Treatment of ‘Spare Capacity’

Gas TCMF

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Transcost & Spare Capacity

- "Spare Capacity" might arise at 1-in-20 peak conditions due to
  1. Storage flows close to areas of high demand
  2. Capacity having been provided to Transport peak supplies away from peak demand conditions
  3. Reinforcement projects designed to cater for a number of years growth
  4. Declining supplies or demands
- Transcost will model all forms of "spare capacity" whereas only the last instance represent true spare capacity
- Results presented through the Gas TCMF have shown that, based on the forecast declining beach flows, the Transcost based approach would distort northern Exit prices and southern Entry prices.

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Transportation Model

- The transportation model minimises the flow distance of gas around the network
  - given the assumed pattern of supplies and demands and the constraint that at any node, demand plus flow out must equal supply plus flow in.
- Any change in flow down a line results in a reinforcement requirement, with a standard reinforcement cost (expansion constant).
  - It does not consider the way in which pressure, pipeline diameter / length and flow interact – it simply assumes that, for the standard reinforcement cost, incremental flow can be routed down each existing pipeline route.
- As a consequence the Transportation model ***excludes spare capacity*** and ***includes a backhaul benefit*** equal to the avoided cost of reinforcement

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Benefits of Removing Spare Capacity

- Users pay for the capacity that they utilise. – No cross-subsidy
- Allows use of a single year forecast of supply and demand, as opposed to a multi-year model
  - avoids price distortions as a result of uncertainties in forecasts while avoiding pricing instability;
- Increases transparency by removing the need for subjectivity in the determination of the amount and location of spare capacity, and therefore which Users obtain a benefit from the inclusion of spare capacity, (due to choice of compressor and regulator settings);
- Avoids a benefit to Users transporting gas from entry points that appear to have a quantity of spare capacity at peak but a lesser or zero quantity in normal operation off-peak.
  - Unutilised system capability identified at peak may not be fully available on every day of the gas year.
- Increases stability and predictability of prices

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Issue

- Removal of locational effect of ‘spare capacity’ as a result of moving to the Transportation model could lead to capacity sterilisation
  - e.g. charging for baseline capacity at declining terminals where genuine spare capacity may materialise.

- We know there is likely to be some spare peak capacity as forecast flows are less than baseline (assuming baseline = capacity).

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Options for Taking Account of Spare Capacity

- **Economic Test**
  - This could involve an “economic test” of entry charges where there is believed to be spare capacity at the terminal. The economic test would consider whether the difference in entry prices was greater than the estimated cost of an offshore pipeline between the terminal and the next terminal. If it were, the tariff at the terminal with spare capacity could be reduced accordingly.
  - ***Could be implemented in a relatively transparent manner. Would need to take into account LNG importation. Offshore is almost certainly more expensive anyway.***
- **Include explicitly within Transportation Model**
  - A second option would be to adjust the Transportation model. This is open to claims of subjectivity – however, it would arguably be less subjective than adjustments based on an economic test. If the model were to be adjusted, the approach could be defined network elements (rather than individual entry points) as having or not having spare capacity in a given flow direction.
  - ***Difficult to implement as it is hard to define the capacity of any network pipe section in isolation.***
- **Remove reserve prices**
  - A third option would be to remove the reserve price for QSEC and MSEC within constrained timescales at terminals where there was believed to be both (a) spare capacity and (b) a sufficient number of competing shippers.
  - ***Arguably it would discriminate against new entrants, create cross-subsidies and lead to inefficient development of the system.***

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Options for treatment of Spare Capacity within the Transport Model

- 1. Transcost
- 2. Transportation model
  - a. Identify ASEPs where reductions should apply
    - NG identify specific ASEPs where ‘spare capacity’ is available
    - Rule based on ratio of expected flow to baseline – ASEP or ‘Entry Zone’ specific
  - b. Reduction based on
    - Reduce pipe lengths
    - Reduce expansion factor

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Transportation Model & Spare Capacity

- **Which ASEPs should benefit from a discount?**
  - It is difficult to identify a process that could be used to identify ASEPs with “spare capacity” that was deemed to be either discretionary or arbitrary and therefore any discount might have to apply to all ASEPs (and be consistent with Exit charging within the enduring arrangements).
- **How should a discount apply?**
  - If the model were to be adjusted, the approach could be defined network elements (rather than individual entry points) as having or not having spare capacity in a given flow direction.
    - Difficult to implement as it is hard to define the capacity of any network pipe section in isolation.
  - The options for identifying an Entry point discount would again be open to the claim that they were discretionary or arbitrary and non-transparent.

