

## The Need for Balance in NETA Imbalance Pricing

In this feature, I would like to provide a brief perspective on the NETA imbalance pricing mechanism, especially on the dual weighted average imbalance price setting methodology, which is timely given recent Ofgem and Government initiatives to look at the problems besetting small generators, as well as consolidation and demand side issues. I do not argue from the point of view of any market participant or class of market participants but rather provide a comparison against the initial market design objectives that were set. I conclude that we need a much more open mind on the strengths and weaknesses of the current pricing rules and on possible enhancements. As an industry we also need a much more **cohesive** governance arrangement that enables an **orderly** review, development and change management process for the rules.

### Market Design Objectives

Electricity market design objectives typically include:

- achieving economic efficiency
- delivering cost reflectivity
- facilitating liquidity
- enabling transparency
- providing timely information.

If you look at the relevant papers from the Development and Implementation Steering Group (DISG),<sup>1</sup> all these objectives are there in one form or another. In fact the NETA designers went a bit further, and two supplementary principles were added, namely:

- prices should be derived from cost reflection; they should not be penal, and should not create any artificial tax; and
- prices in the central systems should approach those which bilateral trading would have achieved.

Ofgem, of course, by applying these objectives originally advocated use of a single weighted average price (SWAP). It was only later, in June 1999, that dual prices became the preferred mechanism in the July 1999 Proposals document<sup>2</sup>, which was confirmed by the October 1999 Ofgem/DTI Conclusions Document<sup>3</sup>. Discussion first of marginal versus average prices and then single versus dual prices became muddled by issues of tagging, rebidding and default pricing. Even at that stage, though, there was nothing absolute in Ofgem's language and it was clear at the time that it recognised there were pros and cons of different approaches. Looking back at the various discussion papers on price construction, the NETA programme seemed less concerned than it was subsequently to become about disincentivising Balancing Mechanism trading, though subsequently the designers focused on this matter virtually to the exclusion of other design issues. The driving force behind this change in 2000 was simple – a single price in a liquid Balancing

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<sup>1</sup> See especially *DISG 07/004*; available at [www.ofgem.gov.uk/elarch](http://www.ofgem.gov.uk/elarch).

<sup>2</sup> *The New Electricity Trading Arrangements*, Volume 1, Ofgem (July 1999).

<sup>3</sup> *NETA: Ofgem/DTI Conclusions Document*, (October 1999), page 7, Ofgem/DTI went on to note that three pricing options were discussed in the July report, and “there are strong arguments on both sides.”

Mechanism looked too like the Pool with all the anxieties that that gave rise to about generators abusing market power in organised markets. The answer was to eliminate a single price and create a strong financial incentive to contract forward.

Perhaps the most lucid account of the rationale behind the dual pricing mechanism was provided by Professor David Currie<sup>4</sup> in his 2000 Beesley lecture. Interestingly Currie noted “it may be difficult to judge the actual cost imposed by ... unpredictable supply but to assume that it is zero by adopting a single cash-out price would be even more arbitrary. He went on: “it is fair to say that the particular formula for determining the dual cash-out prices is somewhat arbitrary, and can be criticised and probably impaired in the light of experience.” Again “it may be possible to improve on the formula over time to get it to reflect better the true costs that are imposed on the system, and this development should be encouraged.” He also emphasised the second best nature of some of the detailed design issues but felt there would be ample opportunity to work towards first best solutions after Go-Live. It is also worth noting that the initial proposal for dual weighted prices from Accord Energy<sup>5</sup> included a tolerance band, but this feature was subsequently lost. Despite these caveats, Ofgem has shown rigorous attachment to the principle of dual weighted pricing, and it has doggedly defended its application in a manner that aligns with its October 1999 conclusions.

### **Comment on NETA**

Looking back at the market design objectives that were set at the start of the NETA process, I would make two points.

First, at some stage – it is not clear precisely when – the process became fixated on one objective at the expense of others, and some principles became more equal than others. Interestingly the term “economic efficiency” does not appear in either the evaluation or the conclusions to the relevant DISG decision papers. By contrast, cost reflectivity – that is, ensuring costs fall where they should, thereby achieving correct incentives for reliability - has recurred as the primary (and often the only) objective throughout the design process. Consequently, the starting point of imbalance price construction was the recognition that the factors (and causers) of imbalance prices differed for energy and system actions taken by the system operator (SO), and a methodology was developed by NGC to “tag” trades that arose from system effects to eliminate them from the energy imbalance price.

