# Consultation Guidance

ESO

# Contents

# State of Energy (SoE)

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# Overview / intro

**Table 1**: Terms and Definitions

| Term | Measure | Definition / When they are used |
|---|---|---|
| Offered Quantity | MW | This is the quantity of a response product that the provider has offered into the auction. |
| Contracted Quantity | MW | This is the quantity of a response product that the provider has been contracted for. |
| Delivery duration | Minutes | DC – 15 mins<br>DM – 30 mins<br>DR – 60 mins |
| Contracted Response Energy Volume (REV) | MWh | This is the minimum capacity required by the unit at the start of each EFA block calculated by: (service **delivery duration**/60)* **Contracted quantity**.<br><br>For bidirectional contract they require to have the combined high requirement and the combined low requirement. |
| State of Charge | % of charge of battery | The State of Charge of the battery (at the beginning of the EFA block) is dependant on the required **REV** in each direction. This is more likely than not to be a range around 50% ish. So that they have capacity to both import and export as required. |
| Energy Recovery (ER) | MWh | This is the minimum the unit must recover per settlement period after a frequency event that has resulted in them no longer having the required **REV** and is calculated as 20% of the **REV** |
| Extra Capacity / Capacity reserved at the bidding stage | MW | This is the capacity that the unit is required to reserve at the bidding stage so that they can effectively manage their SoE during service delivery and it varies depending on the service that they are delivering:<br>DC – 10%<br>DM – 20%<br>DR – 40%<br>This equates to the **ER** * 2 as this is the minimum the unit must recover in a SP (30 mins) – conversion from MWh to MW.<br>This created the necessary headroom for energy recovery as the extra capacity reserved is equal to the required ER per SP. |

# SoE During Service Delivery

**Proposal:**
**There is no fundamental change to the policy here we are ensuring that the service terms are explicitly clear:**

- Providers must have the **contracted response energy volume** at the start of each EFA block.
    - Contracted REV= (duration of service/60)*Contracted volume

- Their response energy volume should be assessed at the start of each settlement period.

- At the end of every Settlement Period the Registered Service Provider assesses the level of stored energy and submits an appropriate baseline to recover that energy at a rate of at least 20% per Settlement Period.

- If they no longer have the contracted response energy volume at the start of the settlement period then they must start the process of recovering that energy volume at a minimum of 20% per settlement period.

- By the time the next EFA block arrives they should have managed their SoE and energy recovery effectively such that they have the contracted response energy volume at the start of the EFA block once again.

- If a unit has followed the SoE management rules, but due to continuous delivery of contracted response services has depleted their unit(MW) then they must declare unavailable but will be considered available in terms of payment.

**Justification:**

- These rules ensure that units remain able to provide the contracted services on a continuous basis.

- The 20% energy recovery rule, gives ESO confidence that material volume of Response energy is being recovered until full CREV is restored whilst not being overly restrictive on providers (and allowing for more recovery if desired)

# Service Delivery – Energy Recovery

- In the example in the following slide, we can see what this might look like in real time.
- The line across the top shows the frequency trace, and as we can see there is a fault in EFA 1 SP2 which triggers the providers DC contract.
- The provider starts EFA1 with 15MWh (which is more than the minimum that is required – Contracted REV of 10MWh)
- During SP2 the unit uses 10MWh
- Resulting in the unit no longer having its Contracted REV.
- So in SP3 it submits a new baseline and can start to recover its energy in SP6. This unit must recover at least 2MWh per SP as this is 20% of its contracted REV (10MWh)
- If it abides by these rules and manages its SoE then it should have sufficiently recovered enough to start EFA2 with its required Contracted REV.
- Although very unlikely – if there was another event during EFA1, that resulted in the unit not having sufficient time to recover its Contracted REV for EFA2, then the unit would still be considered available for payment purposed as per Service Terms

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# Energy Recovery Example

In this example a 50MWh unit is contracted to deliver 40MW DCH in EFA1 then 30MW DMH in EFA2. There is a system fault resulting in a high frequency event in EFA1 SP2. No further response was required in SP 3-8.
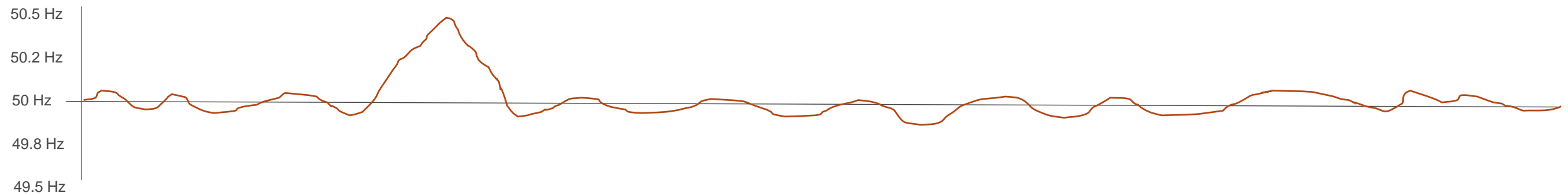
**Figure 1**: Frequency trace



**Table 2**: Description of Events

| | EFA 1 (SP1) | EFA 1 (SP2) | EFA 1 (SP3) | EFA1 (SP4) | EFA 1 (SP5) | EFA 1 (SP6) | EFA 1 (SP7) | EFA 1 (SP8) | EFA 2 (SP1) |
|---|---|---|---|---|---|---|---|---|---|
| **System Frequency** | | FREQUENCY EVENT | System frequency reverts back within the deadband. | | | | | | |
| **Actions needed** | (At least) Contracted response energy volume (10MWh) | | New baseline submission required | | | Start to discharge | | | |
| **Actions taken by unit** | Starts EFA at 15MWh | Delivered 10MWh 5MWh – remaining | Assess and submit a new baseline | | | Must recover a minimum of 20% of contracted REV (2MWh) | | | Will have sufficiently recovered back to 15MWh. |

Although unlikely should there have been another event in SP 7, that didn't not leave enough time for the provider to sufficiently recover, although they have made every endeavour to follow the rules then they will still be available for the purpose of payments.

# Service Delivery – Energy Recovery

- Slide number 9 shows a slightly different example and also illustrates what the units SoE could look like during service delivery as well as when it is able to start recovering post new baseline submission in SP3 (EFA1)

- Through not over bidding at the point of submitting sell orders it guarantees that the provider will be able to deliver in the opposite direction if needed (as in this example the contract is bi-directional)

- If a provider has overbid and is then unable to effectively manage their SoE this will result in them shortening their response in the opposite direction.
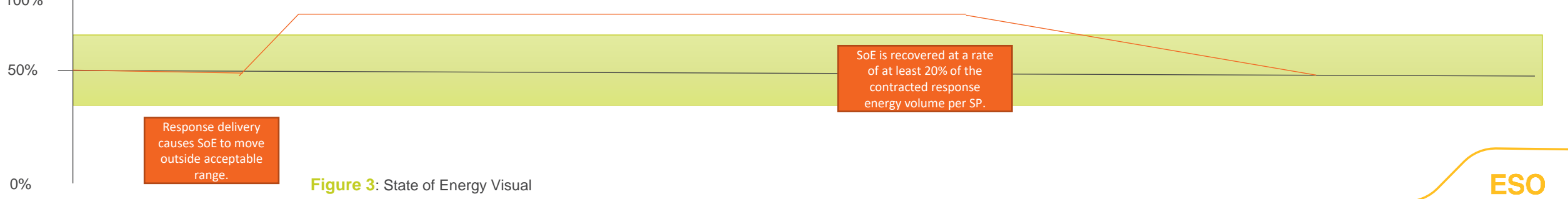
# During Service Delivery – Energy Recovery

In this example a 50MWh unit is contracted to deliver 45MW DCH&L in EFA1. There is a system fault resulting in a high frequency event in EFA1 SP2. No further response was required in SP 3-8.

