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Pay-as-bid or pay-as-clear pricing for energy balancing services in the Balancing Mechanism

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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Current Arrangements

- Participants receive the price of their bids/offers – they are 'paid-as-bid'.

Original Justification

- "Pay-as-bid process will provide the **appropriate economic signals** and be consistent with the operation of the forwards and futures markets that are expected to emerge"
- "When markets are broadly competitive, SMP and pay-as-bid produce similar results, but that when **market power** is evident, pay-as-bid can have advantages"

The New Electricity Trading Arrangements, Ofgem/DTI Conclusions Document, October 1999

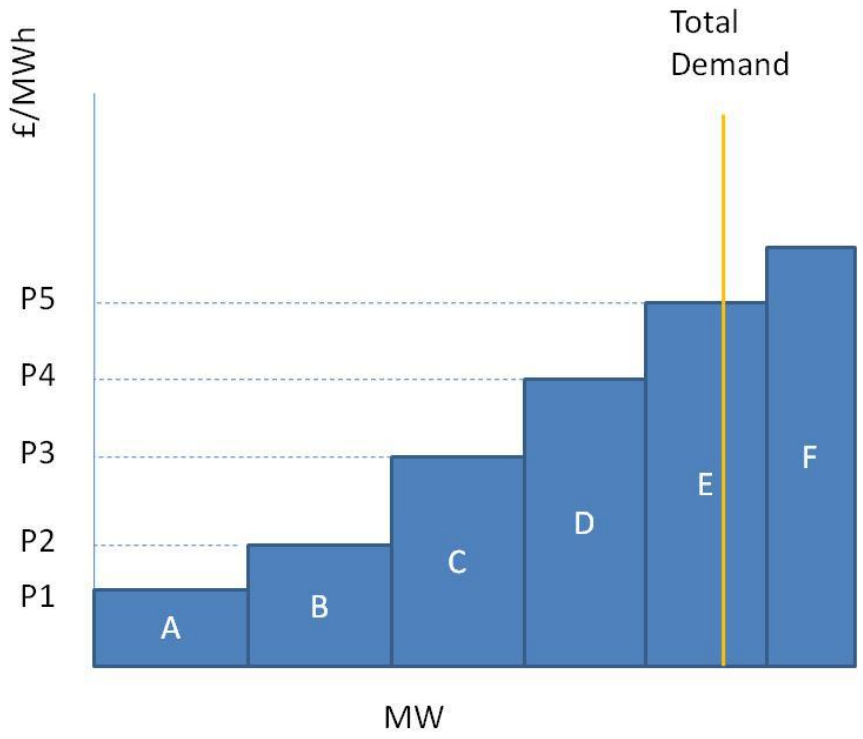


Figure 2: Pay-as-bid pricing

Developments

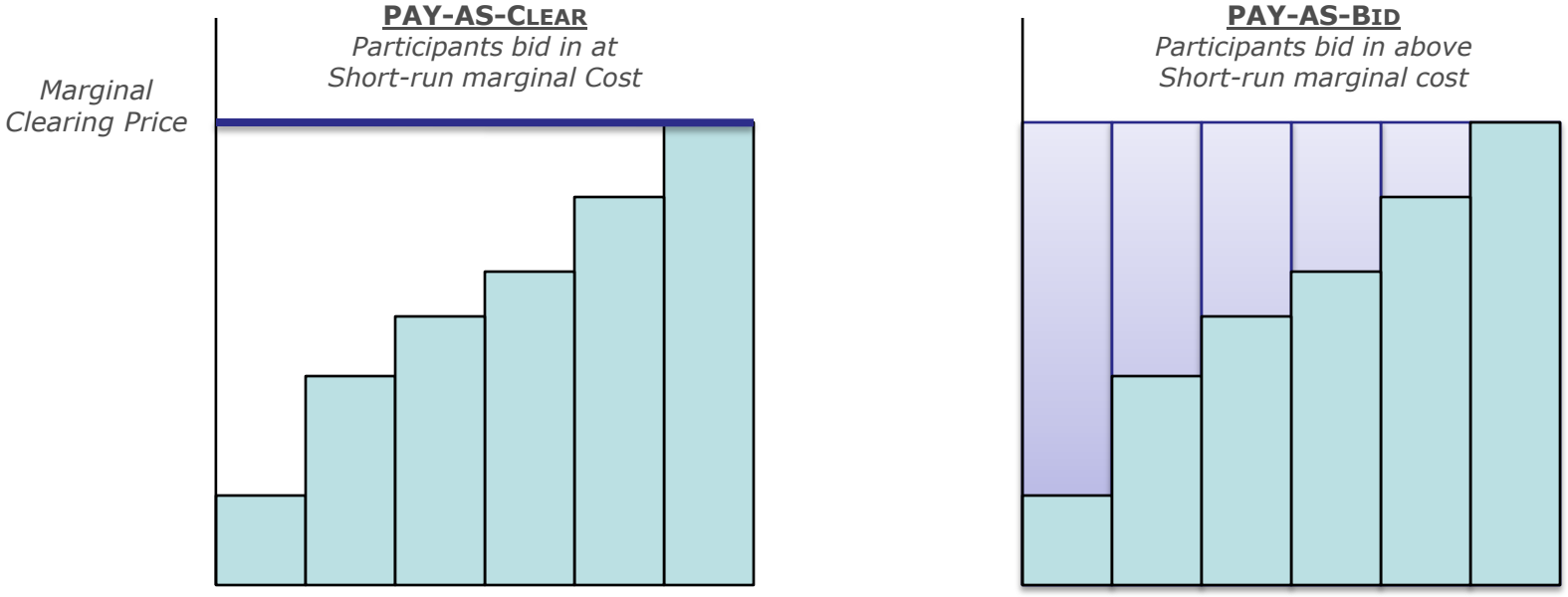
