Public

Quick Reserve phase 1 Industry Drop-in

24 October 2024

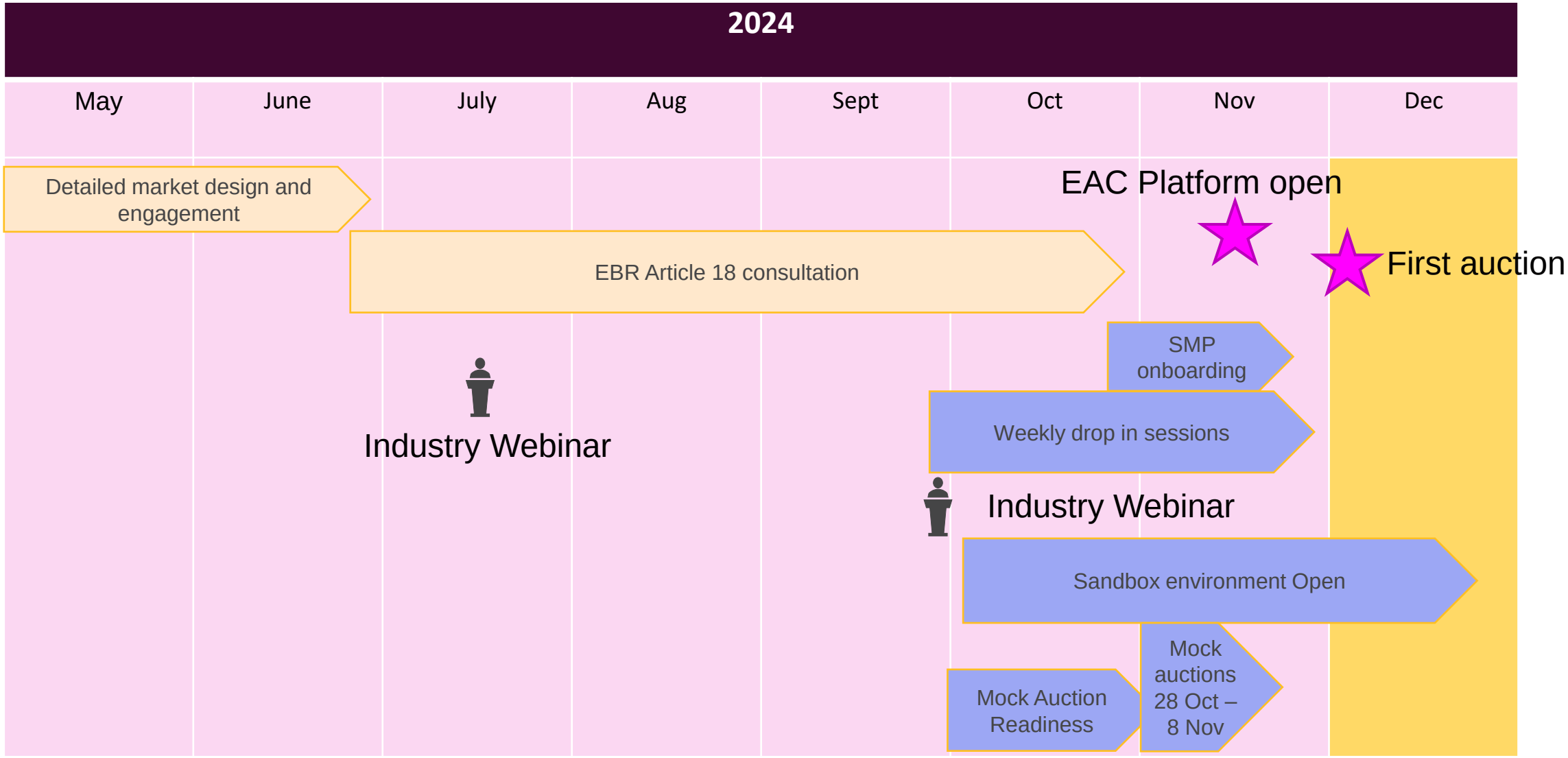
NESO
National Energy System Operator

Agenda

1. Timelines
2. Mock Auctions
3. SMP registration
4. Service Requirement
5. Auction
6. Service Parameters
7. Performance monitoring and settlement
8. Q&A

Timelines

Timeline for quick reserves phase 1 delivery



Key Dates

Ofgem Decision – End Oct

QR available in Sandbox from 3 October

Mock Auctions – planned for 28th Oct – 8th Nov

Planned EAC platform open for bids – 19th November 2024

Planned First Auction – 3rd December 2024 (with delivery starting 23:00 on 3rd Dec)

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Mock Auctions

Mock Auctions

- The mock auctions will support the go-live of the Quick Reserve on EAC platform in mid-November 2024 and enable the associated changes to the procurement process for frequency response & reserve services.
- The mock auctions are designed to educate all stakeholders on the practical application of the market design and help to build transparency of market clearing outcomes.

- The Mock Auction environment will be available to access from **Monday 21st October**. All data in Sandbox will be transferred to Mock Auction environment on Friday 18th October.
- Mock Auction URL - https://mock-auction.eac.neso.production.n-side.com/marketparticipant
- Mock Response and Reserve auctions will be scheduled to take place daily from Monday 28th October to Friday 8th November
- API credentials used in the sandbox environment can also be used in the mock auction environment.
- Results of each mock auction will be available here: https://www.neso.energy/data-portal/eac-mock-auction-results

- QR Mock Auction Guidance doc is available here. https://www.neso.energy/industry-information/balancing-services/reserve-services/quick-reserve#How-to-participate-

- If you have any questions, please contact **minesh.solanki@nationalgrideso.com**

SMP Onboarding

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SMP Onboarding

The Single Markets platform prequalification will open to providers following Ofgem's decision at the end of October.

Ahead of Ofgem's decision, we recommend new providers enter SMP, and begin setting themselves up for Quick Reserve

What you can do now:

- Set up your company on SMP,
- Create your Assets and Units you wish to use for Quick Reserve
- Align your Units and Assets within SMP, to be ready for prequalification.

SMP Guidance is available online, as a user guide and demo videos and if you have any issues with SMP, please contact commercial.operation@nationalenergyso.com

What cannot be done at this point

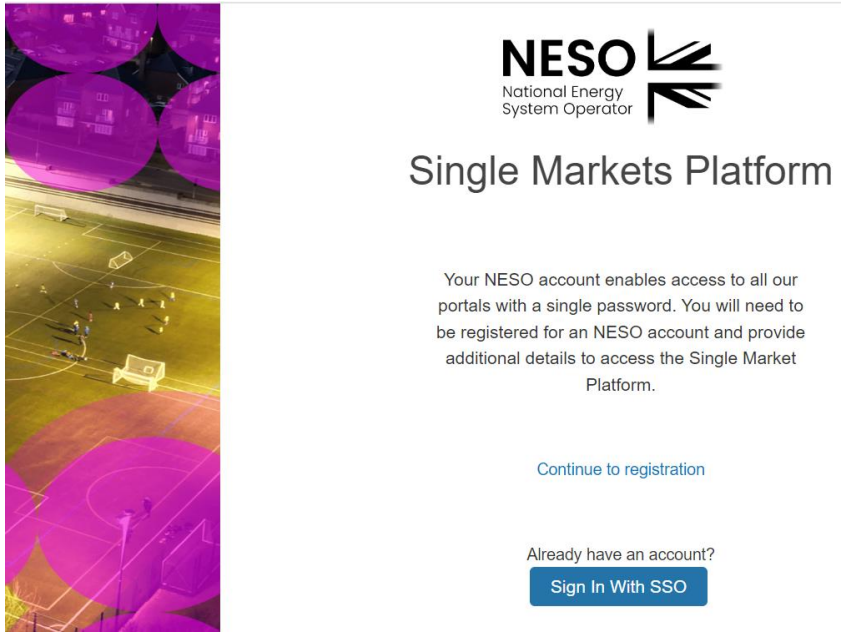
- Prequalification for the Quick Reserve service in SMP, including signing up to the service terms and procurement rules.

