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Submission
Electricity Authority
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By email: submissions@ea.govt.nz

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Dear Sirs

Re: Consultation Paper – Review of distributed generation pricing principles

The Electricity Authority (Authority) states: “It is unclear why any single category of distribution network user should be favoured over others, as occurs under the DGPPs.” In Nova Energy’s experience distributed generators (DG) most definitely need unambiguous regulatory protection from the monopolistic practices of electricity distribution businesses (EDBs). Reasons for this are covered below:

Avoided Cost of Transmission (ACOT)

Nova acknowledges that ACOT payments have increased significantly in recent years as a result of:

- Increased Transpower charges,
- The focus of Transpower charges on a small number of load peaks, and
- The embedding of a number of significantly sized generation projects.

These are issues that need to be managed; but it is not sufficient cause for removing all protections for generators connected to EDB networks.

The Authority’s argument against ACOT payments focuses on the gap between ACOT and the actual marginal cost of transmission, given that in many cases there is adequate transmission capacity and marginal costs of virtually zero. The underlying presumption is that a generator and consumer within the same GXP area shall have no rights for one to supply the other with electricity without the consumer also paying, via the EDB, the grid operator a transmission charge, i.e. a charge for a service that neither party is using.

With its proposal to abolish ACOTs, the Authority is, in effect, instituting a monopoly right to Transpower; enabling it to recover its regulated revenues from all parties, and in particular, in preference to embedded generators that provide an alternative service to consumers.

For example, if consumers were to contract directly with Transpower for transmission services, they will be in a position to choose between either paying Transpower’s charges or choosing an alternative supplier, e.g. a DG operator. In a competitive market the DG would reduce the consumer’s demand from the grid, and expect recompense for that. The current ACOTs arrangement provides this ability for the consumer; albeit inefficiently due to some EDBs extracting a disproportionate share of the benefit by being the intermediary for transmission charges. Removal of even this diluted benefit accruing to consumers under the current ACOT arrangement means that choice and competitive element is removed from consumers. We believe this is anti-competitive and a retrograde step.

In the absence of the EDB as the intermediary, the DG and connected consumer could be expected to jointly negotiate the benefits of the ACOT between them.

The logical response to the removal of the DG Regulations is for DG to by-pass the EDB and supply consumers directly. This can be achieved by connecting directly to networks that are not connected to the Transpower grid, i.e. embedded networks. The embedded network should only pay a share of the EDB's Transpower connection charges for the extent to which it draws electricity from the EDB's network. In some cases the embedded network net demand could be nil, or even a net exporter of electricity. In such cases, consumers on the embedded network can afford to pay the DG an amount up to the same amount saved in transmission charges that would have been passed on by the EDB, i.e. equivalent to an ACOT payment.

Such by-pass would be both rational and profitable in circumstances where the added lines costs are not excessive. It is not, however, an optimal solution economically.

The solution to that scenario is to rationalise the transmission pricing methodology such that interconnection charges are allocated appropriately to users of the grid (rather than basing charges entirely on small number of RCPD peaks). The TPM, as proposed, is largely expected to achieve that, in which case removing the distributed pricing principles from Part 6 of the Code is unnecessary as well as creating perverse incentives to directly connect DG to consumers, by-passing the EDBs.

Code amendment does not address market failure

The Authority uses an economic argument to justify the elimination of the DG protections under Part 6 of the Code. Its position, however, ignores the imbalance of negotiating power between generators and the EDB monopolies when it comes to connect DG to their networks.

The Authority recognises that there is justification for Transpower and EDB's to pay DG for:

- Avoided transmission cost, where this directly defers the need for additional investment in the Transpower Grid or reductions in load, and
- Avoided costs of distribution; where the DG enables the EDB to avoid the cost of additional network investment.

Where there is an LRMC charge applied to load (or in some cases generation), then Transpower should also be required to apply LRMC credits for DG generation where appropriate, reflecting the inverse of LRMC charges on load.

