Dynamic Containment

Feedback summary

April 2020

nationalgridESO

Contents

COVID-19

Since we started Dynamic Containment, we have all been faced with huge changes in our home and business lives as a result of COVID-19.

It is clear that disruption will continue during the months ahead and as we aren't quite clear on the impact on the full breadth of our activities and the energy industry just yet, we haven't currently changed the delivery dates of this project.

However, we will be constantly reviewing our project plan taking into account changing priorities for the ESO and our stakeholders.

Taking time to reflect…

We met a key milestone for DC this week in completing our review of your feedback. Some of you have asked for more information to help you to better understand the reasons behind the need for this product, and others have raised concerns regarding specific aspects of the proposed service.

With that in mind, we have taken the decision to spend more time reviewing the design of the service and in the meantime, we will look to share more information on the background of DC based on your feedback.

1. Introduction

Over the next few years, the ESO aims to deliver a new suite of faster-acting frequency response services to support our operations as the electricity system is decarbonised and to ensure that these new services enable a level playing field for all technologies.

We plan to release Dynamic Containment (DC) as the first of our new end-state services, in order to meet our most immediate need for faster-acting frequency response. This service will be designed to operate post-fault, i.e. for deployment after a significant frequency deviation.

Engagement so far…

- We published an information pack outlining the problem (i.e. our operability need) with our proposal of the product and we asked you for your thoughts and suggestions on the proposal
- We presented the proposal in a webinar and afterwards, published the webinar recording with the questions and answers from the session
- Following this, we invited you to complete a feedback survey to provide your say on the product. We extended the feedback timescales as you told us you needed more time to digest the information
- We have now reviewed your comments, thank you to those who sent in their feedback
- In this document, we have summarised your feedback and outlined the key feedback themes from the survey

2. A look back on engagement to date

2018

- Webinar (300 joined)
- Feedback survey (39 responses)
- 3 technical workshops

2019

- Shared the Response and Reserve roadmap

2020

- Shared DC product proposal
- Webinar (163 joined)
- Feedback survey (36 responses)
- Feedback summary document

Stakeholder feedback

- *"Really useful to see and hear the description of how balancing and frequency response are applied. And good to have the most recent view on the description of the new services."*
- *"It really helped to understand the reasoning behind the suggested product design as a result of knowing more about real life system requirements."*

Stakeholder feedback

- *"Attended webinar. Helpful presentation, known sound issues (that's life!)"*
- *"We very much appreciate NGESO's participation and engagement with industry."*
- *"It was useful but needs to be alongside information about the rest of the planned new frequency services."*
- *[We need] "Better explanation as to what led the ESO choose technical parameters & what type of assessment (if any) had been carried out."*

3. Dynamic Containment proposal (1/4)

As part of the product proposal for DC, we shared our operability challenges, and how we think we can best address them:

Operability need	Proposed solution
To secure the system & plan effectively, we need to know where on our network any activated response or reserve will deliver. National Control need precise and accurate locational detail of all balancing service providers.	Each unit must be identified by its nearest/most relevant GSP or Node. This means aggregation can occur at GSP/node level and not a GSP group level.
We must be able to justify our balancing and system spend and provide assurance that our security standards are met. So it is essential that reliable and accurate performance monitoring can occur.	We need data for performance monitoring at a resolution of 20Hz or better. This resolution is already required because dynamic containment is a very fast service and one that may have to become even faster in the future.
We must secure the system and keep the lights on. We need confidence that the services we procure are helping us to do that for the least cost.	We will apply our performance monitoring processes and rules from day one of the new dynamic containment service.
Visibility of service delivery and availability is required in our control room to ensure that operational decisions are based on the best information.	We are asking providers to submit real-time power (each second) and a baseline (in-line with PN rules) per unit.

3. Dynamic Containment proposal (2/4)

Here are the proposed solutions explained in more detail:

1. GSP (Grid Supply Point)

GSP group approximately maps the geographical area covered by the DNO license areas. This level of locational granularity is not enough to ensure secure network planning and operation.

Each participating unit to be identified by its GSP. Assets can be aggregated within a single GSP and each asset must measure frequency locally at their connecting point. We require information on the connecting GSP or Node for each unit or aggregated unit.

2. 20Hz

Operational experience from Enhanced Frequency Response and best practice for fast responding services in GB and other markets has informed our requirement for 20Hz metering for performance monitoring.