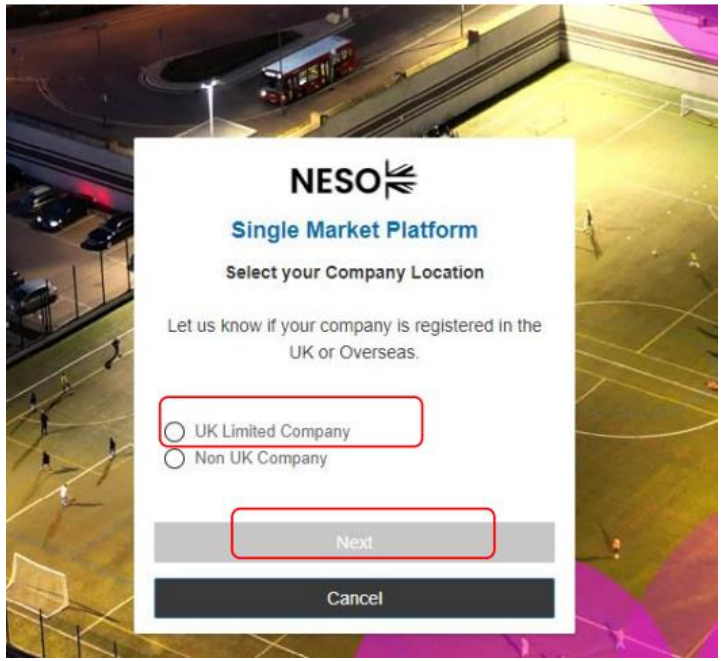
Prequalification will become available once the service receives a decision and at this point, providers can enter their QR specific parameters and sign up to the service terms

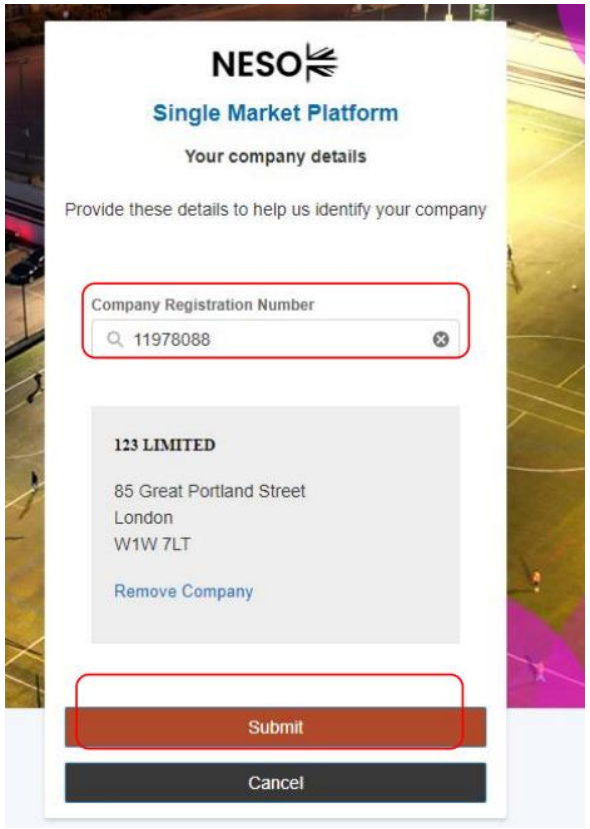
1. Account/User Registration

Access the Single Markets Platform from the link on the NESO website: SMP Link

- If you are registering for the first time, or for a new company in SMP, you will need to create a NESO account and then enter your company registration number.







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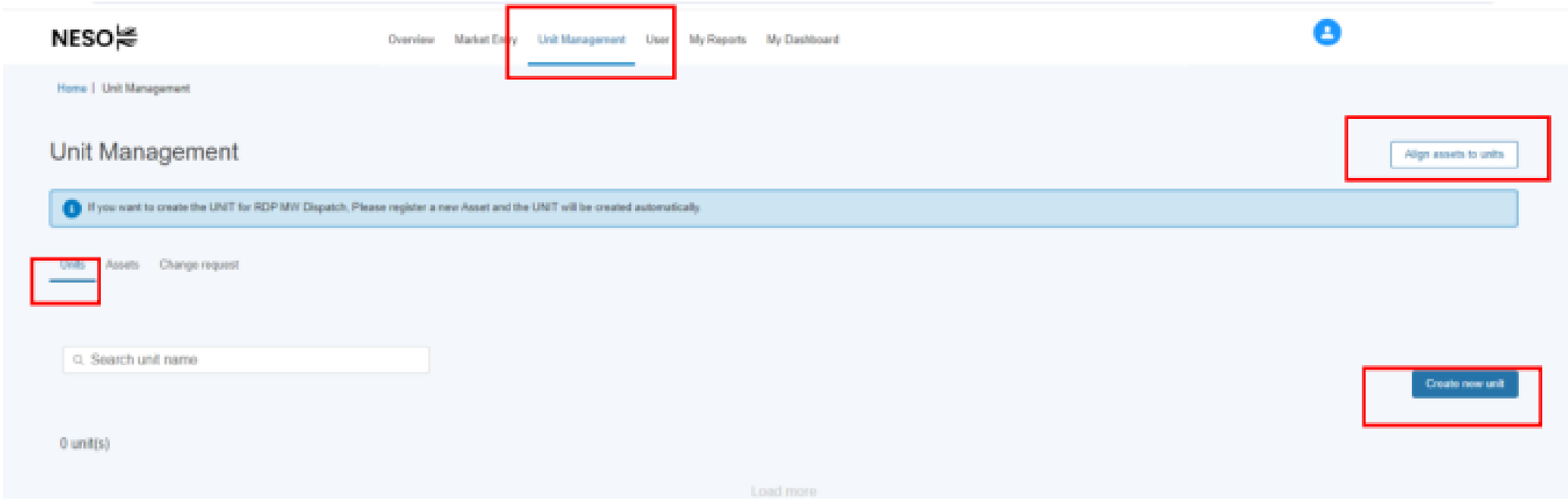
2. Unit Management

Once you have completed verification and are successfully registered as a User in SMP, you can access the Unit Management page, to create your Units and Assets.

