System Operation Responsibilities and Contracting Framework

Discussion Document Support Material

For 9th March 2004 DISG Discussion

National Grid Transco

Content

- The Building Blocks
- The “3” Options
  - NTS TO/SO and DN TO/SO
  - GBSO
  - Hybrid NTS TO/SO plus DN Control Room Function
- System Operation Managed Service Agreement (SOMSA)
- Energy and capacity interactions
- Responsibility matrices

The Building Blocks

Energy Balancing
Physical balancing using OCM and other tools. Shipper NBP balance preserved

NTS Operation and Congestion Management
Interruption for NTS purposes

Contracting for interruption
[for NTS purposes]

NTS Investment Planning

Construction

NTS Maintenance Planning

Maintenance

Reserving NTS Exit Capacity
in accordance with Offtake Code

DN Control Room Operation and Congestion Management

DN Field Operation

Contracting for interruption [with DN loads]
[for DN purposes]

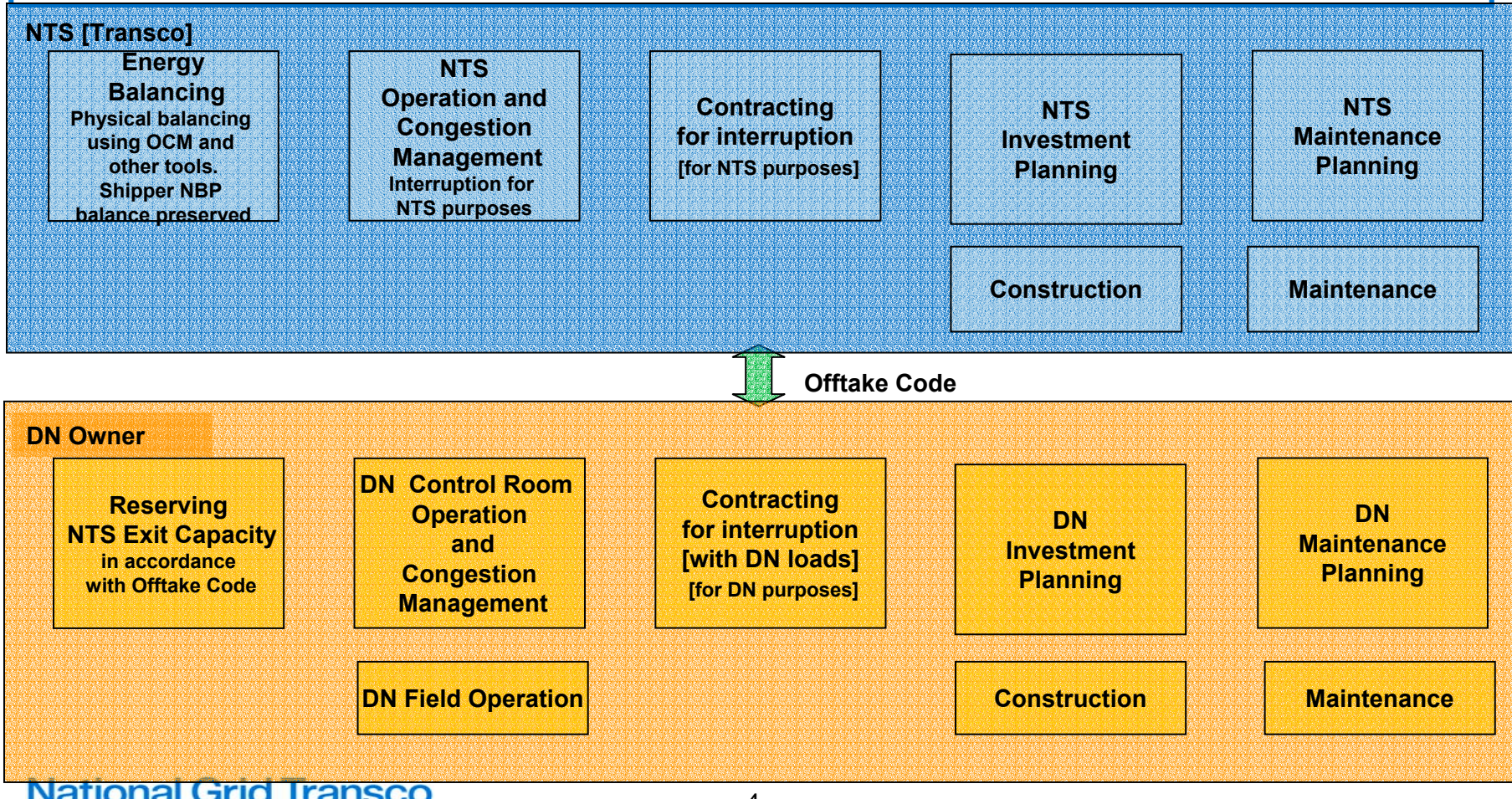
DN Investment Planning

Construction

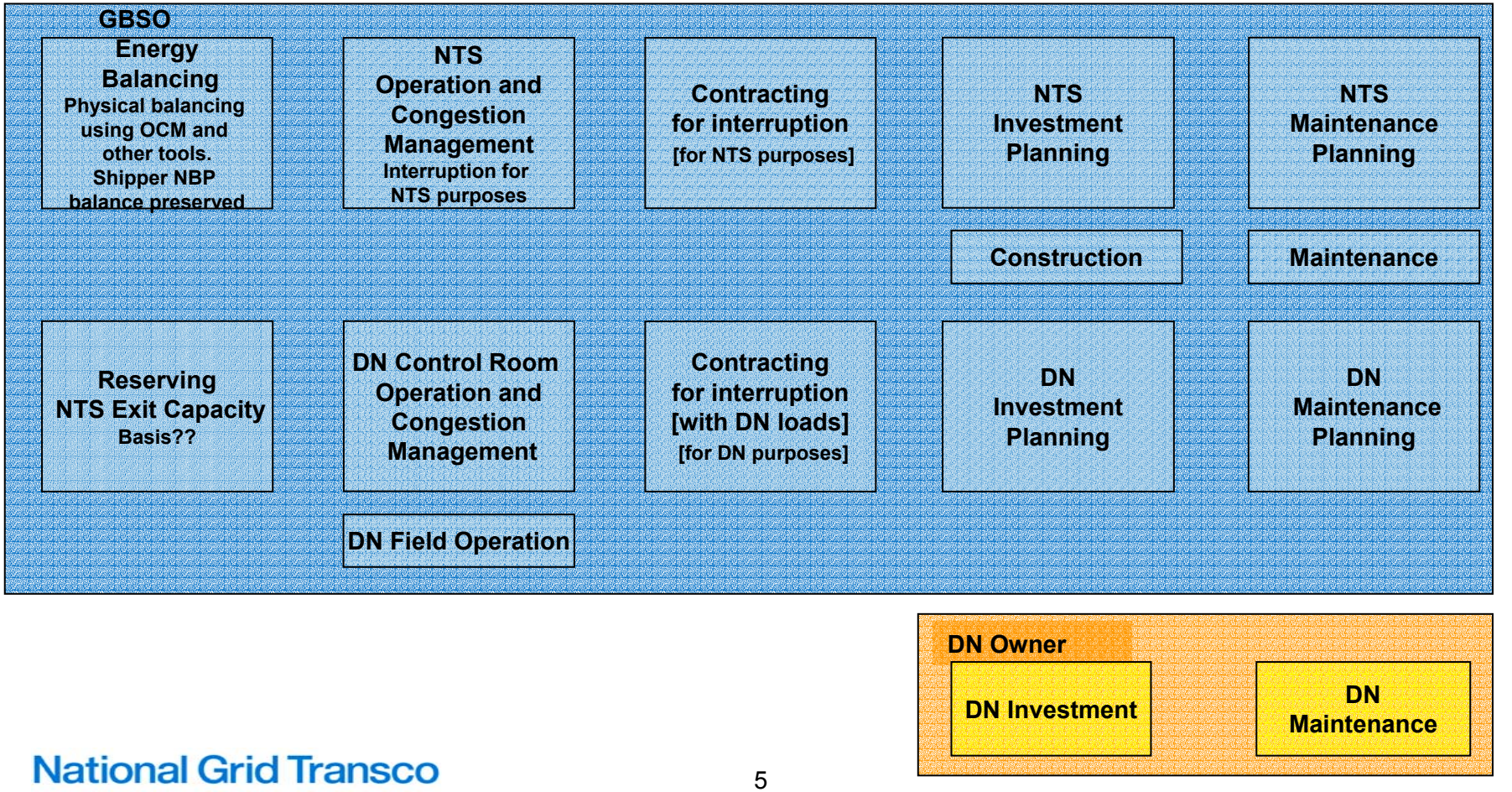
DN Maintenance Planning

Maintenance

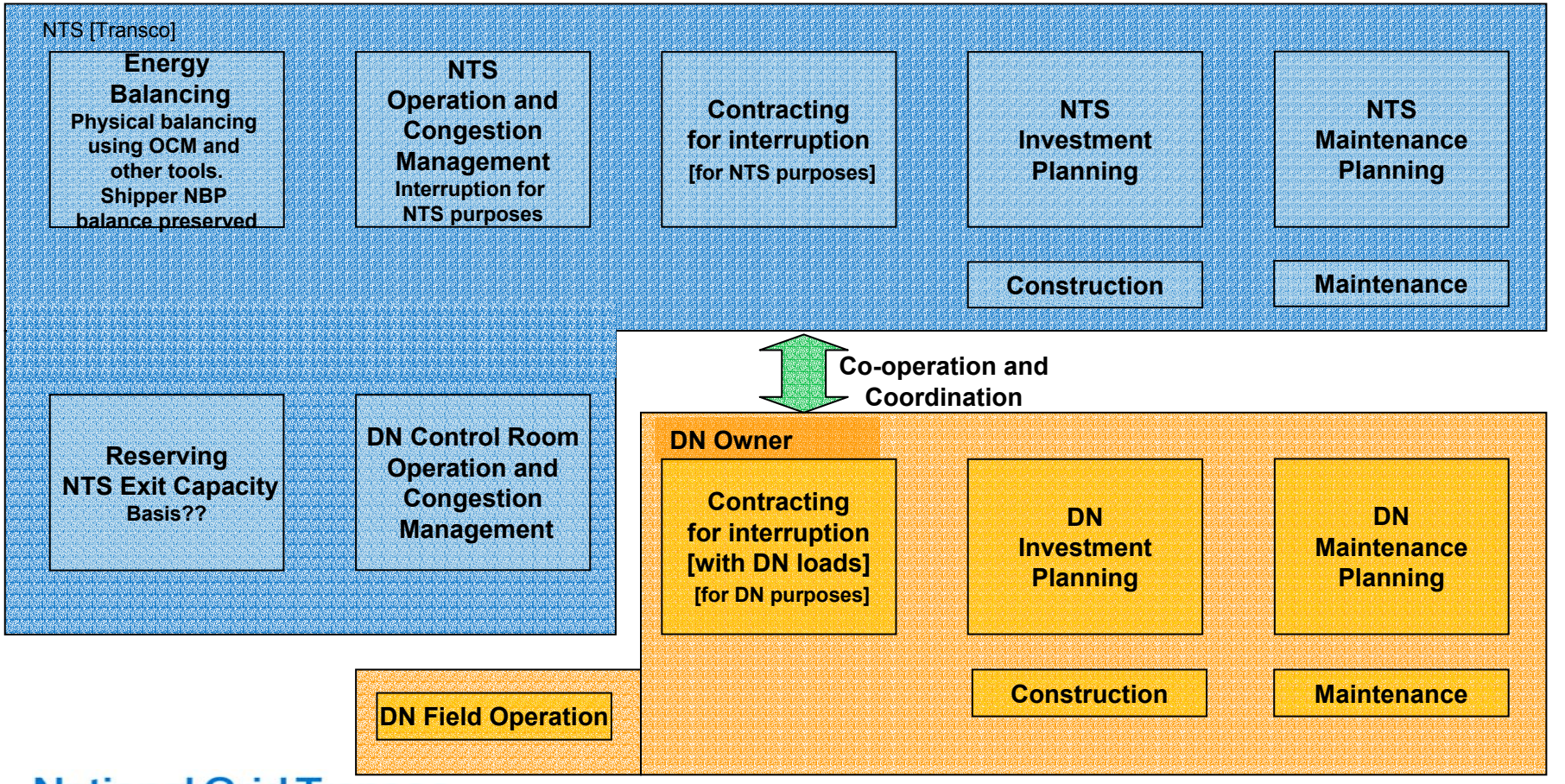
