

Residual DUoS charges for Storage at Low and High Voltage

Summary: An assessment of the impact of removing residual charges from DUoS for storage sites at Low and High Voltage

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1. Executive Summary

Ofgem issued a consultation on the [Targeted Charging Review](#) in March 2017 followed by a [launch statement](#) in August 2017. Within these papers Ofgem gave their view that storage sites should not pay the demand residual element of Distribution Use of System (DUoS) charges and Transmission Use of System (TNUoS) charges. Ofgem requested that changes should be brought forward by Industry to implement these changes.

Since the launch statement a change modification has been brought forward to amend TNUoS charges for storage ([CMP 280](#)), however no change modification has yet emerged at distribution. At the April Distribution Charging Methodologies Development Forum (DCMDG), Northern Powergrid put forward a draft change proposal which will remove the residual charge element for the demand side of storage sites connected at low and high voltage (note: there is no residual applied to export).

2. What are residual charges?

Network charges can be split into two elements:

- **Forward-looking element** – this represents the costs a user drives for the network company. By setting these charges at a cost reflective level, a network company can incentivise the customer to change their behaviour and the network company will realise cost savings.
- **Residual element** – this represents the balance of costs that the network company needs to recover after the forward-looking element has been removed. This ensures the network company recovers its allowed revenue as set by the regulator

The residual element of network charges has become increasingly under focus by Industry. This is because the residual (for DUoS and TNUoS) is recovered based on usage and can therefore be avoided. As more customers avoid the charge the residual charge rate increases for those customers who cannot avoid it.

3. Impact of removing DUoS residual for Storage

To determine the impact of removing the DUoS residual for storage sites, Energy Potential has extracted the residual element of demand tariffs from the Common Distribution Charging Methodology (CDCM). This varies by DNO area and is normally a fixed amount in p/kWh across all

tariffs. However, there is an adjustment to prevent rates becoming negative and in the London area the residual rate varies across the red, amber and green timebands.

The table below shows the impact for a 500kW and 1MW 1C battery that connects in each DNO area. In each case, the value is the annual cost of the residual element assuming that the battery charges for 1 hour every day. Where the rate varies by timeband (only in London network area at present) it assumes that the storage is charged overnight. It should also be noted that the residual charge in London is negative, so the proposed change would result in slightly higher charges for the import side of storage sites in this network area.

Figure 1: Annual cost savings of a storage site by DNO area based on 2019-20 (note: values in red are an increase in cost)

DNO Area	500kW Battery		1MW Battery	
	LV	HV	LV	HV
ENWL	£1,048	£1,048	£2,097	£2,097
NPG-YE	£1,755	£1,755	£3,509	£3,509
NPG-NorthEast	£1,926	£1,926	£3,853	£3,853
SP-M	£2,268	£2,268	£4,536	£4,536
SP-D	£2,156	£2,156	£4,311	£4,311
UKPN-LPN**	-£13	-£3	-£26	-£5
UKPN-EPN	£192	£192	£384	£384
UKPN-SEPN	£708	£708	£1,416	£1,416
WPD-WMid	£1,838	£1,838	£3,675	£3,675
WPD-EMid	£1,557	£1,557	£3,114	£3,114
WPD-SWALEC	£2,451	£2,451	£4,902	£4,902
WPD-SWEB	£2,408	£2,408	£4,816	£4,816
SSE-Shydro	£2,349	£2,349	£4,698	£4,698
SSE-Southern	£856	£856	£1,713	£1,713

4. Summary

Removing residual charges for the import side of storage sites will help support the business case for investing in batteries. The governance process for the Distribution, Connection and Use of System Agreement (DCUSA) means that this change will need to be approved by Ofgem by 30 September 2018 to enable it to be implemented at the earliest opportunity which is April 2020. If the modification cannot meet this date, the implementation date will be pushed back to April 2021.