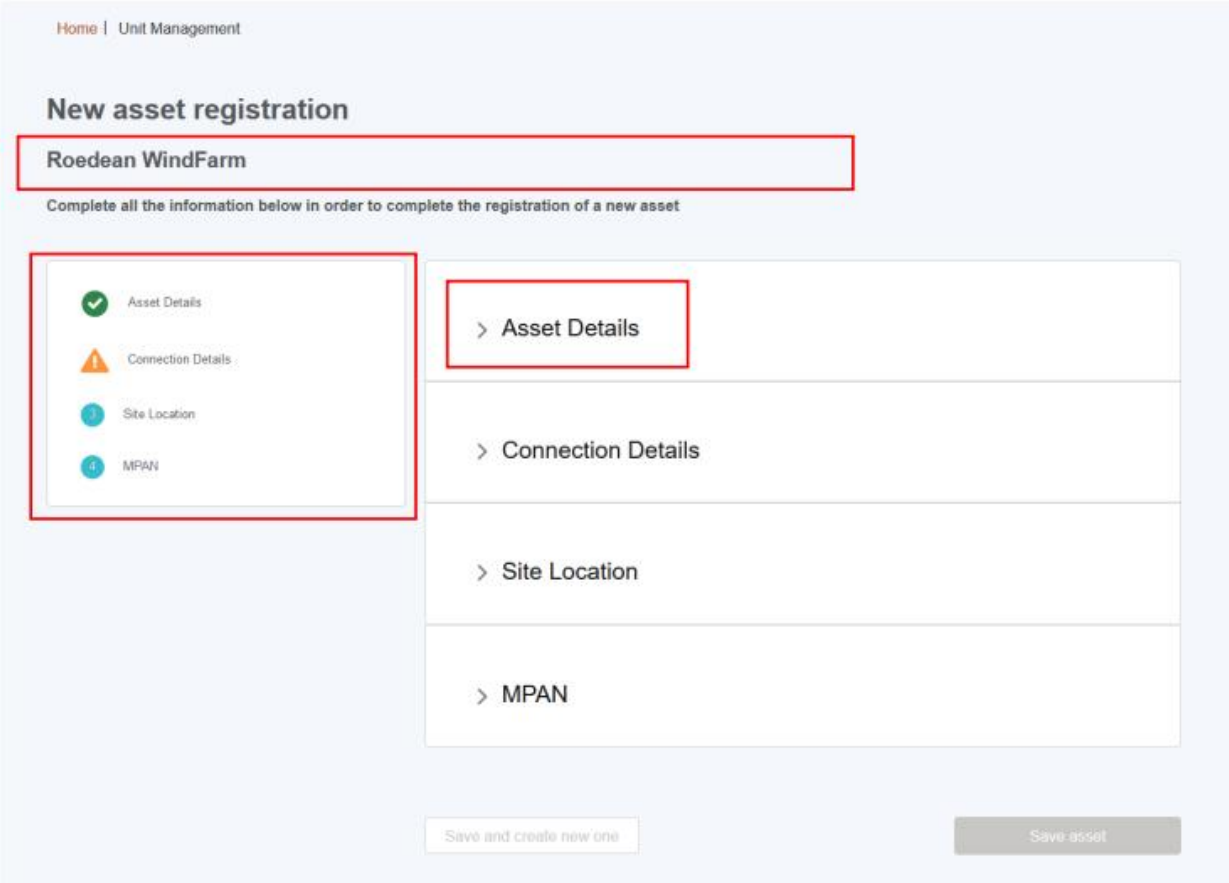


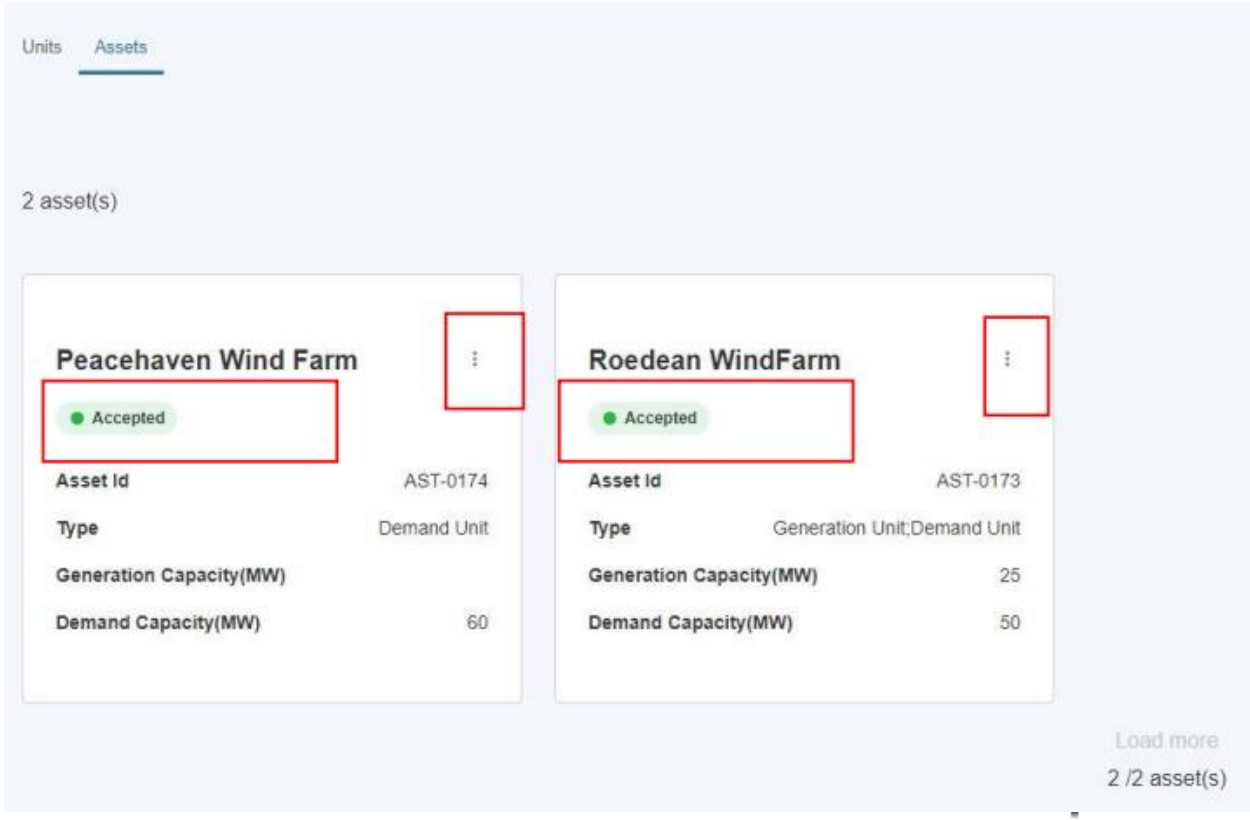
You are now ready to start registering your QR Units and Assets!

3. Asset Creation

You can now enter the Asset name, and the relevant parameters, for your Asset.

