

Report to Secretary of State Adjustment to Demand Curve

2020 Year-Ahead Capacity Auction for 2021/22

21 January 2021

T-1 auction
2021/22 Delivery Year

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Report to Secretary of State on Amendments to the T-1 Demand Curve

Background

The Electricity Capacity Regulations 2014 (“the Regulations”) and the Capacity Market Rules 2014 (“the Rules”), both as amended, oblige National Grid Electricity System Operator Limited in its role as Delivery Body to publish Auction Guidelines. This document has been prepared to discharge that obligation.

Capitalised terms used in this report shall have the meanings given in the Rules and references to a Rule are to a rule within the Rules.

In accordance with the specific requirements in the Regulations and the Rules, this document sets out:

- The aggregate de-rated capacity of Capacity Market Units (CMUs) which have prequalified to bid in the Capacity Auction
- The aggregate de-rated capacity of CMUs of which applications were rejected
- The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will be closed down, decommissioned or otherwise non-operational by the commencement of the delivery year
- The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will be temporarily non-operational for all the winter of the delivery year but will be operational thereafter
- The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will remain operational during the delivery year
- Whether an adjustment is required to the Demand Curve in light of Prequalification Results
- A recommendation as to the adjustment to the Demand Curve.

Prequalification Results

Volume of Prequalified Capacity Market Units

The aggregate de-rated capacity of Capacity Market Units (CMUs) that have Prequalified to bid in the Capacity Auction is 4,243 MW.

Volume of Conditionally Prequalified Capacity Market Units

The aggregate de-rated capacity of Capacity Market Units (CMUs) that have Conditionally Prequalified to bid in the Capacity Auction is 161 MW.

Volume of Capacity Market Units of which the Applications Did Not Prequalify

The aggregate de-rated capacity of CMUs that have Not Prequalified to bid in the Capacity Auction is 50 MW.

Volume of Capacity Market Units of which the Applications were rejected

The aggregate de-rated capacity of CMUs of which applications were rejected is 216 MW.

CMUs that submitted Opt-Out Notifications

Opt-Out: Non-Operational

The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will be closed down, decommissioned or otherwise non-operational by the commencement of the delivery year is 4,686 MW.

Opt-Out: Temporarily Non-Operational

The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will be temporarily non-operational for all the winter of the delivery year but will be operational thereafter is 0 MW.

Opt-Out: Operational

The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will remain operational during the delivery year is 8 MW.

Update to the Demand Curve

COVID-19 Adjustments to Base Case ACS Peak Demand

As described in the 2020 Electricity Capacity Report (ECR), the demand and supply assumptions used to inform our recommendations in the ECR did not consider any potential impact from the COVID-19 pandemic. This is because our assumptions had already been largely finalised when the potential impact from the pandemic arose and even if we had been able to revise them, this would not have been based on any robust evidence as we were still in the early stages of the pandemic.

Since then, in line with the timeline set out in the ECR, we have reviewed the potential impacts of the COVID-19 pandemic on our assumptions. This work was carried out in summer 2020 and discussed with BEIS, Ofgem and the PTE in October 2020. A document summarising the analysis and potential range of impacts will be published on the Delivery Body website¹ at the same time as this report.

This COVID-19 impact document describes three potential COVID-19 peak demand suppression scenarios. These indicated potential demand suppressions of 3%, 6% or 11% in 2021/22 (as well as the possibility of peak demand returning to pre-COVID levels by 2021/22). Given the significant uncertainty and the fact that there is no further opportunity to secure capacity after the T-1 auction, we have assumed the lowest reduction (3%) in peak demand out of the potential scenarios is applied to the Base Case, scenarios and sensitivities in 2021/22 leading to a reduction of 1,600 to 1,800 MW depending on scenario / sensitivity, with a 1,700 MW reduction for the Base Case.

We have observed that during the period closest to 'normal' over winter 2020/21 (immediately after the end of the second English lockdown at the beginning of December and before the introduction of tougher restrictions later in December), that daily peak national demands on weekdays were just under 3% lower than pre-COVID estimates on average². This supports the 3% reduction in peak demand for 2021/22 compared to the ECR assumptions for 2021/22 (assuming that underlying demand reduces in line with national demand).

As such, we recommend a reduction to the Demand Curve target of 1,700 MW relating to Base Case ACS peak underlying demand.

COVID-19 Adjustments to Base Case Supply Assumptions

This COVID-19 impact document reviewed the potential impact on the Base Case supply assumptions for 2021/22 and concluded that there was insufficient evidence to change those assumptions beyond the changes set out in the sections below. Therefore, we recommend no change to the demand curve for this adjustment.

