

Primary Consideration: More marginal cash-out prices?

Workshop 3
03/10/12

These slides are initial thoughts to aid discussion only. They are not in any way meant to signify the views of GEMA, which for the avoidance of doubt has not made any decisions on this particular issue.

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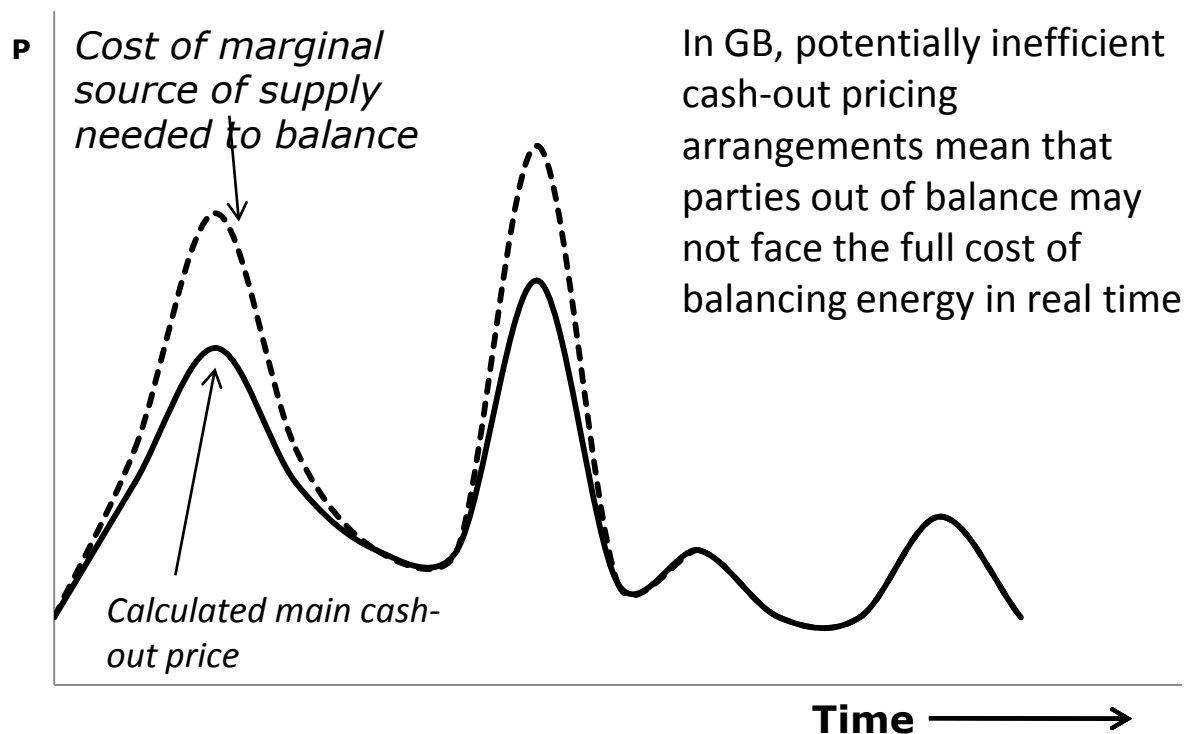
Background

- Currently: cash-out price is **average of most expensive 500 MWh** of relevant actions taken by SO to balance the system; called PAR500 (“Price Average Reference”)
 - after flagging and tagging mechanisms
- Because of averaging, **cash-out prices may not fully reflect scarcity** at times of system stress
 - Opportunity cost of imbalance (cash-out price) is not fully reflective of the costs to the SO of balancing the system at the margin
 - Incentives to invest/maintain flexible capacity are reduced (part of the ‘missing money’ problem)

→ This contributes to security of supply concerns
- **Reducing the volume** on which the price is based would make prices sharper
 - By reducing PAR level (e.g. PAR250, PAR100) or using the price of the marginal trade (PAR1)

The 'Missing Money' Problem (1)

- Missing money refers to a **potential shortage of available revenue streams** to allow existing and future capacity providers to cover their costs