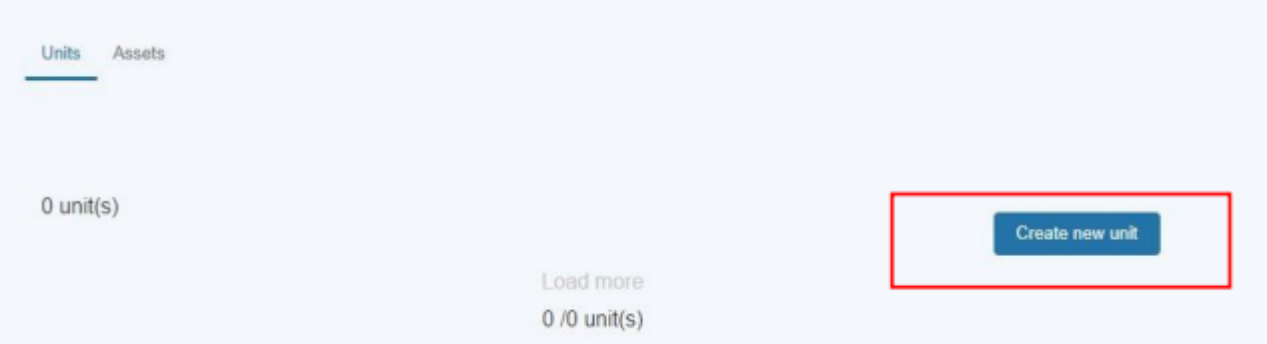
Once finalised, you can save this Asset, or create a new one, if you have multiple you want to register, and the completed asset will show in your Unit Management page.

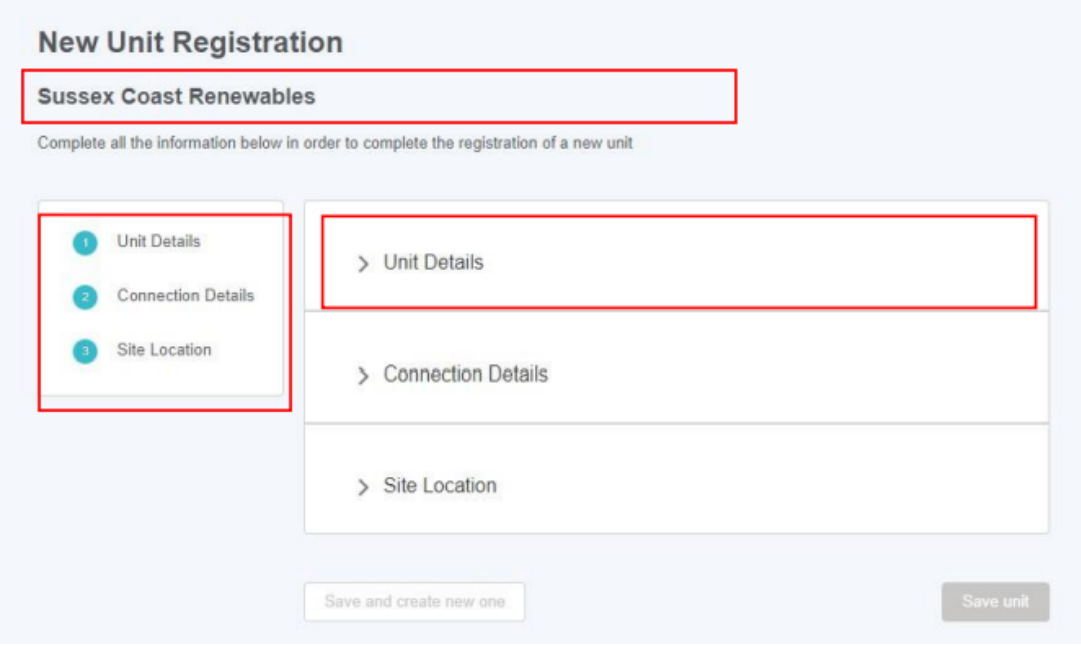


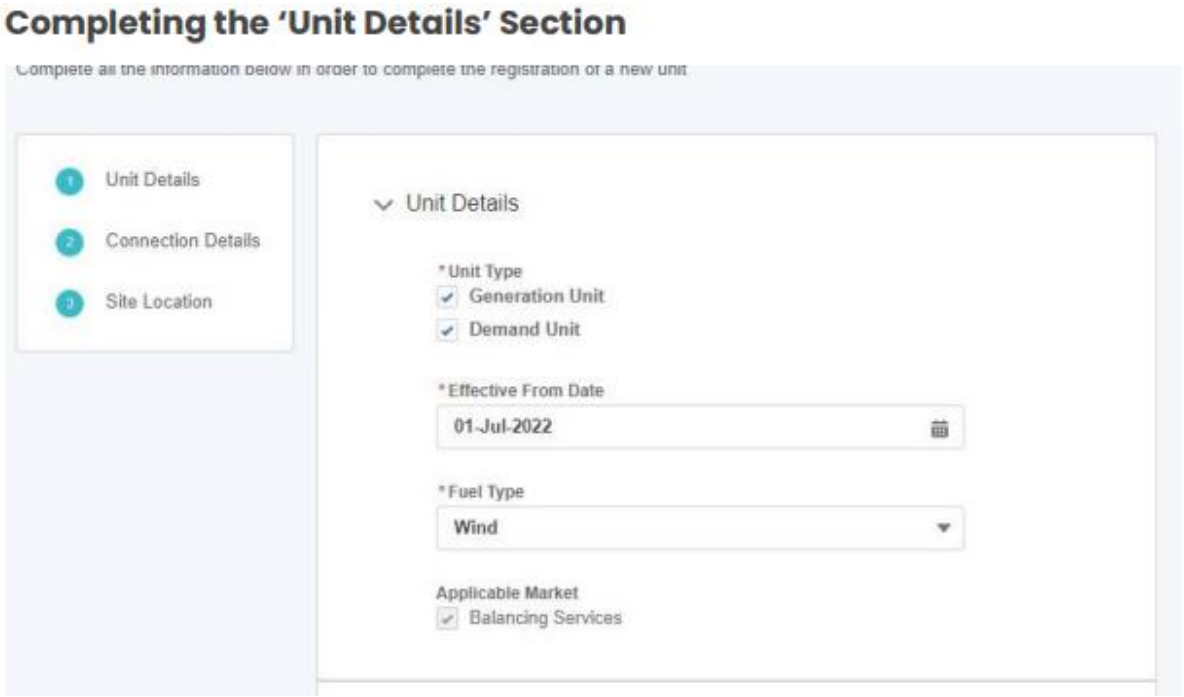


4. Unit Creation

You can now create your Units, which your asset will be aligned to. These Units will be used to register for the QR service in SMP.

