obligations

DN Obligations

- Ensure gas flow rates at the Offtake are not greater or less than notified Prevailing Flow Rate (\pm tolerance)
- Ensure ramp rate not exceeded

DN Failure to Comply

- Licence and/ or Safety Case obligations
- DN pays NTS costs in compensating shippers/ other DNs for its (NTS') failure to supply

NTS Obligations

- Ensure gas may flow at the Offtake at the notified Prevailing Flow Rate
- Ensure pressure at High Pressure Time not less than High Pressure
- Ensure pressure at all other times not less than Low Pressure

NTS Failure to Comply

- NTS pays DN costs in compensating shippers/ consumers for its (DN's) failure to supply

10. Gas Quality

NTS Obligation

- Gas to comply with GS(M)R

Non-compliant gas

- DN may refuse gas in which case treated as gas flow failure
- If DN continues to take then NTS pays clean up costs capped at 10% value of gas

Gas Quality Information

- NTS provides quality information based on NTS inputs
- Notify other party if aware gas non-compliant

11. Charges

Exit Code Statement

- Charges set out in Statement feed into agreement
- Charges **initially zero** but indicative future charges provided

Potential Charge Types

- Diurnal Storage** provided by NTS to DNs
- Overtake and Undertake Quantities** provided by the DNs to NTS
- Forecast Accuracy Incentives**
 - Daily demand forecasting by DN
 - Long term Offtake Rights forecasting by NTS
 - Long term demand forecasting by DN
- Prevailing Offtake Rate Incentive**
 - The degree to which DN deviate from their notified flows
- Reduced Restriction Offtake Profile Requests**
 - The extent to which either party uses the provisions of section 9.10

12. Liabilities

- Except where otherwise stated neither party liable for economic loss (direct, indirect, consequential or increased cost of working)
- Each party bears its own loss for physical damage caused by failure in operation or works
- Liability of either party for death or personal injury is not excluded

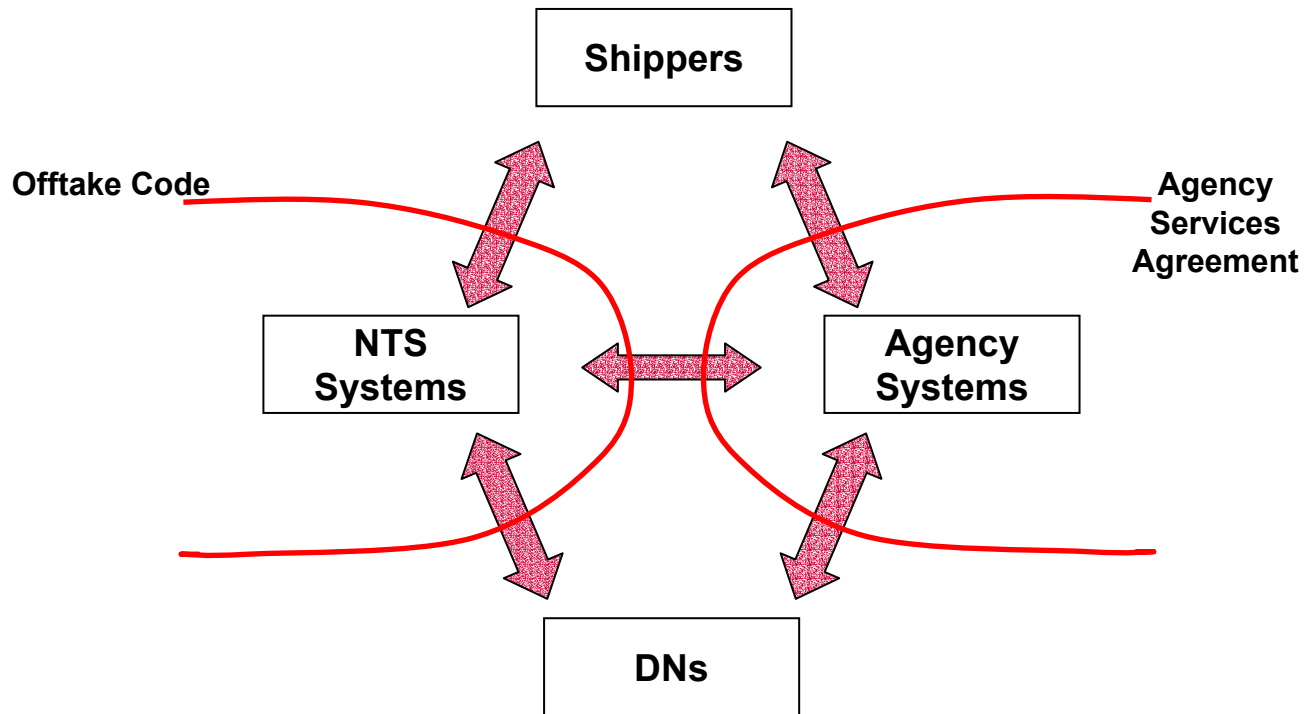
13. Daily Demand Forecasting

- Assigns Network Code forecasting responsibilities
- DN generates forecasts
- NTS generates NDM forecast for shippers
- Also allows NTS to request additional demand forecasts from DNs as required.

14. Invoicing and Credit

- Standard provisions

15. Exchange of Information



Example Information Requirements

Volume CV and energy flows for:

- Offtakes
- Embedded LDZ entry points
 - LNG boil off and reject gas
 - Onshore fields
 - Onshore storage
 - Inter LDZ transfer points
- Major LDZ Exit Points
 - With CV measurement equipment
 - VLDMCs
 - Inter LDZ transfer points
 - CSEPs
 - Onshore storage
- LDZ stocks
- Datalogger reads
- DM dataloggers
- NDM dataloggers
- Interruption forecasts

16. Connections between LDZs

- Identified in Annexes
- Establishing daily quantities and CVs

17. LDZ Direct Input Points

- Commercially, gas gains access to NBP
- Physically, flows into LDZ
- Arrangements maintained for existing LDZ inputs

- Details in Annexes
- NTS to auction entry capacity
- DN to accommodate nominated flows in accordance with capacity held by shippers
- If unable to accommodate:
 - DN may ask NTS to buy back (costs reimbursed)
 - Any Section I liabilities reimbursed
- New input points considered separately

18. Other Provisions

- Definitions
- Force Majeure
- Notices/ Communications
- Termination
- Dispute Resolution
- Expert
- Confidentiality

- Standing Committees
- Insurance
- Assignment
- Governing Law
- Operator Agents
- Performance
- Other

Related Agreements

- Framework Agreement
- Admission Agreement
- Modification Rules
- LDZ Connection Agreements
- System Operation Managed Service Agreement (SOMSA)

Way Forward

- Overview to workgroups
- Written feedback
- Response to feedback
- Legal drafting
- Finalisation