The 'Missing Money' Problem (2)

- Capacity providers collect revenues through two ways:
 - contracting with parties ahead of Gate Closure
 - offering flexible capacity into the Balancing Mechanism (or reserve)
- Dampened cash-out prices reduce the incentives to balance
 - reduces demand for flexible capacity
 - reduces value and revenue available to flexible capacity providers
- Less opportunities to cover costs may reduce the amount of available capacity at times of system stress and thus jeopardise security of supply in the future

How does this fit with the SCR Objectives

- Incentivise an efficient level of security of supply
 - ***incentivise optimal level of investment (through appropriate price signals)***
 - pay firm customers appropriately for the DSR service they provide if their demand is involuntary interrupted
 - ***incentivise plant flexibility and DSR***
- Increase the efficiency of electricity balancing
 - ***minimise market distortions due to the need for the system operator (SO) to balance the system***
 - ***incentivise participants to balance their position as far as is efficient***
 - ***appropriately reflect the SO's costs for balancing in cash-out prices***
- Ensure our balancing arrangements are compliant with the TM and complement the EMR Capacity Mechanism
 - ***align GB balancing arrangements with EU balancing and capacity allocation and congestion management framework guidelines***
 - ***work closely with the DECC to ensure cash-out arrangements and the EMR CM complement each other***

NETA and proposed BSC Modifications (1)

- New Electricity Trading arrangements (2001)
 - introduced cash-out prices as a **volume weighted average** of all actions in the BM
 - Average due to concerns that the marginal price would be set by a system action, and would be vulnerable to manipulation
- Modifications P135, P136, P137, P194 and P205 related to cash-out price calculation. PAR500 (rather than fully marginal) has been introduced due to three main concerns:
 - System pollution
 - Market power
 - Cost reflectivity of cash-out prices

To what extent are concerns raised in the past still relevant today?

NETA and proposed BSC Modifications (2)

- Modification Proposal **P217A**: 'Revised Tagging Process and Calculation of Cash-out Prices' (Nov 2007, introduced in 2009)
 - introduced **flagging and disaggregating of BSAD** actions and maintained PAR500
 - noted that the **PAR level should be kept under review** and a analysis into the effectiveness of P217A to be conducted
 - Ofgem's preliminary analysis of P217A suggested that **P217A has reduced the influence of system balancing actions** on cash-out prices, addressing one of the main obstacles for reducing PAR level

The rationale for marginal cost pricing

- Reflecting the costs to the SO of balancing the system at the margin
 - Prices fully reflects the scarcity on the system
 - increases incentive to invest or maintain flexible generation capacity
 - lowers likelihood of demand interruptions
 - Improve security of supply
- Tackle the 'missing money' problem
 - Sharper cash-out prices feed through to intraday and day-ahead prices, providing additional revenue streams for capacity holders
- Economic theory suggests that marginal cost pricing will lead to most efficient allocation of resources

How big a role does cash-out play in investment decisions?