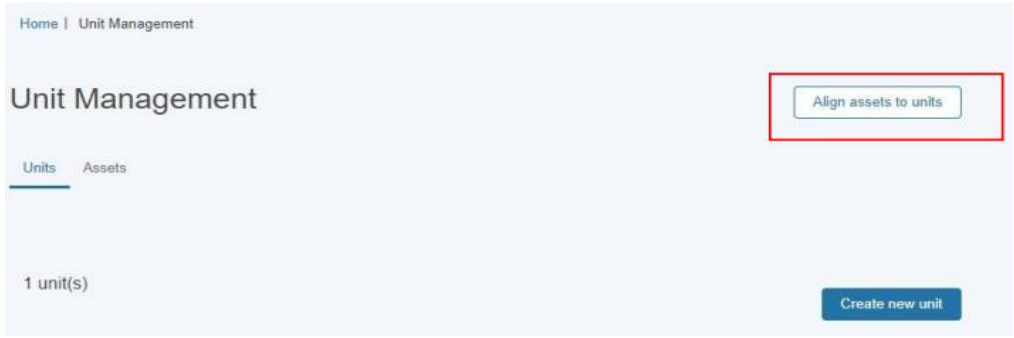


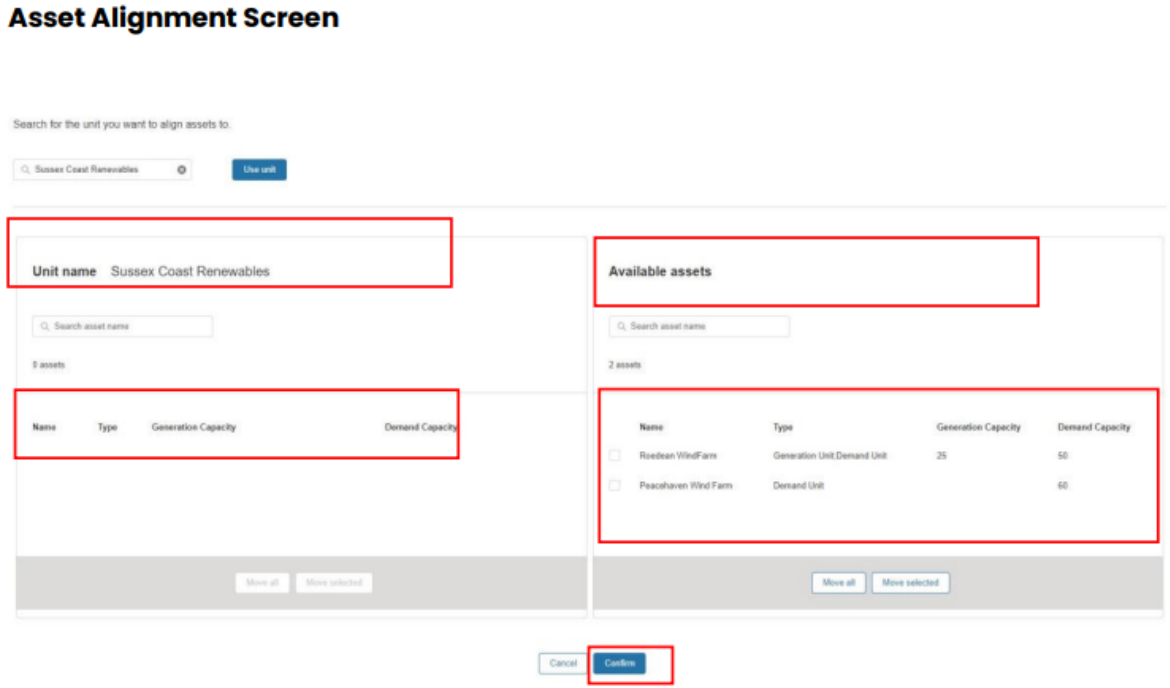




5. Unit and Asset Alignment

- Once your Unit/s and Asset/s are is registered, you can now align your Asset/s and Unit/s, from the Unit Management page.





6. You are now ready to prequalify

Once you have completed the above steps, you are ready for the launch of Quick Reserve in SMP.

If you need any support with any of the steps we've been through today, SMP Guidance is available online, as:

- a user guide and
- Demo videos for the key parts of the process

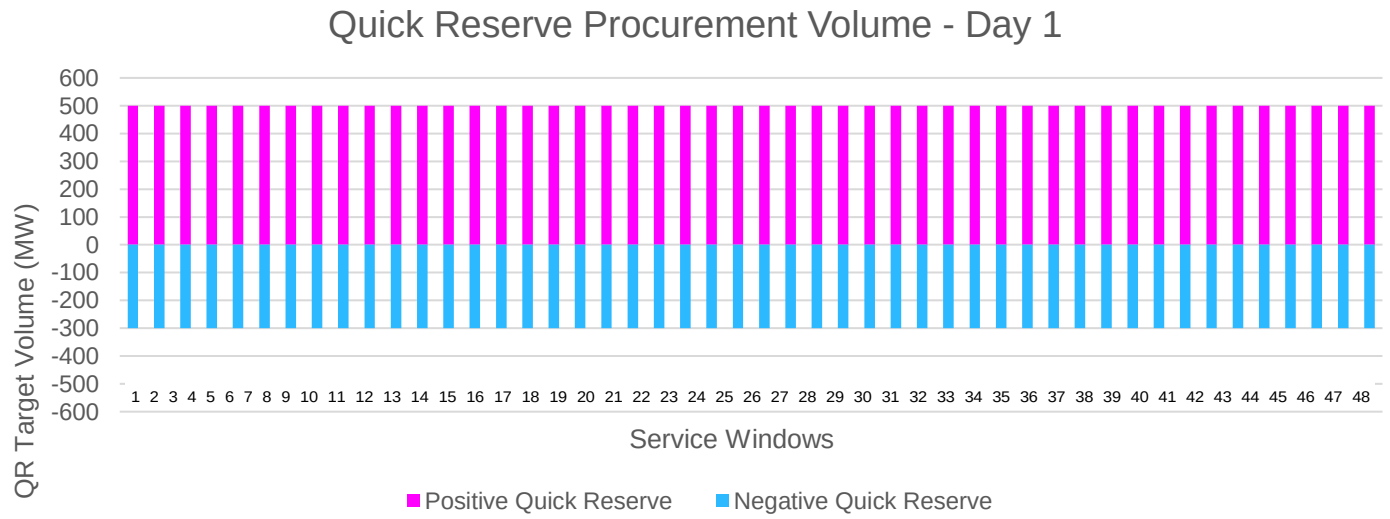
Once the Quick Reserve service is available in SMP, we will provide further guidance on the prequalification process.

and if you have any issues with SMP, please contact commercial.operation@nationalenergyso.com, or get in touch with the Quick Reserve team.

Service requirement

Requirement for Day 1 (Dec 2024)

- We will aim to buy **500 MW** of Positive Quick Reserve (PQR) and **300 MW** of Negative Quick Reserve (NQR) for each Service Window from Day 1.
- The actual cleared volume will depend on prices submitted such as sell orders submitted by providers and buy order prices submitted by NESO, and welfare of co-optimised auction with Response products.
- We may contract more volume than set requirement if this option maximises the welfare.
- Overholding will be included in the buy order to ensure we don't reject the units based on the size alone.
- When setting out the maximum price for the service, we will forecast day ahead alternative actions in absence of QR. Although volume requirement is flat, the maximum prices may vary across service windows.



Requirement on Data Portal

- We will publish the requirement on Data Portal on Quick Reserve Auction Requirement Forecast | National Energy System Operator, the dataset is now available, and we will start updating it ahead of mock auctions.

- Data will initially be updated monthly as the requirement will not change in the initial phase.

- Should the requirement be increased due to events requiring more fast acting reserve, they will be communicated via the new dataset and our Ancillary Services Important Industry Notifications | National Energy System Operator. Please subscribe to both.

