Understanding the Capacity Market

The Capacity Market

What is the Capacity Market?

The Capacity Market is a mechanism introduced by the Government to ensure that electricity supply continues to meet demand as more volatile and unpredictable renewable generation plants come on stream. Commencing in 2018, it will ensure there is sufficient generation or load-management capacity in the system to cope with times of stress on the network when, for example, the wind stops blowing or there is a surge in demand.

The objective of the Capacity Market is to achieve long-term security of supply. The Capacity Market was proposed following the Government's comprehensive review of the electricity market. Along with Contracts for Difference, Carbon Price Floor and Electricity Demand Reduction, it will reform the UK electricity market to deliver low-carbon energy and reliable supply, while minimising the cost to consumers.

The Capacity Market will operate alongside the current Energy Market, supported by the Balancing Services Market. As more intermittent renewable generation technologies come on stream, the Capacity Market will provide back-up generators and demand-side responders to help balance the network at times of stress.

Participants will be paid a per MW rate for the capacity they offer to the market. This capacity needs to be available when providers are called upon by National Grid at any time during the contracted period.

Energy Markets Explained

The Energy Market

The UK Energy Market is where generators sell electricity (£/MWh) to suppliers for particular periods of time. Most participants in the energy market earn the majority of their revenues here. This mechanism allows for both generators and suppliers to hedge their price risk. It determines which providers are dispatched at any one time, and the direction of flow over the interconnectors.

The Capacity Market

Within the Capacity Market, National Grid will buy capacity (£/kW/yr) ahead of delivery, to ensure there is sufficient investment in the development of new generation to meet ongoing reliability standards. Sufficient capacity is guaranteed by Capacity Market agreement holders at periods of system stress. Providers can rely upon a fixed income to cover some of the investment costs not recoverable through the energy market.

The Balancing Services Market

The ancillary (balancing) services market will continue to operate alongside both of the above mechanisms. Here, National Grid pays participants for the option to buy energy at an agreed price, helping National Grid in its obligation to keep the network in balance. Participants can be called on to provide generation or load-management capacity outside of stress events.

What is the Capacity Market?

The Capacity Market is needed to encourage sufficient investment in reliable capacity (both supply and demand side) to secure future supplies of electricity. It offsets the risk of the UK's increasing reliance on unpredictable wind generation. By offering fixed monthly payments to generators it provides valuable assured revenue for investors in any new generation plant. It also incentivises demand-side responders to make capacity available when it is needed most.

How will it work?

Potential Capacity Market participants can bid for contracts in auctions held four years ahead of the delivery date. (Pre-qualification for the first auction in December 2014 has now closed. Successful contracts in the December auction will receive a Capacity Market agreement for delivery commencing 1st October 2018).

Supplementary auctions will be held a year ahead of delivery, with the intention of capturing capacity from demand-side responders, and to allow any secondary trading of capacity obligations secured in the first round. The auction for delivery commencing 1st October 2019 will be held in 2015. Those wishing to participate will need to pre-qualify ahead of the 2015 auction, if they have not already pre-qualified in 2014. Interconnector capacity will be able to participate in the 2015 auction, while T-1 auctions will also be held, allowing bidders of demand side response capacity to participate in Capacity Auctions for delivery within the Transitional Arrangements (delivery to commence 1st October 2016).

The auctions will follow a descending clock format, starting with offers of £75/kW and gradually reducing until the minimum price is reached at which the supply of capacity offered by bidders is equal to the volume required. If successful at auction, existing generators and demand-side responders will be offered one-year capacity agreements at the clearing price. Longer term agreements (15 years) are available for new plant, to encourage investment in new generation assets, and three-year agreements are available for refurbished plant.

During the delivery year, capacity providers will receive monthly payments for their agreed obligation at the auction clearing price. Providers are expected to be available to respond with their agreed generation volumes or load reductions when called on by National Grid at times of system stress.

Who can participate?

New and existing generators

Generators that are not currently supported by other low-carbon incentive schemes, or participating in a long-term STOR contract, can bid to participate in the Capacity Market. Generators with existing long-term STOR contracts wishing to participate in the Capacity Market must provide a withdrawal declaration, prior to the close of the prequalification window.

Embedded generators

Organisations with on-site generation plant may participate. By increasing the volume they take from their own plant, when requested, they can produce a net demand reduction on the network.

Combined heat and power (CHP)

CHP plants either connected to the transmission network or embedded on site may participate.

Demand side responders (DSR)

Organisations that can reduce their demand when requested to provide extra capacity on the network. DSRs can bid to participate either in the four year ahead auction, or on a year-ahead basis. Volumes will be ring-fenced for DSR participation in the year-ahead auction.

Electricity storage

Stored capacity that can respond instantaneously to a request from National Grid may be used to boost capacity on the network.

Interconnectors

Interconnectors from the Continent can participate in the scheme from 2019, with the first auctions in 2015.

Transitional arrangements for demand-side responders

Transitional arrangements have been put in place for the interim period (until the Capacity Market opens in 2018) to ensure that demand-side capabilities are fully exploited – and to encourage more DSRs to participate. Auctions for the transitional arrangements will be held in 2015 and 2016 for the delivery years 2016/17 and 2017/18.

Participants can bid their on-site generation or demand-reduction capacity into these arrangements, provided they do not already have a Capacity Agreement. Both proven (e.g. participants who can demonstrate previous operation of TRIAD avoidance, or the provision of Short Term Operating Reserve) and unproven demand side responders can participate. However, unproven DSR capacity providers will need to submit a bid bond, which will only be returned subject to successful tests. There will also be an option for DSR providers to offer a 'time-banded' service; meaning they will only be called upon during pre-determined windows.

Capacity Market warnings

To notify providers that they will be required to deliver the agreed capacity, a 'Capacity Market Warning' will be issued by National Grid through the Capacity Market Portal. The warning will include information on:

- The start time of the warning – usually four hours ahead of the required delivery time
- The circumstances that triggered the warning
- The settlement period for which the warning is applicable when the provider is expected to deliver
- The percentage of their total obligation that providers will be required to deliver

The delivery expectations will be based on:

- System demand.
- Aggregate capacity that committed Capacity Market participants are likely to deliver
- Aggregate capacity that non-committed participants are likely to deliver during the settlement period

Penalties

Failure to deliver the load obligation during system stress events will result in penalties. These will be charged at a £/MWh rate that is 1/24th of the providers' annual income from the Capacity Market.

Over-delivery

Participants that over-deliver in times of system stress (and notify National Grid of this intent) will receive over-delivery payments, but only if other units fail to respond and are charged penalties.

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