Frequency trace:

**Figure 2**: Frequency trace:
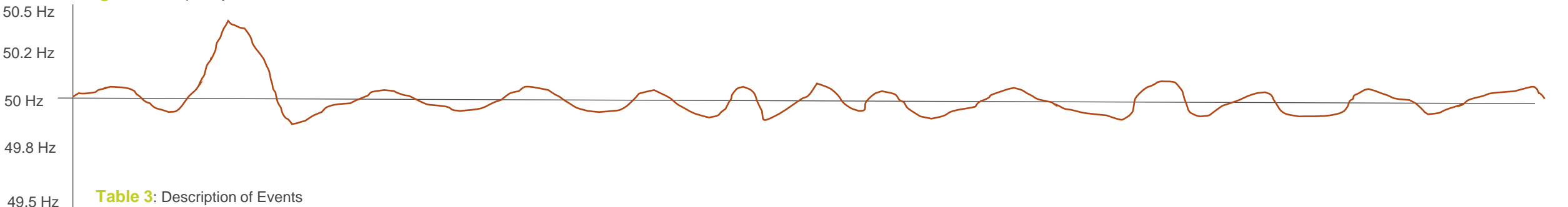


**Table 3**: Description of Events

| | EFA 1 (SP1) | EFA 1 (SP2) | EFA 1 (SP3) | EFA1 (SP4) | EFA 1 (SP5) | EFA 1 (SP6) | EFA 1 (SP7) | EFA 1 (SP8) | EFA 2 (SP1) |
|---|---|---|---|---|---|---|---|---|---|
| **System Frequency** | | FREQUENCY EVENT | System frequency reverts back within the deadband. | | | | | | |
| **Actions needed** | (At least) Contracted response energy volume (11.25MWh) in each direction. | | New baseline submission required | | | Start to discharge | | | |
| **Actions taken by unit** | Starting EFA at 15MWh | Delivered 10MWh 5MWh – remaining | Assess and submit a new baseline | | | Must recover a minimum of 20% of contracted REV (2.25MWh) | | | Will have sufficiently recovered back to contracted REV for EFA2. |



Response delivery causes SoE to move outside acceptable range.

SoE is recovered at a rate of at least 20% of the contracted response energy volume per SP.

**Figure 3**: State of Energy Visual

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# Submitting Sell Orders– Day Ahead

**Proposal:**

We are proposing to add in the specific SoE limits that we expect providers to abide by in to the service terms.

Providers should reserve the following percentage, of their offered quantity when submitting sell orders to allow for effective management of SoE. This is dependant on the service that they are delivering and the percentage should be based on the offered quantity but should be reflective of the total capacity of the asset.

DC – 10%
DM – 20%
DR – 40%

**Justification**

- The ESO is currently monitoring overbidding in relation to bi-directional contracts, through implementing these rules into the service terms it will allow us to further enforce these rules through the monitoring reporting and penalties work.

- This will improve system security as it will allow the control room to have a better view of what response is available to them and will give the ESO certainty that the service they are paying for is there when we need it to be available.
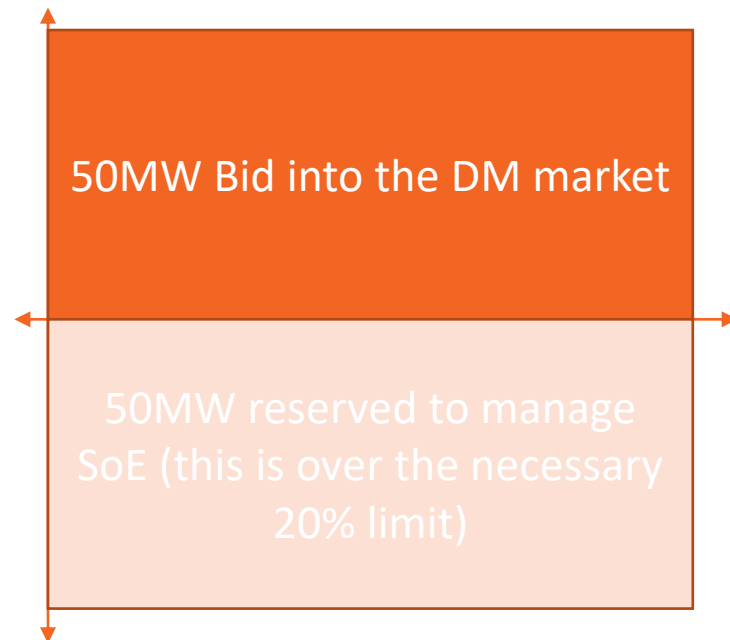
# Bidding Stage - DA

- When submitting sell orders, providers must reserve a certain percentage of their total capacity (dependant on the service that they are delivering) to ensure that during service delivery they can recover at least 20% of their contracted REV without limiting their capacity to deliver instantaneously in either direction as contracted.
    - This gives ESO confidence that material volume of Response energy can be recovered until full CREV is restored whilst not being overly restrictive on providers (and allowing for more recovery if desired).

- In a single directional contract, the unit has ample capacity in the opposite direction to ensure that they can recover at least 20% of their energy recovery, they do not need to reserve capacity in the direction that they are bidding.

- This rule is more critical to units with bi-directional contracts, as they do not have the excess capacity for energy recovery. In order to ensure they have sufficient head room and foot room for energy recovery during service delivery they must reserve the specified capacity dependant on the service they are delivering.

- Limiting providers when submitting sell orders ensures that they can meet the contracted REV at the beginning of the EFA block (shown in example X on slide Y) should providers over bid, especially with stacked contracts it can result in them being unable to meet their contractual requirements.

- As shown on slide 5, it is possible that a provider could offer just a proportion of their capacity into one or more of the D* Services and could reserve the rest for participation in other markets (i.e. the wholesale market) although they would still be required to reserve a proportion of their capacity to manage SoE as highlighted in the table.

    - It is **not** permitted for providers to use the capacity that they have reserved to manage SoE for participation in other markets.

