#DCchanges

Dynamic Containment (DC) webinar

procurement changes

The webinar will start shortly.
Please make sure you are on mute and your camera is turned off.
Please note that the webinar will be recorded.

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Agenda

1. Dynamic Containment procurement changes
2. The auction platform
3. Next steps
4. Q&A session

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Dynamic Containment procurement changes

Dynamic Containment overview

- Dynamic Containment (DC) is the first of our new end-state services
- DC is designed to operate post-fault, i.e. after a significant frequency deviation

Since the launch of DC in October 2020:

Increased daily volume procured from ~150MW to over 700MW

Increased number of providers from 4 to 13

Introduced day-ahead procurement

Enabled option to change MW submission

Introduced BM stacking

Spent £34m on service to date

Daily DC procurement

Following a successful weekly auction trial, we are preparing to move our new response services to daily auctions. The procurement process will largely remain the same, apart from a few changes that came out in the trial feedback and lessons learnt

We will carry on:

- Procuring via the existing EPEX auction platform
- Matching using HELENA algorithm
- Displaying individual results immediately after each auction
- Publishing full market results on the ESO website
- Following the same onboarding process (data forms A,B,& C)
- Procure FFR via monthly tender

We will change:

• Manual Assessment Process	→	• Automated Assessment Process	A
• 24 hour contract	→	• EFA blocks	B
• Pay-As-Bid (PAB) auctions	→	• Pay-As-Clear (PAC) auctions	C
• Unable to link by products	→	• Option to link by products	D

This option will be available once other new response products are launched (e.g. DCH)

Daily DC procurement

Key messages	
This spring: we have launched consultation on changes to the service terms 27 April. You have got 7 days left to respond	From this summer: we intend to procure DC by EFA blocks on a pay-as-clear auction platform

DC procurement changes: Automation*

A

Automation

Automated assessment process provides real-time validation

WHY

- Validation at the time of assessment excludes non-compliance orders from participating in the auction

HOW

- Orders are immediately validated by the platform
- Participants get immediate feedback if an order fails validation

BENEFITS

- Ability to review and modify orders up until the Gate Close
- Reduced operational risk from manual assessment process and Excel-based tools

* Note, providers will still have to submit relevant forms and files to EPEX

DC procurement changes: EFA blocks

B

EFA blocks

Procurement via EFA blocks provides greater flexibility

WHY

- To improve cost-effectiveness by procuring different volumes in different periods, depending on the system needs

HOW

- Daily procurement by six 4-hour EFA blocks

BENEFITS

- Potential for different clearing prices in different EFA periods and more accurate market price signals
- Increased market participation and, as market develops and grows, increased liquidity

DC procurement changes: Pay-as-clear

C

Pay-as-clear

Pay-as-cleared settlement mechanism promotes market efficiency and increases price transparency

WHY

- Reduced barriers to entry, as the need to forecast auction results is removed

HOW

- Each individual provider will receive a contract for the same price at the end of the auction
- Bidders are encouraged to bid their marginal cost

BENEFITS

- Increased market transparency
- Reduces the need for bidders to forecast auction outturn prices
- A single clearing price creates a signal that can be used for other commercial markets and decisions

Process for submitting DC Sell Orders

- To participate in an auction registered providers must:
  - ❑ Receive a confirmation receipt of Forms A, B, and C

- Illustrative timeline:

D-14		D-1		D-1		D	
8.00	• Order book opens for DC Sell Orders	**10.00**	• Auction Closure Time (Order book closes) • Deadline for submission/update of NGESO's buy Order	**10.30**	• Auction results available to view on EPEXSPOT platform	**23.00**	• Delivery starts for EFA block one on service delivery day D (which is the same calendar day as D-1)
				14.30	• Auction results published on the ESO website		

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The auction platform

User interface similar to Weekly Auction

Web-based application

Same platform used for both weekly and daily auctions (no need for a new account)
https://www.cts-fra.epexspot.com/login

Submission process

Access trader global view → Select session for which you want to submit bids → Upload submission form with your bids → Preview market results