Please note that we are not making a requirement for providers to upgrade their code-of-practice settlement metering systems to 20Hz. It is not a requirement that a unit uses its settlement meter to provide the 20Hz data.

3. Dynamic Containment proposal (3/4)

3. Performance monitoring

Performance monitoring processes and rules help to ensure the system requirement is continuously met and NGESO has better visibility and confidence of performance from service providers.

- A fault (e.g. unit trip) could happen at any time, so the service always has to be ready
- To value it, we need confidence in the ability of providers to fulfil the service
- An incentive mechanism allows some deviation from 100%
- Significant underperformance can only be tolerated for very short durations

4. Baseline

For NGESO to value and utilise DC, providers must submit a baseline against which we can measure and monitor performance.

A baseline is a projection of expected output submitted in advance. Without this projection, it is impossible for NGESO to fairly determine if changes in output are related to contracted services or are instead coincidental.

3. Dynamic Containment proposal (4/4)

Other key aspects of DC which we have previously shared with you:

5. Unit and volume cap

Short-term caps to promote competition and increase liquidity in the frequency response market, reducing our overall balancing costs and increasing value for the consumer.

- **50MW unit cap**
- **~250MW volume cap** expected to increase to around 1000MW in the future.

6. Real time metering provided at a rate of 1Hz for each asset within a unit

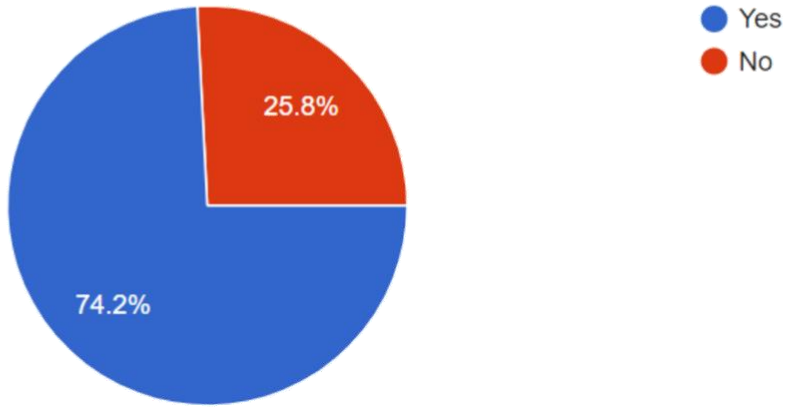
NGESO requires visibility of real-time active power.

4. Feedback (1/5)

Questions from the survey are covered in the next few pages:

In the session/information pack, did we provide you with sufficient information to understand the problem that the ESO has identified?

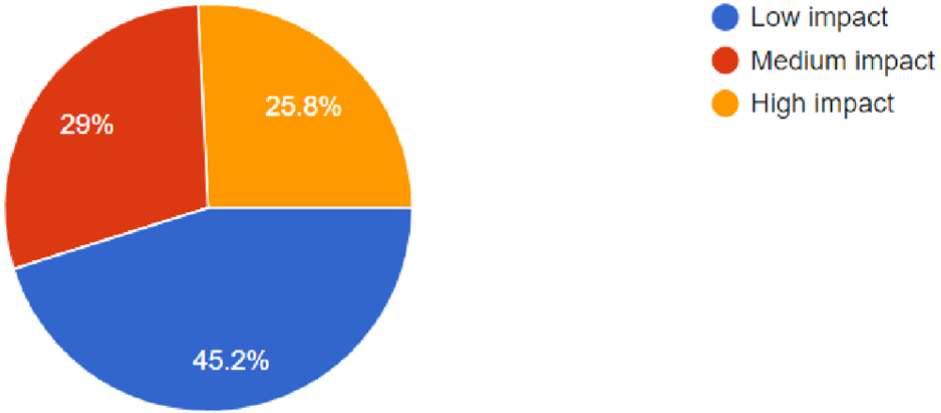
31 responses



4. Feedback (2/5)

We have identified a requirement to identify each unit at GSP level, instead of at GSP group. We understand the implications on aggregated units and we would like to hear from you on what these impacts look like.