Adjustment to interconnection EFC

As mentioned in the ECR, our modelling assumed a contribution from interconnectors that were around 2,000 MW less than agreements previously awarded in the 2021/22 T-4 auction (depending on scenario). This was due to the new approach used to model interconnector de rating factors and that the interconnection distributions in the ECR were not updated this year. Given the negative capacity requirement for 2021/22 in the ECR, this had no bearing on the ECR recommendation given but needs to be considered as part of this Demand Curve adjustment.

We have compared the outputs from the existing interconnector analysis carried out in April / May with previous CM agreements considering any new information on Europe. Following this analysis,

¹ <https://www.emrdeliverybody.com/cm/home.aspx>

² <https://data.nationalgrideso.com/plans-reports-analysis/covid-19-preparedness-materials>

we believe that interconnectors could be expected to deliver in line with their existing agreements in 2021/22.

As such, we recommend a reduction to the Demand Curve target of 2,000 MW relating to the Base Case interconnection EFC adjustment.

Adjustment to Least Worst Regret outcome

Given that the changes in peak demand assumptions and interconnection EFCs were slightly different across the scenarios and sensitivities modelled for the ECR, we have recalculated the Least Worst Regret (LWR) outcome for 2021/22 resulting in a slight increase of 100 MW in the outcome due to the change in sensitivity chosen by the LWR tool (1200 MW non-delivery sensitivity) compared to that chosen in the ECR analysis (high demand sensitivity).

As such, we recommend an increase to the Demand Curve target of 100 MW relating to the LWR outcome.

Opt-Out: Operational

The Demand Curve should be adjusted to reflect capacity that has elected to opt-out of the capacity market to ensure that consumers are not required to pay for capacity that will remain operational without a capacity agreement.

The aggregate de-rated capacity of Generating CMUs of which the Delivery Body received an Opt-out Notification stating that the CMU will remain operational during the delivery year is 8 MW, which is 0 MW (when rounded to the nearest 50 MW).

As such, we do not recommend an adjustment.

Embedded Generation adjustments including Long-Term STOR

Modelling work carried out to inform the Electricity Capacity Report and updated for new information received since then assumed that there was around 2,000 MW of existing embedded small scale de-rated capacity (outside of our generation backgrounds) including Demand Side Response (DSR) without a previous Capacity Obligation covering 2021/22 that is capable of meeting a Capacity Obligation for 2021/22.

This volume has been compared to the volume of small embedded Existing Generating CMUs, small embedded Refurbishing CMUs, Proven DSR CMUs and Unproven DSR CMUs in the CM register to test if any such capacity has implicitly opted-out from the Capacity Market.

The de-rated capacity of such CMUs, which have submitted a Prequalification Application for the T-1 Auction for 2021/22, is approximately 1,150 MW. It would, therefore, appear that most existing eligible small-scale capacity assumed by National Grid ESO has opted-in to the Capacity Market and is seeking a Capacity Agreement.

Of the remaining de-rated capacity (approximately 850 MW), we estimate that around 350 MW of capacity with long-term STOR contracts appears to have opted out of the capacity auction but is expected to be operational in 2021/22. For the other 500 MW of remaining capacity, there is insufficient evidence that provides confidence that we can rely on that this embedded capacity will be operational in 2021/22.

We therefore recommend that the demand curve target should be reduced by 350 MW to account for long-term STOR capacity estimated to have opted-out of the CM that is expected to be operational in 2021/22.

Adjustments to Autogeneration Capacity assumed to be outside of the CM

Modelling work carried out to inform the Electricity Capacity Report assumed around 700 MW of existing de-rated autogeneration capacity was outside of the Capacity Market.

Since then, our assumptions have been revised based on updated market intelligence. As such, it is recommended that the demand curve should be increased by around 150 MW to reflect the reduced volume of existing de-rated autogeneration capacity assumed to be outside of the Capacity Market.

Adjustment to Previously Contracted De-Rated Storage Capacity

There are no changes to the de-rating factors for storage capacity since the Electricity Capacity Report was published, therefore we recommend no change to the demand curve for this adjustment.

Adjustment to De-Rated Renewable Capacity assumed to be outside of the CM

There are no changes to the renewable capacity assumed to be outside of the CM since the Electricity Capacity Report was published, therefore we recommend no change to the demand curve for this adjustment.

Adjustment to capacity outside the CM due to plant with CM contracts not prequalified commissioning early and being operational

There are several plants, amounting to around 50 MW de-rated capacity, with new build CM contracts in later years that have commissioned early but haven't prequalified and are expected to be operational in 2021/22.

We recommend that the demand curve target should be reduced by 50 MW to account for this additional capacity outside of the CM.

Additional Known Non-Delivery since the 2020 ECR

The 2020 ECR used CM registers published in late Feb / early March 2020 to determine the non-delivery in the target year 2021/22. Since then, around 1,850 MW de-rated capacity in the 2021/22 T-4 register with agreements covering 2021/22 have been terminated.

