
WELCOME
CMP393 & CMP394
Thursday 13th October
Online Meeting via Teams
nationalgridESO

Objectives and Actions

Ruth Roberts – National Grid ESO Code Administrator

nationalgridESO

Actions review from Workgroup 1

Action Number	Workgroup raised	Owner	Action	Due by	Status
1	WG1	RR	Provide new wording for CMP393 Terms of Reference and share with Workgroup for review	ASAP	Closed
2	WG1	All	Provide feedback if disagree with the updated CMP393 Terms of Reference	21 September 2022	Closed
3	WG1	RR	Once confirmed submit the updated CMP393 Terms of Reference to the CUSC Panel for approval	September CUSC Panel	Will go to October Panel
4	WG1	RDL	Provide clarification on Storage behaviour at high wind conditions/ behind a constraint boundary	WG2	Open
5	WG1	RN	Confirm whether there is any further detail available from the Cornwall Insight analysis	ASAP	Open
6	WG1	All	Review available analysis and provide feedback on what else might be required	WG2	Open
7	WG1	RR	To send invite for Workgroup Meeting 2	ASAP	Closed

Review & agree Terms of Reference

nationalgridESO

CMP393 – Terms of Reference

Workgroup Terms of Reference
A) Consider EBR implications
B) Consider why this change only applies to a subset of storage technologies (i.e. battery and pumped storage), and potential discrimination for conventional, controllable generation
C) Consider the full Cornwall Insight modelling results and consider the impacts on TNUoS parties
D) Undertake analysis on the extent to which storage can on average be expected to impact on constraint cost levels (under different commercial/operational models). This should include consideration of duration of storage for ~~avoidance~~ management of constraints, and it should include consideration of storage providing ESO Balancing Services
E) ~~Consider the duration of the storage, both on an asset by asset basis and a total asset class basis, in terms of its contribution to the avoidance of constraints~~
F) Consider the impacts for Storage Operators not located in areas with constraints
G) ~~Consider the impacts of storage providing ESO Balancing Services for constraint management~~
H) Consider any interactions with the TNUoS Taskforces, in-flight Modifications (CMP316 and CMP331) and the current NETS SQSS review in terms of the treatment of storage
I) Consider the appropriateness of the solution for both positive and negative charging zones
J) Consider whether the use of a ‘net’ as opposed to ‘gross’ ALF is consistent with the concept of ‘Sharing’ related to the Year-Round Background.
K) ~~Consider the effect of dispatchable and non-dispatchable constraints on storage and boundaries~~

CMP394 – Terms of Reference

Workgroup Term of Reference
A) Consider EBR implications
B) Consider why this change only applies to a subset of storage technologies (i.e. battery and pumped storage), and potential discrimination for conventional, controllable generation
C) Consider the full Cornwall Insight modelling results and consider the impacts on TNUoS parties
D) Consider the nature of demand TNUoS as a conceptual opposite of Generation TNUoS
E) Consider any interactions with the TNUoS Taskforces, in-flight Modifications (CMP316 and CMP331) and the current NETS SQSS review in terms of the treatment of storage
F) Consider the appropriateness of the solution for both positive and negative charging zones

Additional Analysis Requirements

nationalgridESO

Cornwall Insight CMP393 / CMP394 Modelling Summary

TNUoS

- Impact of mods on TNUoS in four spot years, on five archetype generators, and on storage in all zones
- Not expected to have a material impact on TNUoS for generation technologies other than storage
- Slight increases in TNUoS of up to. £0.20/kW
- For storage: decreased charges in northern zones, existing level of credits typically maintained in southern zones

Curtailment costs

- Cornwall Insight modelled the marginal impact of adding a 1MW/2MWh storage facility behind the B6 boundary. The assessment showed a reduction in constraint volumes of 202MWh in 2025, falling to 127MWh in 2035.
- Analysis of the financial impact in 2025 shows the addition of a 1MW/2MWh storage facility behind the B6 boundary has a positive impact, reducing constraint costs by ~£35,000/MW. The value of 1MW of storage behind the B6 boundary falls to ~£28,000/MW in 2030, and ~£14,500/MW in 2035.