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# Submitting sell order – Example 1
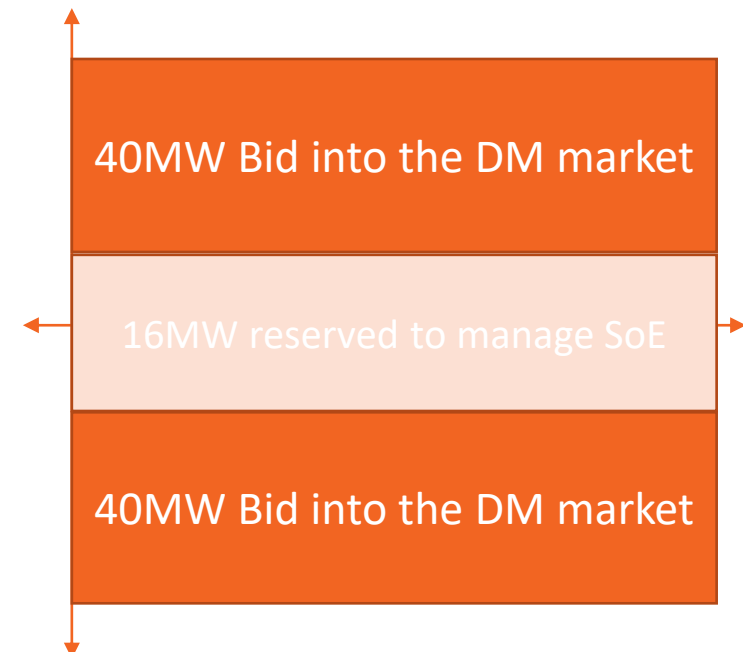
A 50MW 1h duration asset bidding into the DM market.

**Single Directional Contract**
In a single directional contract, the asset can use the capacity in the opposite direction to which it has bid to manage its SoE and so does not need to necessarily bid in 20% less than its capacity in one direction.

50MW Bid into the DM market

50MW reserved to manage SoE (this is over the necessary 20% limit)

**Bidirectional Contract**
In a bidirectional contract, the asset does not have extra capacity reserved in one direction or another, and so they must bid 20% under their full capacity in each direction as demonstrated in the illustrations below:

40MW Bid into the DM market

16MW reserved to manage SoE

40MW Bid into the DM market

# Submitting sell orders – Example 2 – Bidding into other markets

A 50MW 1h duration asset bidding into the DM market.

In both scenarios, the unit has reserved further capacity to bid into other ESO (or external) markets. The extra capacity that has been reserved when submitting sell orders must be used to manage SoE and is **not** permitted for use in other ESO (or external) Markets.

## Single Directional Contract

In a single directional contract, the asset can use the capacity in the opposite direction to which it has bid to manage its SoE and so does not need to necessarily bid in 20% less than its capacity in one direction.

| |
|---|
| 20MW for use in other markets |
| 30MW Bid into the market |
| 50MW reserved to manage SoE (this is over the necessary 20% limit) |

## Bidirectional Contract

In a bidirectional contract, the asset does not have extra capacity reserved in one direction or another, and so they must bid 20% under their full capacity in each direction as demonstrated in the illustrations below:
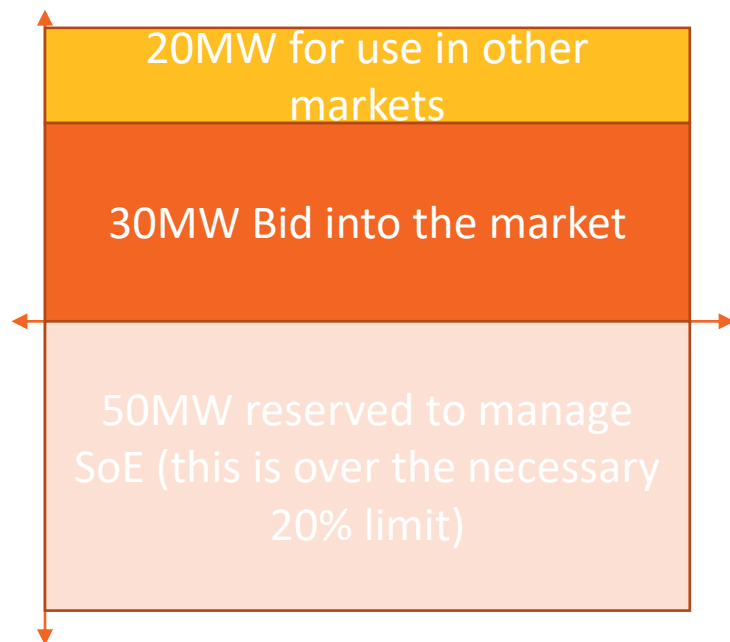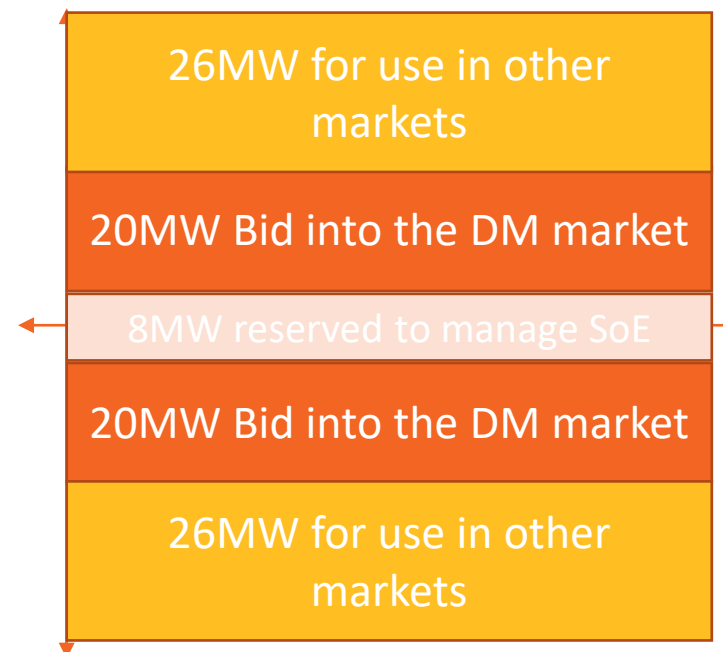
| |
|---|
| 26MW for use in other markets |
| 20MW Bid into the DM market |
| 8MW reserved to manage SoE |
| 20MW Bid into the DM market |
| 26MW for use in other markets |

# Submitting sell orders - Stacking

- When stacking services all of the rules previously mentioned still apply
- The asset will need to reserve enough capacity for all of the services that they have stacked.

How to calculate the required volume (Example on the following pages):

Table 4: Calculations of the required volumes

| Service | Contracted V (MW) | C. REV (MWh) | Energy Recovery (MWh) | Extra Capacity | Extra capacity values |
|---------|-------------------|--------------|-----------------------|----------------|-----------------------|
| DRH | 10 | 10 | 2 | 4 | 40% |
| DCH | 30 | 7.5 | 1.5 | 3 | 10% |
| DCL | 30 | 7.5 | 1.5 | 3 | 10% |
| DRL | 10 | 10 | 2 | 4 | 40% |

The extra capacity is the energy recovery multiplied by 2 as this is the minimum an asset must be able to recover in a SP (30mins) – which also equates to the relevant % of each of the services.

The asset would then combine the total high requirement and the total low requirement so in this example they would need to reserve 7MW high and 7MW low.

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# Submitting sell orders – Example 3 – Stacking

In an instance where you are stacking more than one service, you will reserve enough capacity for all of the services that have been bid into.