Differences with weekly auction

You can now submit your orders 14 days before delivery day
- It means that on a given day, you can bid for the next 14 delivery days
- Orders can be updated or deleted until order books are closed

Everything else remains unchanged (screens, process…)

More information

The following documents are available on NGESO's website and will be updated before go-live
- Cheat sheet: contains high level information and troubleshooters
- Trader user guide: contains detailed information on using the platform

Block order submission similar as Weekly Auction

Submission form

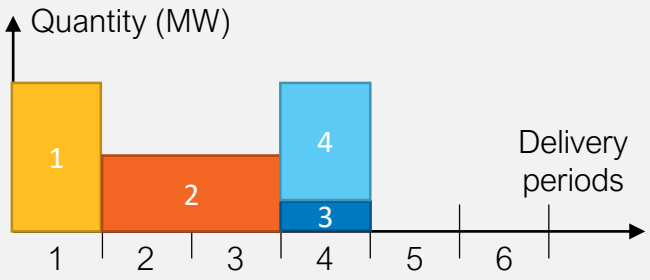
Same format (csv file) as weekly auction, but with 6 delivery periods instead of 42.

Order types

A wide range of orders are available

- Single-period non-curtailable block order
- Multi-period non-curtailable block order
- Single-period curtailable orders (made by linking orders in a family)…

Portfolio	BiddingLevel	OrderId	Version	User ID	BlockCode	BlockPRM	MAR	Price	1	2	3	4	5	6
Unit1	DCL	1			C01			1.23	-10					
Unit1	DCL	2			C01			2.34		-5	-5			
Unit1	DCL	3			C01			3.45				-1		
Unit1	DCL	4			C02	3		4.56				-9		



Order 4 can only be accepted if its parent block (order 3) is accepted.
It's called a child block. Child blocks always have "C02" as code and are single period and fully-curtailable.
Parent blocks are always "C01" blocks and non-curtailable

Block order submission similar as Weekly Auction

Submission form

Same format (csv file) as weekly auction, but with 6 delivery periods instead of 42.

Order types

Effect can be combined by linking C01 and C02 blocks in a family

Portfolio	BiddingLevel	OrderId	Version	User ID	BlockCode	BlockPRM	MAR	Price	1	2	3	4	5	6
Unit1	DCL	1			C01			1.23		-5	-5	-10	-5	
Unit1	DCL	2			C02	1		2.34	-3					
Unit1	DCL	3			C02	1		3.45		-4				
Unit1	DCL	4			C02	1		4.56			-5			
Unit1	DCL	5			C02	1		5.67					-6	