Option 1 Active DN Control



Option 2 “GBSO”



Option 3 Hybrid DN Control



DN Control Activities and Network Planning

Control centre interactions and ACC co-location

- LDZs are operated discretely by Area Control Centres – major interaction is with Gas National Control Centre, not across LDZs
- Co-location of ACCs is about economies of scale, not optimisation across LDZs
- DN and NTS control centres will remain separate

DN Network Planning and control activity integration

- DN investment planning process:
  - Demand
    - Firm & Interruptible
  - Investment
    - Transmission capacity & Diurnal storage capability
  - Provision from NTS
    - Daily flows (flat rate)
    - Diurnal Storage (rate variations)
    - Pressures
- Investment decisions made in the context of investment / operating cost tradeoffs
- DNs develop extensive operating plans covering both field and control room functions
- ACCs operate the LDZ systems based on the operating plans

Daily DN control activities

- ACCs have an active daily role adopting the operating strategy determined from the planning process
- DN field staff have integral role operating the network in conjunction with replacement, maintenance & emergency activities

System Operation Managed Service Agreement (SOMSA)

Key Principle of Option 1 Framework

- Under Option 1 DN owner is accountable for DN control activities

Operation under SOMSA

- Initially, DNs procure that these activities are performed by NGT via the SOMSA
- The operating strategy for the DN is still determined by the DN owner and implemented via the SOMSA

Longer Term Options

- DN develops own control room capability
- DN finds another service provider (e.g. arrangement with other DN owners)
- DN seeks to extend SOMSA

Energy and Capacity Interactions

- Entry interactions
  - Energy “system buys” – minor risk exacerbate/force constraints
  - Energy “system sells” – minor risk of forcing “localised deficit”
  - Capacity management – unlikely to cause an energy issue, shippers remain incentivised to balance
- Exit interactions
  - Energy “system buys” – unlikely to create a problem
  - Energy “system sells” – very low risk of localised constraint
