

Capacity Market

Implementation Coordination Workshop
October 2016





SCHEDULED FOR 2 HOURS – 10:30am to 12:30pm
WE HAVE A LOT TO GET THROUGH, BUT WE WILL TRY TO STICK TO THAT TIME
Just a reminder - PLEASE ENSURE YOUR PHONE IS ON MUTE

Housekeeping

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FIRE DRILLS / FIRE ASSEMBLY POINTS
BREAK TIMINGS THROUGHOUT DAY (Coffee / Lunch)
REST ROOMS

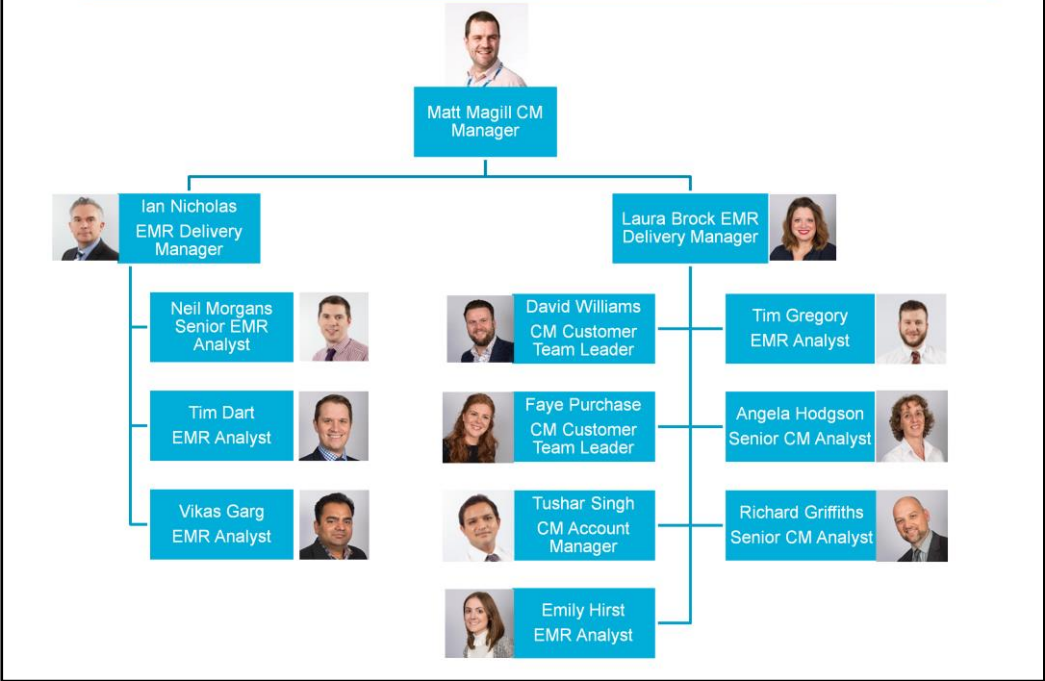
Welcome and Purpose of Today...

To provide an overview of this years prequalification
and set us up for upcoming auctions

- EMR process for the three 2016 Auctions
 - EMR CM - Open Letter, Ofgem
 - EMR Delivery Body and Applicants, Prequalification and Auction
 - EMR Delivery Body Systems – National Grid IS

Matt - Intro

Welcome



Agenda

Time	Topic	Who
09:00 - 10:00	Registration and Coffee	
10:00 – 10:15	Welcome, Agenda and Operational Timetable	Matt Magill
10:15 – 10:30	IS System update	Tom Kingston
10:30 – 10:45	Ofgem update	David O'Neill
10:45 – 11:15	Prequalification outcomes	David Williams Faye Purchase
11:15 – 11:30	Break	
11:30 – 11:40	Prequalification survey	David Williams
11:40 – 12:00	Agreement Management update	Tim Gregory Emily Hirst
12:00 - 12:20	Capacity Market Notices	David Preston
12:20 - 13:00	Lunch	
13:00 – 14:30	Auction Readiness	Ian Nicholas Nick Aked Kelly Freeman Neil Morgans
14:30 – 14:40	Wrap up and Q&A	Matt Magill
14:40 – 16:30	One to One Sessions	

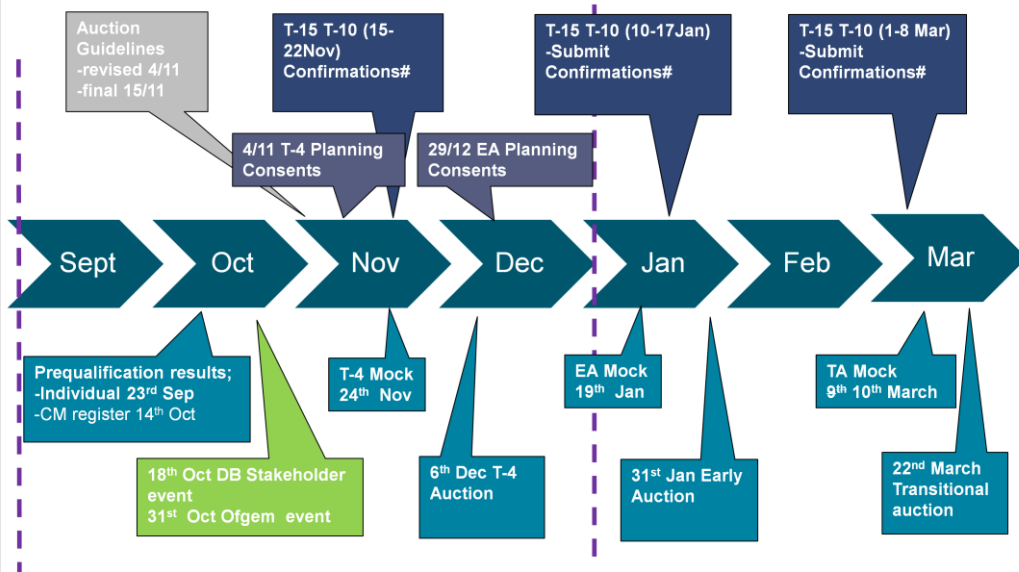
Agenda to

Capacity Market Operational Plan

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2016

2017



Existing price Maker/Taker; DSR size & IN/Out; New/Refurb IN/Out & length

Our survey says...

EMR Customer & Stakeholder survey

Thanks for your feedback...

- This score is a baseline for year on year improvement for Capacity Market
- The survey is split into areas focusing on our business's key interactions with our customers including all aspects of the CM process and service related questions
- Key themes are being developed and will feed into an ongoing improvement plan
- **We will conducting the 2016/17 survey in Spring and we'd really appreciate participation and ongoing feedback.**

**2015 / 16 overall
satisfaction**

7.46

Customer & Stakeholder satisfaction scores 2015 / 16

It is critical that National Grid, as the Electricity Market Reform Delivery Body, understand how our customers and stakeholders perceive our performance and that we meet expectations in carrying out our role and obligations.

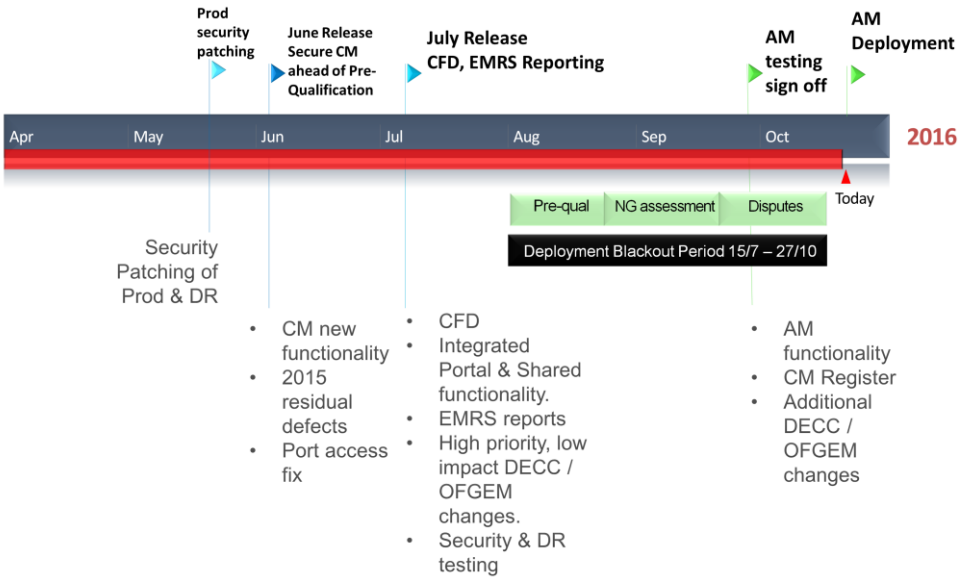


IS System Update
Tom Kingston

EMR Live Admin System Deployments

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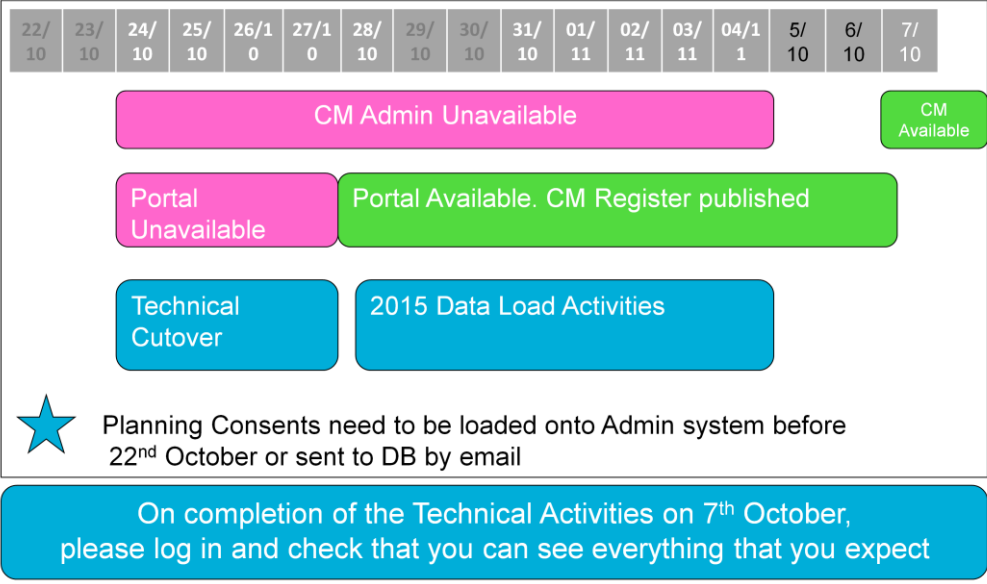
October Release

