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Newcastle NSW 2302

28 February 2023

Dr Nicola Crauford
Chair
Electricity Authority Te Mana Hiko
By email: distribution.feedback@ea.govt.nz

Dear Dr Crauford,

RE: Issues Paper - Updating the Regulatory Settings for Distribution Networks

SwitchDin welcomes the opportunity to provide feedback to the Electricity Authority's Issues Paper on updating the regulatory settings for distribution networks.

SwitchDin is an energy software company that bridges the gap between energy companies, equipment manufacturers and energy end users to integrate and manage energy resources on the grid. SwitchDin's technology enables our clients to build and operate vendor-agnostic virtual power plants (VPPs) and microgrids, and to optimize site performance across fleets of diverse assets. Founded in 2014 in Australia, SwitchDin is currently in the process of expanding our presence in Aotearoa by building on existing and new partnerships with Energy Retailers and EDBs, so that we can leverage our experience to support the imminent New Zealand energy transformation..

We support the Electricity Authority's recognition that flexibility services will play an increasingly important role in the electricity system and its vision to promote competition and consumer choice. We welcome the Authority's intentions to enable data access and facilitate growth in the flexibility services market. We strongly agree with the Commission's view that, "flexibility traders should play the market-making role rather than 'smart' distributors, which could be conflicted in that their own networks are part of the value stack".

We agree with the decision to prioritise improving the visibility of the low voltage (LV) network and improving access to smart meter data. We support the Authority's preference to move at the speed of the fastest adopters and to consider a "regulatory sandbox" to encourage innovation.

SwitchDin warmly welcomes the Authority's intention to ensure equal access to data by distributors and flexibility traders to create a level playing field to develop and offer products and services that will maximise the value of distributed energy resources (DER) for the long-term benefit of consumers.

These issues are elaborated upon in our submission. Thank you for the opportunity to respond to these important issues. I remain available for further discussions and inputs.

SwitchDin would be keen to participate in the workshops on privacy preserving / minimisation techniques foreshadowed in the Issues Paper. Please add SwitchDin staff, Darren Gladman (darren.gladman@switchdin.com) and Josh McLaren (josh.mclaren@switchdin.com) to the invitation list for the workshops foreshadowed in the Issues paper and for other consultative processes regarding regulation of electricity, data and distribution networks.

Best regards,

A handwritten signature in black ink, appearing to read 'D Gladman', with a long horizontal flourish extending to the right.

Darren Gladman
Head of Policy & Regulatory Affairs

Key Recommendations

1. *Support transparency, standardisation and equal access to data*

SwitchDin welcomes the Authority's support for the principles of transparency, standardisation and equal access to data. No company should have monopoly control of customer data. If companies are permitted to monetise customer data, they should be required to publish prices transparently.

2. *Introduce the latest standards for inverters*

The Authority should mandate adoption of AS/NZS 4777.2:2020 as soon as possible and should plan to mandate interoperability capability for inverters within the next few years. An interoperability mandate on inverters is the logical starting point for establishing a digital compliance regime for DER.

3. *Require distributors to publish a 'standing offer' price for alternatives to network investment*

In the short term, distributors should be required to publish their 'standing offer' price information for DER to support longer term alternatives to network investment. When the market for alternatives to network investment is sufficiently mature, the Authority should apply the Arm's-Length rule.

4. *Consider customer access to real-time data from the meter*

The Authority should consider enabling customers to access real-time from their meter, so that they can optimise flexible load, electricity generation, and storage behind the meter.

Responses to questions raised in the Issues Paper

- 1. Do you see value in the Authority commissioning two separate reviews to look into the merit and practicalities of implementing the recommendations of the UK's Energy Data Taskforce around unlocking the value of customer actions and assets and setting up a "digital spine" in a New Zealand setting. The Authority will consult on the findings and recommendations of the reviews as appropriate.**

SwitchDin strongly supports the proposal to assess the merits and practicalities of implementing the recommendations of the UK's Energy Data Taskforce in a NZ setting. The UK regulatory frameworks for data in the energy sector are world leading. Fit-for-purpose regulatory frameworks for data are the essential foundation for the decentralised, digitalised electricity systems of the future.

- 2. Does this capture the key data needs for distributors to make informed business decisions that will unlock the potential for DER for the long-term benefit of consumers? If not, what data is missing and what would it be used for?**

The Issues Paper appears to have covered the issues and data needs appropriately. Distributors will be better placed to provide a more detailed analysis of their data requirements.

