



WELCOME

GSR029

Review of Demand Connection Criteria to Align with EREC P2/7

Meeting 7

18 January 2023

Online Meeting via Teams

Agenda

Topics to be discussed	Lead
Welcome	Chair
Review of Actions Log	Chair
Access SCR Update	Kyle Smith
Proposer's Presentation	Can Li
AOB & Next Steps	Chair

Expectations of a Workgroup Member

Contribute to the discussion

Be respectful of each other's opinions

Language and Conduct to be consistent with the values of equality and diversity

Do not share commercially sensitive information

Be prepared - Review Papers and Reports ahead of meetings

Complete actions in a timely manner

Keep to agreed scope

Your Roles

Help refine/develop the solution(s)

Bring forward alternatives as early as possible

Vote on whether or not to proceed with requests for Alternatives

Vote on whether the solution(s) better facilitate the Code Objectives



Review of Actions Log

Milly Lewis – ESO Code Administrator

Number	Action	Owner	Status
5	TOs to provide feedback on the impact assessment for group demand using Method 1 and/or Method 2 (depending on the site)	TO Reps	Open
7	TOs to assess the contribution from large power stations using the methodology in in EREP 130 and compare with the current practice to understand the impact for the change.	TO Reps	Open
14	Check persistence time for the SQSS table 3.2 in GSR008	BA/ TB	Open
16	Understand how battery output in the ESO POUYA model is produced. Invite connections team member to discuss the Connections Reform project at the next Workgroup. Clarify with Djaved what other work is being done and if it's applied across all TOs.	BA	Open
17	Speak to ESO Pathfinder and market services reps to see contracts the ESO have with batteries. Invite market services team member to next Workgroup.	BA	Partly closed
19	Confirm which section of the Grid Code links to GSPs/ demand contracts (Operating Code 2 or Planning Code)	BA	Open
23	Check Elexon data to assess significance of BM actions	BA	Open
24	Run a simulation assessment, arrange a session with DNO and TO reps.	CL, LF, PS	Open
25	Circulate amended SQSS legal text regarding group demand with Workgroup	CL	Open
26	Provide an update on the group demand impact assessment at the next Workgroup	PS	Open



Access SCR Update

Kyle Smith – National Grid

Access Significant Code Review (SCR)

What is a SCR?

- A significant code review (SCR) is a way in which Ofgem(industry regulator) reviews industry codes and speeds up industry reforms and changes.

What DOES this SCR cover?

- This SCR covers changes to Connection Charges (specifically reinforcement) and the definition and choice of access rights to our network.

Why now?

- Make it easier to reinforce the electricity grid for our customers.
- To facilitate net zero and the connections of Low Carbon Technologies (LCTs)

When do the changes go live?

1st April 2023



Connection Boundary reforms

The Ofgem Decision on Access and Forward Looking Charges Significant Code Review sets out different connection charging depths for Demand and Generation Connections, subject to the application of a High Cost Threshold.

Funding Reinforcement

Demand:

DNO fully funds reinforcement and recovers through DUoS

Generation:

Customer only contributes to reinforcement at the same voltage level as Point of Connection.

Introduce High Cost Cap for Demand

Demand set at £1,720 per kVA

Determined using quotation information from DNO's

Generation remains at £200 per kW

Speculative Developments

Clarification that phased developments are not always treated as speculative developments i.e. a phased housing development.

Introduction of a methodology for connections with planned phases or future expansion which would otherwise be deemed speculative.

ECCR 2017

The Regulations is currently with parliament, revision to remove the requirement for second comers to contribute towards previous reinforcement works.

Access Rights

Non-Firm Access Arrangements

Introduction of new non-firm (curtailable) access rights for distribution connected users.

Eligibility:

Where there is a need for reinforcement and a need for curtailment to manage local network constraints

Excludes customer interruptions from faults

Excludes interruptions resulting from the transmission network

Curtailment Limits

DNO will set the curtailment limit and include this in the connection offer.

If the DNO needs to curtail above the agreed limit, then they must procure this service from the market, where it is economic and efficient to do so.