- The delivery of the Agreement Management (AM) functionality this October will enable the following within the Admin system:
 - Capacity Agreements and all facets of managing them
 - 6-monthly reporting, Financial Commitment Milestone, Substantial Commitment Milestone
 - Provision of deferred items (connection agreements etc.)
 - Secondary Trading
 - Satisfactory Performance monitoring
 - Termination
 - Capacity Market Register
 - Deliver the functionality to enable settlement reporting to EMRS
 - Delivery of high priority BEIS / Ofgem changes following this years consultations
 - The migration of the 2015 data into the Admin system ensure that there is a single version of the truth and enables TA Auction settlement reporting

Business & IS Activities
between 24th October to 7th November

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2016 System Improvements

- We have delivered to the IS plan that we published in February
- Fixed Port issue that saw some firewalls block the site
- “Look and feel” defects e.g. better Buttons, clearer descriptions
- Huge number of lower priority functional defects
- 2015 data in process of being moved from contingency system to CM Admin

Future IS

- 2016 Q4 A full Disaster Recovery Test
- 2017 Q1 Release to accommodate the DECC & OFGEM 'consultation changes' - 2016 rule and ref changes
- 2017 Q1 Portal design changes to improve usability across devices
- 2017 Q1 Additional data items included in EMRS reporting integration
- 2017 Q2 Data Migration of 2014 data into Admin System



Ofgem Update
David O'Neill

Today:

1. CM rule changes
2. CM disputes
3. CM: Ofgem's other roles

Questions

July 2016 consultation:

- **the definition of Mandatory CMUs** to ensure it no longer includes any types of 'excluded capacity' as defined by the Regulations
- **the LFCO formula** to ensure it scales obligations correctly during the first delivery year of the Transitional Arrangements.

Decision delayed as we work with delivery partners to ensure deliverability.

2017 round of changes:

- **stakeholder event on Monday 31 October**
- **deadline for proposals is Friday 11 November. We will:**
 - Focus on changes that are well-justified, meet the CM objectives, and are clearly beneficial
 - Consider system implications for NGET and ESC
- **three proposals received so far.** Early proposals very welcome.
 - RES Group – Including EFR as a Relevant Balancing Service
 - ENGIE – Two proposals (for different Delivery Years) relating to the testing regime - extending the required duration of a Satisfactory Performance Day

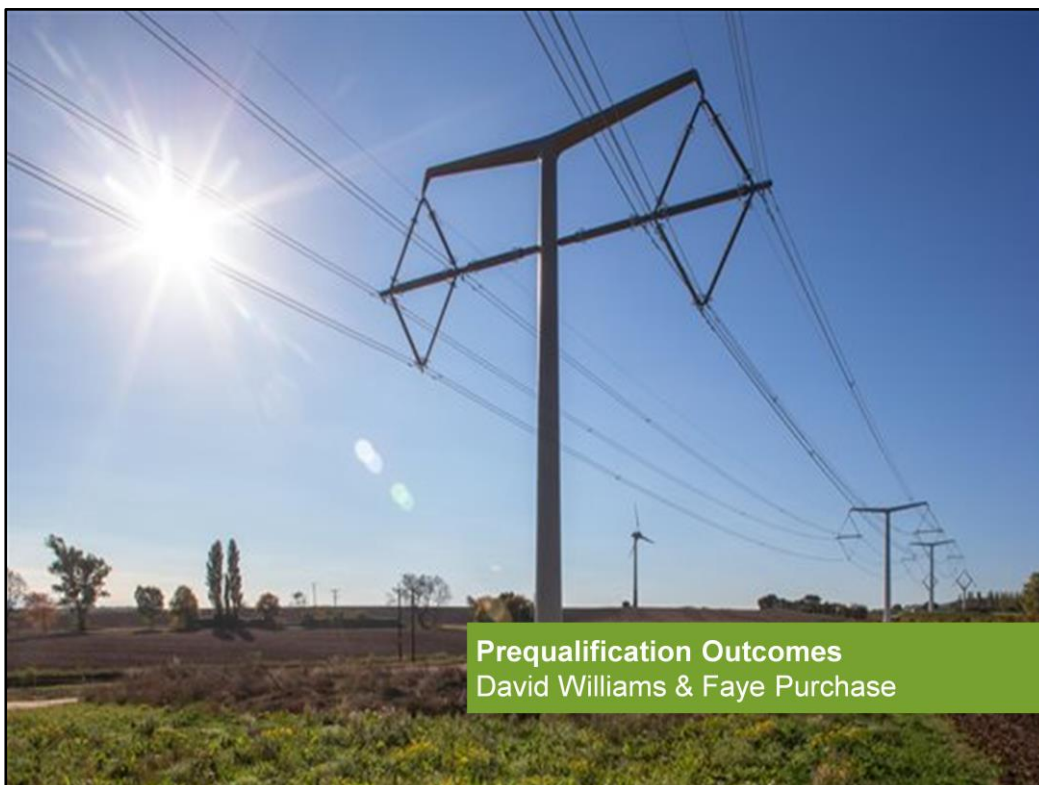
- How to apply: on our website.
- The application form: on our website.
- See also the Regs and Rules.

- Oversee and incentivise NGET in its role as delivery body
- Receiving Price Maker memorandums (process is on our [www](#))
- Monitoring and taking enforcement action
- Reporting on the operation of the CM and NGET's performance as delivery body (June)

Questions / Thank you

NGET CM event, 20/10/16

David O'Neill, Ofgem



- Increase of 5GW of CCGT plant from 2015 to 2016.
- Coal went from 13.7GW in 2014 to 6.4GW in 2015 to 8.5GW 2016 due to SBR plant.
- Additional 2.1GW storage this year, taking total to 4.8GW (incl. pump storage)
- Doubling of DSR from 2014 to 2GW in 2016.
- The number of units under 50MW has doubled from an average of 350 units in 2014 & 2015 to 800 units this year, 2016.
- Conditionally prequalified volumes moved from 1GW in 2015 to 16GW in 2016 as more prospective units have entered the market and have not provided the required information in order for them to prequalify.

Overview of Prequalification EA

71.60 ^{GW}

of prequalified
capacity
(includes conditionally PQ)

61.86 ^{GW}

of de-rated
capacity

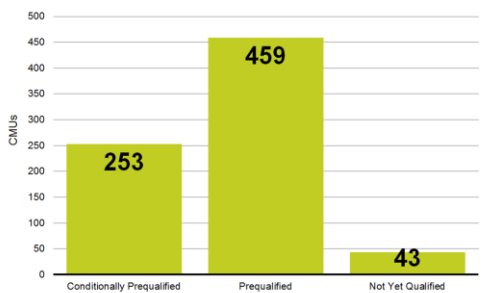
712

capacity market
units

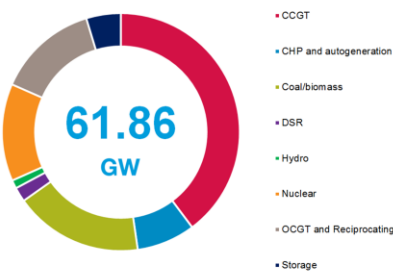
5.61 ^{GW}

of prospective
generation & DSR

CMUs prequalified

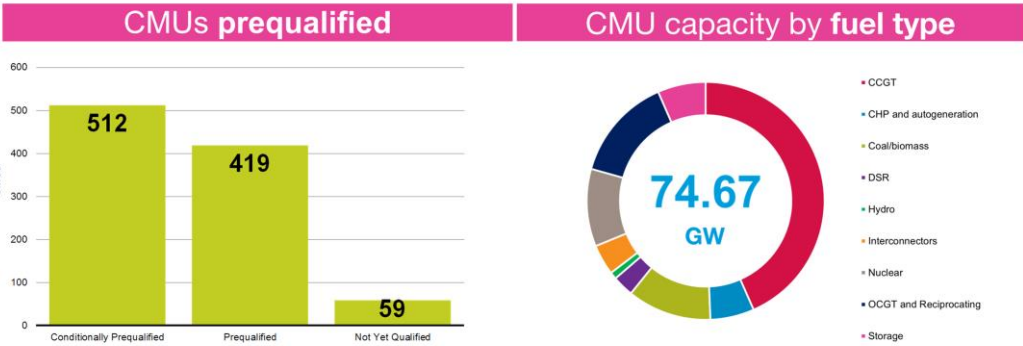


CMU capacity by fuel type



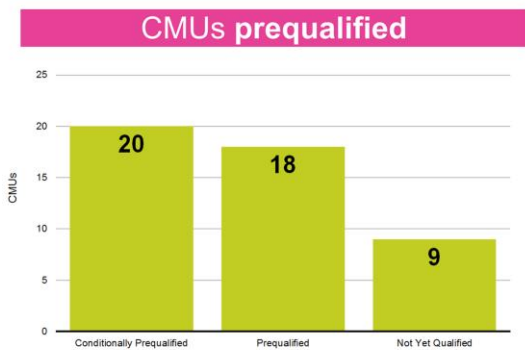
Overview of Prequalification T-4

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Compared to 68.16 GW of prequalified capacity in 2015