## Single Directional Stacked Contract

A 50 MW 1h duration asset bidding into 10MW DMH and 40MWDCH

| |
|---|
| 10MW DMH |
| 40MW DCH |
| 50MW Reserved for SoE (this is over the 40% requirement) |
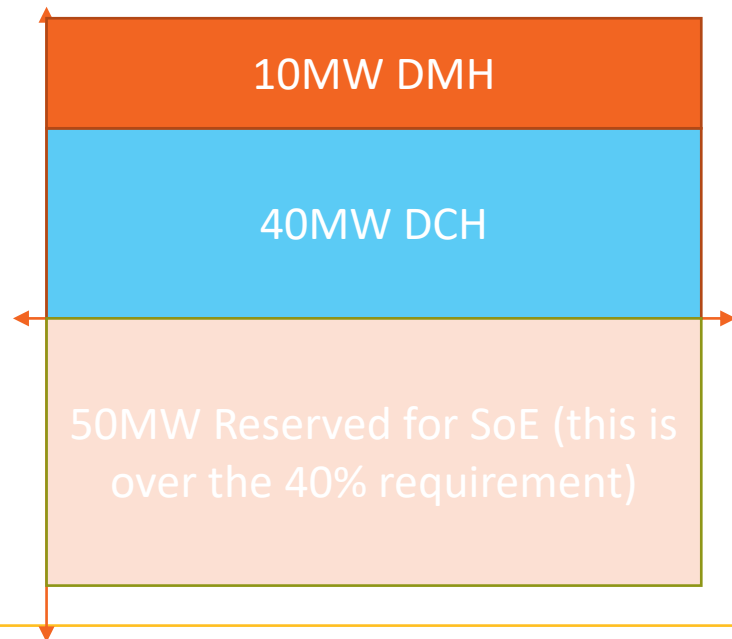
## Bidirectional Stacked Contract

A 50MW 1h duration asset bidding into the 12MW into DMH&L and 30MW in to DCH&L market. Total required reserved capacity is 5.4MW for high and 5.4MW for low.

| |
|---|
| 12MW DMH |
| 30MW DCH |
| 10.8MW Reserved for SoE |
| 30MW DCL |
| 12MW DML |

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# Submitting sell orders – Example 4 – Stacking

In an instance where you are stacking more than one service, you will reserve enough capacity for all of the services that have been bid into.
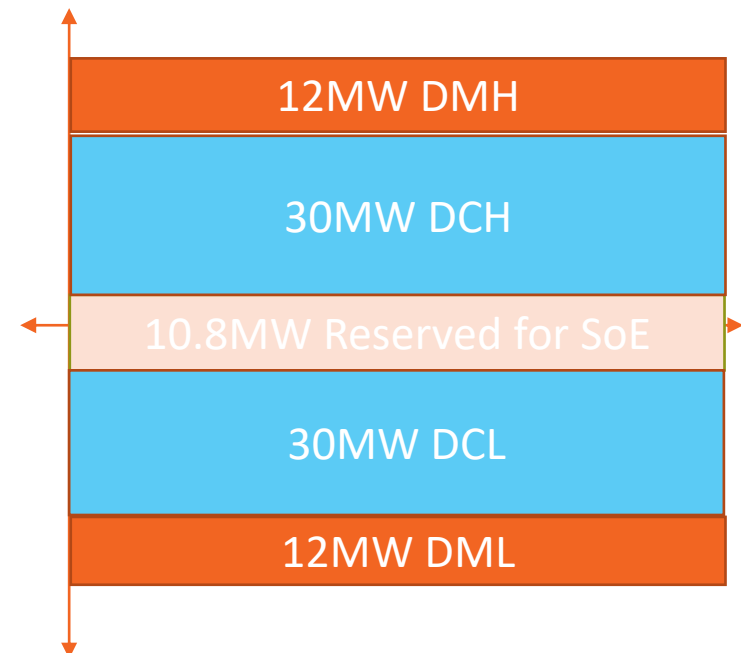
**Single Directional Stacked Contract**

A 50 MW 1h duration asset bidding into 10MW DRH and 40MWDCH

| |
|---|
| 10MW DRH |
| 40MW DCH |
| 50MW Reserved for SoE (this is over the 40% requirement) |

**Bidirectional Stacked Contract**

A 50MW 1h duration asset bidding into the 10MW into DRH&L and 30MW in to DCH&L market. The total required reserved capacity is 7MW for high and 7MW for low

| |
|---|
| 10MW DRH |
| 30MW DCH |
| 14MW Reserved for SoE |
| 30MW DCL |
| 10MW DRL |

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# Submitting sell orders – Example 5 – Stacking Asymmetrical Bids

In an instance where you are stacking more than one service, you will reserve enough capacity for all of the services that have been bid into.
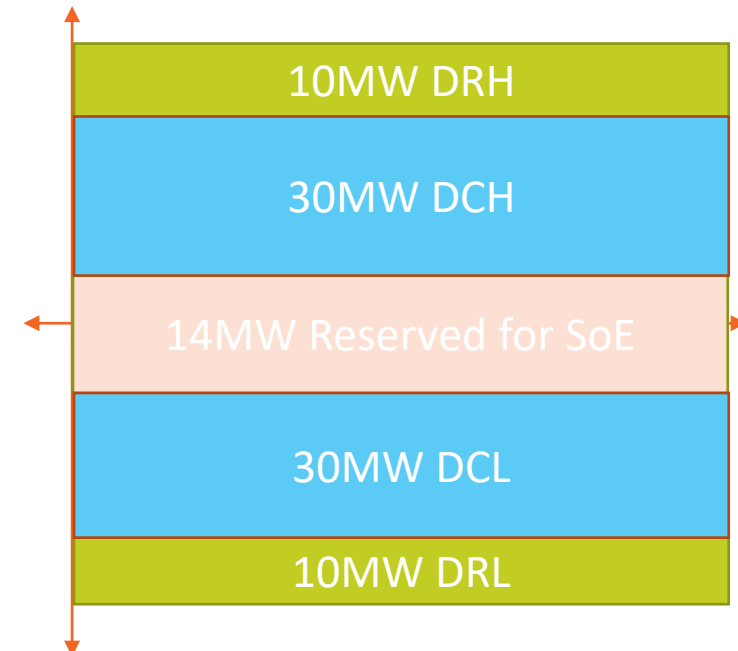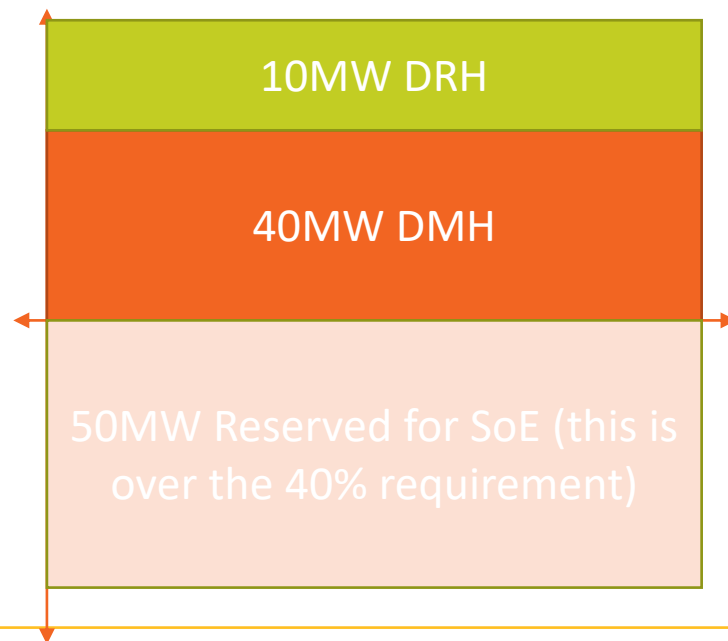
## Single Directional Stacked Contract