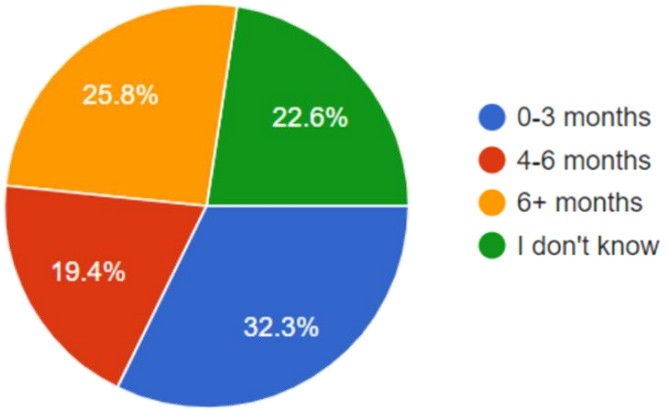
31 responses



4. Feedback (3/5)

Using our operational experience of EFR, we will need more granularity of data for performance monitoring and settlement. With this in mind, we are proposing ~~settlement~~ for performance monitoring metering will need to be provided at a rate of 20Hz. Initial feedback provided from members at both forums was that this hasn't been done before. What do providers need to do in order to establish whether this is possible, and how long do you think this type of analysis will take?

31 responses



Following the feedback survey, several providers got in touch asking for clarity on what we meant by 20Hz metering.

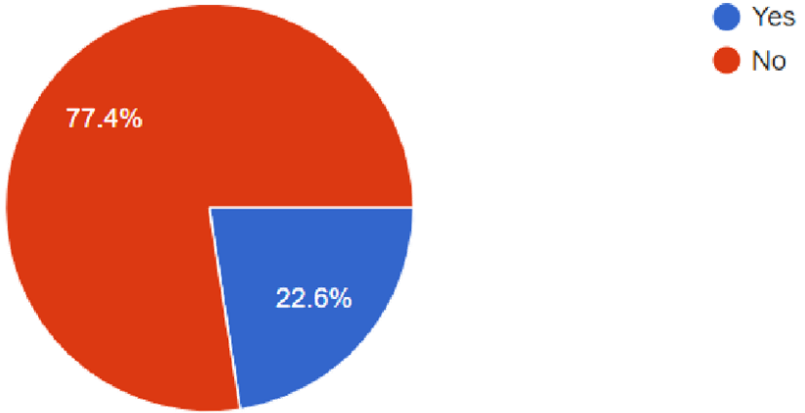
This is linked to performance monitoring, and it is not the same as settlement metering, which we realise was misleading in our survey question as referenced on this page.

We are asking that each unit provides data at a 20Hz resolution to enable performance monitoring.

4. Feedback (4/5)

We are initially suggesting that we have a unit cap of 50MW and a volume cap of around 250MW to promote competition in the market, and to give us time to introduce the new product into our systems and processes. Do you foresee any blockers or issues with these temporary caps?

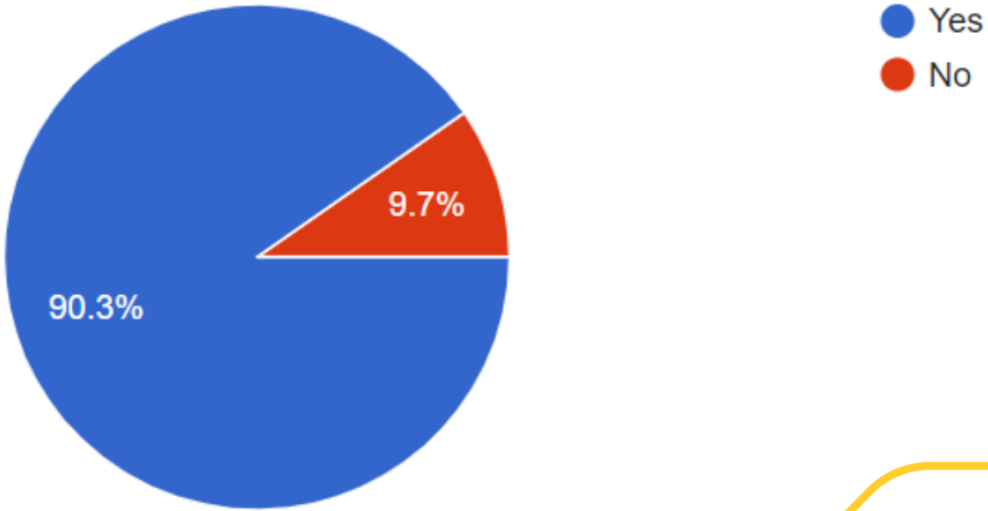
31 responses



4. Feedback (5/5)

Are you interested in participating in Dynamic Containment?