- We are launching the service with minimum requirement however we endeavour to shape out the requirement profile. Therefore, the dataset may need to be updated more frequently.

Auction

Auction Design

Single market for response and reserve

Frequency Response services (Dynamic Containment, Dynamic Moderation, Dynamic Regulation) and the new Reserve services (Quick Reserve, Slow Reserve) are procured simultaneously in a single, pay-as-clear auction

Co-optimisation

The auction clearing algorithm is able to select between alternative provider offers and alternate NESO requirements to better optimise the overall market clearing

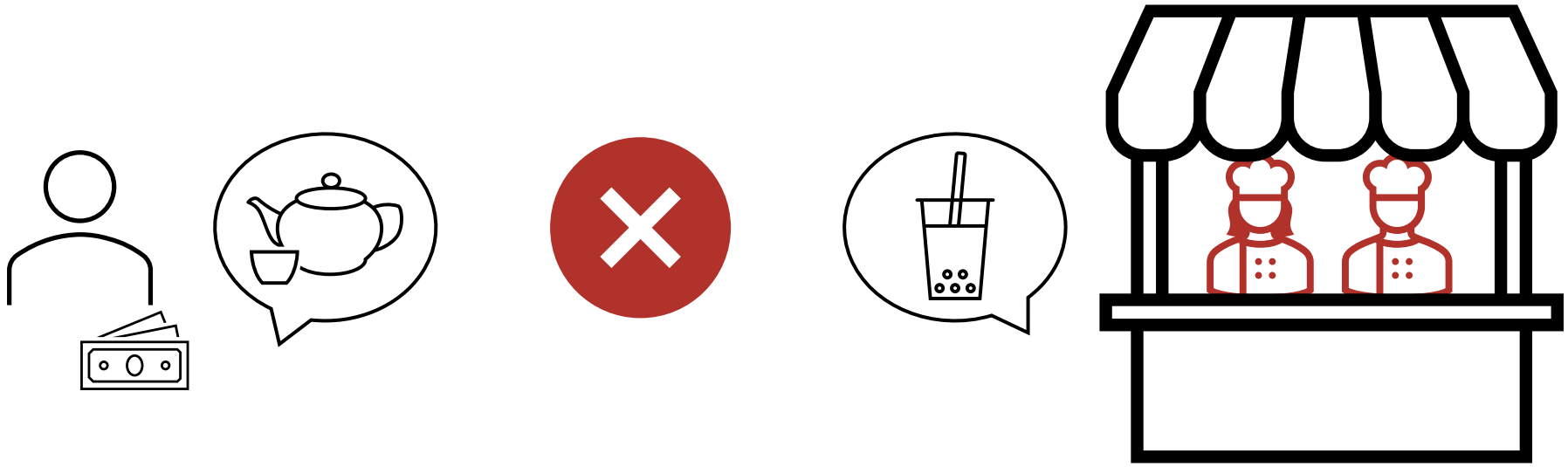
Sell order submission

Sell Orders can be submitted through either 1) Market Participant UI or 2) EAC API.

Overholding

The auction clearing algorithm may clear a quantity of service in excess of NESO requirements if this better optimises the market

A non-cooptimised market…



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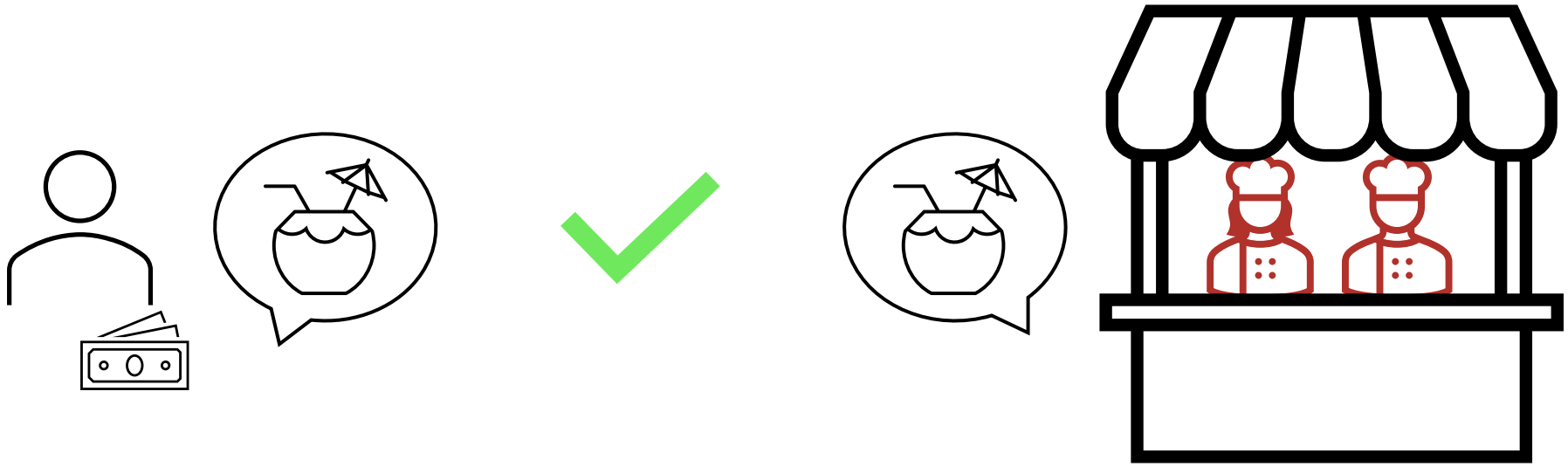
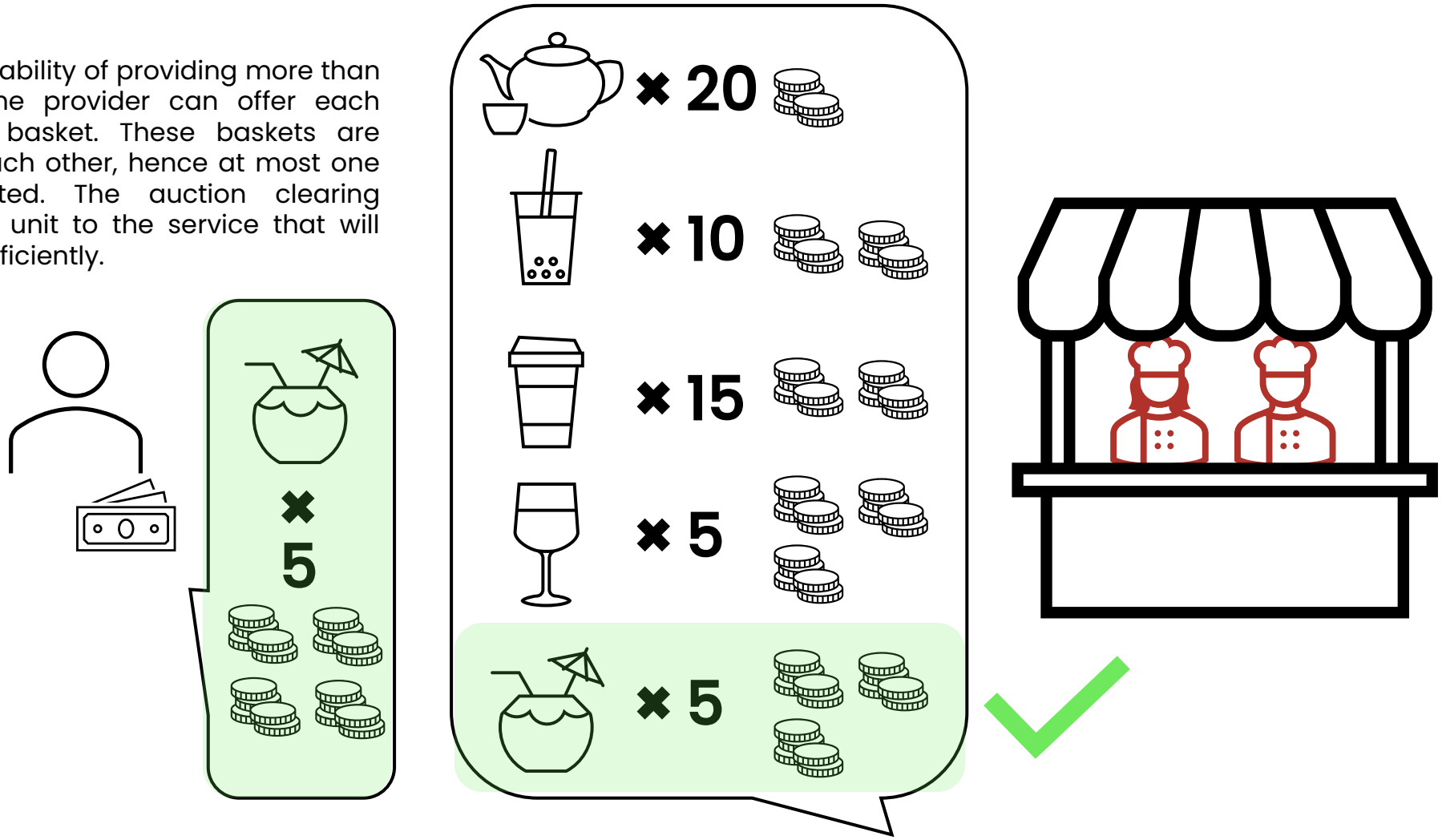