A 50 MW 1h duration asset bidding into 10MW DRH and 40MWDCH

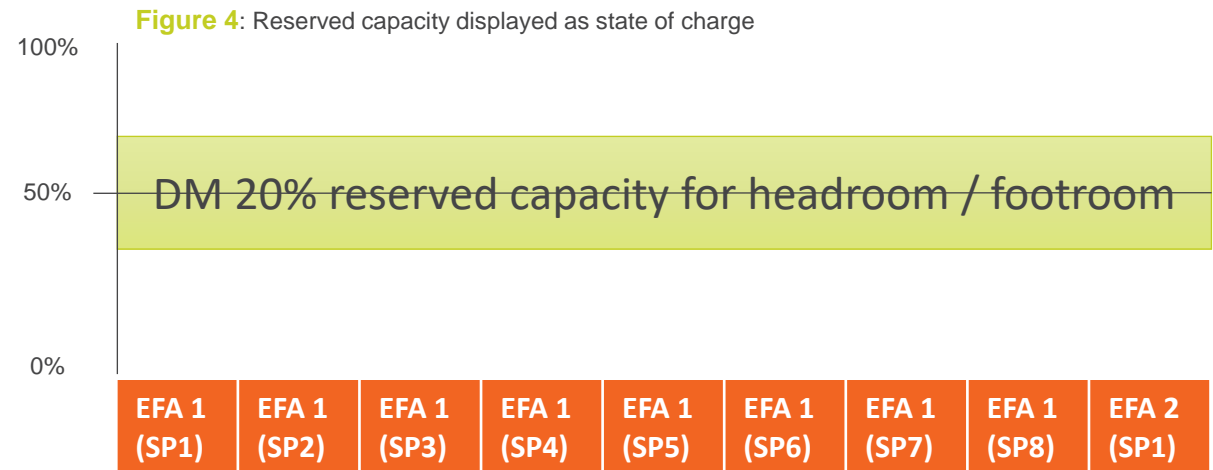| |
|---|
| 10MW DRH |
| 40MW DMH |
| 50MW Reserved for SoE (this is over the 40% requirement) |

## Bidirectional Stacked Contract

A 50MW 1h duration asset bidding into the 15MW into DRH, 25MW in to DCH market and 40MW in to the DML market – The required reserved capacity is 8MW for the low services and 8.5MW for the high services.

| |
|---|
| 15MW DRH |
| 25MW DCH |
| 16.5MW Reserved for SoE |
| 40MW DML |

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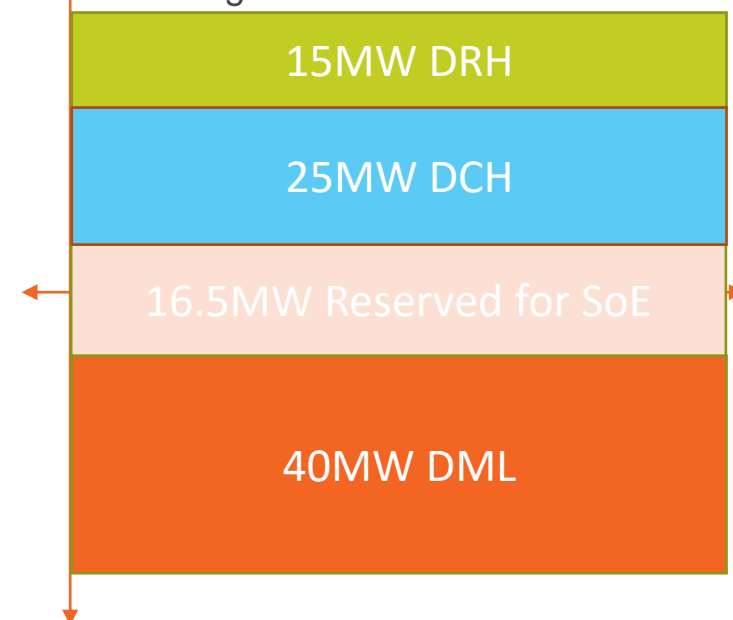
# Conclusions

- In the example on the right it shows the required reserved capacity reflected as a range of charge of the unit.

- As the unit must start the EFA block with capacity to both import 20MWh and export 20MWh which means it can start the EFA block at any point in the range of charge as specified in the example.

- Any where in this range would allow the provider to have the capacity to import 20MWh and export 20MWh.

- This band of green highlights the headroom and footroom that the provider has created at the bidding stage through reserving capacity.
  - This headroom and footroom is what ensures the provider is able to recover at least 20% of its contracted REV during service delivery
  - Hence ensuring that the ESO has certainty that the service they are paying for is available when its needed.



**Figure 4**: Reserved capacity displayed as state of charge

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| EFA 1 (SP1) | EFA 1 (SP2) | EFA 1 (SP3) | EFA 1 (SP4) | EFA 1 (SP5) | EFA 1 (SP6) | EFA 1 (SP7) | EFA 1 (SP8) | EFA 2 (SP1) |

50MWh unit is contracted to deliver 40MW DMH&L in EFA1.

**Calculating the Contracted REV high service:**
DMH: C.REV = (30/60)*40 = 20MWh

**Calculating the Contracted REV low service:**
DML: C.REV = (30/60)*40 = 20MWh

The unit then must start EFA1 with 20MWh capacity to import and 20MWh capacity to export, equating to an SoE of between 40-60% as represented by the green shaded area.

40-60% charge is still with in its SoE limits, if it had over bid at the bidding stage then it could have been out with these limits and unable to meet its contracted REV at the start of EFA block 1.

These limits in place mean the asset has the required headroom and footroom for energy recovery.

# Conclusions

- In the following example we can see that the provider has already reserved the required % of its capacity inline with the service terms at the bidding stage. (as represented by the green section)

- The unit must start the EFA block with 25MWh capacity to import and 25MWh capacity to export.

- As this is a 50MWh battery, the unit can **only** start this EFA block with an SoE of 50% and there is no room for movement on this.

- This highlights the importance of reserving the capacity at the bidding stage as had it not have reserved this capacity at the bidding stage it would never be able to reach the required contracted REV at the start of the EFA block and it would consistently fall short on one slide.

**Figure 5**: Reserved capacity displayed as state of charge
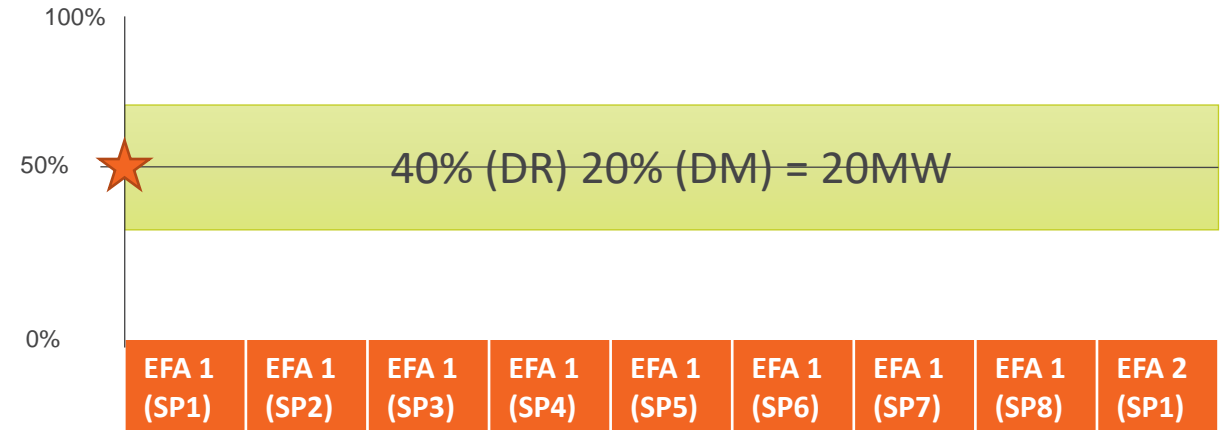
50MWh unit is contracted to deliver 20MW DRH&L and 10MW DMH&L in EFA1.