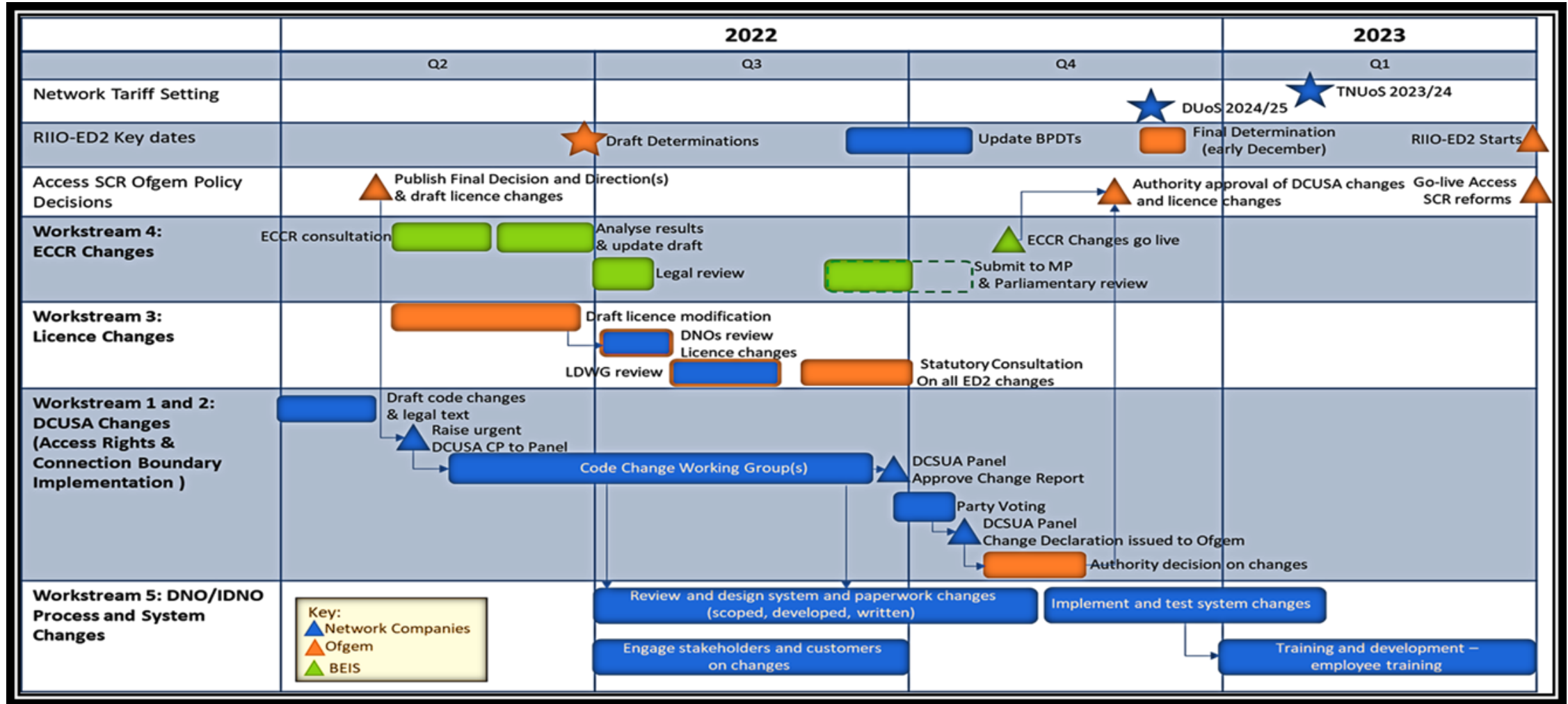
An 'exceeded curtailment price' will be introduced to cap the unit price of flexibility a DNO must procure in these scenarios.

End Dates

Non-firm arrangements will have explicit end dates, after which the connection will need to be made firm or non-curtable.

Exceptions apply where the customer has not requested a firm connection or if they do not wish to fund reinforcement above the HCC.