With the benefit we now have of nearly a year’s data under NETA, the reality is that the allocation process applied by NGC for separating out system and energy imbalance prices is an art not a science (which is why it cannot be proceduralised). Dealing with transmission constraints outside of the Balancing Mechanism, as Ofgem would like to do as part of its transmission access proposals, will not materially help either as many constraints only become apparent after Gate Closure. Moving Gate Closure to an hour ahead from three and a half hours ahead, as Ofgem has also stated it believes is the right

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<sup>4</sup> *The New Electricity Trading Arrangements in England and Wales: A Review*, Professor David Currie (10 October 2000). Currie was a special advisor to Offer on BETTA as it was then called, then became a member of the Ofgem Management Board.

<sup>5</sup> “There would still be scope to include an imbalance tolerance band, to the effect that a market participant out of balance by more than a small specified percentage of its contracted quantities would be cashed out at, for example, the volume weighted average of the system buy and sell prices”

development route, might reduce the size of the allocation problem but it will not impact on the application of the methodology and the need to fine tune it.

More fundamentally, with half hour balancing, the electricity industry here is well short anyway of arrangements that would permit true cost reflective energy pricing. Some electricity systems are evolving towards 10 or five minute despatch, but there is no momentum for such changes in England and Wales. Half hour settlement then immediately imposes limitations on the accuracy and therefore efficiency of the pricing rules. It is more or less possible for many parties to have a contractual and physical position that is in balance over an integrated half hour, but for NGC still to incur significant costs in balancing the system within that half hour. Those who are not in balance over the integrated half hour are thus exposed to the costs of other parties who create the need for imbalance action by NGC within the half hour but who can avoid imbalance charges. Furthermore, parties can and do incur penalties by exposure to an unfavourable cash-out price though at the time their imbalances actually contribute to achieving energy balance, which is inefficient as well as unfair. It is clear that dual weighted pricing loads costs, which is not the same as being cost reflective. In these circumstances it would seem essential that a better understanding is achieved of the different causal factors driving imbalance quantities both within and between half hours, with urgent consideration being directed at unbundling what are a diverse ragbag of diverse costs.

My comments should not be taken to mean that there is anything inherently wrong with targeting costs on the causer. But such rules need to be applied fairly and take into account the physical reality of the electricity system. Pricing rules also need to be applied consistently. In this context, it seems particularly inequitable that no attempt has been made under NETA as yet to target costs of network failure. In fact, energy participants can be placed in imbalance in circumstances over which they have no control because of circuit unavailability. Performance incentives on network providers also remain very weak in the UK by comparison with other electricity markets, which is a further inconsistency within the new market design.

As for liquidity, dual imbalance pricing has actively discouraged trading in the Balancing Mechanism. The size of the spread and the unpredictability of the imbalance prices have actively discouraged participants from exposure to imbalance settlement. The cost minimising approach is to maintain a long position, that is, to over contract.

The incentives are further complicated by the existence of the so-called beer fund. The beer fund arises as a systematic feature of the dual pricing of energy imbalances, and typically gives rise to a cash surplus, which is recycled according to each participant's metered quantities. The size of the beer fund has also attracted comment. Again picking up David Currie's remarks before market start, he noted "it is not the intention for a mountain of cash to arise from the spread between the two prices; and if there were indications that the spread was too great in practice, then the formula should be adjusted."<sup>6</sup>

Is the spread too wide? Well, given the fact that the pricing methodology loads costs especially for system buy prices, the answer must be "yes". Ofgem in recent documents

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<sup>6</sup> Beesley Lecture, 10 October 2000, page 7.  
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draws some comfort from the observation that there has been convergence of system prices since Go-Live. Such trends need to be kept firmly in context. Even if average daily figures are taken - thereby eliminating within-day volatility which is still immense for SBP – SBP has been trading on average at about £40/MWh, more than twice the typical wholesale price. As for SSP this seems to be setting at around half the baseload price at about £10/MWh. Contrast this position with the debates in 1998 when some participants felt that applying a discount/premia of  $\pm 10\%$  to SWAP might be vulnerable to challenge on the grounds it constituted penal pricing.

Transparency and simplicity have not really had a look in either. The operations of the central systems are far from transparent to players with limited resource, and they are certainly not simple. Transaction costs and compliance costs can also be significant and disproportionately impact on small participants. Ofgem needs to be more attuned to the possibility and risks of creating barriers to entry in a market that is widely regarded as already advantaging portfolio and integrated players.