Overview of Prequalification TA



It’s gone down compared to 1.8GW of prequalified capacity in 2015 because you had to be “completely DSR” to apply for the TA this year

Prequalification Assessments			nationalgrid Electricity Market Reform DELIVERY BODY
2015	2016	2017	
Original CM team	New CM team	Established CM team	
CM team members assessing individual applications	New assessment process implemented	Improved assessment process for 2017	
598 applications across 2 auctions	More than 3 times the applications received in 2015	Assume similar levels to 2016	
20 days to complete assessments	19 days to complete assessments	Assume similar timescales to that in 2016	

Dates:

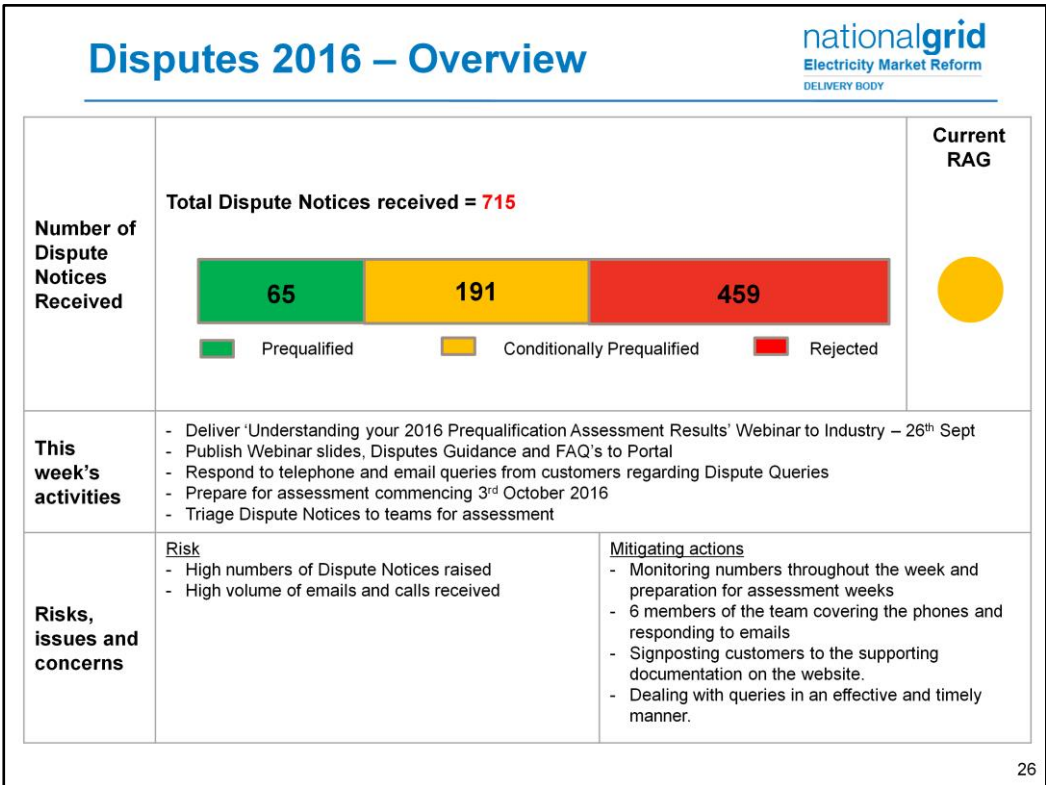
- applications were submitted from 1 August to 26 August
- we then assessed those applications from 29 August to 23 September and gave people our prequalification status
- applicants were able to dispute this from 26 September to 30 September.

No. of CMUs by type:

- 250 Unproven DSR
- 21 Proven DSR
- 865 New Build Generating CMU
- 8 Existing Interconnector CMU
- 633 Existing Generating CMU
- 13 Refurbishing Generating CMU
- 1 New Build Interconnector CMU

No. of applications received was 1,791, significantly larger than previous years (515 for one auction in 2014) and (598 for two auctions in 2015).

We have reviewed our approach to prequalification for 2016 and have improvements to put in place for 2017. You can take part in Ofgem consultation which closes on 11 Nov.



This slide gives you an overview of the number of Disputes we received by the closing date of 5pm on Friday 30th September 2016

715 Disputes Received

65 = Pre-Qualified

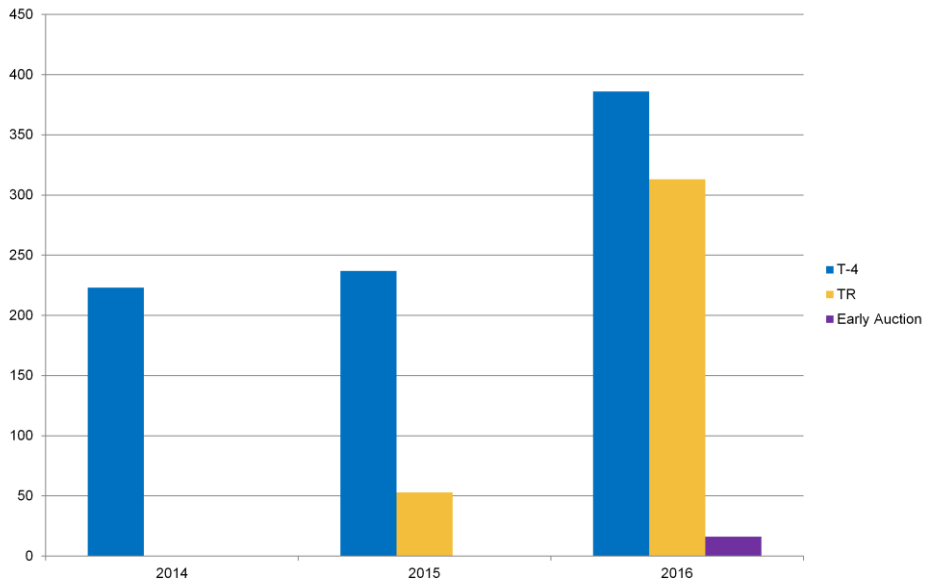
191 = Conditionally Prequalified

459 = Rejected

- Internal stakeholders updated on a weekly basis to ensure that they were:
- up to speed with the status and progress throughout the process,
 - updated on what activities the team were undertaking that week and
 - highlighting any risks, issues and concerns we may have had with associated mitigating actions.

Disputes 2016 – Year on Year

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2014 Comparison

T-4 = 223

Total = 223 out of 515 applications overall = 43%

2015 Comparison

T-4 = 237

TR = 53

Total = 290 out of 598 applications overall = 48%

2016 Comparison (2.5 times as many disputes as last year)

T-4 = 386

T-1 = 313

Early = 16

Total = 715 out of 1791 applications overall = 40% (under half)

Disputes 2016 – Main Reasons for Failure

Category 1	Category 2	Category 3
<ul style="list-style-type: none">- Company Documents invalid or not submitted- Invalid ordinance survey grid reference	<ul style="list-style-type: none">- Absence of 1 or more CMU Component Information- Extended Years Criteria has not been stated	<ul style="list-style-type: none">- Using Last Years' Capex- No historic metering data provided in the application or supplier letter- Connection Agreement has been provided but has not met requirements

Disputes Window 2016 – Approach / Lessons Learnt

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Webinar & Guidance

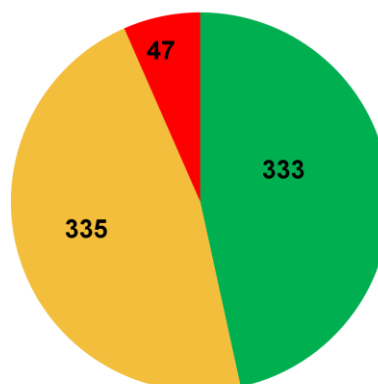
FAQs

Capacity Market Team
Support

Grouped Companies

5 Working Days to raise a
Dispute

10 Working Days to Assess



■ Prequalified
■ Conditionally Prequalified
■ Rejected

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Webinar:

Most effective way of getting key messages out to high number of

Disputes

Was received well, people found it useful

Perhaps we could run this on PreQual Results day in future

1-2-1 calls were not possible due to the volume

Guidance Note:

Again, received well

Gave an outline of the process and

introduced new portal Disputes functionality

FAQ's:

We hoped this would provide constant updates to any common queries we received

Team support:

We've had some great feedback from you regarding the support you have received although;

We are aware that some of you have experienced unusual delays in responses since the Dispute Window closed

Extremely busy period, unprecedented high number of queries

Grouped Companies to promote consistency:

Based on feedback from PreQual we took immediate action to ensure that Disputes were grouped by company to avoid any inconsistencies.