  - Transportation Constraint Interruption – unlikely to cause an energy issue, shippers remain incentivised to balance

Energy and capacity interactions unlikely to be a material issue (?)

Responsibility Matrices

- Capacity Development
- Operations
- Prospective Licence Responsibilities
- Co-ordination & Incentive Mechanisms

Responsibility Matrices – Capacity Development

	Transco – No DN Sales	Option 1	Option 2	Option 3
National demand forecasting				
• Firm	Transco	NTS	Central SO	Transco
• Interruptible	Transco	NTS	Central SO	Transco
Local demand forecasting				
• Firm	DN	DN	Central SO	DN
• Interruptible	DN	DN	Central SO	DN
Capacity Planning				
• NTS offtake (capacity/flexibility)	Joint NTS/DN planning	Joint NTS/DN planning	Central SO	**Joint NTS/DN planning**
• Telemetered DN network	DN	DN	Central SO	DN
• DN Diurnal storage	DN	DN	Central SO	DN
• Non-telemetered DN network	DN	DN	Central SO	DN
Capacity Construction				
• NTS offtake	NTS	NTS	NTS	NTS
• Telemetered DN network	DN	DN	DN	DN
• DN diurnal storage	DN	DN	DN	DN
• Non-telemetered DN network	DN	DN	DN	DN
Replacement Expenditure				
• Planning	DN	DN	Central SO	DN
• Construction	DN	DN	DN	DN