Methodology for Calculating Impact on TNUoS

Cornwall overlaid CMP393 and CMP394 onto their baseline TNUoS model, using 5 generator archetypes and 4 spot years

They calculated the consequent reduction in TNUoS revenue from storage

As the modifications result in lower TNUoS revenue from storage, they impact the EU Adjustment Factor, resulting in increased charges for other generators

e.g., CMP393 in 2022-23 is forecast to increase by £0.029/kW

- Using ALF calculations as defined in the report and projections of storage capacity in each zone, CMP393 reduces total revenue from wider tariffs in 2022-23 from £377.2mn (as per ESO's final tariffs publication) to £375.1mn
- That reduction feeds into the calculation of the EU Adjustment Factor. Total revenue from transmission connected generation pre-adjustment is now £2.1mn lower, so the "correction" required to get down to €2.50/MWh is also £2.1mn lower
- That £2.1mn is spread across the 72.44GW of chargeable capacity (as per ESO's final tariffs publication) to give the £0.029/kW increase

TNUoS Impacts Across Spot Years £/kW

	CMP393	CMP394
2022-23	0.029	0.229
2025-26	0.062	0.221
2030-31	0.063	0
2035-36	0.058	0

Archetypes:

North Scotland Onshore Wind (Zone 1)
South Scotland Onshore Wind (Zone 11)
Northern England CCGT (Zone 13)
South-East England Solar (Zone 24)
South West England CCGT (Zone 26)

Approach to calculating curtailment savings

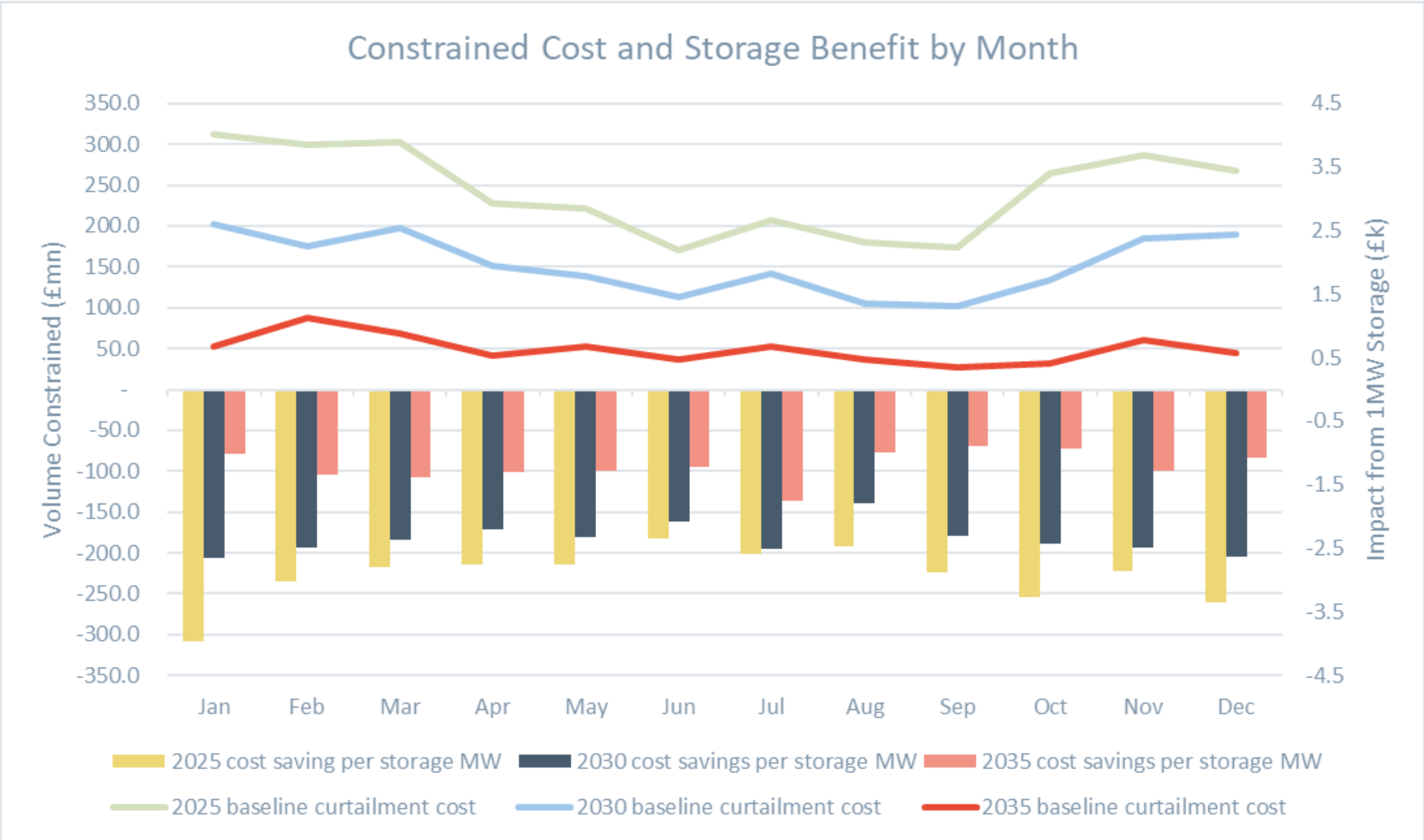
Analysis of impact of battery storage on constraint costs at B6 Boundary, 2025, 2030, 2035