5 working days to raise dispute

10 working days to process:

2 stage process in

3 sections of the system

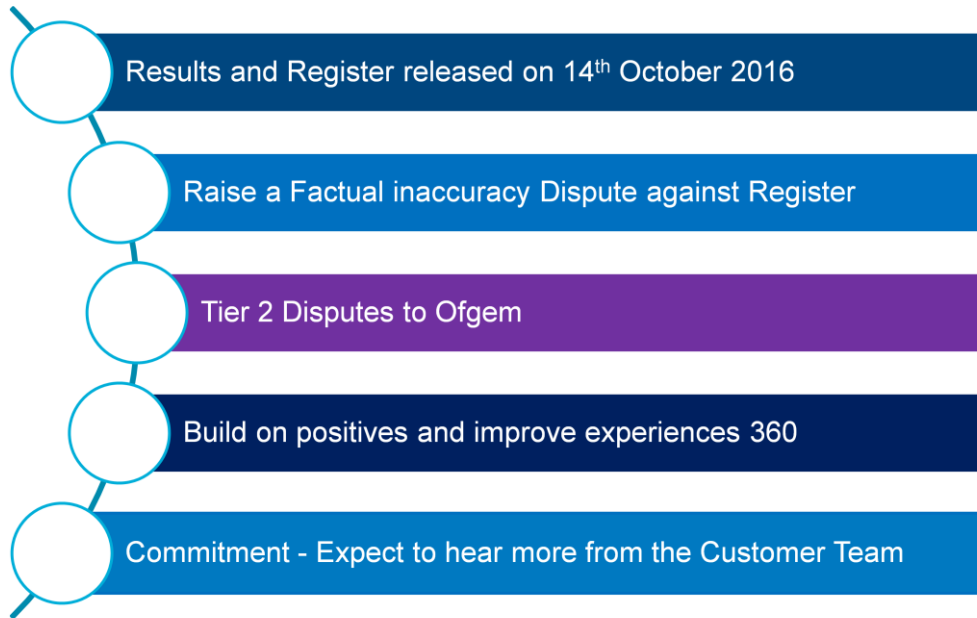
Not a simple process / took time

90% of the Disputes we received from those who had been Rejected have now received a positive result

Out of 715 Disputes, 668 applications, 93%, remain in the process

Disputes 2016 – Next Steps

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Factual Inaccuracy Dispute – via email to emr@nationalgrid.com (anything in the register which is factually inaccurate e.g. typo's etc)

If you are not happy with the Reconsidered Decision given to you from the DB, then – Tier 2 Dispute. Ofgem has issued guidance regarding any disputes to the Authority and this may be found at the following web address:

<https://www.ofgem.gov.uk/publications-and-updates/applying-electricity-market-reform-emr-tier-2-dispute> (IN OUR DISPUTES GUIDANCE DOCUMENT)

We want to work with you to improve the experience of PreQual and Disputes process for everyone, you and us.

To achieve this, our commitment is that we will be contacting you, one way or another, to find out what we can do to support you.



BREAK

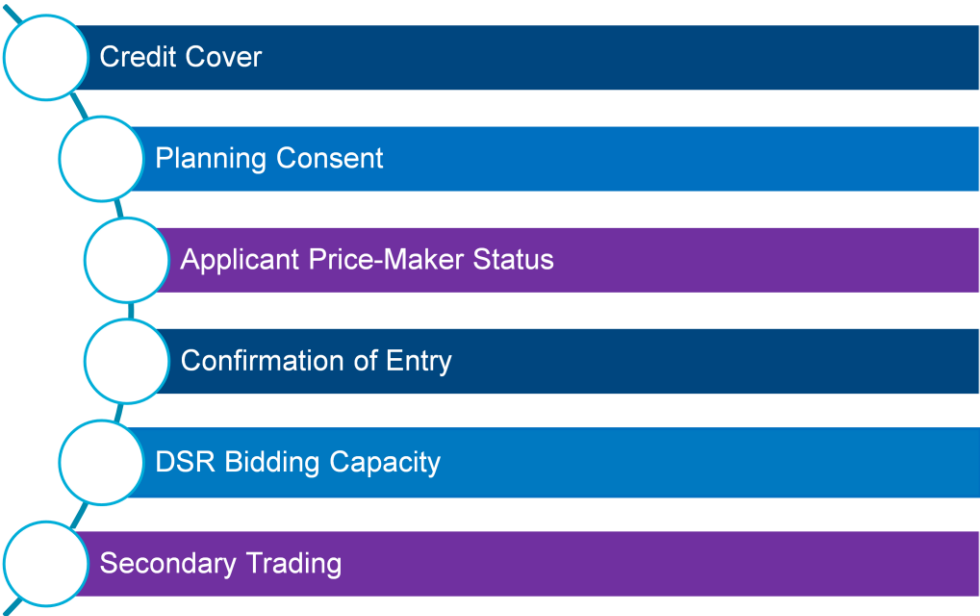




Prequalification Survey
David Williams



Agreement Management



Credit Cover

Rule 4.6.2 – EMR Settlement Body approves the Applicant's Credit Cover and informs the Delivery Body.

Rule 4.6.3 – the Delivery Body will notify the Applicant that they are fully prequalified by updating the register within **5 working days**.

Applicants need to be Prequalified on the register to enter the auction

Most of you have done this already last Friday – So thank you that.

There was a bit of confusion around the operational plan, We admit it could have been clearer but ultimately the rules state that credit cover must be submitted 15 working days from the CMU becoming “prequalified”

In accordance with Rule 4.6.1: An Applicant that, in relation to a CMU, receives notice from the Delivery Body under Regulation 73(2)(b) or Rule 4.5.1(b)(ii), (iii), (iv) or (iva) of its conditional Prequalification must, **within fifteen Working Days** of such notification, provide Applicant Credit Cover to the CM Settlement Body in accordance with the Regulations.

Accordingly if you were conditionally prequalified - irrespective of whether you raise a dispute - you are required to provide credit cover in accordance with these timescales, which this year was 14th October 2016.

Step 24 of the Operational Plan refers to the “Latest date for appellants through the Tier 1 dispute process to post credit cover”. This step should be read in conjunction with step 18 which states that all applicants have 15 working days from their **original prequalification decision**.

Return of Applicant Credit Cover (i)

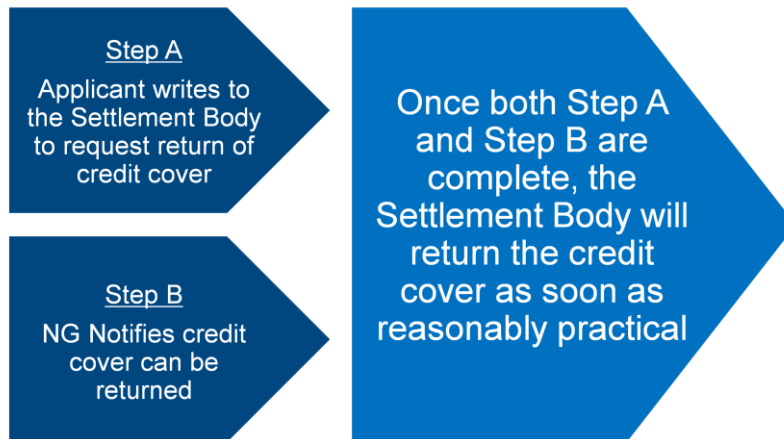
In accordance with Regulations 58 to 60:

Type of CMU	Circumstance
New Build (Transmission and Distribution)	Satisfying the Financial Commitment Milestone
New Build (Distribution only)	Provision of an acceptable connection agreement or offer
Existing Generating (Transmission only)	Provision of a Transmission Connection agreement verifying sufficient TEC
Unproven DSR	Completing a DSR Test

- Deferral of the planning consent declaration and not making the necessary declaration by the deadline
- The auction is cancelled
- Transfer of capacity obligation to another capacity provider

Return of Applicant Credit Cover (ii)

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For more information, see EMRS Working Practice 35:
<https://emrsettlement.co.uk/>

When the credit cover can be released you must write to the Settlement Body requesting release. National Grid will have also notified the Settlement Body that the credit cover can be returned. The Settlement Body are required to release the credit cover as soon as reasonably practical and it will be returned in the same manner as it was provided e.g. if a cash deposit was provided this will be repaid to the capacity provider. Process should be as follows:

Planning Consent

Applicants that declared during Prequalification, in accordance with Rule 3.7.1(a) that Relevant Planning consents will be obtained by no later than 22 Working Days prior to the first Bidding Window of the Auction, will need to submit to the Delivery Body:

- a declaration that it has obtained all Relevant Planning Consents for the CMU;
- a director's certificate confirming that the Applicant can correctly make such declaration; and
- a full electronic copy of the Relevant Planning Consents.

By

- **T-4: 5pm Friday 4 November 2016**; or
- **Early Auction: 5pm Thursday 29 December 2016**

Via

- Email, which the Delivery Body will confirm receipt of. **NOTE:** we will not provide any decision on the content of the planning consents at that time.
- Or via the EMR Portal before 21 October

There is going to be a deployment for two weeks from the 24th October until 7th November. During this time you will not be able to log into the portal. As a result if you wish to upload planning consents to the portal, you can do, as long as it is before 21st October (this Friday).

After this date you can still send in planning consents but it will have to be via email and we will go into the system and add them for you.

4.7.2 On the date falling 16 Working Days prior to the commencement of the first Bidding Window the Delivery Body must notify the Applicant in relation to each CMU to which this Rule 4.7 applies whether or not it has Prequalified, based solely on whether or not the Delivery Body has received the documentation referred to in Rule 4.7.1.

Applicant Price-Maker Status

Applicants for an Existing Generating CMU that wish to be a Price-Maker must lodge a Price-Maker Memorandum with Ofgem and submit to the Delivery Body:

- the Price-Maker Memorandum receipt (from Ofgem)
- a Price-Maker Certificate (Exhibit B)

By:

- **T-4: 5pm Tuesday 22 November 2016**; or
- **Early Auction: 5pm Tuesday 17 January 2017**; or
- **TA: 5pm Wednesday 8 March 2017**

The Delivery Body will accept the Price-Maker Memorandum receipt and Price-Maker Certificate through the EMR Portal.

In accordance with Rule 4.8.3, the Delivery Body will notify the Applicant that it is a Price Maker within **two working days** of receiving the documents.

A price maker is someone who can leave the auction whenever they want.