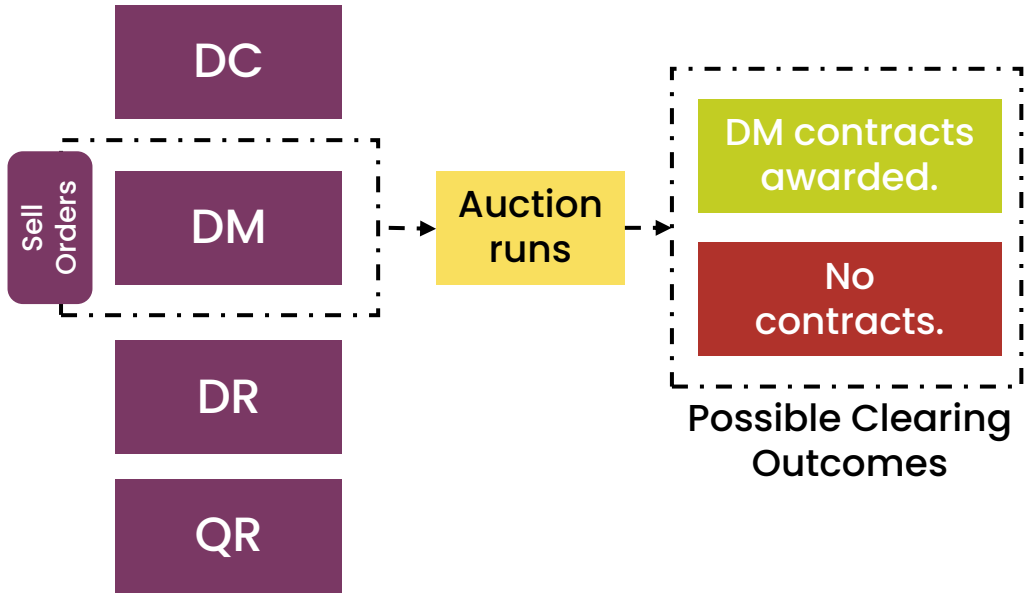
A co-optimised market…

When a unit has the capability of providing more than one of the services, the provider can offer each service in a different basket. These baskets are mutually exclusive to each other, hence at most one basket will be selected. The auction clearing algorithm allocates the unit to the service that will clear the market most efficiently.



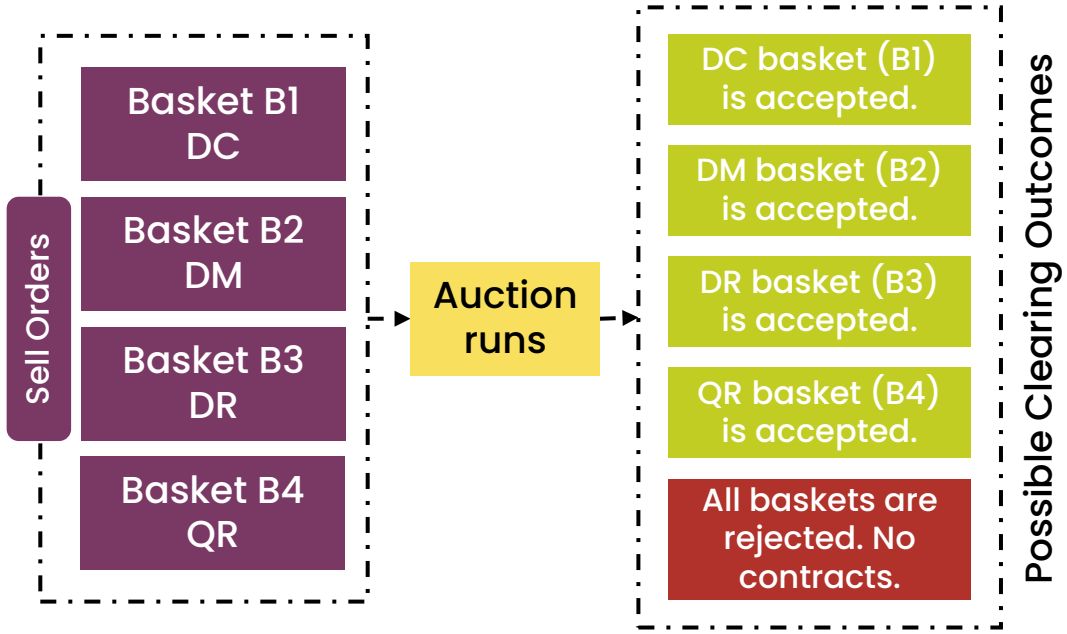
Co-optimisation

Non-cooptimised auctions



Only one service (i.e., either DC, DM, DR, or QR) can be offered into the auction. The provider has to choose in advance which of the various services to offer into the auction.

EAC auction (with co-optimisation)



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Co-optimisation – Numerical Example

Assume a unit is willing to offer 50MW for either DCL, DML, DRL or PQR at £2/MW/h, for delivery period 11:00-15:00.