Main Rules

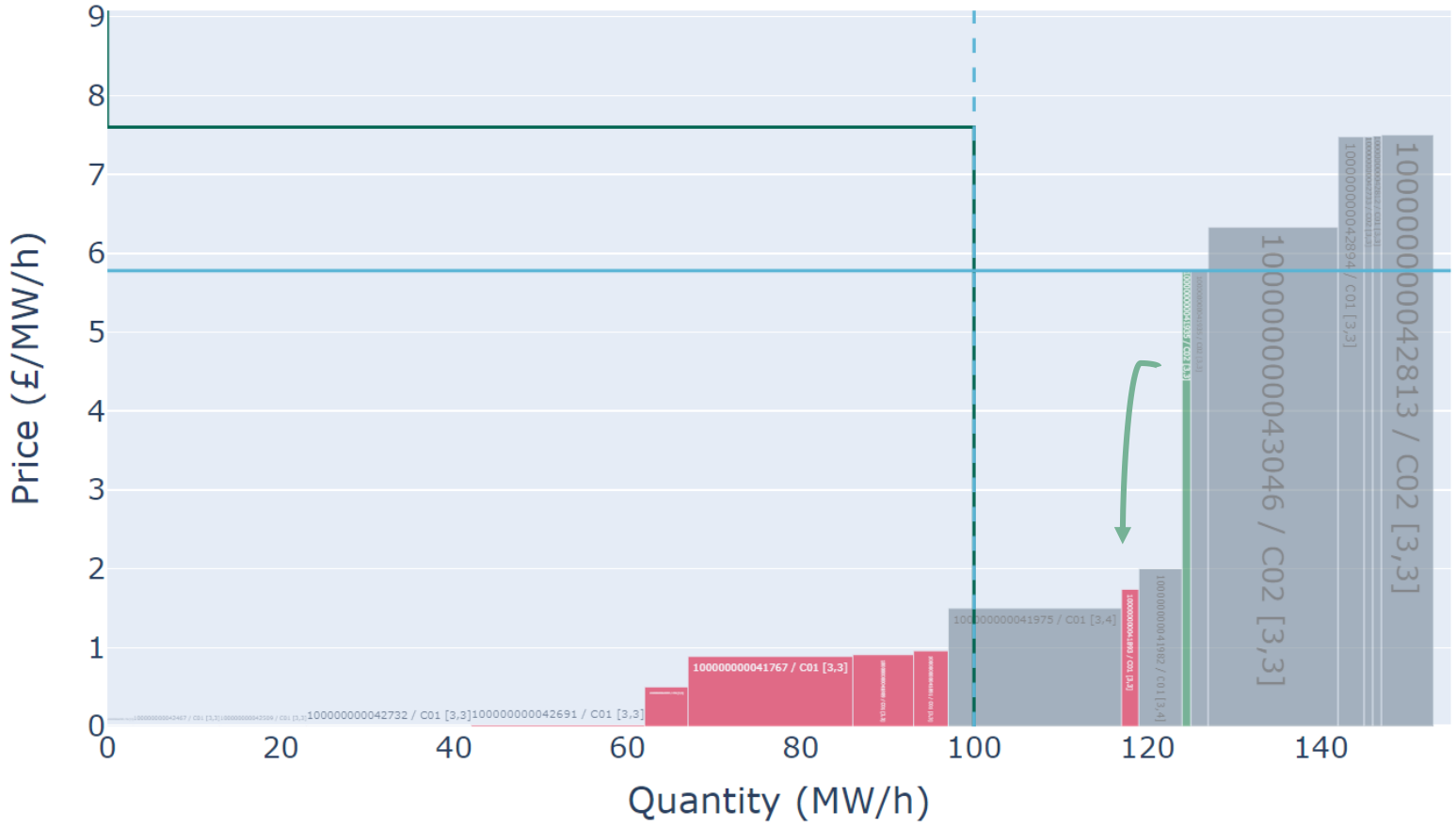
C01 orders are defined on consecutive periods
Sell orders' volumes are strictly negative
Families can only link orders of the same {unit, product}

Orders are validated against those rules at submission and can be corrected up until OBK are closed.

Orders are matched using a 2-steps algorithm

Determine accepted quantity for each order	**Objective** Maximize market welfare across all delivery periods	**Rules / constraints** - Balance: supply = demand - Matched order volume ≤ submitted volume - Block properties (fill-or-kill, link families, etc.) - Merit order rules for basic block orders
Determine prices for all products and delivery periods	**Objective** Minimize market clearing prices across all delivery periods	**Rules / constraints** - No paradoxically accepted curve/block order (Every accepted order must generate a positive surplus)
More information	HELENA algorithm public documentation on NGESO's website Merit order constraints description Explanation on Paradoxically Rejected Blocks (PRB)	

Example of application of the algorithm (weekly auction, DLH, auction of 14/08/20, delivery period 3)



NGESO Buy Curve
Sell Orders
Clearing Price: £ 5.78 /MW/h
Clearing Quantity: 100.0 MW/h

REJECTED because:

- Non curtailable (C01)
- Can't accept more than what NGESO is willing to buy
- Would decrease welfare if accepted instead of cheaper block

FULLY ACCEPTED

PARTIALLY ACCEPTED because:

- Curtailable (C02)
- Parent C01 block is accepted

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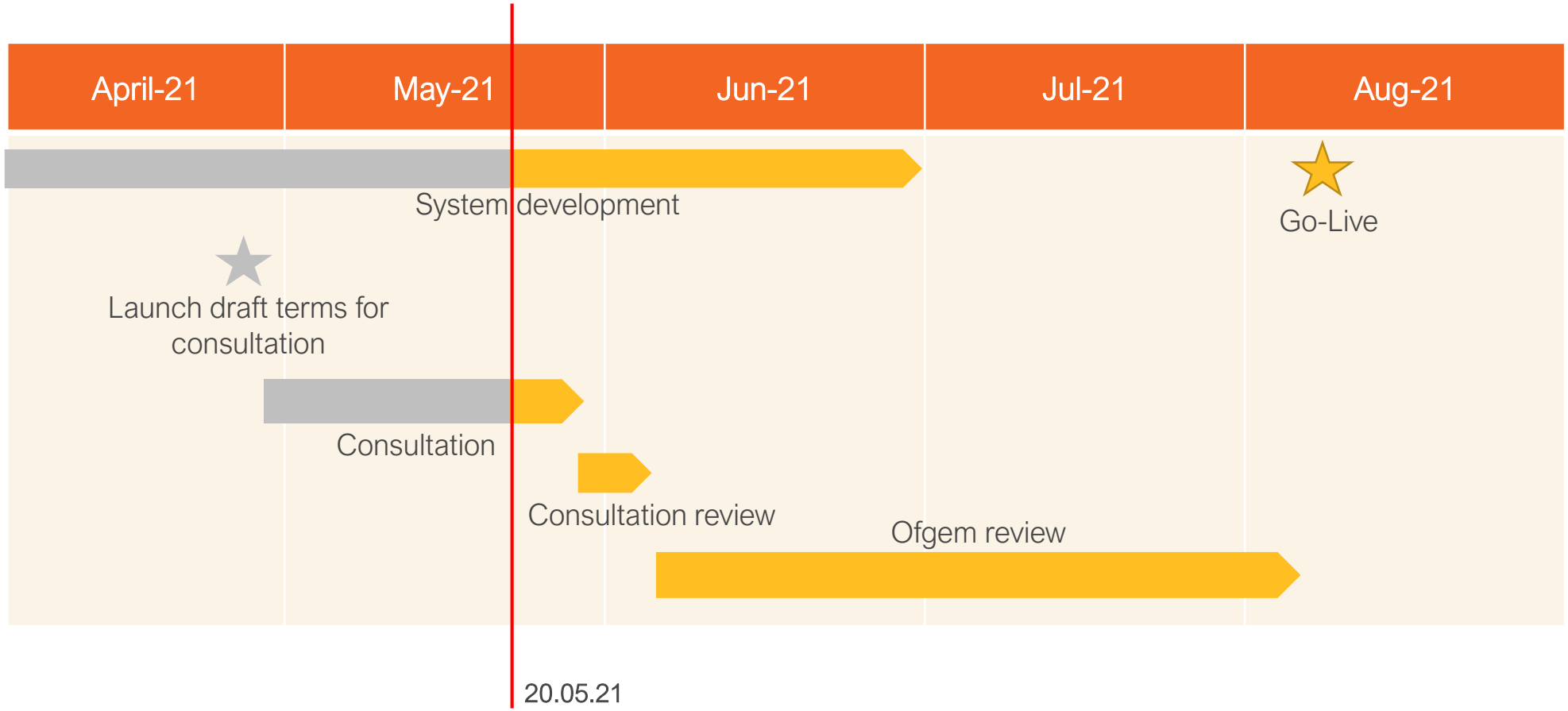
Next steps

DC procurement changes timeline

Dynamic Containment Procurement changes



Next steps

- Consultation on DC procurement changes **closes on 27 May**. The suite of consultation documents can be accessed here
- For updates, please sign up to our Future of Balancing Services newsletter
- Get in touch: box.futureofbalancingservices@nationalgrideso.com

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Q&A

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Thank you

Contact us:

Via your account manager, or email:

box.Futureofbalancingservices@nationalgrideso.com

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Appendix

Refresher of key auction terms

Portfolio

- Portfolio = Unit (BMU or non-BM unit)

Block Order

- All Sell Orders in the Daily Auction are Block Orders. They have one price and one volume per unit per EFA block

Linear Order

- The NGESO buy order is a linear order, there can be multiple/price volume pairs for each EFA block