A price taker is someone who must stay in the auction until the price gets to £25/kw, as determined by BEIS.

Documents have to be submitted to us 15 WD before the auction

Confirmation of Entry

Non-Mandatory CMUs: Refurbishing CMUs, New Build CMUs and DSR CMUs, under Rule 5.5.14, are required to confirm participation in a Capacity Auction, and must submit a notice to the Delivery Body that:

- Confirms that it will participate as a Bidder with respect to that CMU; and
- In the case of a New Build CMU or a Refurbishing CMU, specifies the duration of Capacity Agreement that it requires at the Price Cap.
- **Between 10 and 15 Working days prior to the commencement of the first Bidding Window**

NOTE: Rule 5.5.15 - An Applicant for a Refurbishing CMU must specify in any confirmation pursuant to Rule 5.5.14 whether or not it also wishes to participate in the Capacity Auction with respect to the associated Pre-Refurbishment CMU.

T-4: Tuesday 15 November to Tuesday 22 November

Early Auction: Tuesday 10 January to Tuesday 17 January

TA: Wednesday 1 March to Wednesday 8 March

In the case of a New Build CMU or a Refurbishing CMU, specifies the duration of Capacity Agreement in whole Delivery Years (**not being greater than the Maximum Obligation Period for that CMU**) that it requires at the Price Cap.

DSR Bidding Capacity

In accordance with Rules 5.5.11 and 5.5.13:

- **DSR CMU (either Proven or Unproven):** A DSR applicant may nominate the capacity (in MW) that it wishes to enter into the auction. This is called the Bidding Capacity.
- If a Bidding Capacity is not nominated, then the Bidding Capacity will default to the De-rated Capacity.
- **Unproven DSR CMU:** where the Bidding Capacity is lower than the De-Rated Capacity of the CMU, part of the credit cover for the CMU can be released upon application to the Settlement Body.
- **Between 10 and 15 Working days prior to the commencement of the first Bidding Window**

T-4: Tuesday 15 November to Tuesday 22 November

Early Auction: Tuesday 10 January to Tuesday 17 January

TA: Wednesday 1 March to Wednesday 8 March

DSR CMU (either Proven or Unproven): in addition to confirming the entry to the auction, DSR applicant may nominate the capacity (in MW) that it wishes to enter into the auction. This capacity is called the Bidding Capacity. **Such capacity cannot be greater than the De-rated Capacity.**

Secondary Trading

- Early Auction Agreement Holders can trade part or all of their obligation to an acceptable transferee
- Secondary trade duration can be from 1 day to the full delivery year.
- Plan to allow trading to commence mid 2017 for the Early Auction delivery year.
- Delivery Body plan to run workshops early next year

Summary of key dates ahead of the auction

What's required	T-4 Date	EA date	TA date
Planning consents For those who deferred this in their prequalification application.	5pm Friday 4 November 2016	5pm Thursday 29 December 2016	N/A
Applicant Price Maker Status	5pm Tuesday 22 November 2016	5pm Tuesday 17 January 2017	5pm Wednesday 8 March 2017
Confirmation of Entry Including Agreement Duration & DSR Bidding Capacity For Refurbishing CMUs, New Build CMUs and DSR CMUs	Between Tuesday 15 November and Tuesday 22 November	Between Tuesday 10 January and Tuesday 17 January	Between Wednesday 1 March and Wednesday 8 March

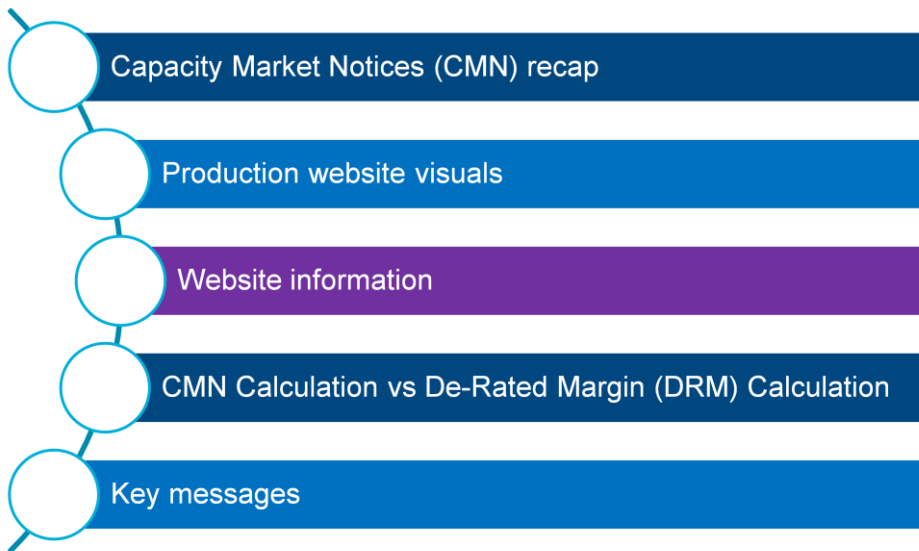


Level 1 Prequalification Disputes = Should be a quick win, easy to rectify, uploading documents or providing written confirmations. WE ARE NOT EXPECTING TO HEAR FROM CUSTOMERS REGARDING LEVEL 1 DISPUTES AS THIS WEBINAR AND GUIDANCE SHOULD BE ENOUGH..

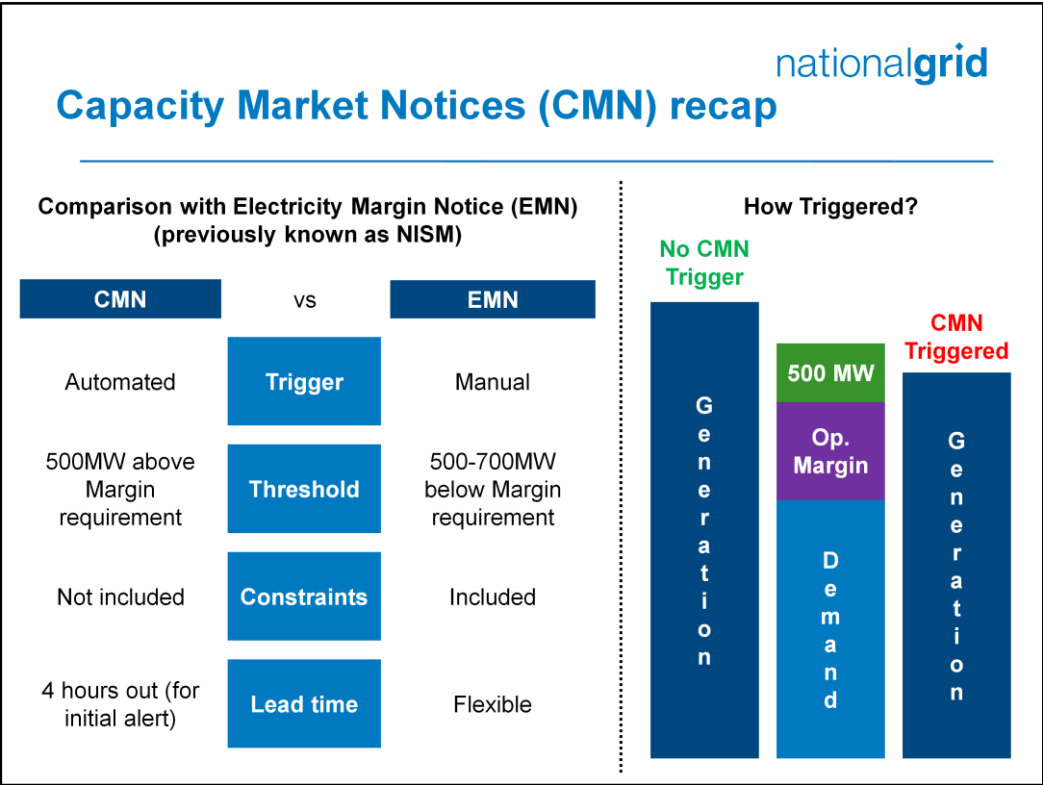
Level 2 Prequalification Disputes = Could take a little more time for customers to obtain and provide correct, updated information

Level 3 Prequalification Disputes = Complex issues which will likely require more work on behalf of the customer to obtain the relevant information and will likely require a conversation with the CM Team DURING THE WINDOW.