31 responses



5. Feedback summary

In analysing your feedback, we identified the following key themes for each topic.

Topic	Comment
GSP	- High barriers for aggregated small assets / favours large assets - To accommodate this, lower the unit threshold below 1MW
20Hz	- Barrier to entry & costs in upgrading metering + Already collect & log this data / comfortable reporting at that level of granularity
Performance monitoring	- Increase administrative burden and cost + Already record all this information / no impact
Baseline	- Makes participation more challenging for DSR assets / gate closure at 1 hour ahead is difficult + Submitting baselines in near real-time will be essential to comply with performance standards / agree with the requirement
Unit and volume caps	- Require a clear timeline of when the caps will be lifted + Supportive of temporary cap / not concerned by the proposal of setting a unit and volume cap to promote competition
Overall product	- Why we have chosen to go ahead with the DC product / what were the other options that were considered? + 90.3% of survey respondents are interested in participating in Dynamic Containment

The next few pages explore each topic in detail.

6. GSP

Topic	Comment
GSP	VLP participation in the Balancing Mechanism is at GSP group, not GSP, there does not seem to be an operational justification for this requirement
	Excludes large volumes of flexibility / high barriers for aggregated small assets / favours larger sites
	Doesn't fit with our aim for a smarter, more flexible system with participation from domestic and smaller commercial resources
	Expect to see detailed cost-benefit analysis and why this is the most cost-effective approach
	Correctly identifying the exact GSP is not necessarily possible
	To accommodate this, lower the threshold from 1MW
	National Grid have not stated that there would be guidance on how to assign the correct GSP to a site
	Remove GSP level aggregation constraint and replace it with (i) constraints on aggregation and location beyond specific thresholds only, and (ii) obligation to react upon local frequency

25% of respondents said the introduction of GSP would strongly impact their asset base.
We would like to work with all affected providers to identify ways to reduce the impact. Please contact us at box.futureofbalancingservices@nationalgrideso.com or via your account manager.

7. Metering for performance monitoring

Topic	Comment
20Hz	Availability of metering scarce / expect will have only be made for bespoke requirements and there could be a shortage for a while
	Significant costs due to upgrading metering
	Already collect and log data at this resolution
	Expect to see clear assessment of the benefits of 20Hz compared to 10Hz
	Huge barrier to entry
	Depending on how you will receive and process the 20Hz metering information, this is something we could do fairly quickly
	Need clarity on the full technical requirements to provide a more detailed workplan
	We are comfortable reporting at that level of granularity and there would be no lead time in providing that sort of data
	Remove 20Hz metering requirement, as gold-plating the product at unreasonable cost

Many of you wanted to understand more about the 20Hz requirement and we have now clarified the wording to “metering for performance monitoring” to avoid confusion with code-of-practice settlement metering – which we do not intend to change.

8. Performance monitoring

Topic	Comment
Performance monitoring	Cost to store this data at a high granularity
	We will be able to use our own metering device to do this
	Will consider it if you allow some tolerance band around the data recording rate such as 20Hz+/- 5 Hz
	We already record SoC/Input frequency for FFR services, so do not see this as an impact to provision of the service
	Increases the administrative burden and cost which may affect smaller participants
	We already record all this information so we do not foresee any issue from our side to collect it
	Lack of clarity on how long we need to retain settlement data, need to agree on timescales

9. Baseline

Topic	Comment
Baseline	Unsuitable to submit one hour before for DSRs – less accurate, should be 15 minutes or less
	Should be submitted at asset level, not connection point
	Agree that providers should submit a baseline and ramp rate to NGESO
	There is no clear information, no rules on how to calculate it and no examples given/shown in the document
	We have no concerns with the proposed approach
	May prove a higher burden for smaller participants and therefore may reduce market participation
	The baseline method is sensible and the ramprate restriction can be managed
	Submitting baselines in near real-time will be essential to comply with performance standards
	Remove the 1-hour lead time for baseline submission and replace this requirement with limitations on the baseline changes (ramp constraints and/or steps)

10. Unit & volume cap

Topic	Comment
Unit cap: 50MW volume cap: 250MW	Clear timetable for removal of caps and unbundled service needed
	Need estimate of caps in the future
	Supportive of a temporary cap in order to support the rapid implementation of the service
	Should be a lower cap otherwise market will be flooded by 50MW purpose built EFR batteries only
	Over 75% do not foresee the temporary caps as blockers

We are currently reviewing the volume and unit caps in the FFR auction trial. Our learning is that having temporary caps encourages competition as well as allowing time for new processes to embed. Reflecting on your feedback, we understand the importance of communicating timescales i.e. providing an indication of when caps will be reviewed and/or removed.