C01 Block

- Also called 'parent block' if part of a linked family a C01 block is non-curtailable and will either be fully executed or fully rejected

C02 Block

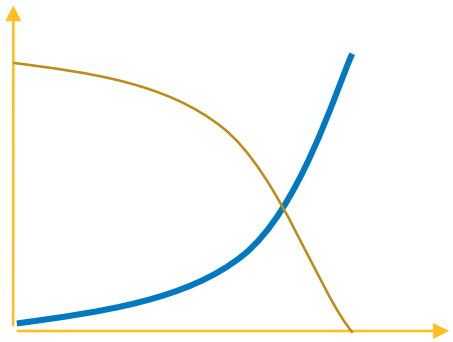
- A 'child block' and part of a linked family. A C02 block is linked to a C01 block and is fully curtailable.

Basic Blocks

- = *Single-period block orders*

- Not a new order type
- A new category of orders on which specific *merit order* rules apply

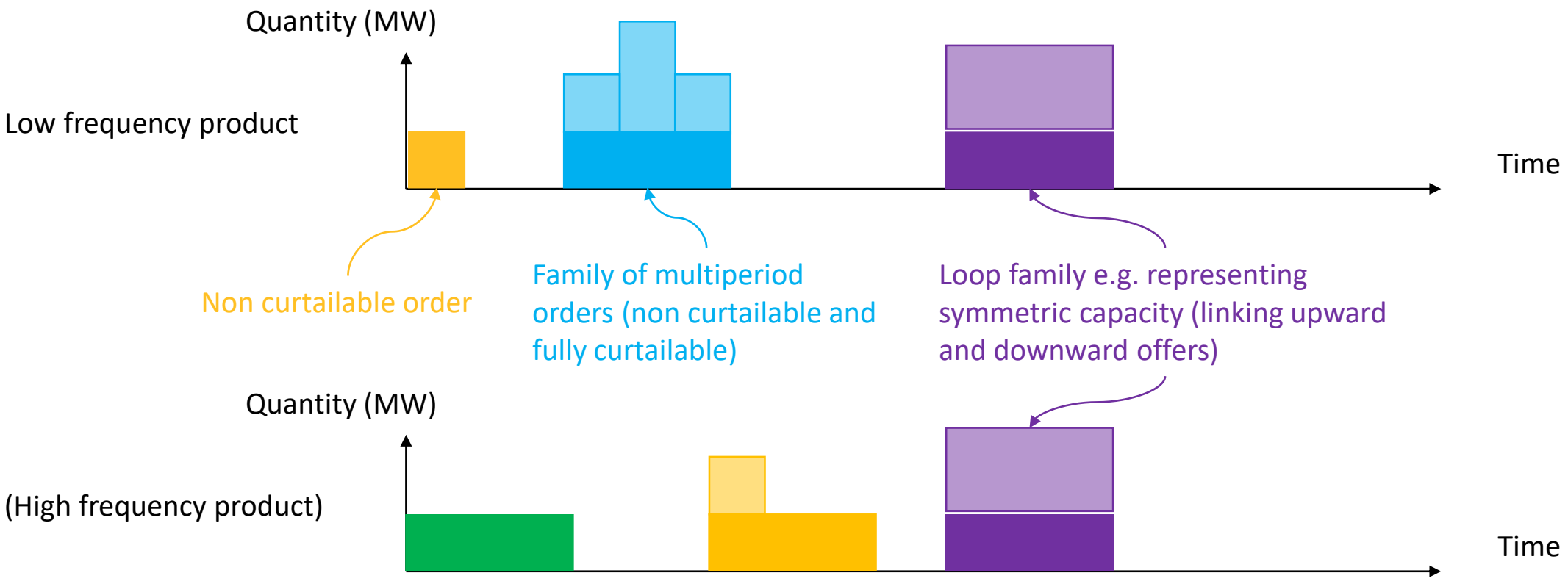
EPEX's platform service: CTS++ and HELENA



