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Cash-out – A System Operator Perspective



Ian Pashley: Ofgem Workshop, 30 April 2012

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National Grid's 'residual balancer' role

Via the BM, trades, ancillary services…

'Energy' Balancing →

- Resolving NIV
- Maintaining sufficient reserves
- etc

Should feed into cash-out processes

'System' Balancing →

- Voltage control
- Flow management
- etc

Should <u>not</u> feed into cash-out processes

…in an efficient and economic manner.

What should cash-out be trying to achieve?

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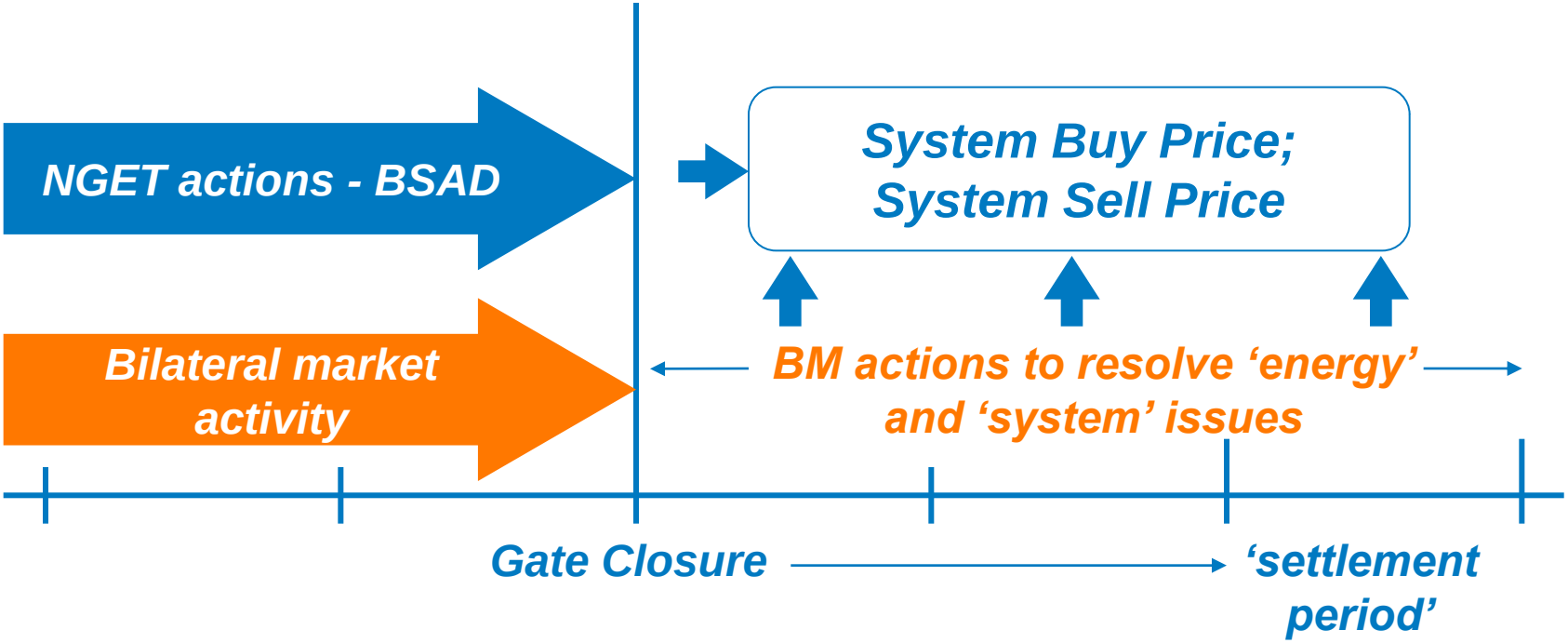
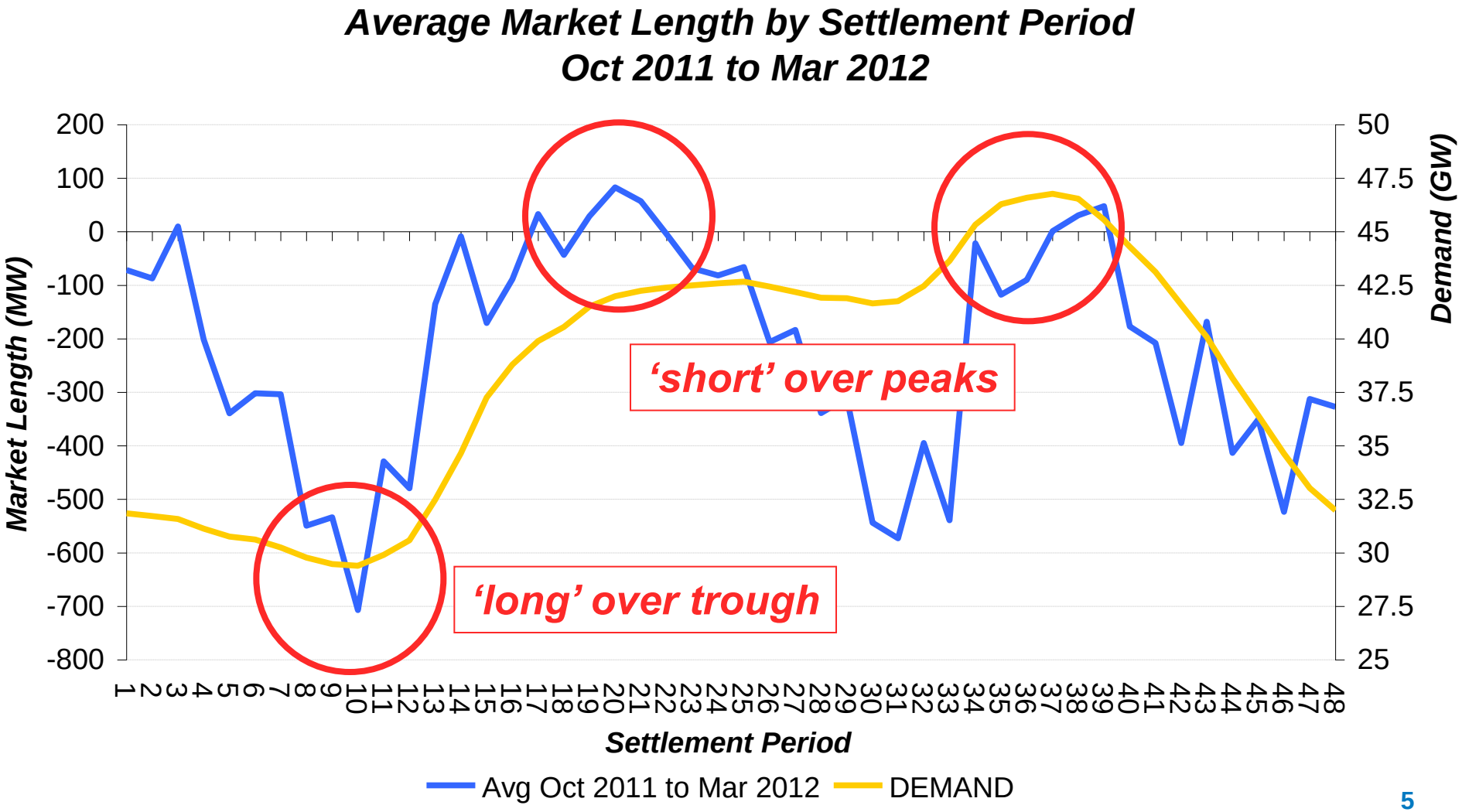
- Cash-out should target balancing costs on those who cause the imbalance:
  - *Encourage parties to contract ahead to meet their needs and minimise their imbalance*
  - *Be reflective of the costs incurred by NGET to achieve energy balance, including at times of scarcity*
- Things to consider:
  - *Generators are not obliged to contract and can choose to pay the cash-out price*
  - *Prices need to be "sharp" enough (and market liquid enough) to encourage parties to balance their own positions*

