24 February 2023 – BBC sensitivity to embedded generation

Question:

Our standing assumption with the application of the new TPM is that as transmission charges will be essentially fixed, that there will no longer be any savings created by virtue of embedded generation that could be paid out to an embedded generator as Avoided Cost of Transmission (ACOT).

One of our embedded generators has challenged this view and believes there are still savings that are attributable to their embedding generation in our network (against a counterfactual of connecting them to the nearest transmission node).

I would welcome the opportunity to speak with someone in your Pricing Team to see if this is a valid scenario that we need to do some further work on.

While we don't quite understand the potential mechanism for this, it is likely to be in the BBC components if anywhere, and more particularly the Appendix A BBI allocation.

Response:

You've asked whether there is potential for embedded generation to deliver transmission charge savings to the distributor under the new TPM's essentially fixed approach to charging and against a counterfactual of the generation connecting directly to the grid.

At the outset we note Transpower and the TPM have no role in determining or advising on how a distributor should pass transmission charges through in its pricing or other commercial arrangements with load and generation customers on its network.

Considering each major component of the TPM:

- Connection charges reflect the connection assets our customer has contracted us to provide. Where connection assets are shared between multiple connected customers the charge for them each pricing year is allocated in proportion to anytime maximum demand (AMD) and anytime maximum injection (AMI). Embedded generation can help to reduce the distributor's share but by how much is not easily predictable, including because it is a function also of the AMD/AMI of the other parties sharing those connection assets.

- Residual charges are allocated on the basis of historic and very slow-moving gross load parameters: charges apply to all load whether it is supplied from the grid or not, and regardless of time-of-use or seasonality. Embedded generation cannot help to reduce a distributor's residual charge.

- Existing embedded generation can reduce an offtake customer's benefit-based charges (BBCs) for <u>future</u> benefit-based investments (BBIs) by reducing offtake intra-regional allocators (IRAs) in the 5 years ahead of the investment being made, or by resulting in that connection location being in a regional supply group because its injection is greater than its offtake. But it could also impact total regional benefits, or give rise to a higher allocation if it results in a distributor's connection tending to inject, rather than just reduce offtake for a BBI that benefits generation in

that region. So the implications of embedded generation for BBCs for future BBIs are not predictable and may be different for each BBI.

- Also, for existing BBIs, any new embedded generation >10MW is treated as grid connected and will trigger a 'large plant' adjustment event when it connects to the distribution network, which could result in an increase to the distributor's BBCs (it cannot result in a decrease).