The primary issue for DG is that it is unlikely to receive such payments from EDBs without a mandated requirement under the Code. Furthermore, the Authority is opening up the opportunity for EDBs to allocate overheads to DG on whatever basis they may choose. The DG regulations were introduced specifically to address the way monopoly powers were being used to disadvantage DG owners.

Transpower is more likely to act appropriately than the EDBs in this respect, given its higher visibility and transparency, although the DG owners remain at a significant disadvantage in terms of access to information, analysis of data, and resources to negotiate a fair financial benefit from their generation.

The Authority has assessed the Code amendment against its Code amendment principles without considering the market's experience prior to the DG regulations.

The current DG regulations originated in an environment where DG proponents were having considerable difficulties engaging with EDBs. There are a number of reasons why this was the case, and these are not unique to the New Zealand situation. The UK energy regulator, OFGEM, acknowledges similar issues in the UK:

“Over recent years we have witnessed a dramatic growth in the number of distributed generators seeking to connect to the distribution network. Accompanying this surge in volume of connections have been concerns that customers are encountering a number of difficulties in navigating their way through the connection process.¹”

The following study documents a range of barriers to connection in relation to grid connected generation, and includes case studies relevant to these. It explains why network operators are naturally inclined to be wary of DG and seek a higher proportion of costs from DG than consumers.

“The DECENT study (Decentralised Generation Technologies – Potential, Success Factors and Impacts in the Liberalised Energy Markets (Joeress et al. 2002) was designed and carried out to identify the main barriers and success factors to the implementation of DG projects within the EU and Member State policy makers to enhance the feasibility of DG projects within the internal energy market.”

The following points are direct extracts from that work:

- Connection charges
 - “Shallow connection charges only bring into account the cost of line extension to the nearest connection point and the equipment needed to connect the line to the rest of the grid.
 - “Deep connection charges bring into account all the cost of integration of a generator into the network, including the cost of all adjustments beyond the point of connection to the network.
 - “However, determining the point of connection with deep connection charges is more complicated, because the location specific cost of grid adjustments will be taken into account both by the generator and the network operator.
 - The relative impact of deep connection charges are not straightforward and provide considerable scope for EDB’s to load costs onto DG.

- Safety and Liability Issues
 - “As they are often under pressure of price regulation they will often try to shift as many of the costs and risks of safety measures to the users of the grid, mainly to producers.
 - “The cost of safety measures related to network connections may entail special safety and contingency equipment in the connection to the grid and adjustments elsewhere (in the case of deeper connection charges), demands on the operation of the plant, etc.
 - “Necessary safety measures are generally determined by the grid operator taking a very risk adverse approach.
 - “The safety requirements on equipment and operation can compound the cost of connection. Moreover, the basis of establishing the necessary measures is not always transparent.”

- Lack of transparency
 - “When establishing the cost of connection to the grid it is important that both the procedures for requesting and negotiating connection and the cost assessment methodology are transparent and non-discriminatory.

¹

(<https://www.ofgem.gov.uk/electricity/distribution-networks/connections-and-competition/distributed-generation>)

- “In the absence of any standard conditions, new entrants will face uncertainty with regard to the cost of connection.
- “On the other hand clear cost allocation rules between developer and (distribution) grid operator have proved to reduce uncertainty.
- Business practises
 - “It is not perceived to be the core business of grid operators to facilitate the integration of DG into their networks. The priority is the operation of the grid and maintenance of the assets.
 - “Furthermore, there is no incentive structure to stimulate the fast and efficient handling of connection procedures. Therefore connection requests by DG have a relatively low priority.
- Benefits of connection
 - “Benefits of connection of DG may arise from deferral of transmission and distribution network upgrades and expansion, decongestion, improved local reliability, and the provision of ancillary service to the grid.
 - “These benefits are usually not reflected in the connection charges, which only take into account the cost of connection.
- Lack of price signals
 - “DG operators seek to minimise the cost of connection to the network.
 - “Network operators also seek to minimise the cost of connecting DG to their network and also seek to minimise the amount of effort involved in handling connection requests and in integrating DG in their grid planning.
 - “As described above the aims of both camps are often difficult to reconcile as a result of non-transparent procedures and cost assessment procedures.
- DSO (Distributed System Operators) incentives
 - “The incentives arising from price regulation on network companies determines the attitude of grid companies to the connection of DG.
- Co-ordination of spatial planning and network planning
 - “The location of DG projects is often constrained by spatial planning and resource availability.
 - “How to allocate these costs between the users of the network (shallow connection charges) and the DG operator (deep connection charges) will have to be discussed.