- Could pay-as-clear pricing could fit in with a '*more-market like*' approach to balancing?
- Could pay-as-clear pricing in the balancing mechanism solve part of the missing money problem?
- European Framework Guidelines favour pay-as-clear pricing for balancing energy in the common merit order

Key Questions

- Can we apply pay-as-clear pricing?
  - Is there a homogenous balancing energy product?
- Should we apply pay-as-clear pricing?

In theory, pay-as-bid and pay-as-clear should produce similar results

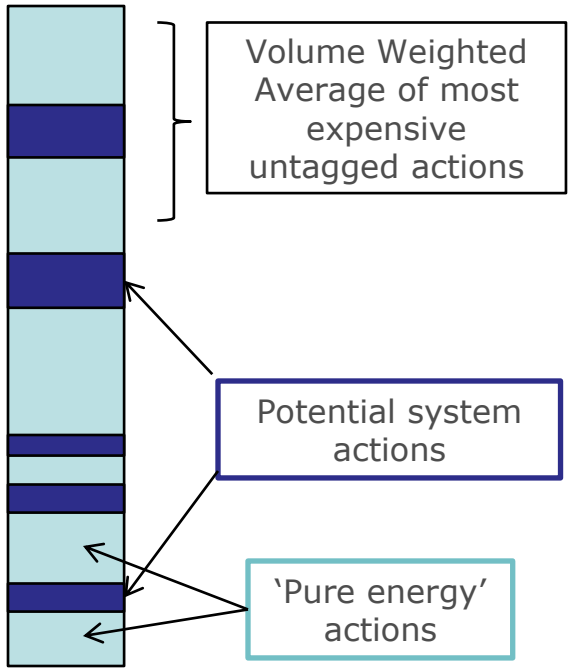
- Under pay-as-clear participants are *automatically awarded* the price of the most expensive offer accepted
- Under pay-as-bid participants have the *incentive to bid* at the price of the most expensive offer accepted



This assumes (i) a homogenous product , (ii) sufficient levels of competition and (iii) perfect information

A homogenous product? (1)