The last objective is timeliness. Indicative imbalance settlement prices are produced shortly after real time, but they have regularly proved inaccurate. The combination of this inaccuracy and price volatility and unpredictability means that indicative prices cannot be relied upon for trading purposes. Until we have timely and reliable prices (amongst other things), there will be **no** meaningful scope for the demand side to come in. And without the demand side many of the dynamic benefits expected of NETA will not materialise. Imbalance prices will also remain more volatile and peaky than they would otherwise have been.

The second point is that comparable markets – there are not many - have taken the same objectives and interpreted them differently. France, which has a small residual pool operated by RTE, discovers a single price but applies a simple 10% plus or minus differential to RTE's aggregated balancing costs. In Norway, the regulating market pays energy providers a marginal price and recovers the cash through a single, simple hourly imbalance price. The French market of course post – dates NETA, but Norway has been operational for a decade and the regulating market has gone through several evolutions. Market solutions obviously need to be tailored, but we should strive for a better understanding of market development in jurisdictions tackling similar problems.

### **Importance of Governance**

Timing pressures were of course immense in implementing NETA and emphasis was rightly placed throughout the process on the merits of flexible governance as a safety valve. Professor Currie in his October 2000 remarks placed great emphasis on this mechanism to enable evolution of a more efficient market.

A number of modifications proposals already introduced have been driven by largely practical considerations, to remove undesirable or extreme effects in the detail of the pricing mechanism and this is to be welcomed given some of their demonstrable perverse effects. Obvious examples are Modifications P3<sup>7</sup>, P8<sup>8</sup>, P10,<sup>9</sup> and P18A.<sup>10</sup> However, we

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<sup>7</sup> P3 Correlation of Price Spikes Generated by De-minimus NGC Purchase. The proposal was rejected by the Authority, but an interim solution was implemented via a change to NGC's BSAD methodology.  
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remain a long way from having identified an enduring pricing mechanism that meets the objectives set. Even with continued evolution and further piecemeal modification, the fundamental nature of dual weighted pricing will remain.

If I had a criticism about the changes to pricing rules since Go-Live it is that the modification process is ad hoc and disjointed. Change can only be discussed at present in a limited context, in response, to a formal modification proposal. Furthermore, modification proposals have to be pushed down to different working groups. While the groups tend to comprise the same people, this approach falls well short of a development process specifically focused to consider evolution of the pricing mechanism within an holistic framework, which is what the BSC seems to need. P28, which concerns committees established by the Panel, would introduce some enhancements but even then the BSC will not have a specially constituted development group, which would seem is essential. I also believe that we need some mechanism to bridge the gap between parallel governance structures. Some elements of pricing are outside of the jurisdiction of the BSC altogether and are governed under the Transmission Licence, and the Panel has no locus over these. This position is obviously undesirable and needs rectifying.

## **Conclusion**

To conclude and to quote Ofgem “there is no unambiguously correct way of setting imbalance prices.”<sup>11</sup> What is needed is a much more responsive attitude about how recognised problems can be fixed. The obvious starting point must be objective **consideration** of enhancements to dual cash-out prices including proper evaluation of SWAP, as has already been (half) suggested by Stephen Littlechild,<sup>12</sup> and the various different mechanisms for achieving price discovery. This suggestion should not be taken to mean that a single price is necessarily better than dual prices, but the issue is a complex one that needs more properly airing. NETA governance also needs to be flexed so that there can be an overall assessment across **all** parts of the pricing process whilst moving away from piecemeal modification and split jurisdictions that is already increasing perceptions of regulatory risk in the market.

In the consideration of pricing rules that are at the heart of the market design, we need open discussion and objective evaluation, not closed minds and dogma.

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<sup>8</sup> P8 Introduction of a Price Adjusted Option Fees for Balancing Services Contracts in Setting System Prices. The proposal was approved by the Authority on 24 September, and implemented the following day.

<sup>9</sup> P10 Eliminating Imbalance Price Spikes Caused by Truncating Effects, implemented on 23 August 2001.

<sup>10</sup> P18A Removing/Mitigating the Effect of System Balance Action in the Imbalance Price Calculations.

This proposal was approved by the Authority on 21 August.

<sup>11</sup> October Conclusions Document, page 7.

<sup>12</sup> Beesley Lecture, October 2001.