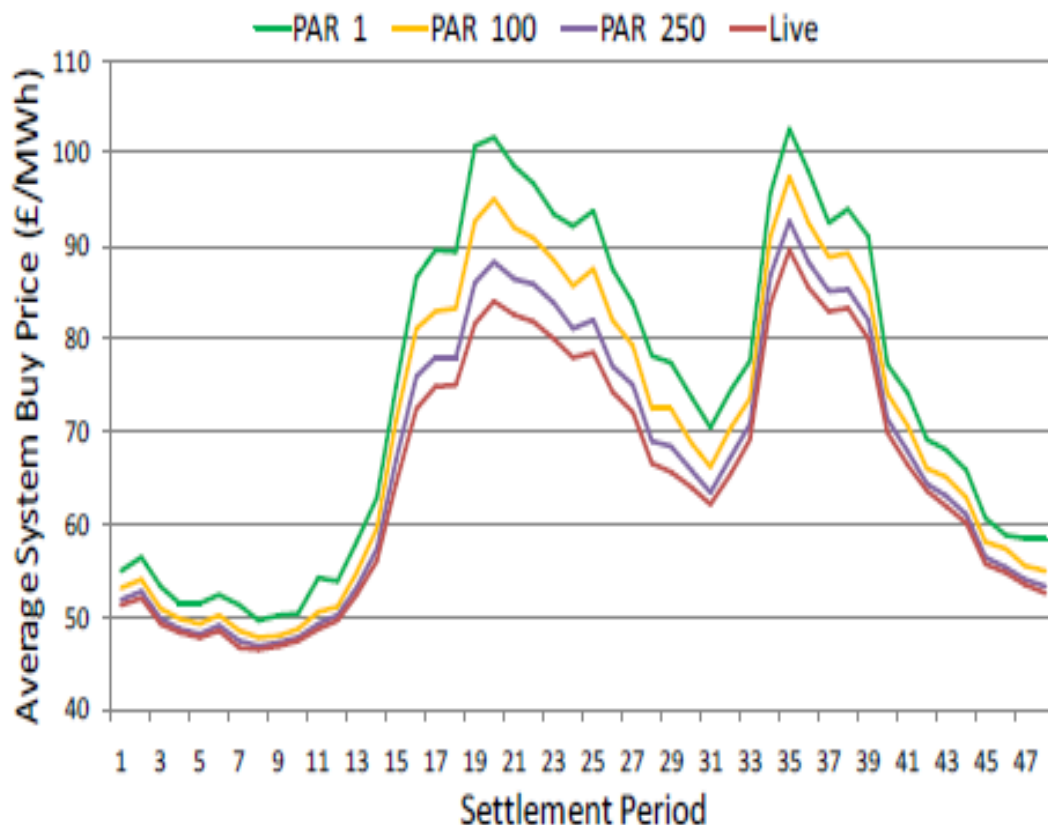
Can a suitable marginal action be defined?

- In theory, cash-out price should reflect cost to SO of balancing 'energy' (→ '**energy actions**')
 - in practice the SO takes balancing actions for other reasons as well, such as overcoming locational constraints ('**system actions**')
- Under NETA arrangements, **cash-out prices should reflect the costs of energy actions** and exclude system actions
 - P217A put in place methodology for flagging system actions and remove them from cash-out calculation
 - Preliminary analysis suggests that P217A has reduced influence of actions flagged as system balancing on prices, however did not consider accuracy of implementation
 - also some of SO's balancing actions can be for both system and energy reasons
- More general concern around whether most expensive action is necessarily the 'marginal' action
 - Most expensive action could have been taken much earlier (e.g. BSAD action)
 - Some actions may not have been taken at all if SO had perfect foresight
 - However this risk has decreased with 1h gate closure compared to 3.5h when NETA was introduced

How suitable are the existing rules for flagging and tagging small or system related actions?
What further analysis should be done to assess accuracy of SO flagging?
What other problems may there be in identifying the marginal action?

