



### **Cornwall Insight Analysis of CMP393 and CMP394**

‘CMP393: Using imports and exports to calculate annual load factor for electricity storage’ and ‘CMP394: Removing generation charges from electricity storage operators in positive TNUoS zones’ would alter an economic signal that disincentivises storage operators from deploying in generation-constrained areas. Better to understand the likely system-wide impacts of the proposed modifications, Zenobē engaged Cornwall Insight to model:

- How increased storage deployment in generation-constrained regions would affect curtailment costs.
- How the modifications would affect TNUoS charges for generation technologies other than battery storage.

#### **Curtailment Costs**

Cornwall Insight modelled the marginal impact of adding a 1MW/2MWh storage facility behind the B6 boundary. This additional 1MW of storage can be used as a proxy for the £/MW benefit of additional storage behind the B6 boundary.

The assessment showed a reduction in constraint volumes of 202MWh in 2025, falling to 127MWh in 2035. A greater impact is seen in the winter, as wind speeds are a primary driver behind constraints. The financial impact of this reduction in constrained volume decreases over time, falling alongside the total constrained volume and volumetric costs of constraint. Analysis of the financial impact in 2025 shows that 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.

The modelling demonstrates how increased storage deployment behind constraint boundaries would alleviate constraints, reducing curtailment costs. As such, there is a strong case for altering regulation to ensure TNUoS charges provide storage operators with more cost-reflective economic signals. The modelling shows the primary benefits of the modifications are in early years (2025-30), supporting a 2024 implementation date.

#### **Generator TNUoS Costs**

Cornwall Insight modelled the impact of the proposed modifications on TNUoS for generation technologies other than battery storage. They found that the modifications would drive slight increases in TNUoS charges for all generators in GB: typically, ~£0.20/kW. The modifications are therefore not expected to have a material impact on the context of most generators’ total TNUoS charges.

The impacts on storage are more marked, with significant decreases in charges in the most northern transmission charging zones (zones 1-14). In these zones under CMP393, tariffs are forecast to decrease substantially, and in some cases to tip into credits, in 2025-26 (see Figure 1); to increase credits substantially in 2030-31; and further to increase credits in 2035-36. In southern zones, across these spot years, the existing level of credits is typically maintained.

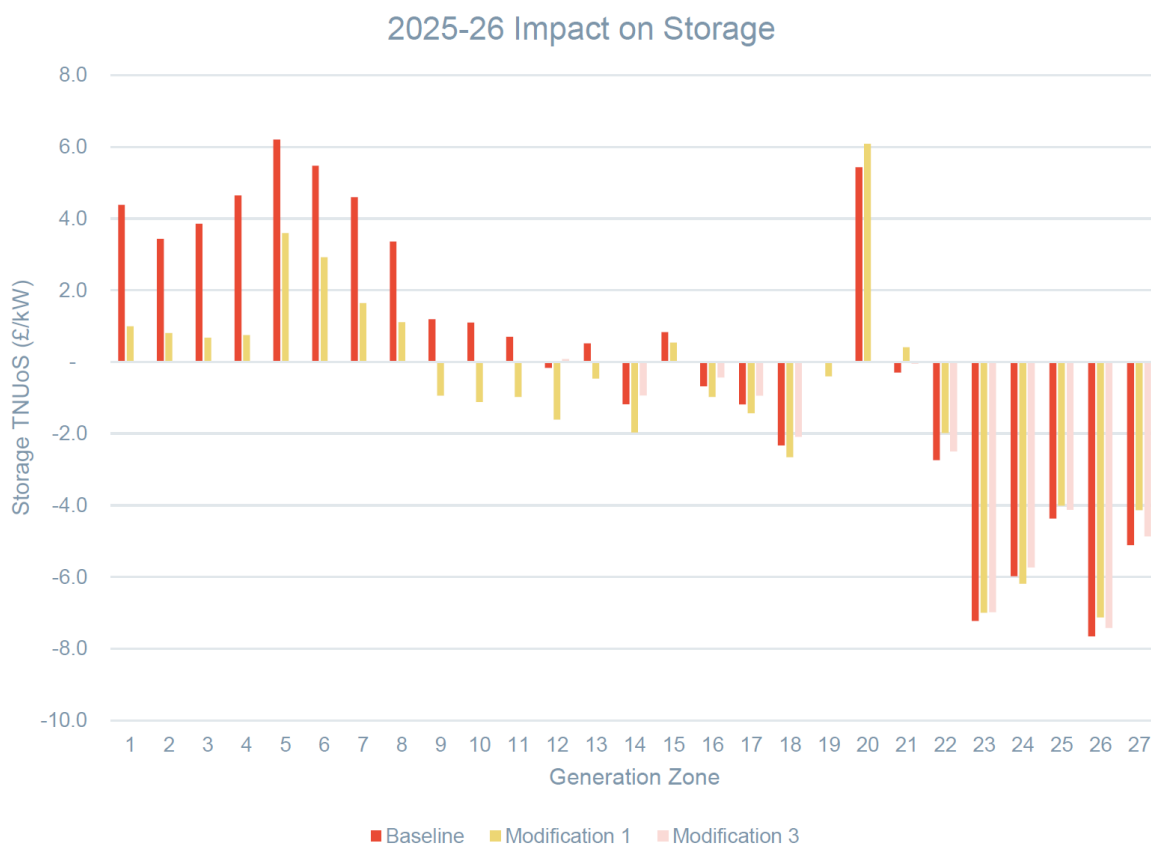


Figure 1: Impact on archetype storage in 2025-26 with 20% increase in Expansion Constant. 'Modification 1' is CMP393: Using imports and exports to calculate annual load factor for electricity storage; 'Modification 3' is CMP394: Removing generation charges from electricity storage operators in positive TNUoS zones.