SCR Timeline



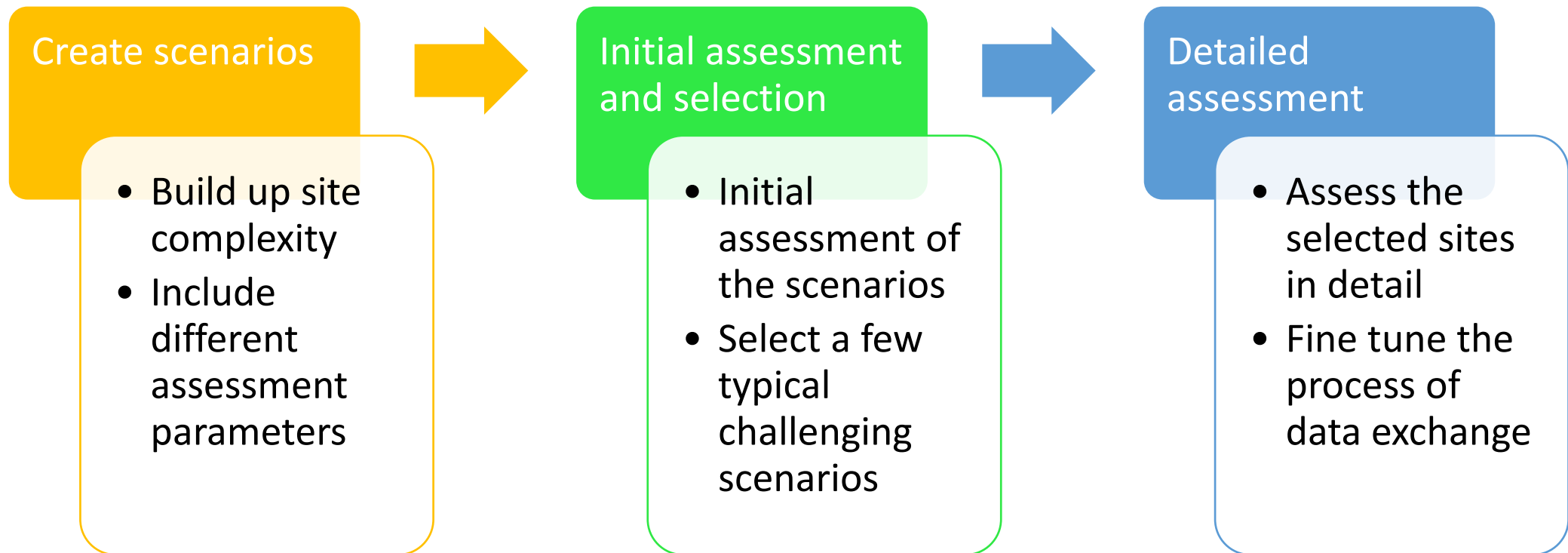
DCSUA consultation completed on 5th September