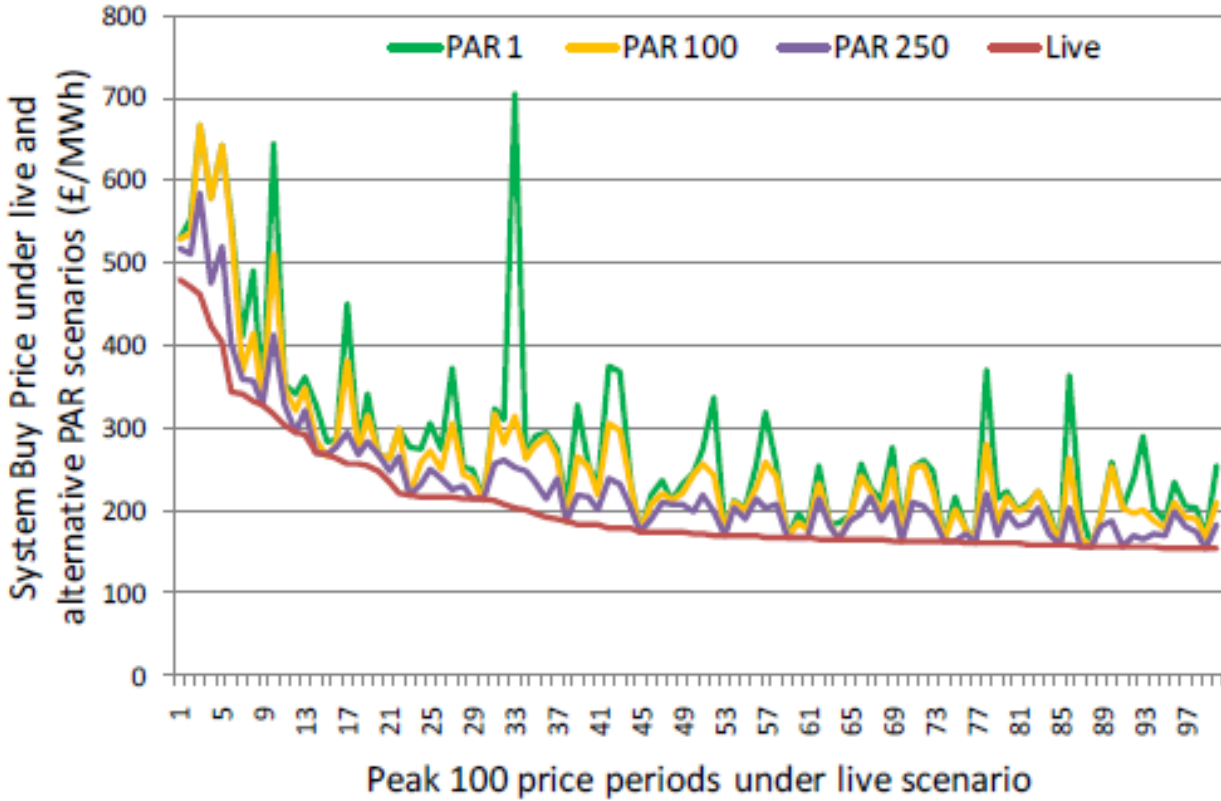
Would a more marginal price have a significant impact? (1)

SBP when system is short



- Our preliminary analysis investigated impact on price of lower PAR level (not taking into account behavioural effects)
- On average SBP would be 15% higher; SSP on average 5% lower
- However, in periods of system tightness (when NIV > 500MWh), SBP was 30% higher and SSP 8% lower

Would a more marginal price have a significant impact? (2)



- Highlighted importance of current flagging and tagging rules
- It is also important to consider the implications of other SCR considerations: attributing costs to non-costed actions and efficient costing of reserve

What would be the impacts on parties incentives to balance?

- More marginal price would **increase the sharpness** of main cash-out prices
 - strengthen the incentive for parties to balance their positions; ensure they had the resources to do so (ie investment and keeping plant open)
 - But: more marginal cash-out prices could lead to greater volatility and spread between prices:
 - increases the risk of SBP relative to SSP
 - parties may increase the extent to which they hedge long to avoid risk of SBP
 - however effects could be reduced over time through changes in behaviour and adjustment effects
 - more marginal prices may create an incentive for parties to hold their own reserve
- Stronger incentives to balance may **increase provision of balancing services** to other parties pre gate-closure, foster intra-day trading potentially increase liquidity

What would be the impact of marginal pricing on the incentives for parties to balance and their contracting strategies?

Other impacts

- More marginal pricing **may increase the risk** to parties who are particularly exposed to imbalance prices
 - Difficulties for smaller and/or intermittent generators?
 - Barrier to new market entrants?
 - Would this grow the market for independent aggregators (helping smaller generators)?
- More marginal cash-out prices could incentivise participation of **Demand Side Response** (DSR) services, providing an additional means of balancing the system

Key Interactions (1)

With other SCR considerations

- Pay-as-clear would lead to 'more marginal' prices due to the way cash-out is calculated
- More marginal prices would make the case for pay-as-clear stronger, in order to keep cash-out prices cost-reflective
- Single /dual prices: If we believe a single cash-out price leads to more spilling, a more marginal price could exacerbate this issue

Key Interactions (2)

With the EU target model

- According to the EBF, imbalances shall be settled in a non-discriminatory, transparent, fair and objective way, at a **price that reflects the costs of balancing the system in real time**.
- EBF favour pay as clear over pay as bid for balancing services.

