

Demand Side Working Group: Gas Cash-out & Demand Side Actions

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Market Balancing

- Operational Balancing
 - maintaining the balance, within operational tolerances, between the quantities of gas respectively delivered to and offtaken from the System
- A **Market Balancing Action** is a Market Balancing Buy Action or a Market Balancing Sell Action.
 - Title/Physical or Locational
 - Included in cash-out price calculation
- A **Locational Balancing Action** is a market action taken to overcome a Localised Transportation Deficit
 - Locational market only and 'tagged' as locational
 - Not included in cash-out price calculation
- An action taken on the locational market of the OCM can be taken as either a **Market Balancing Action** or a **Locational Balancing Action**

OCM Market Prices

- System Average Price (SAP)
 - Weighted average price of all trades
- System Marginal buy Price (SMP buy)
 - Maximum price at which Transco has traded gas (inc demand reduction) on the OCM for market balancing purposes
 - or SAP + fixed differential (.0287p/kWh 0.84 p/therm)
- System Marginal sell Price (SMP sell)
 - Minimum price at which Transco has traded gas on the OCM for market balancing purposes
 - or SAP - fixed differential (0.0324 p/kWh 0.95 p/therm)

System Clearing (Cash-out)

- Shippers with positive imbalance
 - Over-delivered/long
 - Cashed-out at SMP sell
 - The “system” buys the Shipper’s gas at the marginal sell price
- Shippers with negative imbalance
 - Under-delivered/short
 - Cashed-out at SMP buy
 - The “system” sells gas to the Shipper at the marginal buy price

Imbalance (Cash-out) Quantity

- Single quantity Cash-out Regime in Gas
- Shippers Cash-out on the difference between Physical Supplies & Demand (plus net trades)
- Imbalance quantity IQ
 - $IQ = (\text{Supplies} + \text{NBP buy trades}) - (\text{Demand} + \text{NBP sell trades})$

Scenario

- Aggregate System Demand > Aggregate System Supplies i.e System Short of gas
 - Some Shippers Long (could trade out with 'short' Shippers)
 - Some Shippers Balanced
 - Some Shippers Short (some, but not all, could trade out with 'long' Shippers)
- Transco has gone to the Market and taken all actions that are likely to increase physical supplies
- Demand response actions remain on the OCM.

Questions

- What is the impact on System Prices if Transco takes a demand side action?
- What is the impact on a Shipper if Transco takes a demand side action offered by that Shipper?
- What is the impact on a Shipper if they choose not to offer demand side turn-down on the OCM but instead decide to commercially interrupt?

What is the impact on System Prices if Transco takes a demand side action?

- If
 - The action has been taken for national balancing purposes, and
 - The unit price of the action is greater than the prevailing SMP buy
- Then
 - The prevailing SMP buy will be increased to the unit price of the action
- Also
 - Irrespective of the price level, the trade will be included in the SAP calculation

What is the impact on a Shipper if Transco takes a demand side action offered by that Shipper?

- 'Long shipper'
 - Imbalance unchanged
 - Financial Exposure: May increase value of 'spare' gas that Shipper may subsequently sell on within-day
- 'Balanced Shipper'
 - Imbalance unchanged
 - Financial Exposure: Marginal
- 'Short shipper'
 - Imbalance unchanged
 - Financial Exposure: Increases cost of gas deficit if trade increases SMP buy

Impact on a Shipper if Transco takes a demand side action offered by that Shipper.

Scenario: OCM Offer accepted							
Shipper	Long		Balanced		Short		
	BEFORE	AFTER	BEFORE	AFTER	BEFORE	AFTER	
Physical Supply	110	110	100	100	90	90	
NBP Buy Trades	0	0	0	0	0	0	
Physical Demand	100	90	100	90	100	90	
NBP Sell Trades	0	10	0	10	0	10	
IQ	10	10	0	0	-10	-10	

Result: Imbalance unchanged

What is the impact on a Shipper if they choose not to offer demand side turn-down on the OCM but instead decide to commercially interrupt?

- 'Long shipper'
 - Imbalance (positive) increased
 - Financial Exposure: Increases volume of 'spare' gas that Shipper may subsequently sell on within-day to short 'shippers'
- 'Balanced Shipper'
 - Imbalance now positive ('Long')
 - Financial Exposure: Creates volume of 'spare' gas that Shipper may subsequently sell on within-day to short 'shippers'
- 'Short shipper'
 - Imbalance (negative) reduced (may now be 'Balanced')
 - Financial Exposure: Reduces volume and hence cost of gas deficit

Impact on a Shipper if they choose to Commercially Interrupt.

Scenario: Shipper Interruption							
Shipper	Long		Balanced		Short		
	BEFORE	AFTER	BEFORE	AFTER	BEFORE	AFTER	
Physical Supply	110	110	100	100	90	90	
NBP Buy Trades	0	0	0	0	0	0	
Physical Demand	100	90	100	90	100	90	
NBP Sell Trades	0	0	0	0	0	0	
IQ	10	20	0	10	-10	0	

Result: Imbalance changed

Value of Interruption

- End-consumer values interruption at X p/therm and sets an **Interruption Price**
- Market value capped by SMP buy Price
 - **SMP buy** ~ Y p/therm
- Shipper will not value interruption until
 - **Interruption Price** < **SMP buy**
 - i.e. until it is less than the marginal market price

Conclusion:

- Shippers may place a value on having access to commercial interruption at any price but End-consumers could expect such interruption not to be called until the SMP buy price is greater than the interruption exercise fee (unit price)