- 3. Do you agree with the prioritisation of the key data needs for distributors? If not, why not and how would you suggest the priority is changed?**

The proposed prioritisation seems appropriate. Distributors will be better placed to provide a more detailed analysis of their data priorities.

- 4. Does this capture the key data needs for flexibility traders for them to make informed business decisions that will unlock the potential of DER for the long-term benefit of consumers? If not, what is missing and what would the data be used for?**

No. The Issues Paper is missing a very important data requirement. Customers will need access to local, real-time data from their meter in order to optimise their flexible load, generation, and storage assets. This is becoming an increasingly urgent issue in the Australian market, with the introduction (or planned introduction) of reforms to enable a two-way electricity market, such as Dynamic Operating Envelopes and cost-reflective tariffs. Although these might not yet be pressing issues for New Zealand, there is an opportunity to pre-emptively address future problems by ensuring technical specifications for meters, inverters and electric vehicle (EV) chargers enable the kinds of data exchanges that will be needed in future.

- 5. Do you agree with the prioritisation of the key data needs for flexibility traders? If not, why not?**

No, we do not agree. There are 'no regrets' actions that can be taken now that will ensure additional capability can be brought online at a later date. For example, we recommend the Authority should:

- Review the minimum technical specifications for meters with a view to enabling local, real-time data access for optimisation of assets behind the meter, and
- Consider mandating use of inverters with capability for interoperability, so that in future when distribution networks establish a utility server with the necessary capability it will be possible to communicate with a fleet of interoperable inverters.

- 6. Do you agree that the Authority should amend the Data template to address the above issues to improve its workability? If not, why not?**

The proposed amendments seem reasonable and beneficial and should proceed as proposed.

7. Are there other changes to the data template that would improve it and assist it to be a useful mechanism for open access to data?

SwitchDin has no suggestions for changes beyond what has been proposed.

8. Do you agree that this is an issue? If not, why not?

Yes. The requirement for data to be provided via retailers is the cause of unnecessary transaction costs.

9. Should the Authority amend the Code to clarify that MEPs must contract directly with distributors and flexibility traders to provide ICP data for permitted purposes? If not, why not?

Yes. SwitchDin supports the proposal to amend the Code to clarify that Metering Equipment Providers (MEPs) must contract directly with and provide both consumption data and power quality data to distributors and flexibility traders for a set of permitted purposes i.e., without the need for retailer permission.

10. Should the DDA Data template be updated to include Power Quality Data? If not, why not?

Power quality data should not be treated as personal information. It is very useful data for the purposes of network management and should be freely available from MEPs to distribution networks and flexibility traders.

11. Do you think that the transaction costs associated with negotiating the terms of access to ICP data held by MEPs is a problem that the Authority should prioritise? If no, why not? If yes, do you think there is merit in developing a default template to help reduce transaction costs?

SwitchDin does not have access to the data needed to make an informed assessment of the relative costs and benefits of the Authority developing a template versus the status quo.

12. Do you agree that MEP pricing for ICP data (including Power Quality data) and related data services is reasonable at this stage? If not, why not?

We do not have access to sufficient pricing data to make an informed judgment at this stage.

13. Do you agree that MEP pricing for the provision of ICP data to distributors (and other parties) could be more transparent? If not, why not?

We agree with the observation that the MEP services market has significant monopoly elements that cannot be overcome by commercial pressures alone. Ideally, provision of data would be a regulated service. A requirement for transparency in pricing would be a good first step to ensure that MEPs are not using their effective monopoly position in provision of installation control point (ICP) data to charge unreasonable prices.

14. To support the transparency of pricing, standardisation and equal access to data, do you think that the Authority should consider further implementing IPAG's Input Services recommendations that MEPs publish standard 'pay-as-you-go' terms open to all parties? If yes, why, and what do you think this could cover? If not, why not?

SwitchDin supports the proposal for transparency, standardisation and equal access to data. Pricing should be transparent, published and used to ensure that MEPs do not use their effective monopoly position to charge unreasonable prices.

15. Do you agree that distributors' visibility of the location, size and functionality of DER should be improved within the next 3-7 years to support network planning? If not, why not?