With the EMR capacity mechanism

- The EMR capacity mechanism also aims to address the 'missing money' problem. Depending on the design of the EMR capacity mechanism there may be important interactions with the SCR. Ofgem and DECC are working closely to ensure these policies complement each other.

Key questions

What would be the impact of marginal pricing on the incentives for parties to balance and their contracting strategies?

How big a role does cash-out play in investment decisions?

To what extent are concerns raised in the past still relevant today?

What impact would more marginal prices have on competition and market entry?

How suitable are the existing rules for flagging and tagging small or system related actions? What further analysis should be done to assess accuracy of SO flagging?

What is the 'marginal' action? (Most expensive or latest action to overcome imbalance?)

Are there other problems in identifying the marginal action?

What should the PAR level be?

Is more marginal pricing compatible with the current gate closure and settlement period?

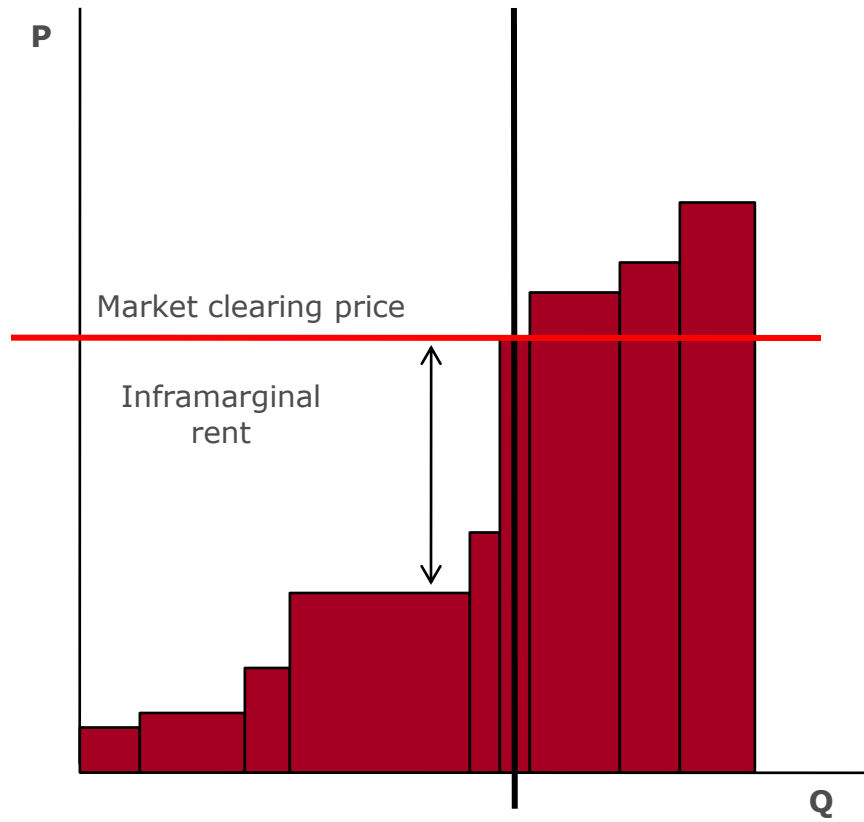
The background of the slide is a composite image. On the left, there are rows of solar panels under a bright sun. On the right, a hand is shown holding a white document. In the bottom left corner, a blue gas burner is visible. The overall theme is energy and customer service.

ofgem

Promoting choice and value
for all gas and electricity customers

The Missing Money Problem

Normal demand conditions



Peak demand conditions