Update from Proposer

Can Li – ESO

Demand security contribution assessment run through

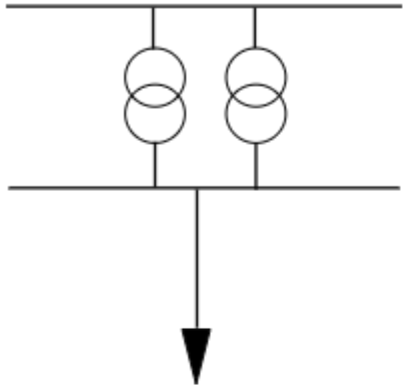


Demand security contribution assessment run through

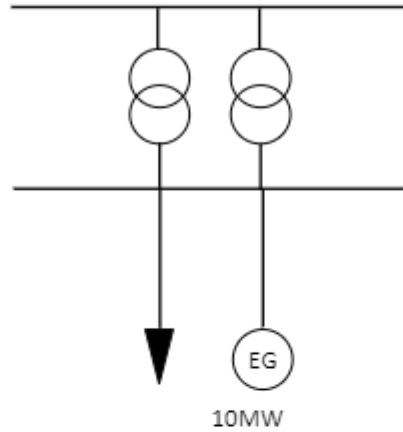
Assessment parameters

- Persistence time T_m
- Season
- Time
- Number of generators

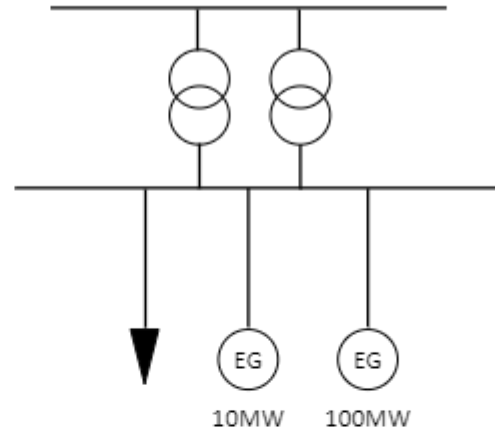
Scenario 1



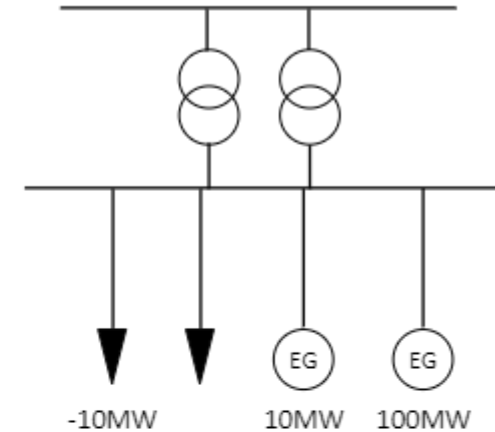
Scenario 2



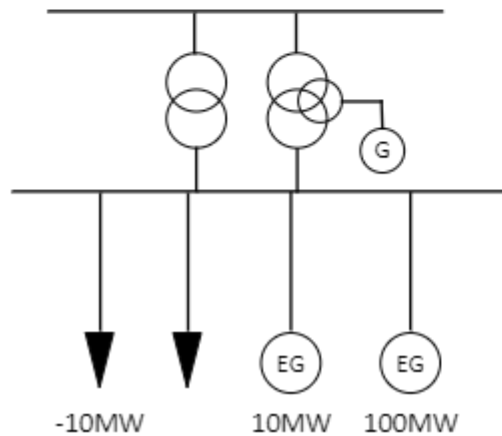
Scenario 3



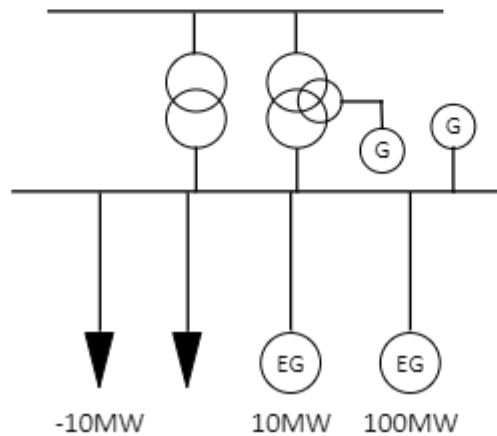
Scenario 4



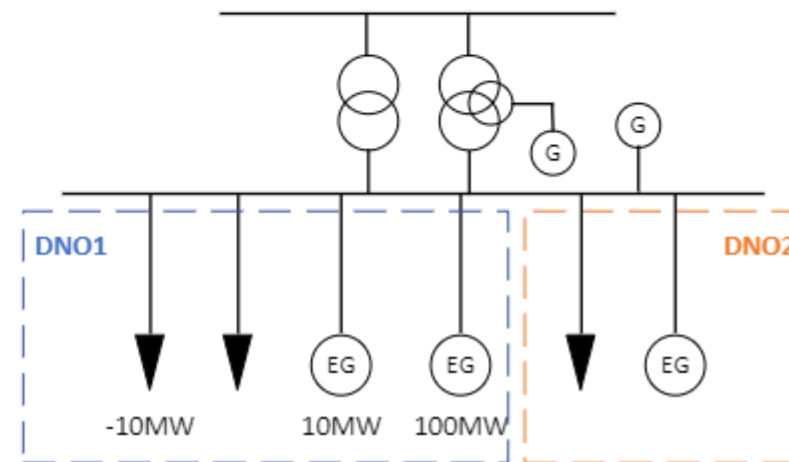
Scenario 5



Scenario 6



Scenario 7



Connections process POUYA tool

- BESS is dispatched based on arbitrage.
- POUYA does not consider commercial contracts such as frequency response.
- BESS dispatch is selected based on the instances of 95th percentile of local boundary flow.

