

Purpose of this note

This note explains how network charges apply to storage, and how the industry is reviewing the residual element of transmission network charges, and BSUoS charges, for electricity storage.

Executive summary

Storage operators currently pay transmission (TNUoS) and distribution (DUoS) network charges – including forward-looking and residual charges – when they ‘import’ electricity from the networks (treated as demand) and when they ‘export’ it back onto the networks (treated as generation). Storage also pays Balancing System Use of System (BSUoS) charges both for demand and for generation.

Ofgem set out its provisional view - in the Targeted Charging Review (TCR) consultation and its Smart Systems and Flexibility Plan – that storage should not pay the ‘demand residual’ element of network charges, and that storage providers should pay only one set of balancing system charges. In the TCR Significant Code Review launch letter, Ofgem confirmed that view. It is Ofgem’s view that storage should continue to pay forward-looking network charges for both import and export (noting that forward-looking network charges are currently under review in the Electricity Network Access project).

Industry is currently working on modification proposals to remove the demand residual element from TNUoS and BSUoS for storage (and generation, which may also face residual demand charges if it needs to import electricity at times). Two industry modifications, CMP280 and CMP281, propose to remove the demand residual element from TNUoS from storage (and generation), and the demand BSUoS charge from storage, respectively.

There is not at present an active modification proposal relating to the residual element of distribution charges for storage. However, the Distribution Charging Methodology Development Group (DCMDG) has recently discussed a potential modification proposal that may be raised in future.

Depending on the detail of the final proposals, these changes could address some of the differences in charging treatment between storage and generation. Ofgem will need to consider the final proposals, and any evidence submitted with those, in making a final decision on these modifications.

What's driving change?

Storage is currently treated under today's residual and cost-recovery charging methodologies as follows:

- › For TNUoS, transmission-connected and larger (above 100MW) distribution-connected storage (and generation) pay both the generation and demand TNUoS residual elements.
- › For BSUoS, transmission-connected and larger distribution-connected storage (and generation) pay BSUoS charges on both imports and exports of electricity.
- › For DUoS, distribution-connected storage pays residual demand charges.

Storage competes with generators in providing services to suppliers, customers and network operators. Storage providers competing with generators in the provision of ancillary services are therefore at a competitive disadvantage, which is likely to distort market outcomes and so disadvantage consumers.

Storage can also sometimes compete with demand, to take excess generation off the network and help to balance the system. However, a key difference between demand and storage is that demand is an end user of electricity. When the electricity provided by the storage operator is consumed by an end user, demand residual charges apply. So under the current system, electricity that is stored, then exported and used, attracts demand residual charges twice, with the storage operator and the end user both paying.

Ofgem's provisional view is that residual charges should apply to storage in a similar way as to generators.

Under the current charging methodology, transmission-connected and larger distribution-connected storage providers pay BSUoS on both their import and export volumes. Storage providers are therefore contributing more towards the cost of balancing the system than other users.

The table below sets out the current charging arrangements for transmission-connected and both large and small distribution-connected generation and storage.

		T Final Demand	T Generation	T Storage [†]	D Larger EG**	D Larger Storage***	D Smaller EG*	D Smaller Storage**	D Demand
Transmission residual	Generation		✓	✓	✓	✓			
	Demand	✓	✓	✓	✓	✓	Paid ^{††}	Paid ^{††}	✓
Distribution residual	Generation				Only EHV pay#	Only EHV pay#	Only EHV pay#	Only EHV pay#	
	Demand				✓	✓	✓	✓	✓
Balancing	Generation		✓	✓	✓	✓			
	Demand	✓	✓	✓	✓	✓	Paid	Paid	✓

- ✓ - Pay the charge Paid – can get paid the inverse of the charge when generating
- * <100MW EG **>100MW EG
- † - may be affected by ongoing storage modifications CMP280 & CMP281
- †† - will be replaced by dedicated embedded export tariff following CMP264/5 WACM4 implementation
- # - only those connected at HEV level pay distribution demand residuals. All other are exempted

Where is this issue today?

Industry has put forward two modifications to change the TNUoS demand residual and BSUoS charges: CMP280 and CMP281.

The working group has met five times so far, and work is progressing to further refine the modification proposals before industry consultations in early 2018.

There is currently no active modification proposal that would remove the residual element of distribution demand charges from storage. Ofgem's provisional view is that this element of network charges should not apply to storage in future. The DCMDG, an industry stakeholder group considering distribution network charging, has recently discussed a possible new modification that may be raised in future.

How might this change in future?

To address TNUoS charges, CMP 280 would amend the CUSC definition of those parties liable to TNUoS demand residual charges to remove the reference to generator parties, including storage. A new generator demand TNUoS tariff, consisting of only the forward-looking elements of the demand TNUoS tariff, would apply when storage and generators import electricity.

The current proposal would apply to storage and generation that is connected at transmission level, and larger (over 100 MW) storage and generation connected at distribution level. The working group set up to examine this proposal is exploring whether to extend the proposal to smaller generation and storage, and will work to understand the impact of extending or not extending the proposal in this way.

On BSUoS charges, CMP 281 would change the BSUoS charging methodology to remove the BSUoS liability from storage facilities' import volumes. This can be achieved by defining an 'Exemptible Storage Balancing Mechanism Unit (BMU)' and removing the liability for this party to pay BSUoS on its imports from the National Grid system. This exemption would mirror that in place for BMUs and trading units associated with interconnectors.

The working group is exploring alternative ways to remove the import BSUoS liability, and has developed other options to be further discussed at future meetings.

What are the next steps?

Working groups for both CMP280 and CMP281 will meet over the next three months to finalise the proposals before issuing a consultation early next year. We expect the proposals will come to Ofgem for decision in the first half of 2018.

How can you get involved or find out more?

Contribute

- › Follow developments and respond to the upcoming consultations (see links below).

Learn

- › CMP280 – Draft proposal and other material available on NG website: <https://www.nationalgrid.com/uk/electricity/codes/connection-and-use-system-code/modifications/creation-new-generator-tnuos>
- › CMP281 – Draft proposal and other material available on NG website: <https://www.nationalgrid.com/uk/electricity/codes/connection-and-use-system-code/modifications/removal-bsuos-charges-energy>

Ask

- › National Grid as CUSC Code Administrator at CUSC.Team@nationalgrid.com