

10. Wholesale market

SUMMARY

‘The wholesale market no longer provides clear signals for investment’

There was widespread agreement among respondents that the current wholesale market no longer provided adequate signals for investment in new plant. While the wholesale market has traditionally provided investment signals (based on the price of electricity), a number of respondents commented on the increasingly important role of Government in determining investment.

Given the urgent need for investment in the sector, it is clear the role of the wholesale market going forward needs to be carefully reviewed. There was general agreement among respondents that, in the long-term, market signals should determine how investment is allocated, with technologies competing on a like-for-like basis (taking into account all system costs and benefits). Participants generally agreed reforms such as the capacity market and cash-out reform were appropriate regulatory interventions, but some argued, in the long-run, there should be a move towards effective carbon-pricing as the basis of investment in low-carbon generation.

Some respondents, however, believed reviving a fully market-led approach would be a significant challenge, and a range of views was expressed on how the market should be structured (in the long-term) in order to effectively provide the correct market signals for new investment. Although many agreed the capacity market was an appropriate intervention, a number argued the mechanism should be carefully reviewed in order to ensure there was a level playing field in capacity auctions for new and existing/refurbished plant. A number of players felt measures such as the supplemental balancing reserve (SBR) were ‘eating away’ at price signals, arguing it increased the cost of existing plant, leading to less plant on the system and aggravating the need to procure more SBR capacity (the “Slippery Slope” problem).

Some respondents also expressed concerns regarding wholesale market liquidity, despite Ofgem’s secure and promote reforms, and some raised concerns regarding the potentially increasing volatility in the wholesale market as a result of tightening capacity margins.

10.1 Interview responses

Of those who addressed the question, respondents almost unanimously agreed the wholesale market is not sending the right market signals to incentivise new investment.

Several themes emerged from respondents on wholesale prices:

1. The ‘missing money’ problem
2. The role of the supplemental balancing reserve (SBR) and the capacity market (CM); and
3. Liquidity in wholesale markets.

Beyond these themes, however, consensus was light with regard to the role of the wholesale market going forward and market reforms. Respondents held differing views as to what would ‘fix’ the market and there was some concern on whether (given the current level of regulatory intervention in the market), a wholesale market could ever provide adequate price signals for investment in new plant. Energy UK therefore strongly encourages Government to engage with industry and consult on its long-term vision for the structure of the electricity market. Some of these issues are discussed further in chapter 3, Stability and Predictability.

Interviewees expressed views such as:

“Too many interventions by DECC and National Grid (such as SBR) have destroyed the ability for the wholesale market to give the right price signals.”

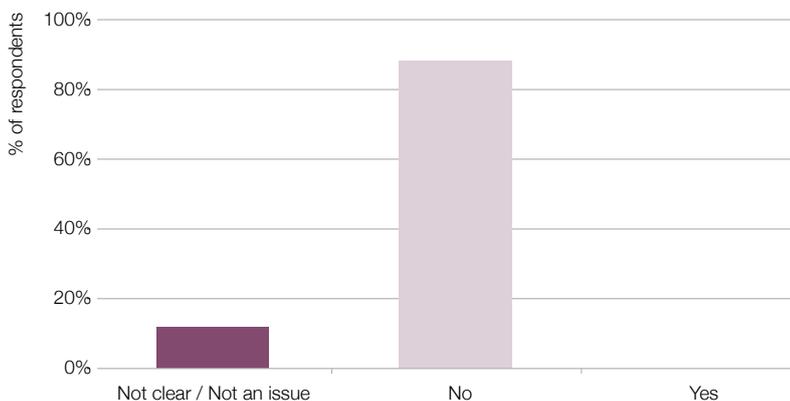
“The [wholesale] market is already broken.”

“The wholesale market is unable to give a reliable long term price signal. It is not liquid and deep enough (such as the oil market).”

“There is an issue in not having long-term liquidity. If a long-term forward power price was clear and had liquidity, there would be less need for a capacity market, but until then some kind of mechanism will be required.”

