A Balancing Market for Electricity Cash-out

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Outline

- Background: from the Pool to NETA
- Conditions have changed
- Problems of cash-out today
- Balancing market proposal
- Addressing Ofgem’s issues
- Discussion of possible concerns
- Implementation issues
- Conclusions

Background

- Concerns about the Pool
  - Public day-ahead “market-clearing price” but
  - Vulnerable to gaming and market power
  - Compulsory and only half a market
- Aims of NETA
  - Allow bilateral trading to determine majority of output and prices, plus short-term markets
  - Scope for parties to self-balance if they wished
  - Need for balancing mechanism for small proportion of total output (about 3%)

Balancing mechanism

- Concern about market power
  - Therefore must not allow dominant generators to recreate the Pool
  - Attraction of pay-as-bid
  - And active role for NGC in purchasing
- Concern about SO ability to balance
  - Therefore must discourage imbalances
  - Attraction of dual cash-out prices
  - Again active role for NGC in the process

Balancing Mechanism v Market

- Hence Balancing seen through eyes of SO:
  - “BM one of the tools that SO has available to it”
  - “role of BM is to provide mechanism for NGC to adjust participants’ intended level of operation”
  - “BM allows SO to match imbalances” Ofgem 2001
- Valid points, but only half the picture
- What are the needs of market participants?
  - Aim of privatisation and NETA to facilitate competitive markets
  - Participants may wish to trade later than present markets allow?
  - Would a balancing market and reference price be useful?
  - Ask instead: can Balancing be more like a market?

Conditions have changed

- Restructuring and new entry, generation market power no longer the same problem
  - No longer concern about market-clearing price
- NGC now has extensive experience at balancing, gate closure brought forward
  - No longer need to discourage imbalances
- Others now have balancing markets
  - eg Ercot in Texas, Balancing Energy Services traded each 15 minutes
  - Market Clearing Price of Energy announced 10 minutes before each period.

Experience with cash-out

- Cash-out arrangements have “worked”
  - In the sense that SO has kept system in balance
  - And extent of imbalance is relatively small (3%)
  - And costs are relatively small proportion of total
- But some cash-out problems identified
  - Numerous patches and modifications over time
  - But other problems remain – see Ofgem slides
  - Some market participants may be content
  - But is cash-out facilitating or distorting the market?

The debate today

- Ofgem summary of concerns
  - Blurring of energy and system balancing costs
  - Distorts costs & competition, uncertain, low liquidity
- Ex-Post Unconstrained Schedule
  - Simpler?
  - But does it solve underlying problem?
- Market price +/-
  - Avoids problem of analysing SO costs
  - But is Apples and Oranges a solution?
- Does either facilitate competitive market?

Balancing market

- Appoint market operator to run market
- Bids and offers placed with MO
- SO predicts Net Imbalance Volume
- MO declares market clearing price
    - ranks bids & offers, calculates market-clearing cash-out price at predicted NIV, & confirms trades
- Ex-post imbalances cleared at same price
- SO role otherwise as now

Ofgem issue 1 cost-blurring

- Large and unpredictable SBP-SSP spread
- Balancing market would solve completely
  - Single cash-out price hence zero SBP-SSP
- System pollution in cash-out prices
- Balancing market no tagging so no pollution
  - Separates the sheep and goats (sheep if traded in Balancing Market, goat if action taken by SO)
- Incomplete (15%) recovery of BSAD costs
- Balancing market recovers 100% SO costs
  - 0% of SO non-cashout costs: for discussion anyway

Ofgem issue 2 smaller players

- Smaller players disadvantaged by large SBP-SSP spread and system pollution
- Balancing market removes both distortions
  - Zero SBP-SSP spread
  - Separation sheep & goats removes system pollution
- Balancing market is an additional market that is particularly useful for smaller players
  - To prevent such a market distorts competition
  - To enable such a market facilitates competition

Ofgem issue 3 post gate closure

- Main price has limited cost-reflectivity
  - Because of extent of post-gate closure changes
- Reverse price is not cost-reflective
- Balancing market reflects ex ante costs
- Does not reflect post-gate closure costs
  - Separate decision how to recover them
  - Could be related to actual imbalances?
  - (Same as present? No, tail versus dog)
  - Or to accuracy/variance of demand or supply?

Ofgem issue 4 liquidity

- Day-ahead liquidity lower in GB than in other European electricity markets
- Higher volume cash-out (15 TWh/yr) than in APX within-day market (10 TWh/yr)
- Balancing market adds cash-out to market
    - Some offsetting reduction in within-day market?
    - Or cash-out reference price complements latter?
    - In either case total market liquidity will increase?

More balancing market advantages

- Separates market-making and price-setting from other more legitimate SO functions
- Pure energy price: simple in concept & in practice, and fully transparent & public
- Reflects parties' cost of balancing in market
- No surplus (beerfund) or deficit to distribute
- Ex ante cash-out price more conducive to demand management than ex-post price

Concern: economies of scope?

- Loss of economies of scope for SO?
  - Cheaper for SO to kill two birds with one stone?
  - This presumes incompetent bidding into BM?
  - Same argument in other vertical separation cases (CEGB re generation and transmission, RECs re distribution and supply, British Gas, Brit Telecoms)
  - Those alleged economies of scope not missed
  - Significantly outweighed by advantages of clearer separation of functions and specialisation
- Economies of scope not a strong argument against balancing market

Concern: sucks liquidity?

- A balancing market would suck liquidity out of the present short-term markets?
  - This would be a legitimate concern where cash-out mechanism is not a market
  - But if balancing a market, it increases total liquidity
  - Then issue is where and when to trade in market
  - No reason to discourage use of balancing market
  - In fact every reason to facilitate its use
- But reasonable to take account of impact on present providers of short-term markets

Concern: spirit of NETA?

- Cash-out market would undermine the spirit of NETA?
- Aim was to encourage self-balancing by market participants & penalise imbalance?
- Self-balancing & low imbalances not aims in themselves: recall concerns at the time
- The real spirit of NETA was to replace an “artificial market” by proper markets
- Spirit of NETA better reflected by replacing cash-out mechanism by a proper market

Implementation details

- Details of implementation for discussion
    - Timing of cash-out price before gate closure: later better predictability v earlier better response?
    - How far to specify basis for SO predictions?
    - Provision of earlier information by SO?
    - Role and incentives of SO?
    - Allocation and charging of SO costs
- Many of these apply for all solutions and better or no worse with market solution?

Implementation research

- What impact would balancing market have? Is it worthwhile?
- Most useful where reducing NIV ex ante is significant relative to real time adjustments
- Least useful if SO cannot predict ex ante
- What would be the typical magnitudes of adjustments in balancing market?
- What impact on real time costs?
- Can past data to assess bal mkt prices?

Concern: implementation time?

- Independent power exchange - delay?
- SO could apply in present BM? Faster?
- Perhaps (need to check) but
  - MO has specialist expertise that SO lacks
  - More responsive to needs of market participants
  - Extent of SO involvement part of present problem
  - Impact on present markets and market operators – undesirable to replace markets by “SO market”
  - Therefore need to take this into account
- Need to envisage transition to full market

Conclusions

- The present cash-out mechanism reflects concerns of a decade ago: generation market power and SO ability to balance
- These concerns no longer so serious
- Blurring of SO costs and market distortions and restrictions are now more problematic
- A balancing market is now possible, fully addresses Ofgem issues, has additional advantages, and deserves consideration