11. Responding to your feedback

Thank you for contributing towards the design of Dynamic Containment. From the workshops in 2018 through to the feedback survey earlier this year, we have taken your comments on board and we are now reviewing the product design.

"Is 20Hz and baselining a requirement for all services?"

One question that we were asked from the survey was whether the proposed requirements were just for DC because some providers may incur costs in meeting these principles.

We are taking a holistic approach in reviewing the design of DC so that any investment you may need to make to meet the requirements of DC, should apply across the future suite of frequency services.

We have brought together our thinking for the future of frequency response and reserve, creating 'the bigger picture' (on the next page)**.**

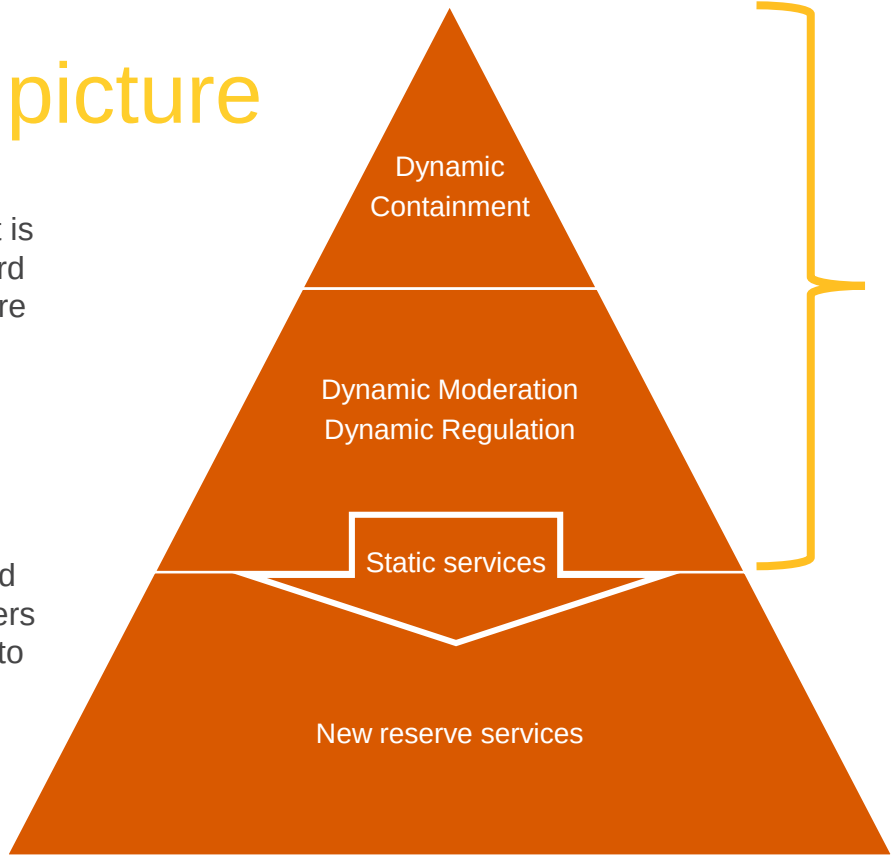
Whilst this information isn't new, based on your feedback we know it's important that we share our thinking of our direction of travel for the future of frequency services and how they interlink.

12. The bigger picture

The information on this page isn't new, it is in line with the Roadmap and our Forward Plan, we have brought it together to share our direction of travel.

In considering the bigger picture, we are currently developing and delivering a strategy, not just a single new service.

The requirements across services should be as similar as possible, so that providers can optimise where and what they offer to NGESO.



Frequency containment process
Automatically triggered & delivered "Response"

Frequency restoration process
Manual dispatch "Reserve"

13. Next steps

At the beginning of this document, we shared that we aren't yet clear what the impacts of COVID-19 may have on our deliverables. Along with reflecting on your feedback, we are also going to be reviewing our delivery plan for DC, taking into account the potential impacts the ESO and industry might experience.

To keep up to date with the latest news, please see the new Dynamic Containment page on the ESO website.

ESO Website

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