

**Ofgem Consultation on:
Electricity distribution charging boundary between higher (EDCM) and
lower (CDCM) voltages - Impact Assessment**

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**Response by:
University of Bath and DLT Consulting**

The Department of Electrical and Electronic Engineering at the University of Bath is engaged in research into charging methodologies and their impacts for distribution networks. DLT Consulting provides advice to the electricity industry on commercial matters that has included an emphasis on the development of network use of system tariffs.

The charging principles for customers whose charges will be pursuant to the EDCM incorporate a pricing signal intended to encourage generation and load to site so as to provide economy in the development of the distribution networks. This is a more sophisticated pricing arrangement than that provided under the CDCM. At the moment the EDCM will apply only to EHV connected customers but in time it is to be hoped that the methodology will spread to lower voltages and thus encompass supplies to a substantially greater number of customers. This will become increasingly necessary as grids become smarter and demand management is needed as a source of reserve to support a greater proportion of intermittent generation in the mix.

The present debate over the boundary between the EDCM and CDCM is thus an interim consideration. We would hope that in reviewing the responses to this consultation the Authority will recognise this and adopt the lowest point on the system from the options considered where the EDCM can be implemented. We therefore support Option 5a. The argument for not extending the EDCM further down the system and thus encompassing more customers should be a question of practicality rather than principle.

Where DNOs have difficulties with the analytical skills or approaches to deploy the EDCM at lower voltage levels then it would be better to permit a period for implementation rather than revert to the CDCM. Customers could equally raise the discriminatory issue if they are shown to have a similar impact to the system but treated differently purely due to their connection voltages, particularly if the DNO has the capability to model their impact.

Customers choosing a connection level based on differential charges under different charging regime is very real. The Brazilian electricity regulator – ANEEL has already observed the 'cherry pick' effects in their system. A considerable number of generators artificially raised their connection voltage so as to lower their network charges but at a substantial cost to the system development. This has triggered the regulatory authority to restructure their distribution charging, aiming to deliver a consistent charging regime as far as possible.

The EDCM is likely to be most effective in delivering its objective of encouraging economic system investment when applied to the HV and LV networks. Raising the boundary to 22KV could see DNOs flip in and out their charging methodologies over time, this will inevitably increase price shocks to customers and adding further

administration and implementation cost in the long run. We would hope that the Authority will not choke off this prospect by settling on an EHV/HV boundary that permits the CDCM “postage stamp” charging arrangements to be retained for larger customers at this stage in the development of network charging methodologies.

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