**Calculating the Contracted REV high services:**
DRH: C.REV = (60/60)*20 = 20MWh
DMH: C.REV = (30/60)*10 = 5MWh
Total contracted REV high = 20MWh + 5MWh = 25MWh

**Calculating the Contracted REV low services:**
DRL: C.REV = (60/60)*20 = 20MWh
DML: C.REV = (30/60)*10 = 5MWh
Total contracted REV low = 20MWh + 5MWh = 25MWh

The unit then must start EFA1 with 25MWh capacity to import and 25MWh capacity to export, equating to an SoE of 50% =

- If the provider had not reserved at least 40% of its capacity at the bidding stage it would be unable to meet the service terms requirement of starting the EFA block with the contracted REV and even if the unit intended to manage its SoE at a later stage it would always be short of the REV to one side.

# Full worked example

- A 50MW x 1 hour battery (50MWh.) with a bidirectional contract can technically deliver 50MW power output in one direction OR the other for 30 mins
(if starts at 50% charge exactly, 50MW x 30 mins = 25 MWh.)

- Scenario
  - High
    - DMH 12MW = 6MWh
    - DCH 30MW = 7.5MWh
  - Low
    - DML 12MW = 6MWh
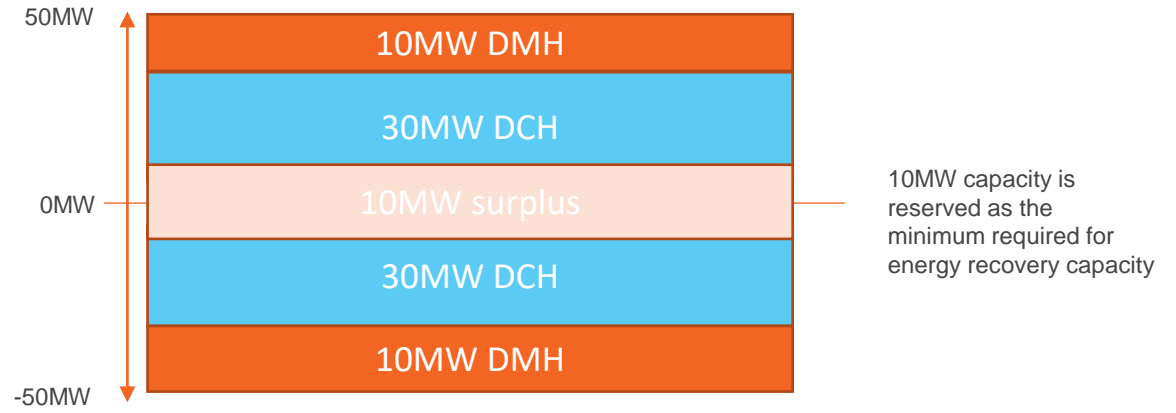    - DCL 30MW = 7.5MWh

ER - Gives ESO confidence that material volume of Response is being recovered until full CREV is restored

Extra capacity = minimum energy recovery per SP in MW

**Table 5**: Calculations table with descriptions

| Service | Offered Quantity (MW) | CREV (MWh) | Energy Recovery (MWh) | Extra capacity values | Extra Capacity (MW) |
|---------|----------------------|------------|----------------------|----------------------|---------------------|
| DMH | 10 | 5 | 1 | 20% | 2 |
| DCH | 30 | 7.5 | 1.5 | 10% | 3 |
| Combined H | 40 | 12.5 | 2.5 | | 5 |
| DML | 10 | 5 | 1 | 20% | 2 |
| DCL | 30 | 7.5 | 1.5 | 10% | 3 |
| Combined L | 40 | 12.5 | 2.5 | | 5 |

Contracted Q * Duration = CREV

CREV * 20% = Energy Recovery

Contracted Q * Extra Capacity Values = Extra capacity



**Capacity held back for energy recovery - MW**

50MW
10MW DMH
30MW DCH
0MW — 10MW surplus
30MW DCH
10MW DMH
-50MW

10MW capacity is reserved as the minimum required for energy recovery capacity

**Figure 6**: State of Energy Visual



**State of energy management – MWh.**

Frequency event in SP2 uses 20Mwh

Energy recovery starts at 2.7 Mwh. Per SP

Asset back to full CREV in SP8

50 MWh. (100%)

25 MWh. (50%) — SOE zone with full CREV

0 MWh. (0%)

SP1 | SP2 | SP3 | SP4 | SP5 | SP6 | SP7 | SP8
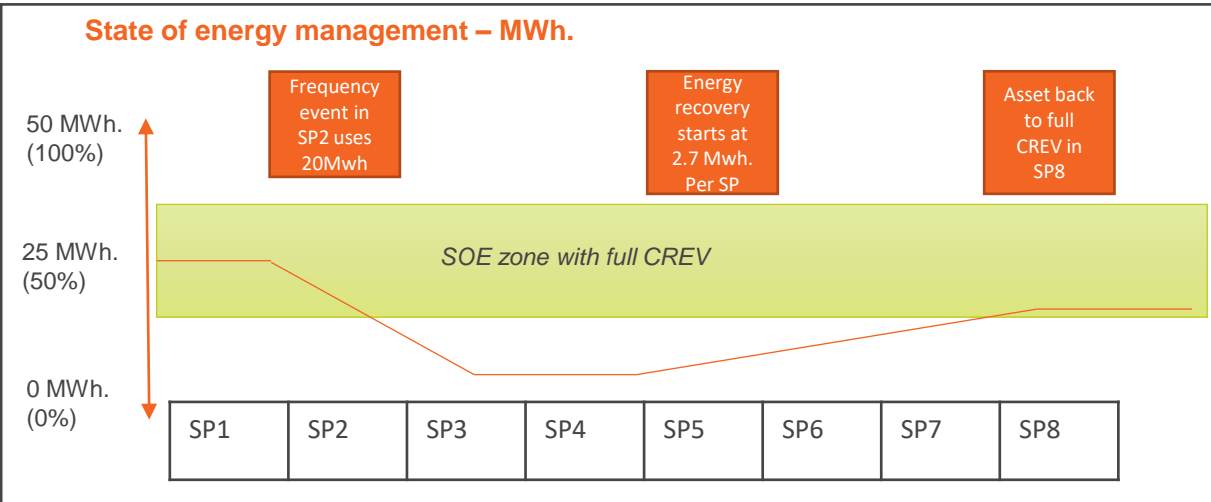
# Penalties

# Introduction

The effectiveness and reliability of our response services rely heavily on the Response Penalty Regime outlined in our Service Terms. However, we acknowledge that there is room for improvement in the current penalty framework. Our goal is to better align the penalties with the actual impact of non-compliance and create stronger incentives for our service providers.