“Non-discriminatory access to the grid and transmission and distribution services is therefore fundamental to ensure that DG can compete with other sources of electricity on an equal basis².”

It is clear from the above that the issues are not unique to New Zealand and its 29 EDBs. Quite simply the issues are complex and the objectives and negotiating power are not aligned between the parties. However imperfect, the regulations under Part 6 of the Code have facilitated both DG operators and EDBs to resolve most of the above issues.

² DECENT Final Report - https://www.izt.de/pdfs/decent/DECENT_Final_Report.pdf

If, on balance, it is deemed that the provision in the Code for ACOT payments must go, then it is still essential that the Code continues to regulate EDBs to:

- Act in a reasonable manner in terms of facilitating existing and new DG connections,
- Make provision for paying for avoided costs of distribution (ACOD), and
- Charge no more than the direct (shallow) connection costs associated with DG.

If EDBs are allowed to charge deeper connection costs plus overheads to DG, they are placing DG at a competitive disadvantage to grid connected generation. New EDB connection charges may therefore result, in some instances, in DB operators investing in lines and high voltage transformers that should otherwise be unnecessary.

While EDBs may incur deeper connection costs or overheads associated with DG, the EDBs also receive benefits that they are unlikely to credit back to the DG. By limiting the connection charges to the shallow costs, such regulation does, by effect, balance out at least some of those benefits.

LRMC charges

As per its submission to the Authority on the TPM Options Paper, Nova supports the application of the LRMC charging methodology as it focuses on future investment, and is complementary to the Area of Benefit charge.

Given the intent of the LRMC charge is to signal the increasing load on the grid and likelihood of future grid upgrades, it is also economically efficient to signal that to DG. Under the Authorities proposed Code change, it is unlikely that LRMC offsets will occur (unless the LRMC charge happens to be a net export charge).

Just as there is provision for Transpower to pay for DG directly for demand response, it should also be required under the Code to credit LRMC recoveries back to DG at the same rate as Transpower charges for load.

IEGA submission

Further to the points made in this submission, Nova supports the supports the submission made by the Independent Electricity Generators Association (IEGA), specifically:

- The point that the DG Regulations were primarily implemented to address barriers to entry for DG,
- The Authority has not fully evaluated the market impact of removing the incentive for DG to generate during peak demand periods, and potentially a wider shift of DG generation patterns, and
- The impact of EDB's imposing lines charges, including overheads, on DG, whereas the Authority itself outlines very good reasons why grid connected generation should only pay for Interconnection charges to the extent that they can be shown to benefit from those.

Conclusion

ACOT payments have facilitated innovation in building DG projects throughout New Zealand, ranging from strategically located wind turbines, geothermal power stations of various sizes, co-generation plants, and landfill sites. Many of these would not have proceeded in the absence of the Part 6 regulations. However they are still economically efficient investments if all of the benefits are taken into account (which consist of more than just the revenues received by the DG owners).

Notwithstanding our view that mechanisms supporting recognition of DG, such as the ACOT payments structure, should be maintained, it is crucial that the Authority ensures that a level playing field with respect to connection costs is retained. That includes minimising transaction costs as well as preventing EDBs from subsidising consumers at the cost of the DG operators.

Part 6 of the Code should not be amended until the Authority is ready to address these wider issues.

Yours sincerely



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