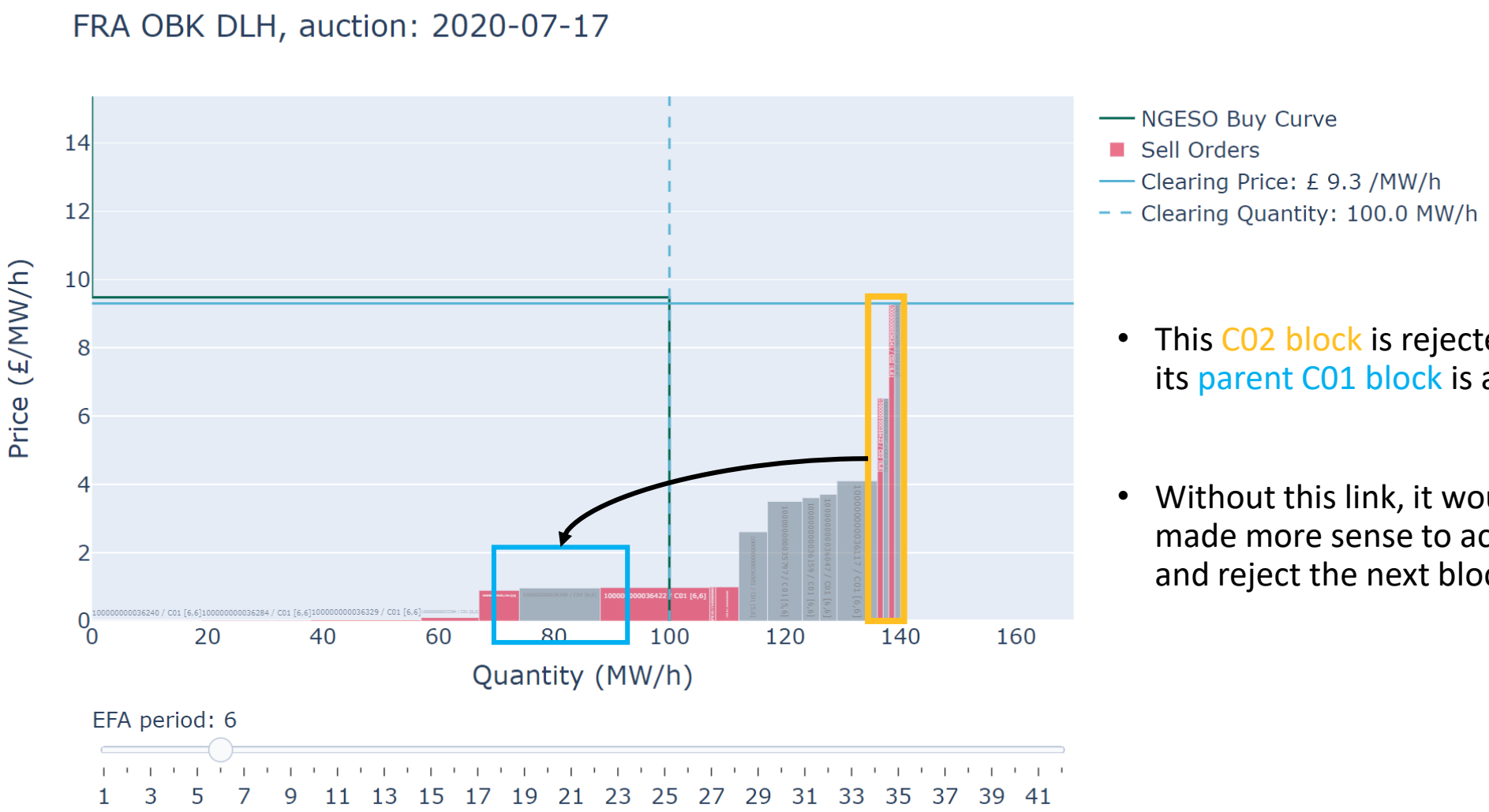
Double blind auction

HELENA algorithm offers a lot of flexibility to suppliers while maximizing market welfare and minimizing procurement price

Sellers can use a variety of block orders to reflect their constraints



Taking into account family dependency



- This C02 block is rejected because its parent C01 block is also rejected.
- Without this link, it would have made more sense to accept this C02 and reject the next block in the stack