- In the Balancing Mechanism trades are taken for many reasons across the period from gate closure to real time
  - Location, speed of response to instructions, reliability, potential duration, etc
- A homogenous energy balancing product defined for cash-out price calculation – via flagging and tagging mechanisms
- Concerns about 'system pollution' have led to **Price Average Reference** (PAR) tagging – leading to a 'chunky marginal' price
- BSC Modification P217A aimed to remove system balancing actions from the calculation of cash-out prices – allowing the cash-out price to be based on 'pure' energy balancing actions



PAR Tagging

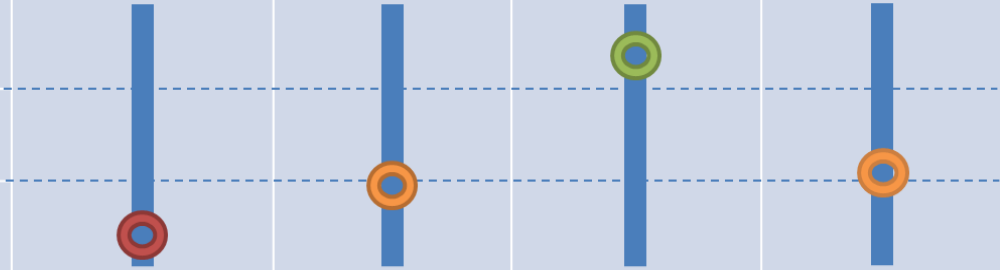
A homogenous product? (2)

- Could a clearing price be applied to energy balancing products as defined by flagging and tagging?
  - Would this require 'perfect' flagging (ie no Price Average Reference)?
- What would the impact of having pay-as-bid for some actions in the Balancing Mechanism, and pay-as-clear for other actions in the Balancing Mechanism be?
  - If energy balancing volumes were paid-as-cleared, and all other balancing volumes were paid-as-bid, would there be sufficient incentives on participants to bid in a SRMC?
    - Given that average NIV is approx 350MWh, and average total volume of balancing actions taken is approx 840MWh

Does a homogenous balancing energy product exist? What would be the impact of having two different pricing mechanisms in the BM?

Competition in the balancing mechanism

- At a time when only two generators owned the peaking plant, market power concerns were a major drive of the decision to move to pay-as-bid pricing
  - To what extent is this still a concern?

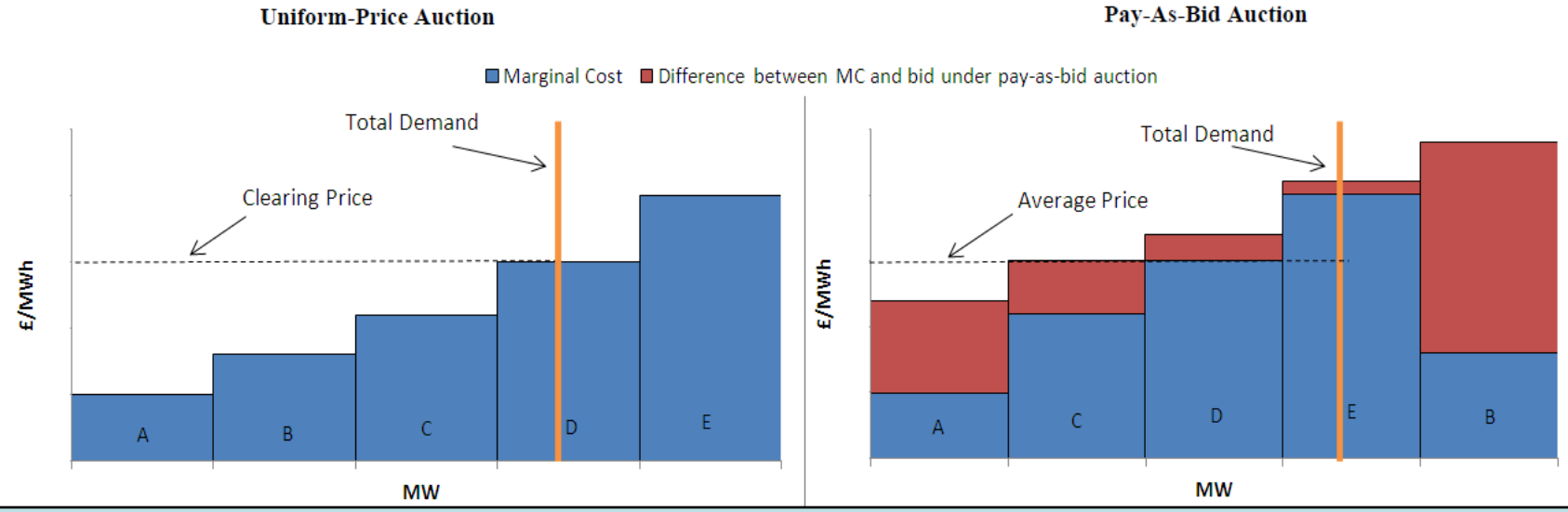
Area		France	Netherlands	Great Britain	Spain
Type of balancing market		Upward manually-activated energy from FRR and RR (2011)	Upward energy from FRR (2011)	Upward and downward balancing energy (2010)	Automatically-activated FRR capacity (2011)
HHI value		3894	2639	1300	2494
Level of market concentration	Unconcentrated HHI <1500				
	Moderately concentrated 1500<HHI<2500				
	Highly concentrated HHI > 2500				