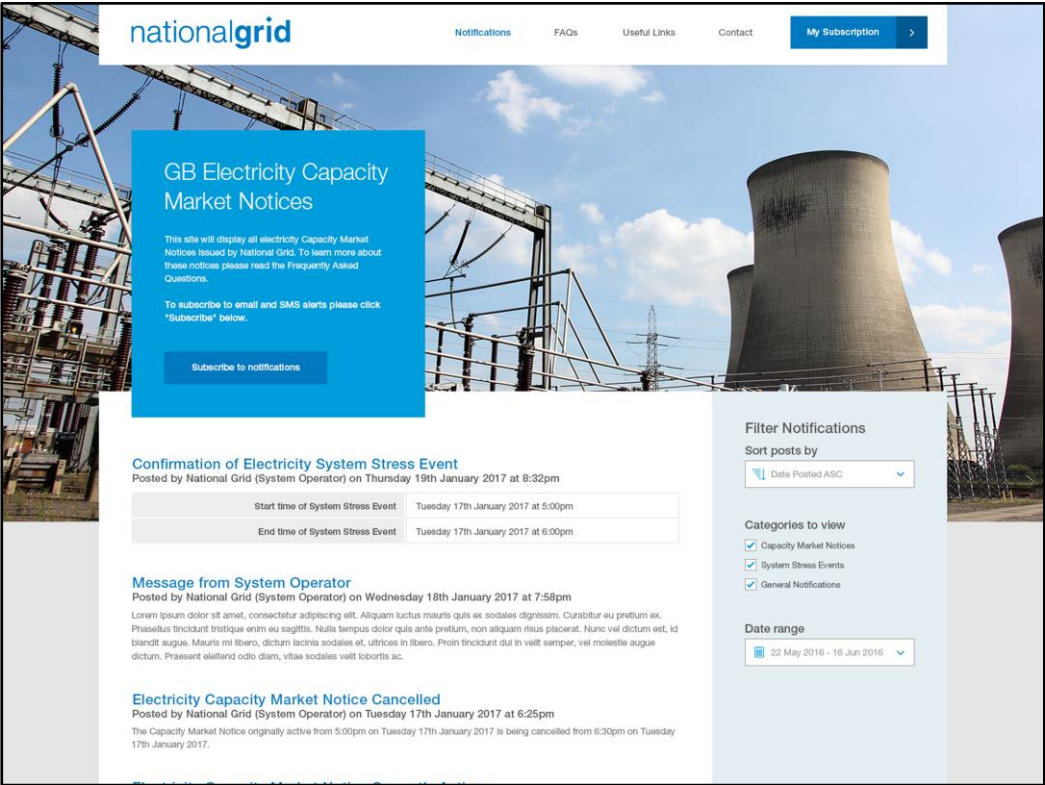
Content



- Recap of messages / slides from previous presentation.
- No run through the scenarios but I can field any questions in presentation as well as during the breaks.



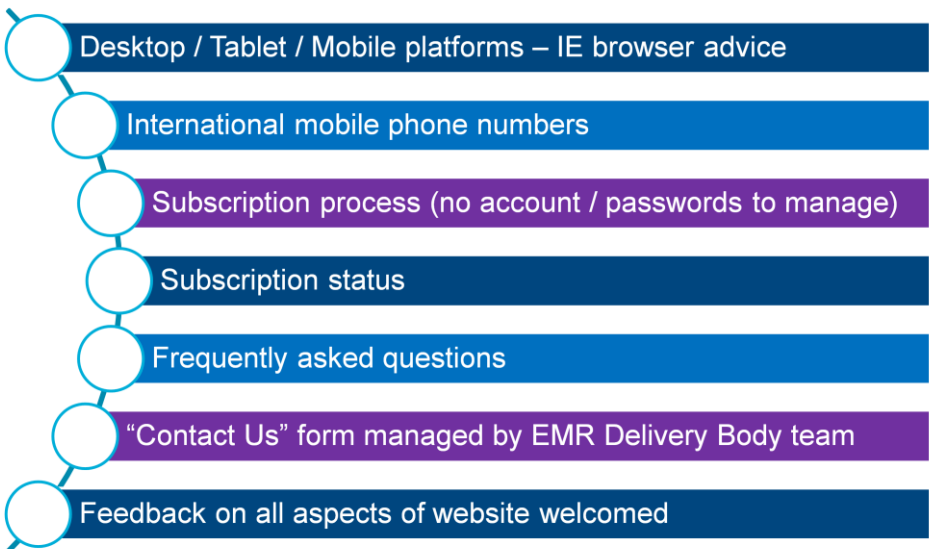
- NISMs have been subject to a name change to **Electricity Margin Notice**
- EMNs include some element of **engineering adjustment** as control room deploy their skills, knowledge and experience
- We **expect to see more CMNs than EMNs** due to make up, but many **valid reasons why no EMN following a CMN and vice versa**
- **May 9th was unlikely to have been a CMN**
- A lot will depend on how close to real time participants update BM data items (MELs, Dynamic Parameters etc). **Calc is exposed to this**, reinforcing the notice to review BMRS more closely
- At the very highest level the available generation in any SP (4 hours out) is required to be greater than Demand + Operating Margin + 500MW tolerance to trigger a CMN
- However, as you would expect the **calculation is somewhat more involved** than this, and takes into account a number of critical factors
- Reinforce **learning opportunity as Daily triggers would be an issue** clearly
- **Different to DRM calc** (TBC). Worth noting that DRM was designed to reflect a 50% potential for a demand control event where the DRM was 0MW
- Reinforce the messages from previous page that this is an **alert only and not an operational tool**, simply a heightened potential for a System Stress Event and to watch for other SO warnings



Desktop, Tablet and Mobile platform available

Please subscribe

Website information



CMN Calculation vs De-Rated Margin (DRM) Calculation

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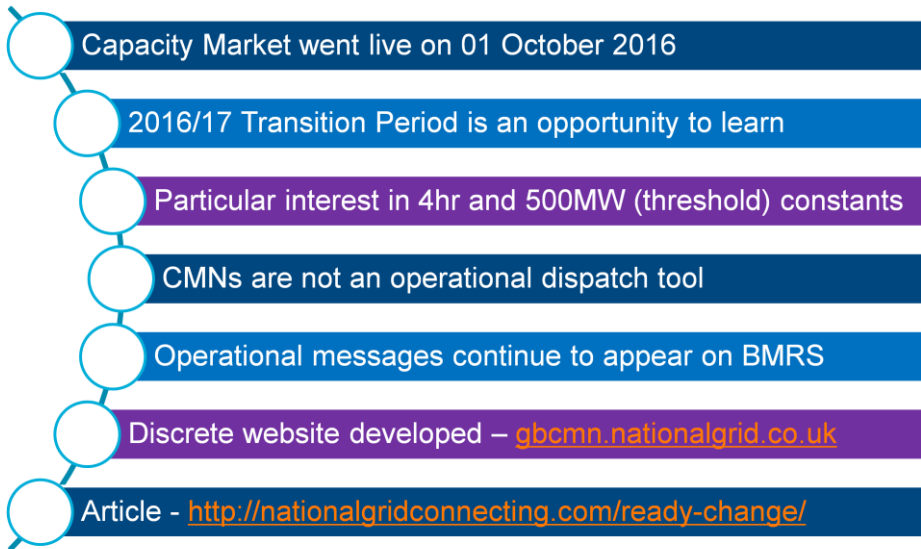


CMN and DRM calculations diverge reflecting the differences in their design

DRM Calculation	vs	CMN Calculation
Inform gate closure LoLP / RSP where 50% potential of DCE if 0MW	Purpose	Reflection of ENCC System Operating Plan @ 4 hrs out
Medium	Complexity	High
Requirement to meet real time fixed Largest Loss (Reserve & Response)	Margin	All reserve and response requirements at 4 hrs out
Day Ahead / 8hr / 4 hr / 2hr / 1hr (De-rating / reserve apply equally)	Frequency	Single calculation for each SP
Simplified	Dynamics	Optimised (including ramping / warmth)
MELs derated by ~1% to cover losses post gate closure	Other	Subject to additional separate 500MW threshold trigger

- DRM always uses 1260MW Largest Loss in real time (the market preferred the certainty of using a fixed number, even though it makes DRM and LOLP worse at times when the largest loss is smaller).
- The largest loss reserve component represents the amount of reserve that is consumed when units are selected for response, the response requirement is based on a fixed largest loss and demand.
- Regardless of leadtime, we'd expect control room to hold the same amount of response, and therefore the largest loss reserve figure shouldn't change.
- The rest of the reserve requirement (the bit reflecting 4hr, 6hr, 8hr PN uncertainty) is set to zero. If this were not the case, it would mean that a DRM of zero would not equal a 50% chance of not meeting demand.

Key messages



- From an SO perspective the **CM is very real from this year**
- Real **opportunity to learn** within what should be seen as a **pilot** winter
- **CMNs** are a requirement under the CM Rules and are **not an operational tool** that NG would otherwise have introduced.
- CMNs are an **automated calculation** that is based on **data provided by the industry** to NG
- There is **no discrete dispatch signal** in the CM. CMNs are more of a fuel light in a car, a **heightened potential of a Stress Event**
- NG will continue to use **operational messages on the BMRS** and **DRM data**
- Very **difficult to determine number of CMNs** there will be
- Same for **System Stress Events** but as these require a Demand Control Event we'd hope **very, very rare**
- **Stress Event analysis** will be new for all so would appreciate **patience** if demand control issued
- **Discrete website** developed with **email and SMS alerts**. This reflects the **non-operational nature of the messages** and separation of such.

LUNCH

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Auction Readiness
Ian Nicholas & Neil Morgans