To achieve this, we are implementing a new penalty regime known as the tiered penalty system. This strategic approach is specifically designed to address and rectify instances of repeated violations in a systematic manner. By doing so, we aim to enhance the overall responsiveness of our services while promoting compliance and strengthening deterrence.

# Problem Statement

- We do not calculate each penalty applicable, instead we step through different non-compliance opportunities and penalise them for the first non-compliance. So a provider may not receive the largest penalty that is applicable.

- Unavailability used to mask a poor k-factor. The system unintentionally favours service unavailability over substandard service. Providers might prefer declaring unavailable to avoid poor performance records.

- The penalty regime's current form fails to ensure strong compliance and deterrence.

- Some penalties are not being enforced perhaps due to inability to monitor performance.

# Current Penalties Regime

- If the Service Provider doesn't submit an Operational Baseline, the Response Unit is unavailable for the entire Settlement Period (section 6.5).

- The Service Provider must continuously submit Operational Data with a maximum delay of five seconds. Failure to do so can result in the Response Unit being unavailable for the Auction Product(s) (sections 5.2 and 15.1).

- Performance Data must be submitted hourly. Failure to comply can result in the Response Unit being unavailable for the Auction Product(s), and persistent non-compliance may lead to deregistration of the Service Provider (sections 5.2, 15.3, and 15.4).

- If a Response Unit fails to submit at least two consecutive Connection Indicators, it is unavailable for the entire Settlement Period (paragraph 6.5).

- If the Service Provider fails to manage the State of Energy according to the rules (MWh) the Response Unit is unavailable until compliance is restored (paragraph 6.12).

- Non-compliance with the Maximum Ramp Rate results in the Response Unit being unavailable for the entire Settlement Period (paragraph 6.8).

- Inability to comply with a Disarming or Re-Arming Instruction, without notifying NGESO, may be considered as unavailability (paragraph 6.16).

**Table 6**: Current Penalty Levels

| Current Penalty Levels | Checks | | | | | | |
|---|---|---|---|---|---|---|---|
| | Operational Baseline Non-Submission | Operational Data Non-Submission | Performance Data Non-Submission | Connection Indicator Non-submission | SOE Non-compliance | Ramp Rate Non-Compliance | Disarm/Re-arm Non-Compliance |
| 1st | SP | SP | SP | SP | N/A | SP | SP |
| 2nd | DR | DR | DR | DR | N/A | DR | DR |

SP = Deemed unavailable in settlement period of breach
DR = Deregistered from market
**1st -> 2nd level**: At discretion of account manager

# Proposal

## Proposal

The ESO is proposing the introduction of a regime of tiered penalties which will address instances of non-compliance through a progressive series of actions and provides an opportunity for rectification.

## Explanation

**Non-submission of data**: The checks will monitor submission of data in line with the Service Terms requirements. The regime will target specific checks including Operational Baseline Non-Submission, Operational Data Non-Submission and Performance Data Non-Submission. Automatic penalties will be generated for data non-submission breaches.

**Behavioural checks**: These checks will monitor provider behaviour including compliance with Service Terms designed to support effective energy management supporting secure service delivery, and potential behaviours intended to distort performance management processes. Behavioural checks will include checks for State of Energy Non-compliance, Disarm/Re-arm Non-Compliance, and Gaming Check including Alignment of Real-time and Post event data, and misuse of Unavailability flags to cover poor performance.

## Process

**Deemed Unavailability**: Continued non-compliance leads to deemed unavailability for a settlement period, while further non-compliance may result in an EFA block, indicating a more serious breach.

**Suspension and De-Registration**: Persistent non-compliance or lack of corrective actions could lead to temporary suspension for 28 days and potential de-registration of unit.

## Implementation

We intend to consult on these changes in June 2024 with implementation and enforcement from October 2024 subject to Ofgem approval.

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# Proposed Penalty Regime

**Table 7**: Proposed Tiered Penalty Levels

| Progressive/Tiered Penalty Levels | Checks | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Operational Baseline Non-Submission | Operational Data Non-Submission | Performance Data Non-Submission | SOE Non-compliance (Delivery Stage) | SOE Non-compliance (Bid Stage) | Ramp Rate Non-Compliance | Disarm/Re-arm Non-Compliance | Alignment of real-time and post event | Gaming Check | Strategic Unavailability |
| 1st | **SP** | **SP** | **SP** | SP | SP | N/A | SP | SP (ADAM) | SP (ADAM) | Skip to next level |
| 2nd | EFA | EFA | EFA | EFA | EFA | N/A | EFA | EFA (ADAM) | EFA (ADAM) | EFA (ADAM) |
| 3rd | TSus | TSus | TSus | TSus | TSus | N/A | TSus | TSus (ADAM) | TSus (ADAM) | TSus (ADAM) |
| 4th | DReg | DReg | DReg | DReg | DReg | N/A | DReg | DReg (ADAM) | DReg (ADAM) | DReg (ADAM) |

**SP** = Deeming Unit unavailable in settlement period of breach

**EFA** = Deeming Unit unavailable for whole EFA block of breach

**TSus** = Temporarily Suspend Unit from the market for 28 Days

**DReg** = De-registration of unit

**ADAM** = At Discretion of Account Manager

**N/A** = Not Applicable

**1st Level:** Initial Breach

**1st -> 2nd Level**: After 10 Breaches in a Settlement Period

**2nd -> 3rd Level**: After 10 Breaches in an EFA Block

**3rd -> 4th Level**: At discretion of account manager

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NB- Bolded characters in 1st level penalty are unchanged

# Non-Compliance Checks

These refer to the specific requirements and obligations outlined in the NGESO Service Terms that service providers must adhere to. These checks are designed to ensure that providers are meeting their contractual obligations and contributing to the stability and reliability of the system.
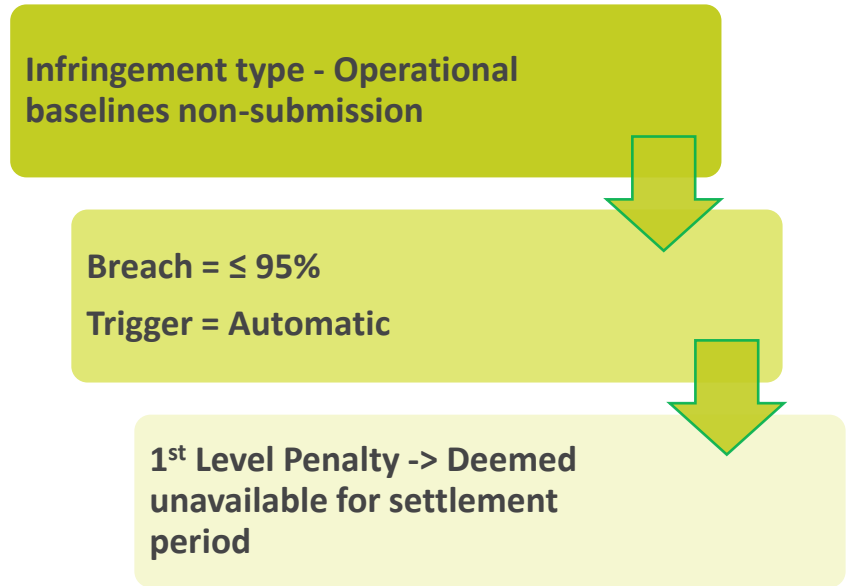
**Types of Non-compliance Checks**
- **Non-compliance check list 1**: We intend to monitor the following:
  o Operational Baselines non-submission (as provided by 6.2 in Service Terms)
  o Operational data non-submission (15.1 in Service Terms)
  o Performance data non-submission (15.4 in Service Terms)
  o State of Energy non-compliance (Delivery and Bid Stage)
  o Disarm/Re-arm non-compliance, ie does their output reflect their instruction