We agree that distributors' visibility of the location, size and functionality of DER should be improved. Ideally, this would commence sooner than within the next three to seven years, so that the systems are in place before there is rapid growth in DER.

16. Do you have any views on the type and size of DER that need more visibility?

EV chargers could have more impact on network planning than other forms of DER, at least in the short to medium term. It follows that visibility of EV chargers should be a priority.

17. The Authority acknowledges that definitions of 'real-time' vary, please explain what real-time means to you

Consumers will need access to local, real-time data from their meter to optimise flexible load, generation and storage behind the meter. For this application, data from the meter should be locally available in one second increments.

18. Do you agree that access to 'real-time' consumption and Power Quality Data won't be needed for at least five years?

Real-time data on imports to and exports from the ICP will be needed sooner than within five years so that customers are able to optimise flexible load, generation and storage behind the meter.

19. Do you agree that flexibility traders' access to ICP data must be improved so they have the same level of access as distributors (and retailers), with whom they might be competing to provide contestable services? If not, why not?

Yes. SwitchDin strongly supports the proposal to improve access to ICP data for flexibility traders so that they have the same level of access as distributors and retailers. Flexibility traders are competing with retailers and require access to data to do so. It is therefore highly problematic for the retailer to exercise control over access to data by their competitors.

20. Do you think the Authority should prioritise modifying the data template, so that flexibility traders can use it, or should the Authority prioritise amending the Code to clarify that MEPs must provide ICP data directly to flexibility traders and distributors for a set of permitted purposes without the need for retailer permissions? If neither, please explain why

SwitchDin supports the proposal for the Authority to amend the Code to clarify that MEPs must provide ICP data directly to flexibility traders and distributors for a set of permitted purposes without the need for retailer permission.

21. Do you agree that flexibility traders need access to granular current and likely future congestion data on distribution networks within the next 1-3 years?

Yes. Access to granular current and likely future congestion data is crucial to enable flexibility traders to plan investments in those parts of the network where they will deliver the most benefits.

22. Are there any other issues preventing distributors from providing granular current and likely future congestion data?

SwitchDin is not aware of other issues preventing distributors from providing granular current and likely future congestion data. Distributors will be better placed to provide a more detailed explanation

of any other barriers they experience.

23. Do you agree that visibility of the location, size and functionality of larger DER needs to be improved within the next 3-7 years to help understand the drivers of network congestion, what DER is 'controllable', and what services could be offered to owners of DER? If not, why not?

Yes.

24. Do you have any views on the type and size of DER that flexibility needs to have improved visibility?

The Authority should aim to improve visibility of all forms of DER, regardless of type and size.

25. Do you think that the Authority, instead of a DER registry, should consider amending the registry data fields and/or requirements to improve DER visibility?

Yes. Enabling visibility of DER should be a high priority for the Authority. The work could be prioritised by commencing with larger DER installations.

26. Do you agree that the Authority should prioritise work on addressing the other issues outlined in this chapter?

Improving the visibility of DER is a 'no regrets' measure that could commence in tandem with work on other issues. Large installations could initially be prioritised if resources are a significant constraint.

27. Do you agree that flexibility trader access to real-time congestion and ICP data won't be needed for at least five years?

We agree that access by flexibility traders to real-time congestion data is not a high priority. However, we do not support the suggestion that flexibility trader access to ICP data will not be needed for at least five years. Real-time data access is needed now for the provision of services to optimise generation, consumption and storage behind the meter. If the real-time data is not available from the meter, the alternative is to install multiple meters. This places an unnecessary cost burden on consumers.

28. Do you agree that model privacy disclosure terms are appropriate? If not, why not?

SwitchDin supports the proposal to develop model privacy disclosure terms.

29. Do you agree that model privacy disclosure terms would facilitate data access? If not, why not?

Yes. Model privacy disclosure terms will reduce transaction costs while maintaining data privacy.

30. Do you see any practical issues with this proposal?

None that we are aware of.

30.(b) Should the Authority create model terms for distributors and MEPs as well given the range of data being collected through smart meters? If not, why not?

As a general principle, where it is practical to develop fit-for-purpose model terms, they should be used in preference to bespoke arrangements. Bespoke arrangements will be more expensive and customers will ultimately bear the additional costs.

30.(c) Would the industry find it helpful for the Authority to conduct workshops on privacy preserving / minimisation techniques?

