Supply Substitution vs Load Absorption

Gas TCMF

26th April 2006

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Introduction

- To calculate a Unit Cost Allowance (UCA) for a new System Entry Point requires a methodology to:
  - Maintain a Supply and Demand match including the new Entry Point
  - Allocate any identified costs between Entry and Exit

UCA Methodology

- Prevailing - Route Costs:
  - Calculated from the additional investment required to support an increase in flow along each route
  - Disaggregated into Entry/Exit costs on average on a 50/50 basis
- For large New Entry points, modeling a corresponding increase in demand at a single Exit point might more than double local flows, and hence not be modeled accurately by Transcost

- Proposed - “System Costs”:
  - Calculated from the additional investment required to support a sustained increase in flow at an Entry point with balancing adjustments to other Entry and/or Exit points.
  - A cost is determined for the entry point by only considering those costs trigger by the entry point flow increase

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Maintain Supply and Demand match

- For any steady-state hydraulic model to operate, it is necessary to achieve a system balance between Entry (supply) and Exit (demand) flows
- Prevailing methodology maintains a supply & demand balance by
  - Starting from a balanced central case
  - Considering route costs i.e. matched increase in Entry/Exit pairs
- Options identified by Ofgem for “System Costs” are:
  - Load (demand) Absorption
  - Supply Substitution, or
  - A Hybrid of both the above

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Allocation of Costs to Entry & Offtake

- Once a system balance achieved, costs associated with additional assets required to maintain transmission capacity can be identified

- Costs need to be split between Entry & Offtake. Options identified by Ofgem are:
  - 50/50 Entry v Offtake split
  - 100% cost allocation to Entry
  - Cost allocation based on engineering judgement

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Load Absorption

- Increase demand to match the higher supply level
- How?
  - Known load growth?
  - Scaling Firm demand?
    - All firm offtakes equally?
  - Consider Interruptible Offtake flows?
    - A proportion of all Interruptible offtakes modelled equally, or
    - Selected Interruptible offtakes modelled?

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Load Absorption: Entry Exit Cost Split

- Offtake related reinforcement costs might be identified
- These could be removed by
  - Engineering judgement:
    - Feasible but a non-transparent process
  - 50:50 split:
    - Understates share of investment costs driven by incremental entry capacity for entry points at the extremities of the system due to the distributed offtake increase

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Supply Substitution

- Decrease existing supply to allow for the higher supply level
- How?
  - Scaling supplies?
    - All supplies equally?
    - Selected supplies e.g. exclude those <50 miles from new SEP
    - Furthest ASEPs from the new Entry Point
  - Merit order – reduce flows starting from the Entry Points furthest from the new Entry Point?
    - Storage
    - Interconnectors/LNG Importation
    - Beach

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Supply Substitution : Entry Exit Cost Split

- Offtake related reinforcement costs would not be identified
  - 50:50 split:
    - Understates share of investment costs driven by incremental entry capacity for any entry point
  - 100% Entry
    - Consistent with a process where only Entry flows are changed

Hybrid Approach

- A complex process could be defined based on
  - Known load growth
  - Interruptible loads
  - Reduced use of storage & Interconnectors (high merit order supplies)

Hybrid: Entry Exit Cost Split

- 100% Entry
  - Process could be designed to only generate entry costs
  - Transparency?
- Offtake related reinforcement costs might be identified
- These could be removed by
  - Engineering judgement:
    - Feasible but a non-transparent process
  - 50:50 split:
    - Understates share of investment costs driven by incremental entry capacity for entry points at the extremities of the system due to the distributed offtake increase

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Summary

- National Grid NTS View:
  - Supply Substitution should be used for UCA calculation
    - Use merit order and start with those furthest from the new Entry Point
  - 100% Entry Cost Allocation as only Entry flow increases are modelled
  - The 50/50 split used within the LRMC methodology remains appropriate
    - consistent with modelling of route costs where equal Entry and exit flow increases are considered

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