Assumptions

- Peterhead load factor at 35%, Torness load factor at 85%
- Northconnect (1.4GW) set to import and Moyle (500MW) set to export
- Storage behaviour optimised to charge at times of constraint and discharge at times of no constraint

Scenarios

- No storage scenario
- Baseline scenario
- Baseline +1MW storage scenario (proxy of £/kW benefit of additional storage behind constraint)


Constrained Cost and Storage Benefit by Month
Volume Constrained (£mn)
Impact from 1MW Storage (£k)
350.0
300.0
250.0
200.0
150.0
100.0
50.0
-
-50.0
-100.0
-150.0
-200.0
-250.0
-300.0
-350.0
4.5
3.5
2.5
1.5
0.5
-0.5
-1.5
-2.5
-3.5
-4.5
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2025 cost saving per storage MW
2030 cost savings per storage MW
2035 cost savings per storage MW
2025 baseline curtailment cost
2030 baseline curtailment cost
2035 baseline curtailment cost

ENOBĒ

Additional Analysis requirements

Workgroup previously agreed that there was a need to consider the following within the analysis:

- the behaviour of storage at peak
- impact of potential future incentives (currently not in place)
- influence of the current high prices

Timeline for CMP393/CMP394

Milestone	Date	Milestone	Date
Modification presented to Panel	24 June 2022	Workgroup report issued to Panel	18 May 2023
Workgroup Nominations (15 working days)	19 July 2022 to 9 August 2022 (5pm)	Panel sign off that Workgroup Report has met its Terms of Reference	26 May 2023
Workgroup 1 (Understand proposal and solution(s), note the scope, agree timeline, agree and review terms of reference, review cross code impacts, review analysis and agree what other analysis is required, agree next steps)	2 September 2022	Code Administrator Consultation (15 working days)	30 May 2023 to 20 June 2023 (5pm)
Workgroup 2 to 4 - Further analysis review	13 October 2022, 4 November 2022 and 30 November 2022	Draft Final Modification Report (DFMR) issued to Panel	22 June 2023
Workgroup 5 - Refine solution(s), draft legal text and consider potential Workgroup Consultation questions	12 January 2023	Panel undertake DFMR recommendation vote	30 June 2023
Workgroup 6 - Review Workgroup Consultation questions and finalise Workgroup Consultation	7 February 2023	Final Modification Report issued to Panel to check votes recorded correctly	4 July 2023
Workgroup Consultation (15 working days)	17 February 2023 to 10 March 2023 (5pm)	Final Modification Report issued to Ofgem	12 July 2023
Workgroup 7- Review Workgroup Consultation Responses, consider new points raised, refine solution, review legal text and discuss any potential alternatives	22 March 2023	Ofgem decision	By 1 October 2023
Workgroup 8 - Finalise solutions (including legal text) and alternatives and hold alternative vote	11 April 2023	Implementation Date	1 April 2024
Workgroup 9- Finalise Workgroup Report and hold Workgroup Vote	3 May 2023		

Next Steps

Ruth Roberts – National Grid ESO Code Administrator