Capacity Market

Ian Nicholas

- Timetable, Parameters
- Supply/ Demand
- Auction Process

Nick Aked/Kelly Freeman

- Auction Demo

Neil Morgans

- Training
- Bidding groups/ Authorised Individual setup

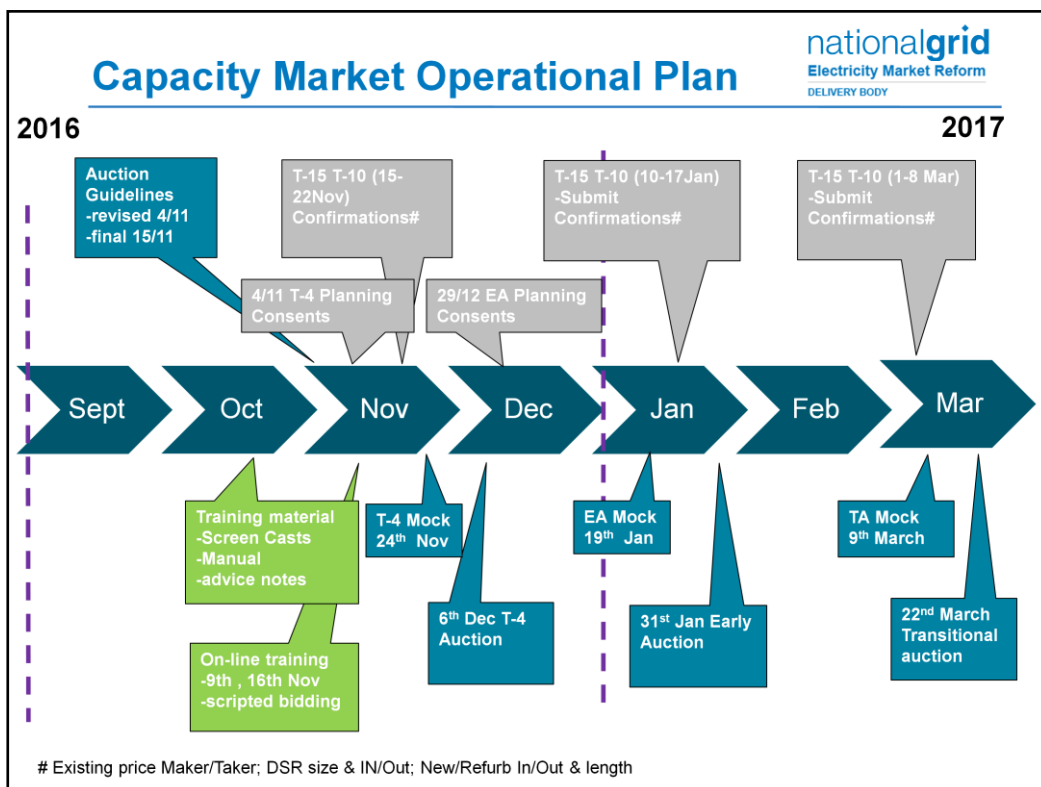
I want to cover the Auction Parameters (published Friday 8th July) to be updated 4th Nov

Also go through the auction process

-timeline

-demand/supply curve

-auction reporting



This timeline shows how the auction will run in 2015

Parameter definitions

- Price Cap - the price at the minimum capacity to procure, this is the starting price and maximum possible clearing price
- Net Cone – Implied Cost of new entry
- Target Capacity - capacity at net CONE
- Price Maker – CMU with no restriction on exit bid price
- Price Taker – must abide by the PTT
- Price Taker Threshold - level at which a price taker can exit the auction

Net-CONe is defined as the cost of a new entrant after accounting for wholesale and ancillary market revenues

Target Capacity- capacity to buy at Net cone

Price Cap – roughly 2x net cone it is the maximum price that the auction could clear (at minimum volume to procure)

Price Maker- CMU with no restriction on exit bids i.e. can enter an exit price valid in the first round

Price Taker threshold- this is the highest price where the price taker can exit the auction and freely bid upto this. it will be set at a level that ensures that the majority of existing plants should be willing to participate in the Capacity Market without being price

Makers

Price Taker- all existing CMU's (unless a not a maker) unless price maker memorandum submitted to Ofgem

Auction Parameters

Parameter	T-4 (20/21)	EA (17/18)	TA(17/18)
Reliability standard (LOLE)	3h/year	3h/year	3h/year
15 year threshold	£255/kW	n/a	n/a
3 year threshold	£130/kW	n/a	n/a
PriceCap	£75/kW/yr	£75/kW/yr	£75/kW/yr
NetCone	£49/kW/yr	£49/kW/yr	£49/kW/yr
Price Taker Threshold	£25/kW/yr	£25/kW/yr	£25/kW/yr
Target Capacity	52,000MW	53,800MW	300MW
Min capacity at the price cap	Target - 1.5GW	Target -1GW	Target -100MW
Max capacity at £0/kW/year	Target +1.5GW	Target +1GW	Target +100MW

Auction parameters- published Friday 8th July

Main ones are the **target volumes** – 52GW/53.8GW & 300MW

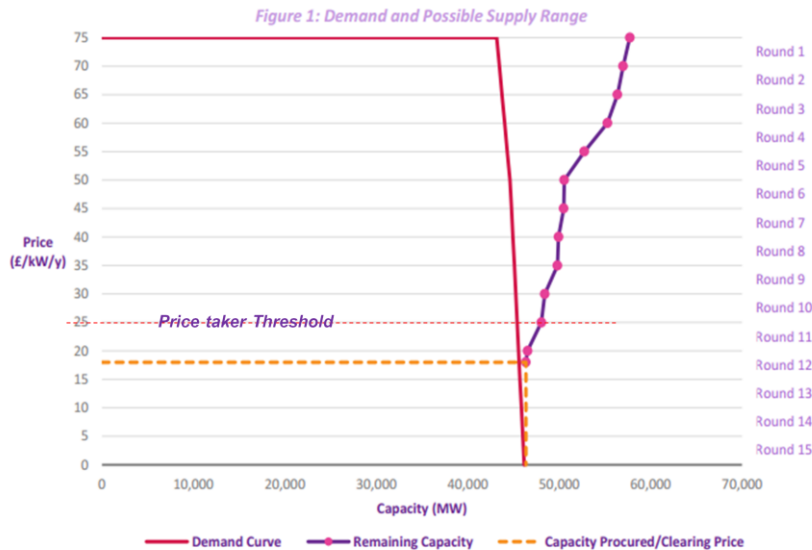
15 year threshold £255- this is the minimum kw spend on a project to justify a 15year agreement

3 year threshold £130- this is the minimum kw spend on a project to justify a 3year agreement

Price Cap/Net Cone/Price taker threshold we discussed earlier

Missing the time banded discount for the TA (this is the discount to the clearing price) for Oct-March Mon-Fri 9-11/ 16.00-20.00 set at 70% so if the clearing price is £10 then participant receives £7

Supply and Demand



This is the Demand and supply curve from 2015 T-4 Auction

You can see from the demand curve.. the solid line on left

- target

- volume at price cap

- volume at price £0 (theoretical level we cannot meet)

On the right you can see the supply curve

- starts at full volume of 47.7GW at the price cap of £75

- reduces as the round progress and the price drops

- cleared round 12 at £18 volume 46.3GW

You can see the Price taker threshold at £25 and the activity in that round

Auction Process

- Descending clock, pay as clear, multiple fixed rounds
- First round starts at the price Cap
- Each round has a fixed price spread
- Runs across multi rounds until demand is met by the supply- this final round is the Clearing round
- If clearing capacity met by multiple units - decided by ranking (size, duration, random number)
- If clearing capacity not met exactly then clearing algorithm used (Net Welfare Algorithm)

I want to explain the auction

- Descending clock – also known as a Dutch auction as auctioneer starts with the highest price and reduces until participants are no longer willing to offer capacity
- First round starts at the price cap
- each round had a £5 price spread i.e. R1 range £75-£70
- Auction is run across Multiple rounds until the demand and supply curves meet
- Very low probability that an exact match will be met as the auction can clear to the 1p and 1kw in which case the auction system uses the Net Welfare Algorithm (detail in Ch5)

-The Net Welfare Algorithm evaluates the integral specified in Rule 5.9.6 to determine whether to include the marginal unit. The algorithm subtracts the additional cost of procuring the marginal unit from the welfare gained by procuring the marginal unit. If the result is positive i.e. the welfare gained by procuring the additional unit outweighs the cost, the unit is included, and the Clearing Price is set to the Exit Bid Price of that unit

Auction Process

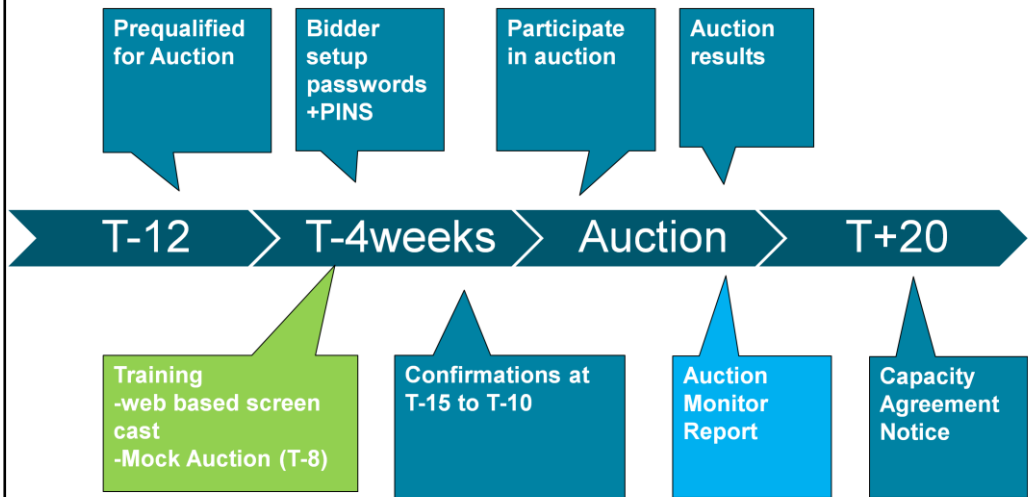
- Eligible participants who do nothing at auction will get an agreement at the clearing price
- Exit bid takes you out of the auction (unless your exit bid is equal or less than the clear price)
- Duration Bid amendment used to change agreement length (to 1 year)
- Duration Bid amendment used to change from Refurb to Pre-refurb
- Auction System is internet based

Auction Activity recap

- If prequalified and enter the auction but Do nothing in the auction you will et an agreement
- An Exit bid is used to take you out of the auction (if your exit bid is higher that the clearing price)
- DBA used to reduce duration or refurb to pre-refurb
- simple system/ internet based /no software

Overview of typical auction

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This timeline shows the main process for a participant for an auction

- prequalified
- training
- setup passwords and pins to access the auction system
- Confirm entry at T-15
- participate in auction
- auction results

Auction Reporting

If the auction clears in the first or second round of the day, the provisional results would be published at 20.00 that night:

- DB publishes on website the Clearing Round price range within the cleared round recess.