“The capacity market demonstrates the Government’s acceptance of wholesale market failure, i.e. the missing money. Some parts of Government believe the capacity market is only a temporary measure, but it is not likely the wholesale market could function without it.”

Figure 51: Is the wholesale market providing clear signals for investment?



10.2 Analysis

10.2.1 The 'missing money' problem and SBR

Some respondents felt that the SBR mechanism was resulting in the erosion of the price signals in wholesale markets and compounding the 'missing money' problem, i.e. the price signals required to cover the large capital investment required for new generation capacity⁷⁶.

The supplemental balancing reserve (SBR) is a mechanism for ensuring security of supply in the interim period before the capacity mechanism begins. It is a strategic mechanism that incentivises additional capacity over and above that already available in the electricity or balancing markets, i.e. plants that would otherwise be closed or mothballed. By providing payments to plant that would not otherwise be available outside of the market, wholesale prices will cease to adequately reflect the scarcity rent, leading to an overall wholesale price fall.

The other mechanism for addressing the missing money problem is the capacity market. This is a market-wide mechanism introduced by Government, through which the system operator is able to procure the necessary volume required to meet the loss of load expectation requirement. This means all plant with a capacity agreement are equally compensated. Many interviewees felt the capacity market was a necessary intervention, but would need to be amended in order to get significant new gas built.

However, with the first auction round clearing at £19.40/kW⁷³, the price was considered by many to be too low to bring on new CCGTs. Many respondents felt there is a need to continue to push new build CCGT, but changes would be needed to bring this about on a large scale through this mechanism⁷⁴. Many respondents suggested diesel generation should not be eligible for capacity payments in addition to triad avoidance payments.

Ofgem has also implemented reforms to imbalance pricing ('cashout') to ensure the arrangements reflect the cost of system balancing undertaken by the system operator and the cost to consumers of system imbalances (value of loss load, or VoLL). These reforms have included pricing of VoLL at £3,000/MWh, a single cashout price based on the average cost of the 50 most expensive actions taken by the system operator (i.e.

PAR50 vs. the previous PAR500) and introduction of a reserve scarcity price.

Energy UK supports the principles behind changes to cashout, as efficient balancing is in the interests of consumers and the reliability of the system. The changes should ensure that flexibility is better valued in the Balancing Market, which benefits flexible generation and demand side response, including storage, to the extent that they have access to the Balancing Market. The new cashout arrangements have, however, also introduced new risks to market participants, particularly those more at risk of being out of balance. It is therefore important that the cashout changes are monitored closely and the impact properly understood before making any further changes.

The recent notification of inadequate system margin (NISM) announced by National Grid has also drawn significant public attention. During the NISM, several media reports described large spikes in the wholesale price and expensive actions taken by National Grid to balance the system. However, it is important that Ofgem and Government are able to explain to the media and the wider public that NISMs and scarcity pricing are part of a functional wholesale market, providing the market signals for investment in flexibility and reliability. (Although it is worth noting that NISMs have been occurring less frequently than in the past and the cost should be considered in comparison with other reserve mechanisms such as DSBR and SBR.)

10.2.2 Liquidity in wholesale markets

Despite Ofgem's secure and promote reforms, liquidity in wholesale markets (often referred to as a key driver of efficiency, competition and investment signals) was viewed by several respondents as being "insufficient" and "dysfunctional". Views centred on both spot and forward liquidity though the ideas for rectifying this were quite varied. Despite its investigation into the energy market, the CMA has not found sufficient concern regarding liquidity⁷⁵, several interviewees raised this as a concern and questioned whether the current suite of measures could address the issue.

Some respondents felt a variety of barriers to entry remained and would continue to create challenges for smaller players

⁷³ Interviews were held before the second Capacity Auction. The second auction round cleared at a price of £18.00/kW which was lower than the first auction round.

