10 May (IEGA) – TPM implications for embedded generation

Question:

I am working through the draft Assumptions Book and note that 2 hydro power stations of Pioneer (South Island) and one of King Country Energy (North Island) are being explicitly modelled by Transpower in the derivation of transmission charges under the new TPM.

[We want to] work through how the information (and operation) of two of these hydro stations flows through to the calculation of the residual benefit-based charge for the distributor these plants are connected to.

Response:

You've noted that some embedded generation is modelled by Transpower. The 2 most important aspects of the TPM where embedded generation is modelled or data about embedded generation is used are as follows:

- Residual charges: Transpower is required to use meter data for embedded generation in order to determine residual charges on the basis of gross load. The residual charge is payable on all load whether it is supplied by grid-connected generation or embedded generation. It is not a charge on generation itself (except to the extent the generator has load embedded behind it or consumes load when it is on outage perhaps). Any part of embedded generation injected into the grid (the GXP changing to a GIP scenario) does not count towards gross load.

- Benefit-based charges: The cost of benefit-based investments made by Transpower in the interconnected grid since July 2019 is allocated on a basis intended to reflect benefits derived from the grid. For the simple method, net metering at points of connection to the grid is used (embedded generation is not explicitly modelled). For the standard methods, modelling typically follows the approach Transpower takes to modelling the grid for grid planning and investment decisions. In many cases that includes explicitly modelling embedded generation as grid-connected because it does impact the grid. The benefits or disbenefits accruing to the modelled embedded generation are attributed to the host customers, which may result in distribution customers receiving benefit-based charges for embedded generation that injects to the grid via the distribution network. Conversely, embedded generation will tend to reduce the benefit-based charges of distribution customers as their offtake will be lower.