For simplicity, assume there are no other participants in the co-optimised response and reserve market.

The **requirement** for the same delivery period is 100MW DCL at £25/MW/h, 100MW DML at £20/MW/h, 100MW DRL at £15/MW/h, and 100MW PQR at £10/MW/h.

The market welfare is:

- W_1: $(£25 - £2) \times 50MW \times 4h = £4600$ if the unit is allocated to DCL
- W_2: $(£20 - £2) \times 50MW \times 4h = £3600$ if the unit is allocated to DML
- W_3: $(£15 - £2) \times 50MW \times 4h = £2600$ if the unit is allocated to DRL
- W_4: $(£10 - £2) \times 50MW \times 4h = £1600$ if the unit is allocated to PQR

As per market design, the auction clearing algorithm allocates the unit to the product that will clear the market **most efficiently** (i.e., best maximise market welfare, subject to the constraints), in this example, **the unit will be allocated to DCL market** (and the market clears at £2/MW/h).

Note: More examples can be found in the EAC Market Design Explainer document.

Delivery Period: 11:00-15:00

(EFA 4/Service Window 25-32)

Service Parameters

Technical Parameters

Technical Design Element	Proposal
Direction	Positive and Negative
Minimum Contract Size	1 MW
Provider eligibility	BM units with control/ system telephone during contracted windows
Time to full delivery	1 minute from instruction
Minimum Activation Period	Not greater than 5 minutes
Maximum Recovery Period	Not greater than 3 minutes
Energy Requirement	The unit must be able to deliver the full contracted capacity per QR Window
Operational Metering	Existing BM requirements apply
Dispatch mechanism	BOAs via EDL/EDT or wider access equivalent and control/system telephony as alternative dispatch solution during contracted windows
Notice to Start Ramping	0 minutes
Ramp rates	No maximum ramp up or ramp down rates. Minimum ramp-up and ramp-down rate to be in line with Time to Full Delivery.
Performance Metering	30-minute average settlement operational data
Performance Monitoring	Time to Full Delivery, Availability and Utilisation – Payment Penalties for over (>120%) and under (<95%) delivery
Baselining	As per BM – Physical Notifications 24 hours in advance. Final Physical Notifications 60-mins ahead of contracted Settlement Period. Both zero and non-zero baselines allowed.
Aggregation	Allowed, per GSP group
Operational data requirements	BM units as per current BM operations
Passing through zero	Allowed

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Procurement Details

Procurement Design Element	Proposal
Service Window	30-minute blocks
Maximum Bid Size	300 MW
Frequency of Procurement	Daily – Firm procurement
Locationality	National
Auction Platform	EAC
Auction Timing	Results by D-1 14:30
Stacking	Same MW cannot be sold twice. Splitting only allowed between Positive and Negative QR, BM, Voltage & Stability services.
Bid Sizing	1MW≥, integer bids
Linking of bids	By Service Window and Product (Positive and Negative only)
Bid Curtailment Rules	User defined
Payment Structure	Firm: Availability + Utilisation Optional: Utilisation only
Payment Mechanism	Availability: Pay-as-Clear Utilisation: Pay-as-Bid

Performance monitoring and settlement

Settlement - Payment Information

What Payments will be made:

There are two forms of payment that ESO will make for the Quick Reserve services.

Availability Payments

Where a Service Provider secures a Firm Service contract, ESO will make an Availability Payment subject to the relevant market clearing price (£/MW/h) for the Service Window covered by the Firm Service contract. Availability payments are subject to performance monitoring.

Utilisation Payments

All Utilisation Payments will be calculated using the Utilisation Price on a pay-as-bid basis submitted by the Service Provider for the relevant Service Window. Utilisation payments will include the energy delivered in ramping towards and ramping from the instructed MW level. For BM providers, energy delivered will be paid for through the Balancing Mechanism.

Availability payments and utilisation payments will be settled by ESO monthly, subject to deductions for service delivery failures following performance monitoring.

The Payment Process:

Payment runs align with all other AS invoice processes; Settlement takes place during the month after the one in which the service has been provided. So services provided in December 24 will be settled in January 25.

Preliminary Statements are issued by the eighth business day of the month following provision of the service provided and do not include invoices as there are no associated payments, they are intended as an opportunity for providers to review our calculation of what they are owed, allowing time to raise a dispute before the creation of the final statement.

Final Statements are issued for each ancillary service, along with the self-bill invoices, by the eighteenth business day of the month following the provision of the service.

Settlement – Data and Queries

Data to be provided:

Operational Metering

In line with frequency response services and the Balancing Mechanism, all providers will be required to submit operational metering data at a frequency of 30-minute average settlement whilst prequalified for the service. For the avoidance of doubt, this includes where the unit is declared unavailable. All operational metering, including active power and system frequency data, should be provided at an accuracy according to the relevant Code of Practice.

Performance Metering

All providers will be required to submit data to NESO for real time monitoring of service availability and post-event performance monitoring. This data is required by NESO to ensure operational security of the network and to validate the performance where units are dispatched to deliver an instruction for the Firm and Optional Quick Reserve services. Performance metering data should be submitted to NESO as the end of the operational day.

Raising a Query or Dispute:

If you have a query or dispute relating to payments, download the query and dispute submission template. Download the dispute template

Once complete, email it to settlement.queries@nationalenergyso.com

Settlement Operations Contact Details:

You can use the query form as referenced above, or you can contact the Settlements team via their central email address which is settlement.queries@nationalenergyso.com

Settlement - Performance Monitoring

Performance Monitoring

Performance monitoring will be completed in line with the Service terms and Guidance document – the checks that will be performed are as follows;

- **Availability and Utilisation**
  - This check confirms contracted units comply with the service parameters and Accepted tendered MW by confirming unit availability and flag any units which were unavailable
- **Time to Full Delivery**
  - This check confirms contracted units could achieve the full contracted capacity within the Time to Full Delivery of 1 minute, which is inclusive of Notice to Start Ramping (NTS) time parameters.
- **Cease Time**
  - This check ensure units comply with the requirement to ramp down within the specified time so that they can then recover in time the next instruction to activate.
- **Activation and Recovery**
  - This check ensure units comply with the minimum Activation and Recovery periods specified
- **Cross Overs**
  - This check confirms contracted units could deliver the service where instructed at the end of the Settlement Period as per the service terms.
- **Delivery %**
  - This check confirms contracted units comply with the minimum and maximum delivery thresholds where a unit is required provide delivery between 95% (min) and 120% (max)
- **Stacking – Splitting**
  - Splitting - This check confirms that where a unit is being paid multiple revenues using different capacity, at the same time then they have only split across the services and that they are not split between the same polarity Reserve products, i.e., PSR & PBR or that the splitting has not impeded their ability to fulfil their contracted MW.

Settlement – Useful Documents

Useful documents:

Please use these forms if you need to send us (or update) your contact details or have a query or dispute. Each form contains details of how to send them back to us.

Change of bank details form (Settlements)

New Provider Guidance Document (settlements)

Payment Query and Dispute Submission Template

Payment Calendar

Trouble shooting & FAQs

Q&A

Thanks for attending