⁷⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/389832/Provisional_Results_Report-Amendment.pdf

⁷⁵ CMA, Energy Market Investigation, Liquidity Working Paper, <https://assets.digital.cabinet-office.gov.uk/media/5503051540f0b613e9000001/Liquidity.pdf>

⁷⁶ The 'missing money' problem is where potential revenues in the energy-only market are insufficient to incentivise the required level of investment in capacity. This arises from a variety of factors. These can include the absence of expectation of scarcity rents as investors anticipate that authorities would preclude parties from earning such rents and the fact that electricity prices may not reflect the true cost of system balancing actions when scarcity exists.

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trying to enter the market (meaning entry routes were often restricted to striking power purchase agreements (PPAs) with larger suppliers). These were centred on:

- The non-availability of exchange based products was viewed as both inefficient (by reference to Europe where multiple exchanges (EEX, ICE etc.) all facilitate trades down to 1 MWh;
- High collateral requirements. A recent report commissioned by DECC found the average annual framework collateral in the UK power market is £4.2 billion with the costs of exchanges being a key;

To drive liquidity in a market, there are three types of participants required, generators, suppliers and traders. The number of players buying and selling capacity is increasing with the increase in small suppliers and independent power producers. However, the non-asset backed traders (e.g. banks) are reviewing their participation in the market due to changing financial regulation in the energy market (EMIR and MiFID), which has implications for market liquidity.

10.2.3 Impact of the decarbonisation agenda and low-marginal cost generation on the system

Increased penetration of low-marginal cost generation can have both positive and negative impacts on the system prices, ultimately resulting in both cost and benefits for consumers.

The widespread deployment of close to low-marginal cost generation can have an effect of lowering prices in the wholesale market – the so called ‘merit order effect’. GB wholesale electricity is priced at the highest marginal cost of generation needed to meet system demand. Hence an increase in low-marginal cost generation on the system that displaces the higher marginal cost generation will result in lower clearing prices in the wholesale market⁷⁷. Assuming emission targets are met by 2030, the CCC estimates⁷⁸ the merit order effect for additional low carbon generation in the 2020s to amount to £7/MWh and £20/MWh by 2025 and 2030 respectively. This implies a potential saving of £0.8 billion in 2025 and £1.2 billion in 2030. Experiences in the Irish electricity market, where savings from the increasing penetration of wind

generation has been said to have resulted in “significantly greater than the subsidy received for wind-generated electricity over this time period”⁷⁹, support the merit order effect theory.

Notwithstanding the impact of increasing low-marginal cost plant, the increase in DSR, smart meters and storage could also affect the merit order. This highlights the uncertainty going forward as to the scale of the impact. Additionally, as well as the merit order effect reducing price and operating hours of thermal generation units, thermal plant will be required to run less frequently and with better fuel efficiency in order to meet the UK’s decarbonisation objectives.

Reduced wholesale prices and lower operating hours can result in significant risks for generation units with higher marginal costs, and reduce the proposition for investment into new capacity, creating security of supply risks. Interventions such as the capacity market can address the missing money problem intrinsic to the wholesale market design, and partly address the distortions created by a decarbonised agenda and low-marginal cost plant (as discussed above), in order to encourage investment in higher marginal cost plant. The wholesale market is discussed in more detail in chapter 10.

The challenge of focusing solely on reduction in subsidies, in line with reducing technology costs, is that low-marginal cost plant will continue to reduce wholesale prices due to the merit order effect. Making the case for further investment even more difficult.

Alongside industry, the Government should undertake a review of the future market arrangements. It is clear EMR provides the foundations for the right framework to drive investment but it is necessary to look beyond this to consider how to manage a world of increased low marginal cost plants, coupled with a higher amount of distributed generation and the increased need for system flexibility, while ensuring the viability and continued investment in any thermal generation required.

⁷⁷ The merit order is the supply curve for the wholesale electricity market with the different generation units arranged in order of increasing marginal cost.

⁷⁸ CCC, Power sector scenarios for the fifth carbon budget, October 2015

⁷⁹ Amy O’Mahoney, Eleanor Deny, 2011, “The Merit Order Effect of Wind Generation in the Irish Electricity Market.”