Current imbalance arrangements

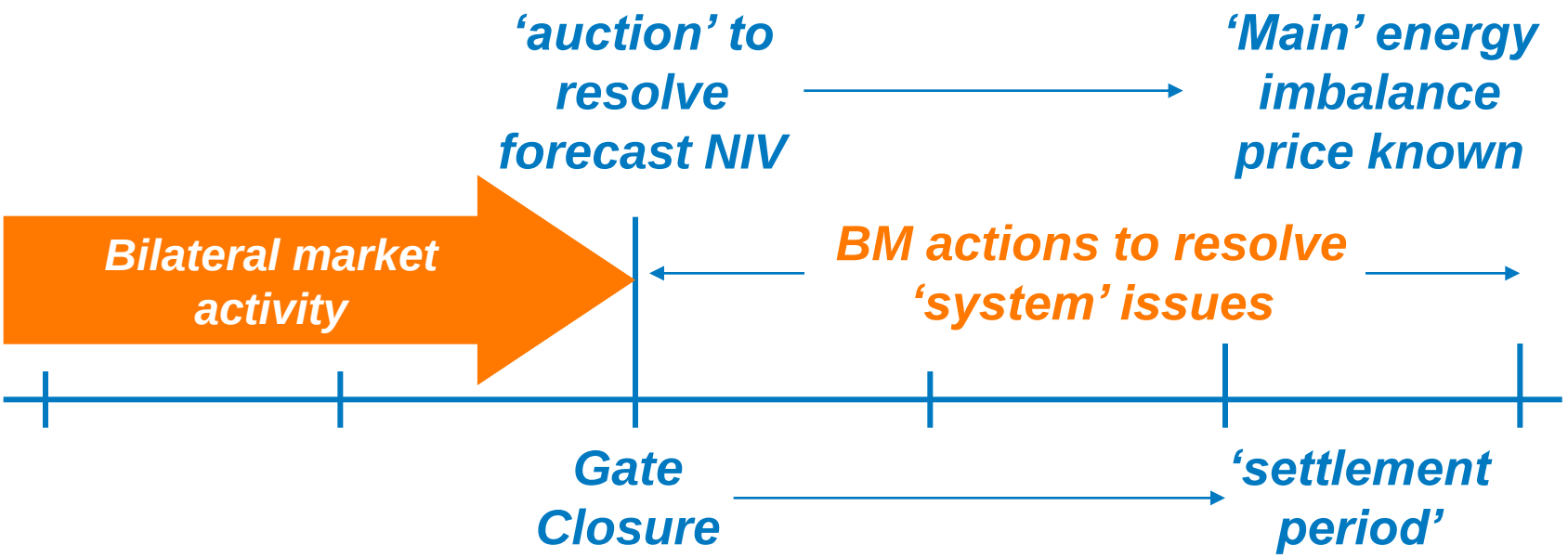


- System actions 'removed' via SO Flagging (good accuracy)
- Pre-gate closure actions (energy/reserve) captured via BSAD
- Prices determined using actual market length (as long as all BM/trade/ancillary service volumes represented)

Observations



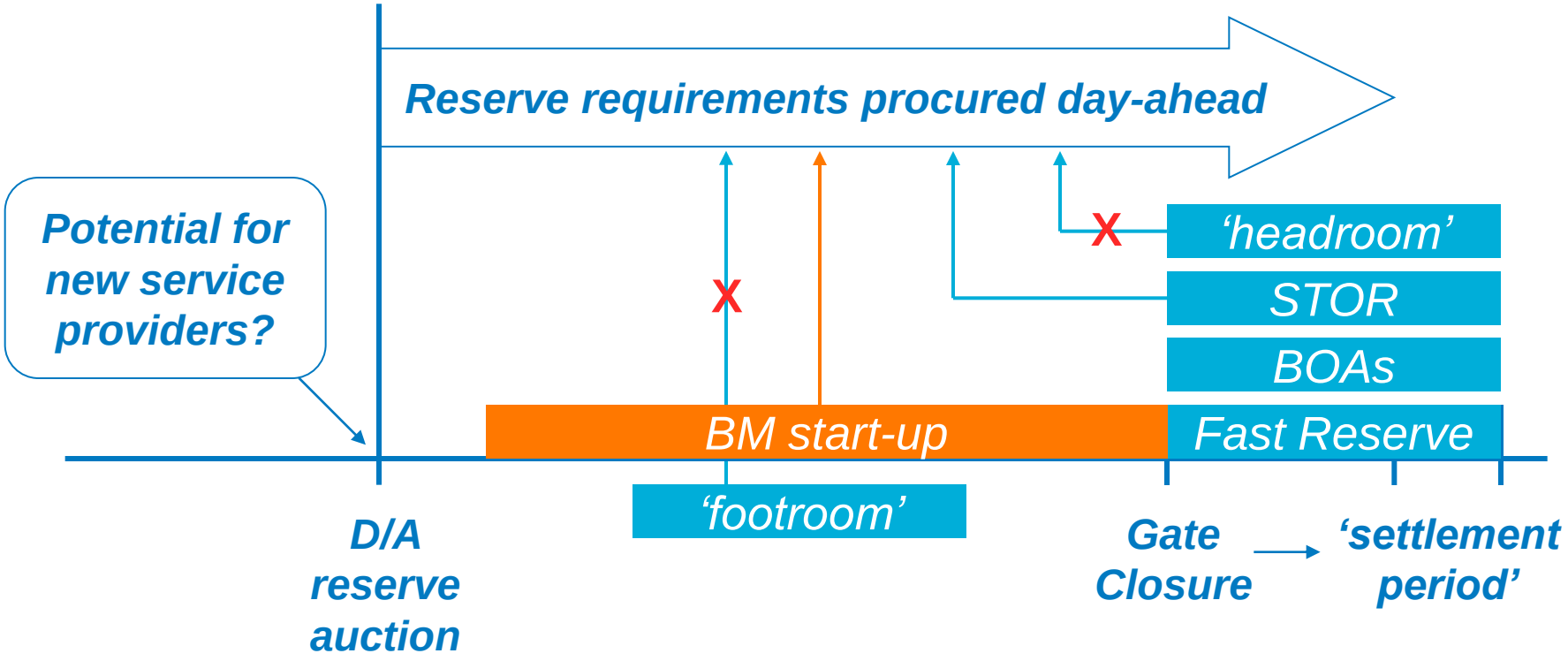
Ofgem's 'Balancing Market' proposal



- Energy imbalance price would be known in advance, ***but***
- Post-gate closure NIV changes (plant loss/demand forecast error) won't feature in imbalance price
- Requires accurate NIV forecast (NGET demand forecast; generation PN submissions that reflect contract positions ('energy' *and* 'system')