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Alternative Approach

- Spare Entry Capacity could be defined as the difference between baseline capacity and forecast flows
- Charges could be calculated based on forecast flow rather than baseline capacity
- Assumptions
  - Use the Transportation model with base case S&D scenario (i.e. forecast flow)
  - Prices for each Entry point not at maximum flow would be calculated from individual analysis where the Entry point was adjusted to the max flow e.g. Storage, LNG Importation.
  - The discount would apply to the baseline reserve price
  - No discount should apply to QSEC step prices above P0.

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Baseline Capacity Options - Pros & Cons

Option	Pros	Cons
Price based on baseline	◆ Stable entry prices	◆ Requires baselines to be available ◆ Price will not vary with extent of decline
Price based on baseline with discount (100%)	◆ Stable entry prices	◆ Price will not vary with extent of decline ◆ Creates cross subsidies ◆ Discriminates between new and existing entry points
Price based on forecast flow	◆ Price will decrease with extent of terminal decline	◆ Price variation ◆ Incentive to understate forecast future supplies

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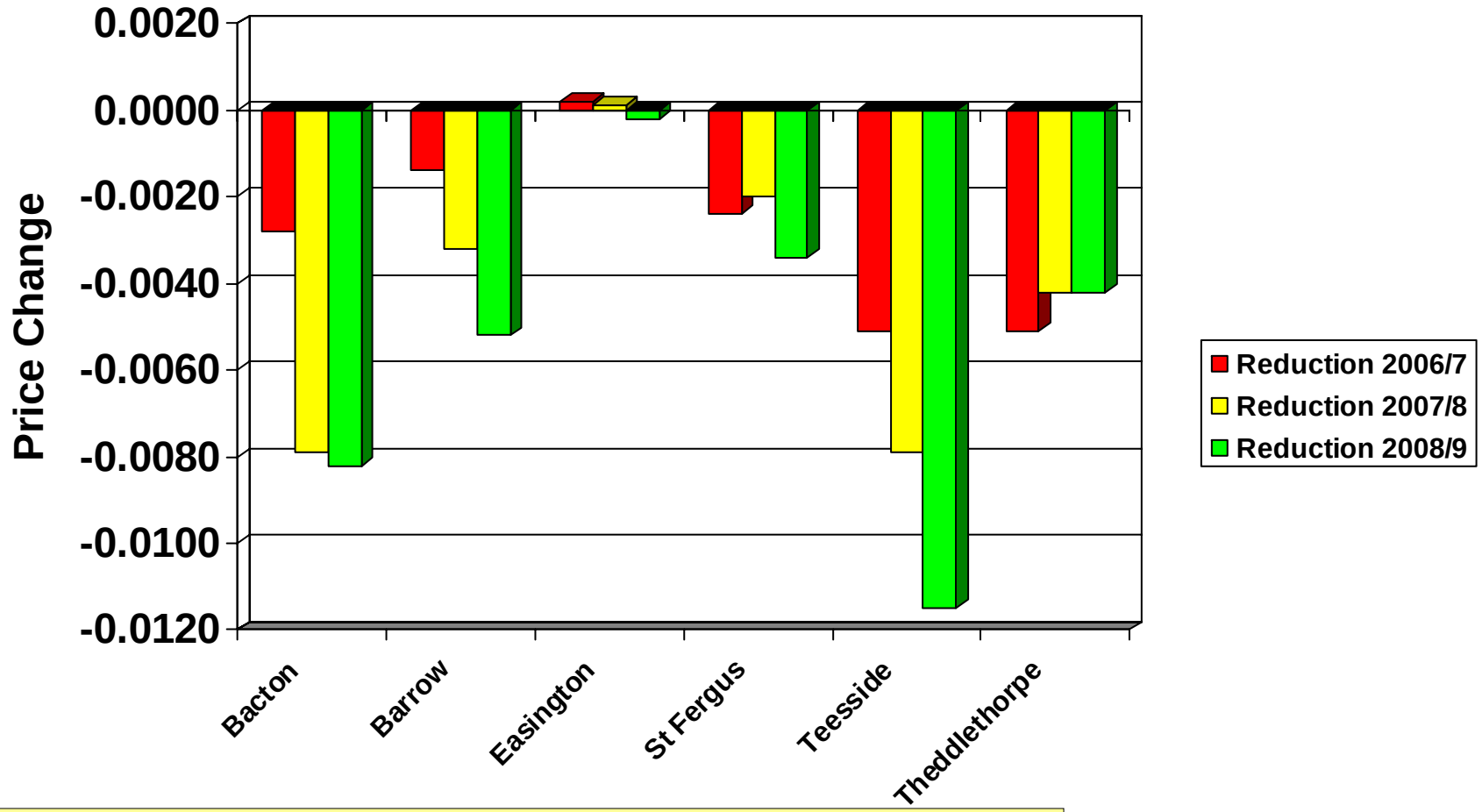
Implications for Entry Baseline Reserve Prices



Data shows the price change resulting from moving from 'baseline' to 'flow' based charging

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