ENERGY STORAGE MODELLING & NON-FIRM OFFER DEVELOPMENT

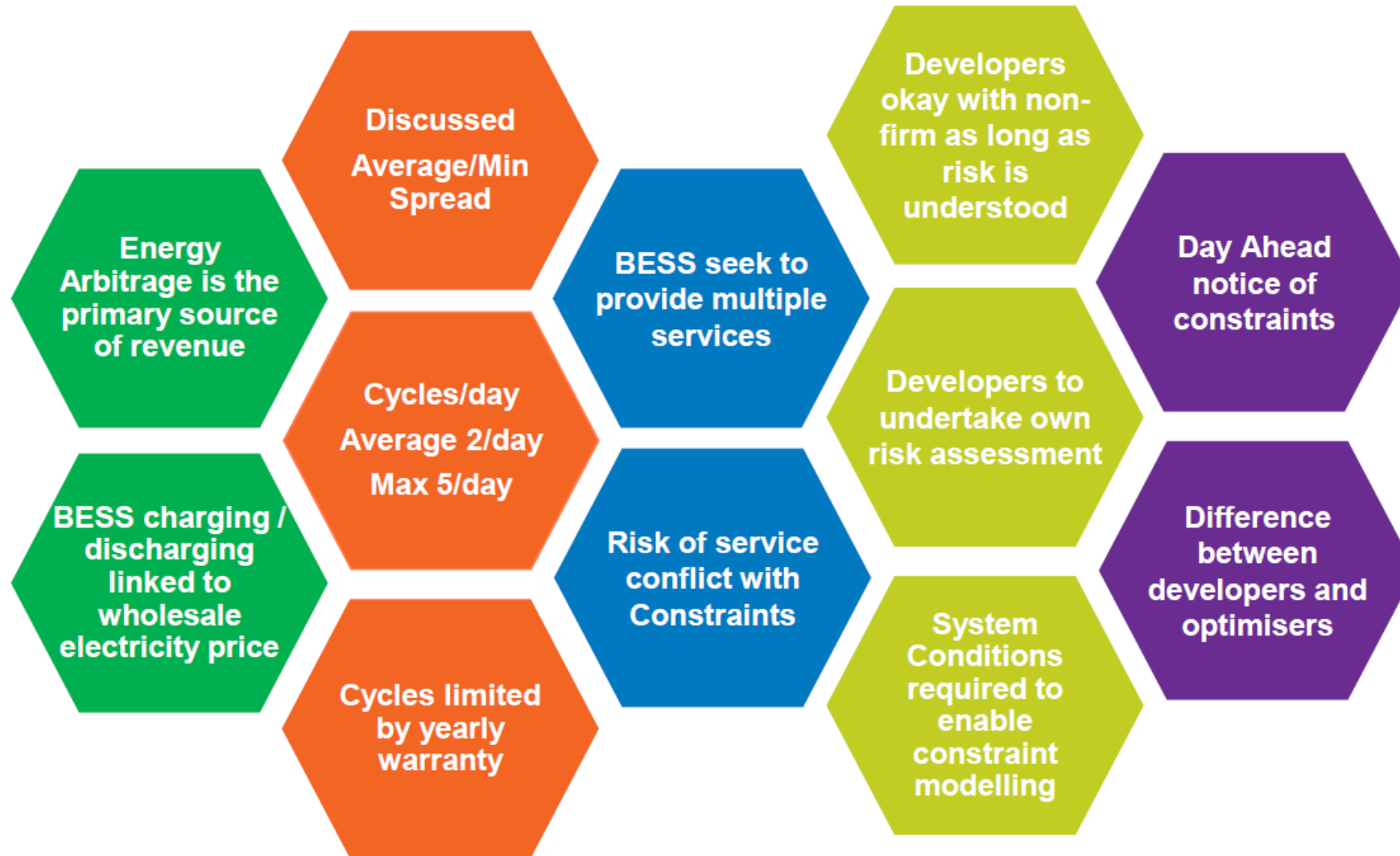
TRANSFORM | CONNECT | ENABLE NET ZERO

Energy Storage Assumptions

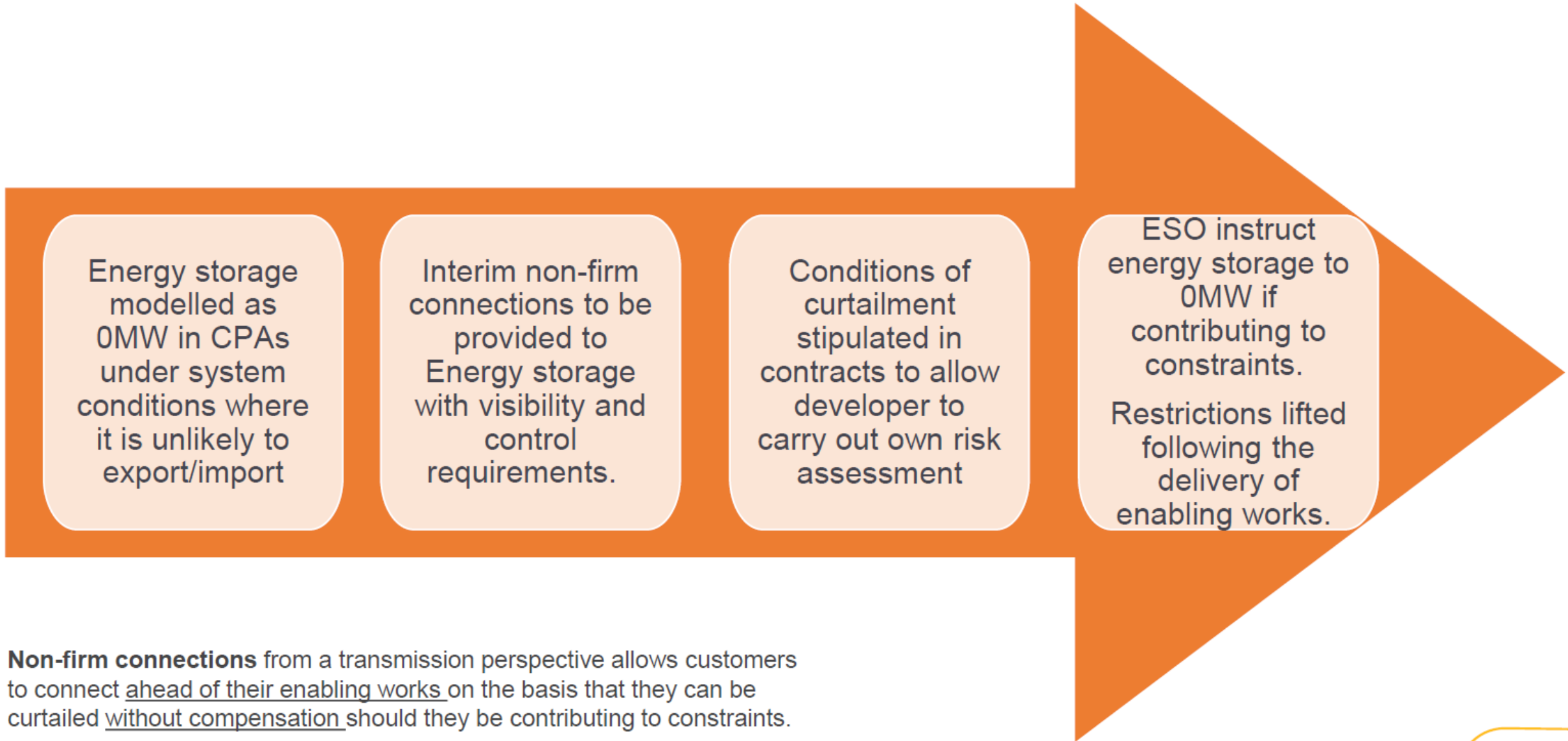
- Energy storage can play an important role as enabler of renewable energy penetration and facilitate the transition to net zero.
- Such operation can have a negative correlation with system constraints.
 - Times of high renewable output – storage unlikely to be discharging
 - Times of high demand – storage unlikely to be charging
- A working group has been set up to explore new way of assessing energy storage connections that better reflects how the assets operate.
- We have engaged with selected energy storage developers to understand the business model for their assets.
- Further engagement planned with the Electricity Storage Network (ESN), TOs and DNOs



What have we learnt so far?



Energy Storage proposal



Non-firm offer development for Energy Storage

Network Owners/ ESO Connections

- Improved modelling of energy storage
- Understand implications of curtailment on service provision.
- Define contractual terms for non-firm connections and associated network restrictions.
- Establish data to be provided to energy storage to enable calculation of curtailment risk
- Undertake assessments to determine works for firm connections.

ESO- Electricity Network Control

- Processes established to ascertain when and how energy storage can be curtailed.
- Establish optimum time (Day Ahead/ within day) for providing curtailment signals
- Development of IT systems to issue instructions to energy storage at both T&D
- Systems to establish when curtailments are compensated v/s not compensated.

Storage Developers

- Carry out assessment of risk of curtailment frequency and duration of curtailment.
- Understand implications of curtailment on service provision.
- Work with Network owners/ ESO to sign up to appropriate systems to receive curtailment instructions.
- Enact upon instructions in appropriate timescales.

We aim to address the above ESO development activities on non-firm connections by March 2023.
In parallel we are also be exploring opportunities for non-firm connections for other types of generation



AOB / Next Steps

Milly Lewis – ESO Code Administrator