- **Non-compliance check list 2**: This covers non-compliance issues for which we will take a more discretionary approach to penalties.
  o Alignment of Real-time and Post event data- This is a check that performance monitoring data is in line with operational metering data. Each penalty level will be imposed at the discretion of the account manager.
  o ESO determination of provider gaming, ie submission of data that is false or otherwise gives a misleading impression about the unit's delivery of the service
  o Strategic unavailability ie where a provider has declared itself unavailable (outside of allowable circumstances provided by the service terms) in order to improve its performance factor for the service period. To explain, a providers overall performance factor is determined by the k-factor on its worst performing Settlement Period; providers may declare themselves unavailable for this settlement period if non-payment for that period is less costly than having the k-factor for that settlement period applied across the service period.

# Example

**Example Breach 1:**
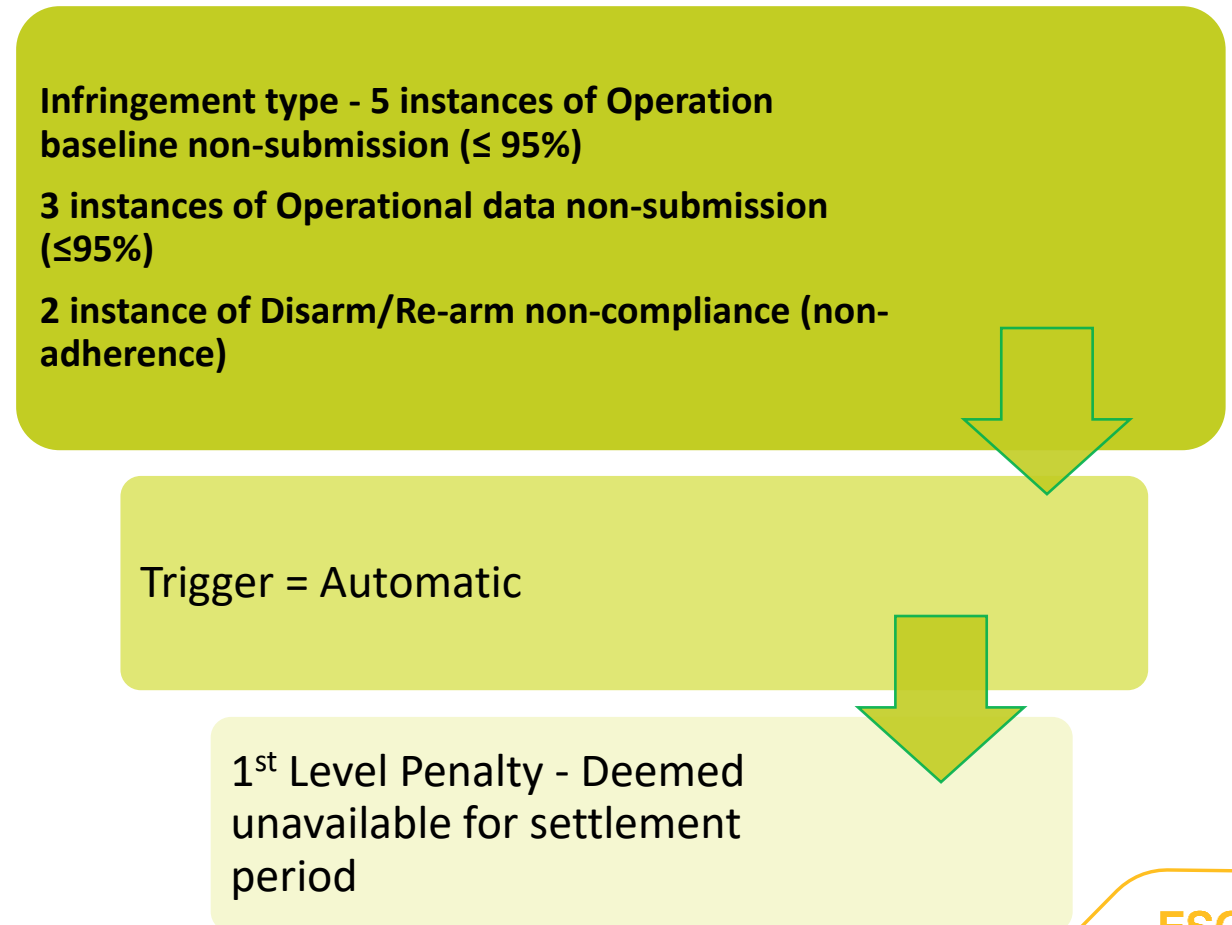If the operational baseline submitted are less than or equal to 95%, this would display a breach.

**Infringement type - Operational baselines non-submission**

**Breach = ≤ 95%**

**Trigger = Automatic**

**1st Level Penalty -> Deemed unavailable for settlement period**

**No Breach**
If Operational baselines submitted to cover all 30 mins in the settlement period then this is 100% (no breach)

**Example Breach 2:**
A unit accumulates 10 breaches;
- 5 instances of Operation baseline non-submission.
- 3 instances of Operational data non-submission
- 2 instances of Disarm/Re-arm non-compliance

**Infringement type - 5 instances of Operation baseline non-submission (≤ 95%)**

**3 instances of Operational data non-submission (≤95%)**

**2 instance of Disarm/Re-arm non-compliance (non-adherence)**

**Trigger = Automatic**

**1st Level Penalty - Deemed unavailable for settlement period**

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# Example

**Example Breach 3:**

A unit accumulates 11 breaches;

- 5 instances of Operation baseline non-submission.
- 3 instances of Operational data non-submission
- 2 instances of Disarm/Re-arm non-compliance
- 1 instance of SoE non-compliance

**Infringement type - 5 instances of Operation baseline non-submission (≤ 95%)**

**3 instances of Operational data non-submission (≤95%)**

**2 instances of Disarm/Re-arm non-compliance (non-adherence)**

**1 instance of SoE non-compliance (Actual Response Energy Volume < expected Response Energy Volume)**

Trigger = Automatic

2nd Level Penalty -> Deemed unavailable for whole EFA block

**Example Breach 4:**

A unit accumulates 21 breaches;

- 10 instances of Operation baseline non-submission.
- 5 instances of Operational data non-submission
- 4 instances of Disarm/Re-arm non-compliance
- 2 instances of SoE non-compliance

**Infringement type - 10 instances of Operation baseline non-submission (≤ 95%)**

**5 instances of Operational data non-submission (≤95%)**

**4 instance of Disarm/Re-arm non-compliance (non-adherence)**

**2 instances of SoE non-compliance (Actual Response Energy Volume < expected Response Energy Volume)**

Trigger = Automatic

3rd Level Penalty - Temporary Suspension (28 Days)

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