Source: ACER

Does market power remain a concern?

Inefficient despatch?

- Demand uncertainty, and difficulty in establishing the marginal plant may result in inefficient despatch under pay-as-bid pricing
  - To what extent do participants use bids and offers to position themselves in future positions?
- If participants cannot capture sufficient rent above their SRMC → part of the missing money problem?



Can a marginal plant be defined in the balancing mechanism? Do participants bid in order to capture this marginal price?

Potential benefits of Pay-as-clear

- Assuming there is sufficient competition, pay-as-clear pricing could have a number of benefits:
  - Incentives for participants to bid at SMRC
  - Easier for capacity to bid and participate – particularly smaller players
  - More efficient despatch
  - A clear reference price for the price the marginal unit of balancing energy to act as an incentive on balancing service providers

European Target Model interactions

PAC pricing for balancing energy

- harmonisation of the pricing method for balancing energy products; a process to define, review and change the common pricing method
- the initial proposal shall be based on marginal pricing (pay-as-cleared), unless TSOs ...demonstrat[e] that a different pricing method is more efficient.

CMO

- exchanges of balancing energy are to be based on a TSO-TSO model with common merit order list.
- TSOs share their balancing resources Access of balancing bids and offers shall be non-discriminatory, fair, objective and transparent.

Standard balancing products

- standardisation of balancing energy and balancing reserve products used to balance the system. [other products can be used if necessary and these should not distort competition]

Interactions with other scope considerations

- Cash-out calculation
  - Pay-as-clear pricing in the Balancing Mechanism may need to be consistent with a marginal, single cash-out price – otherwise parties could receive more from spilling than by offering balancing services.

- Payments for non-costed actions
  - Impact of the marginal action being VoLL or other demand control action?

- Balancing Energy Market
  - Would create a separate energy balancing market, allowing a single clearing price

Questions

An energy balancing product

- Does a homogenous energy balancing product exist?
- Could cash-out flagging and tagging mechanism be used to define an energy balancing product for balancing services?
- Would a Price Average Reference (PAR) be appropriate for a clearing price?
- What would the impact of having pay-as-clear for some actions, and pay-as-bid for other actions in the balancing mechanism be?

Levels of competition

- Does market power remain a concern?

Inefficient despatch

- Can a marginal plant be defined in the balancing mechanism?
- Do participants bid in order to capture this marginal price?
- Could pay-as-clear pricing lead to benefits in terms of efficient despatch, and participation of smaller parties?

Interactions with other scope considerations

- Are there any other interactions that we should consider?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