CMP405 - TNUoS Locational Demand Signals for Storage

13th January 2023

Online Meeting via Teams

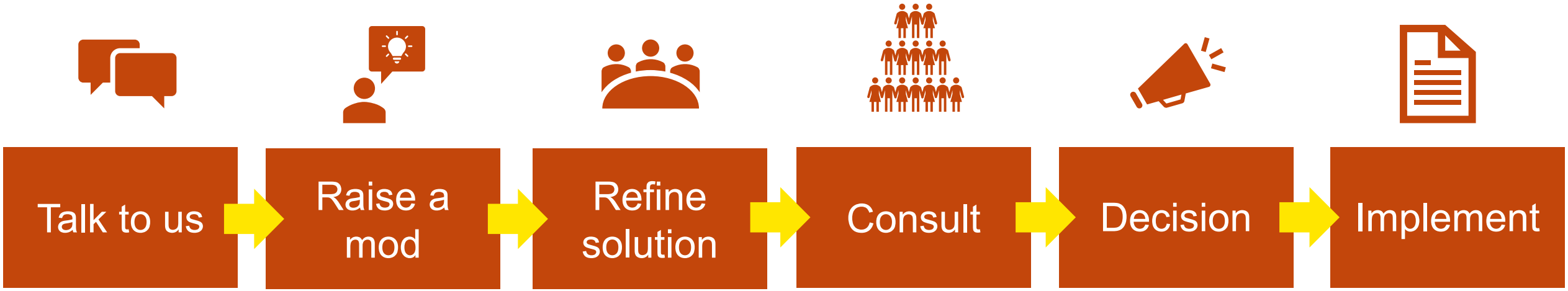
ESO

WELCOME

Modification Process

Ruth Roberts– National Grid ESO Code Administrator

Code Modification Process Overview



Forums

Panels

Workgroups
(Workgroup Consultations)

Ofgem/Panel

Workgroup Responsibilities

Ruth Roberts – National Grid ESO Code Administrator

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

Terms of Reference

Ruth Roberts– National Grid ESO Code Administrator

CMP405 - TNUoS Locational Demand Signals for Storage – Terms of Reference

Workgroup Term of Reference	Location in Workgroup Report (to be completed at Workgroup Report stage)
a) Consider EBR implications	
b) Consider the analysis that is being undertaken as part of CMP393/CMP394	
c) Consider potential impact from additional topics, discussion outcomes and Terms of Reference from CMP393/CMP394	
d) Consider wider TNUoS Taskforce work and purpose of TNUoS charging methodology	
e) Consider which types of Storage characteristics are in scope and how they could benefit the Transmission system	
f) Consider whether storage connected at Distribution should receive this benefit	

Proposer’s Presentation

Damian Clough– SSE

CMP405

TNUOS LOCATIONAL DEMAND SIGNALS FOR STORAGE

SSE

RECENT HISTORY

- The application of a de-minimis level demand charge of £0/kW for Half Hourly and £0/kWh for Non Half Hourly metered demand was part of the methodology introduced in 2004. Due to the ever increasing demand residual (cancelled out negative locational signals) it has never needed to be applied.
- As part of the TCR the Demand Residual will be removed from the Demand Charge and charged in a different way
- Due to the removal of the demand residual from the final tariff charged based on Triad demand this exposed the negative locational signals
  - Paying users to increase demand over the Triad periods was a perverse incentive
- Ofgem recently approved CMP343 WACM2 to be implemented for April 2023. This floored the forward-looking demand charges at 0.

DEFECT

- The dampening of the locational signals means there are weak incentives for Storage to locate and connect to parts of the Transmission System where by importing at times of peak Generation output or low demand they provide significant benefits to the System and reduce Transmission investment.
- Demand has traditionally being treated only as a cost and not a benefit hence why the incentive has always being to reduce demand over the Peak periods.
- These defects have being highlighted consistently within the Market Design work

DEMAND LOCATIONAL SIGNALS

- The DCLF Model calculates both a Peak and Year Round Locational signal based on incremental flows under the Peak Security and Year Round Backgrounds
- For Generation Tariffs, different types of Generators pay the Peak tariff, whereas the Year Round locational signal is further split to recognise areas of high concentrations of low carbon technology, which creates a Year Round Shared tariff which is multiplied by TEC x Annual Load Factor, and a Year Round Not Shared Tariff which is multiplied by either TEC or TEC x ALF dependent on Generation type.
- However for Demand the Peak and Year Round locational signals are added together and charged based on Triad Demand for HH
- What does the Year Round locational signal show for demand
  - Increasing demand when there is maximum generation, or low demand in the Year Round scenario reduces Transmission Investment

BUILD UP OF DEMAND TARIFFS 22/23

Zone	Peak (£/kW)	Year Round (£/kW)	Residual £/kW	2022/23 Final (£/kW)
1	-2.178226	-27.236880	56.861767	27.446662
2	-2.588187	-18.807862	56.861767	35.465718
3	-4.334540	-7.845295	56.861767	44.681931
4	-1.522583	-3.931676	56.861767	51.407508
5	-3.111358	-1.910980	56.861767	51.839430
6	-1.977716	-1.477330	56.861767	53.406721
7	-2.753986	1.420681	56.861767	55.528462
8	-1.348947	1.681051	56.861767	57.193871
9	0.445125	0.646597	56.861767	57.953489
10	-3.519338	5.119538	56.861767	58.461967
11	3.640164	-0.302852	56.861767	60.199079
12	4.486793	2.339230	56.861767	63.687789
13	2.537729	2.864165	56.861767	62.263662
14	1.880963	5.004935	56.861767	63.747665

POSSIBLE SOLUTION

- To be determined by the workgroup but initial thoughts
- Similar to how Capacity is determined for Triads but instead of the calculation being based on importing over Triad Periods the calculation will be based on import Capacity over a set number of high Constraint volumes/costs

Requirements for additional Analysis

Workgroup member discussion

AOB & Next Steps

Ruth Roberts– National Grid ESO Code Administrator