As a result, we recommend an increase to the demand curve target of 1,850 MW to account for this additional known non-delivery.

Additional Large-Scale Capacity at risk of Non-Delivery for 2021/22

Based on updated market intelligence since the 2020 ECR, we have identified around 3,900 MW of additional large-scale capacity with CM agreements for 2021/22 in the 2021/22 T-4 register at risk of not being operational throughout winter 2021/22. This comprises capacity that has been on long-term outages, capacity that has announced it is to decommission during the 2021/22 delivery year, capacity for which the parent company is in administration, and new capacity that has announced that it will not commission until after winter 2021/22.

Given this significant non-delivery risk and the fact that there is no further opportunity to secure capacity after the T-1 auction, we recommend an increase of 3,900 MW to the demand curve target relating to this adjustment.

Additional risk for 2021/22 due to coal and biomass conversion unavailability

As of 21 January 2021, six Electricity Margin Notices (EMNs) have been issued to date during winter 2020/21 to encourage market actions to increase system margins - these EMNs were subsequently cancelled after the system margin increased. On the six periods covered by these EMNs, the average available capacity of coal and biomass conversion units was around 1,700 MW lower than the total de-rated capacity of coal and biomass conversion units operational in 2020/21. Based on this experience in winter 2020/21 and given that the biomass conversion units are expected to operate in 2021/22 and that all of the operational coal units have either secured CM agreements for 2021/22 or have prequalified for the 2021/22 T-1 auction, there is a significant risk (not accounted for in the de-rating factors) of coal and biomass conversion capacity being unavailable in winter 2021/22.

Given this significant additional availability risk and the fact that there is no further opportunity to secure capacity after the T-1 auction, we recommend an increase of 1,700 MW to the demand curve target relating to this adjustment.

If this coal and biomass conversion unavailability risk for winter 2021/22 does not materialise, this proposed adjustment of 1,700 MW would also cover the possibility of the Base Case ACS Peak Demand for 2021/22 returning to the pre-COVID forecast level rather than reducing by 1,700 MW as assumed in this report.

Minister's Adjustments to Demand Curve

In the 2020 Electricity Capacity (ECR), the outcome of the Least Worst Regret (LWR) calculation for 2021/22 T-1 auction was a capacity requirement of -1,200 MW. Since the LWR outcome was a negative capacity, we recommended a target of 0 MW for the 2021/22 T-1 auction.

Following the publication of the 2020 ECR, the Minister at BEIS decided to set an initial target of 400 MW to account for the uncertainty and potential risks from the ongoing COVID-19 pandemic; recent prolonged plant outages; and compliance with the long-standing commitment to set a target capacity for T-1 auctions, which is at least half the capacity that was set-aside when determining the target capacity for the T-4 auction for the same delivery year.

In this report, we have assumed that the starting point for any demand curve adjustments should be the LWR outcome of -1200 MW in the 2020 ECR rather than the initial target of 400 MW.

Conclusion

In light of the Prequalification Results and new or updated information, National Grid Electricity System Operator, as EMR Delivery Body, recommends that the Demand Curve for the T-1 auction is adjusted to reflect:

Demand Curve Adjustments	Adjustment (MW)
The COVID-19 reduction to Base Case ACS Peak Demand	-1,700
The reduction due to the adjustment to the Base Case interconnection EFC	-2,000
The increase resulting from a change in LWR outcome	+100
The adjustment to account for long-term (LT) STOR capacity that is estimated to have opted-out of the CM and is expected to be operational in 2021/22	-350
The volume of new build plant with CM contracts in future years that have commissioned early but haven't prequalified	-50
The reduced volume of existing de-rated autogeneration capacity assumed to be outside of the Capacity Market	+150
The additional known non-delivery for 2021/22 since the ECR assumptions were finalised	+1,850
The additional large-scale capacity with CM agreements for 2021/22 in the 2021/22 T-4 register at risk of not being operational throughout winter 2021/22	+3,900
The additional risk for 2021/22 due to coal and biomass conversion unavailability	+1,700
Net Adjustment	3,600

On the basis of this analysis, it is recommended that the LWR outcome for the T-1 Auction for Delivery Year 2021/22 should be increased by 3,600 MW (net) from -1,200 MW.

This results in an adjusted LWR outcome of 2,400 MW. As such, the Auction Parameters would be amended as shown in the following table with the minimum and maximum capacity to be decided (TBD) by the Minister:

Target capacity for T-1 2021/22 Capacity Auction	2,400 MW
Demand curve – minimum capacity at price cap	TBD MW
Demand curve – maximum capacity at £0/kW	TBD MW
Price cap	£75/kW/yr
Price Taker Threshold	£25/kW/yr
15-Year Agreement Threshold	N/A
3-Year Agreement Threshold	N/A