Ofgem's 'Reserve Market' proposal

- Reserve requirements would be procured day-ahead
- Would be necessary to interface with other NGET products
- Potential inefficiencies through over-procurement where market delivers headroom/footroom



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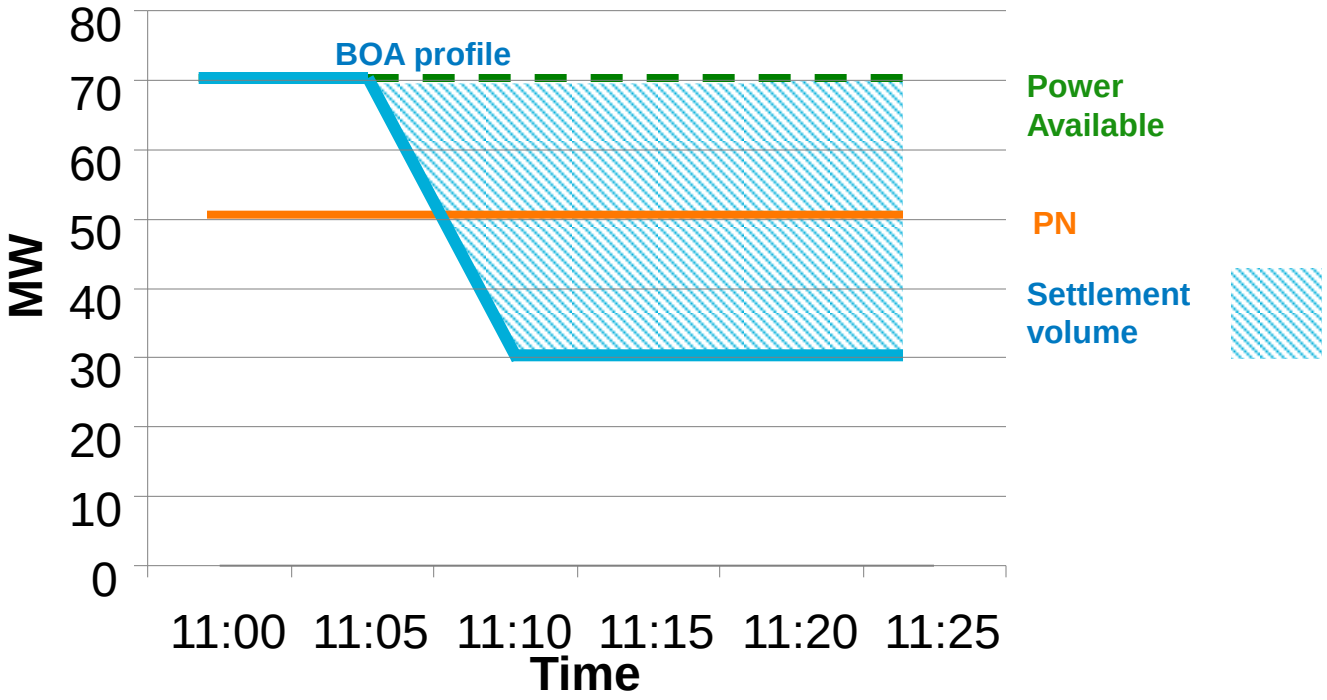
Comparison

Current Arrangements	Balancing Market
Pros	*Pros*
■ Captures all energy balancing actions	■ 'Main' imbalance price known in advance
■ Based on actual market length	■ Imbalance price set based on 'marginal' action
Things to consider	*Things to consider*
■ Requires accurate removal of 'system' actions	■ May not capture all energy balancing actions
■ Price not known in advance	■ Based on SO forecast of NIV - accuracy depends DF and FPNs from all generation plant
■ 'Average' rather than 'marginal' - 'sharpness' depends on PAR	

Ongoing developments (1)

- Intermittent generation
  - Power available signal to better represent the accepted bid/offer volumes for wind?



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Ongoing developments (2)

- Electricity Market Reform
  - Interactions with capacity mechanism and FiT CfD need to be carefully considered…
- Europe
  - Maintain equitable incentive across Europe to balance?

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Questions?

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