Responsibility Matrices
- Operations

	Transco – No DN Sales	Option 1	Option 2	Option 3
Development of Operational Plans				
• NTS offtake	DN	DN	Central SO	Transco
• Telemetered DN network	DN	DN	Central SO	Transco
• DN diurnal storage	DN	DN	Central SO	Transco
• Non-telemetered DN network	DN	DN	Central SO	Transco
• Interruption for DN purposes	DN	DN	Central SO	Transco
• Interruption for NTS purposes	NTS	NTS	Central SO	Transco
Operation – Normal Day				
• NTS offtake	DN Control Room	DN Control Room	National Control Room	National Control Room
• Telemetered DN network	DN Control Room	DN Control Room	National Control Room	National Control Room
• DN diurnal storage	DN Control Room	DN Control Room	National Control Room	National Control Room
• Non-telemetered DN network	DN Field Operations	DN Field Operations	DN Field Operations	DN Field Operations
• Interruption for DN capacity	DN Control Room	DN Control Room	National Control Room	National Control Room
• Interruption for NTS purposes	NTS Control Room	NTS Control Room	National Control Room	National Control Room
Operation – Local Failure				
• NTS offtake	DN Control Room	DN Control Room	National Control Room	National Control Room
• Telemetered DN network	DN Control Room	DN Control Room	National Control Room	National Control Room
• DN diurnal storage	DN Control Room	DN Control Room	National Control Room	National Control Room
• Non-telemetered DN network	DN Field Operations	DN Field Operations	DN Field Operations	DN Field Operations
• Interruption/load shedding	DN Control Room	DN Control Room	National Control Room	National Control Room
Operation – National Failure				
• NTS offtake	NEC	NEC	NEC	NEC
• Telemetered DN network	DN Control Room	DN Control Room	National Control Room	National Control Room
• DN diurnal storage	DN Control Room	DN Control Room	National Control Room	National Control Room
• Non-telemetered DN network	DN Field Operations	DN Field Operations	DN Field Operations	DN Field Operations
• Interruption/load shedding	DN Control Room	DN Control Room	National Control Room	National Control Room
Emergency operations	DN Field Operations	DN Field Operations	DN Field Operations	DN Field Operations

Responsibility Matrices
- Prospective Licence Responsibilities

	Transco – No DN Sales	Option 1	Option 2	Option 3
Efficient & economic development, maintenance & operation of system	**Transco**		Central SO	
NTS offtake				
• Offtake demand forecast		NTS/DN		Transco/DN
DN				
• Demand forecast		DN		DN
• Plan		DN		DN
• Construct		DN		DN
• Operate		DN		Transco/DN
• Maintain		DN		DN

Responsibility Matrices
- Co-ordination & Incentive Mechanisms

	Transco – No DN Sales	Option 1	Option 2	Option 3
Contracts	No contracts - co-ordination achieved through joint development of capacity plans and operational plans.	The NTS offtake capacity and allowable flow characteristics need to be agreed between the NTS and DNs at each DN offtake.	Central SO outsources construction.	The NTS offtake capacity and allowable flow characteristics need to be agreed between the NTS and DNs at each DN offtake. In addition, Transco and DN would need to agree operating plans at each point where Transco and DN operation of the DN meet.
Incentives	All price controls within Transco give incentive to optimise financial per formance across NTS and DNs. No comparative incentives for DNs (arguably incentive to dampen benchmark comparisons).	Self contained DN price control would provide incentives to optimise financial performance of DN. Incentives required for DN and NTS to agree optimum capacity and flow characteristics at NTS offtake. Comparative benchmarking incentive between DNs.	All price controls within Central SO give incentive to optimise financial performance across NTS and DNs. No comparative incentives for DNs (arguably incentive to dampen benchmark comparisons).	Misalignment between price controls and operating responsibility provides incentives for Transco to impose costs on DN in order to reduce costs in NTS. *Incentives required to ensure Transco seeks to minimise total operating costs. Transco and DN will need to adjust revenues between themselves to extent DN operating conditions depart from those foreseen in setting DN control. Cost drivers could include:* • DN capital investment • Volume of DN diurnal storage used • Network pressures driving emergency costs in DN Comparative competition reduced by Transco operational control.