If the auction clears in the third or fourth round of the day, the provisional results would be published at 7am next morning:

- Third/Fourth round of the day the Auction clears.
- DB publishes on website the Clearing Round price range within the cleared round recess.
- DB sends the individual Provisional Results to bidders via the auction system at 20.00 and also publishes the Clearing Price.
- DB will upload the full provisional report to DB website at 07.00 next morning.

Auction reporting

Basically we make sure that no market sensitive information is available to participants before the market

When auction clears the DB published the price range externally

Bidders receive their individual results at 8pm

Market sees the full report either 8pm

or

07.00 the next day

Depending on whether the auction clears Am or PM

Auction System Design & Testing

- **Not** off the shelf; derived from the Electricity Regulations and the Capacity Market Rules.
- IBM, National Grid and Deloitte created models based on Chapter 5 independently ensuring the system design is consistent with the auction rules.
- Tested against 25 clearing scenarios and 300 functional tests as well as penetration, performance and volume testing.

A bit about the Auction system background

- Auction system is derived from the CM rules and amended annually as required
- IBM, The Delivery Body and Deloitte each build a separate auction model to compare results when different clearing scenarios were tested
- System tested against 30 clearing scenarios such as what if a unit moves from refurb to prerefurb at the point that the auction clears/ what is the auction clears at the price cap of a round/ price floor of a round/
- The results of the auction are 'verified' by the Auction Monitor who is deloitte – they produce a report 2 days after the auction with their findings
- -deloitte are present in the Auction Room (as well as IMB/Power auctions/Deliverybody making up circa 9 members.....you think the rounds take a long time!!)

About the Auction System

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- No software to download
- Accessible with ordinary browser
- Auction system runs on a secure site hosted in the UK
- Accessible from T-9 to check your CMUs

Auction Software

Simple Easy Accessible

Access via the internet

No software to download

Accessible on Portable devices

Passwords and Pins to access the auction system set up via the admin system

Auction System Demonstration

Nick Aked
Kelly Freeman

Introductions

Nick Aked/ Kelly Freeman

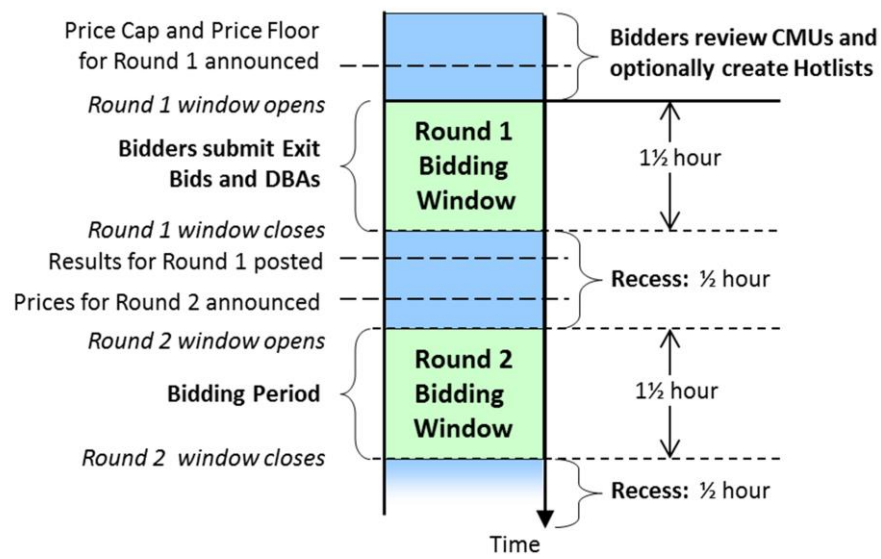
About the auction system

- No software to download
- Uses an ordinary browser.... with the right settings
- Reliable internet access required
- Auction system runs on a secure site hosted in the UK
- Authorised Individuals notified to obtain a password and PIN from the EMR Portal
- Simple intuitive interface
- Accessible from D-9 to check your CMUs

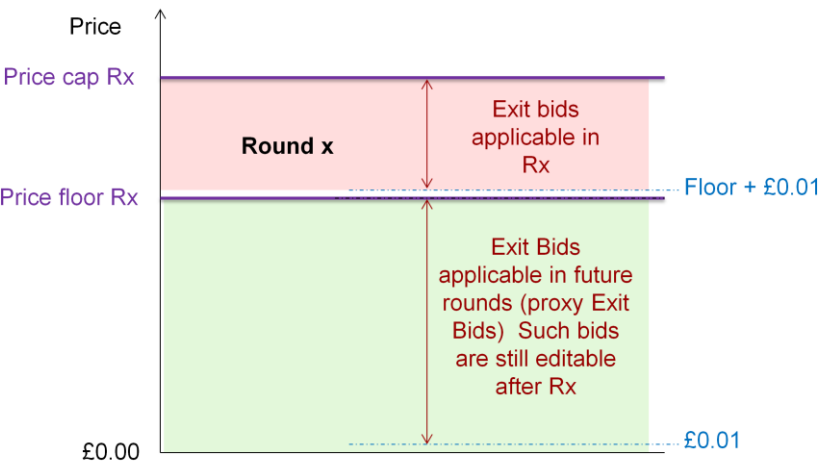
Access - Supported configurations

- Intel Pentium or equivalent with 1.2 Ghz processor
- Screen resolution 1366 x 768 or higher
- Windows 7, 8.1 or 10
- IE 11 or recent versions of Chrome & Firefox
- TLS 1.1 or higher must be enabled
- Cookies enabled
- Javascript enabled

The Auction Process

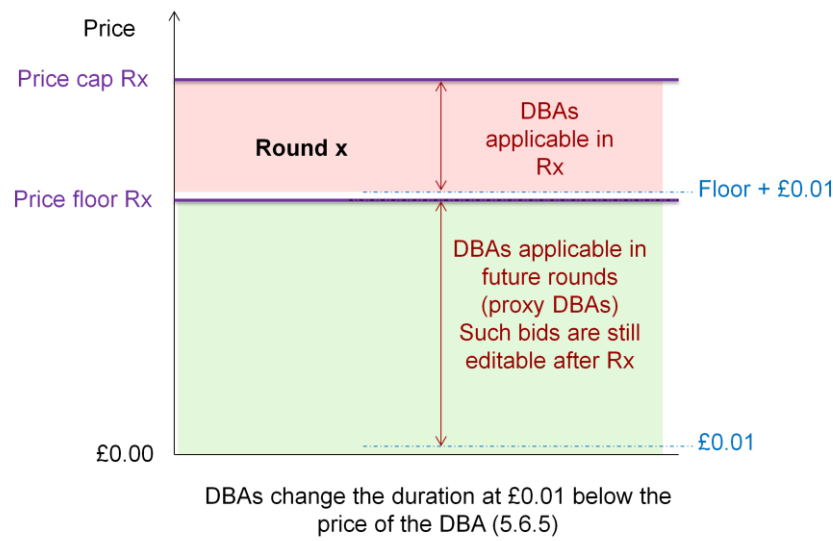


Price ranges for Exit Bids



Exit Bids reduce CMU capacity to zero at £0.01 below the price of the Exit Bid (5.8)

Price ranges for Duration Bid Amendments



Content of the Demo

- Total Capacity = 66.505 GW
- Target Demand = 52 GW (at CONE) as in T-4 auction
- What we will cover
 - Introduction to user interface and start of auction
 - Show how DBAs and Exit Bids are placed and checked
 - Show Round Results
 - Then to fast forward to R11 (£25-20) to show impact of exit bids over multiple rounds leading to clearing

All values are illustrative and for demonstration purposes

Using the live system

Demo is concluded

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Thank you for your attention!

Auction Readiness

Neil Morgans

New Functionality

■ What's Changed:

- Previously: Excel templates and PDT tool for bidder management.
- Now: Self managed by Main Admin users within the EMR Portal



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User Training

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- **Where:**
Online with telephone support.
- **What:**
Access to all types of CMUs allowing users to experience placing bids, DBAs and exploring the Auction system.
- **Who:**
All participants that can enter an auction, 4 logins issued per sub company
- **When:**
9th & 16th of November 09:30 – 14:00



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Training-

-material available including user guides and webcast

-On-line training

-Mock Auction

-Auction

Mock Auction

■ **Where:**

Online - under Auction conditions.

■ **What:**

Access to real CMUs and associated Bidding Companies with scripted bidding activities.

Company Name	CMU ID	CMU Name	Exit Bid Range
Bid Co X	A-T-4-2018-BIDCO1-00001	Bidco1 SE	£25-£5
Bid Co X	A-T-4-2018-BIDCO2-00001	Bidco2 NE	£30-£10
Bid Co X	A-T-4-2018-BIDCO3-00001	Bidco3 SW	£50-£30
Bid Co X	A-T-4-2018-BIDCO4-00001	Bidco4 NW	£60-£40
Bid Co X	A-T-4-2018-BIDCO5-00001	Bidco5 S	£25-£5

■ **Who:**

Als who have been assigned to CMUs that have entered the Auction.

■ **When:**

D-8 for the relevant Auction: 24th Nov (T-4) / 19th Jan (EA) / 10th March (TA)

- Scripts and guidance will be issued to AI’s in advance of the mock auction

Key Messages

We need to ensure that everything is in place for the first delivery year

- We are working towards the key dates for the three planned Capacity Market Auctions (including prequalification and other key milestones) in the Operational Plan
- Complete the necessary checks following the IS deployment
- Complete the necessary milestones leading up to the auctions
 - Provide planning consents by 4 November for the T-4
- Read the updated Auction guidelines and volumes to procure
- Look out for details of our webinar in November about the CM register