Yes. SwitchDin would be keen to participate in workshops on privacy preserving / minimisation techniques. Please add SwitchDin staff, Darren Gladman (darren.gladman@switchdin.com) and Josh McLaren (josh.mclaren@switchdin.com) to the invitation list for the workshops foreshadowed in the Issues paper and for other consultative processes regarding regulation of electricity, data and distribution networks.

31. What are your views on the three options presented above, to deal with Issue 1 (that distributors might prefer network investments to NNS)? What alternative options would you favour, if any?

SwitchDin prefers the option of requiring distributors to show they have exploited non network solutions (NNS). We would also be keen to participate in trials and use of standardised templates and agreements where they would reduce transaction costs.

32. Do you agree with the tentatively preferred intervention to deal with issue 2 (Option 3: encourage standing offers) and the collection and monitoring of information proposed under Option 4? If not, what alternative options would you favour, if any?

Yes. We agree that the proposal that distributors make available their 'standing offer' price information for DER to support longer term alternatives to network investment would be a "step in the right direction towards market development". We also support the proposal for collection and monitoring of information under Option 4.

33. Do you think there are circumstances in which the Authority should extend the Arm's-length Rules? If not, why not?

We support the position of the Council of European Energy Regulators (CEER) that distributors should not be involved in contestable services. We broadly support the approach of the Australian Energy Regulator (AER) to ring-fencing of distribution businesses.

It is important to ensure that distributors cannot cross-subsidise business in contestable markets using regulated allowances and thereby preventing third parties from competing in these markets. The default assumption of policy makers should be that the Arm's-Length rule is applied in all circumstances involving distributors and contestable markets, unless there are extenuating circumstances.

34. Do you agree with the Authority that Option 1 should be implemented, and that Option 2 should only be considered in the event of allegations of, or instances of anti-competitive harm in contestable markets (Issue 3)? If not, what alternative options would you favour, if any?

SwitchDin supports ring-fencing of distribution business from contestable markets as a matter of policy principle. It should not be a matter of introducing ring-fencing in response to anti-competitive behaviour. Exemptions to the principle of ring-fencing should only be in response to extenuating circumstances. The default assumption should be that distribution networks do not compete in contestable markets, unless there is a very good reason why that is considered necessary.

35. What do you think of the Authority's option of using the education option proposed elsewhere in this paper, to include some guidance on how distributors should collaborate in future?

It is unclear whether lack of collaboration between distributors is the problem that requires a solution or that a guideline on how to collaborate would be helpful.

36. Do you think it would be helpful for the Authority to encourage the use of joint ventures between distributors to increase the integration of DER and their procurement of NNS projects? And should this be combined with the first option?

This could be beneficial in areas where the size of the market for NNS has been identified as a limiting factor.

37. Do you agree with the proposed approach to monitor progress between Transpower and distributors in developing standard offer forms for procuring NNS, and monitor whether issues associated with operating agreements for flexibility services are developing, and prioritise resources to progressing the other chapters? If not, why not?

Yes.

38. Do you have any views on the best way the Authority can monitor whether issues associated with operating agreements for flexibility services are developing?

The Authority could return to this question with a review at a later date.

39. Do you have any suggestions for how the Authority can support industry-led work on providing guidance on best practice and templates for operating agreements?

Possibly through a grants-based program in which a condition of funding is that the results are made publicly available as a shared asset.

40. What are your thoughts on the proposed scope for the Part 6 review? What, if anything, would you include or exclude and why?

SwitchDin supports the proposal to review Part 6 of the Code: *Connection of distributed generation*. We support the proposal to broaden the scope of Part 6 to include all forms of DER, not limited to distributed generation. In addition to the areas proposed for the review, we recommend the Authority consider requiring inverters to be capable of interoperability.

41. In order, what are the three most important issues that should be addressed as part of a Part 6 review, and why?

The three most important issues should be:

1. Amend the scope to explicitly include all forms of DER,
2. Mandate AS/NZS 4777.2:2020 for inverters in New Zealand, and
3. Mandate IEEE 2030.5 or a variant such as the Australian Common Smart Inverter Profile (CSIP-Aus) for interoperability of inverters.

42. What are your thoughts on amending Part 6 to explicitly include DER, and what do you think are the key issues to be considered?

SwitchDin supports the proposal to explicitly include DER. If the scope is expanded there will be a need to review grid connection rules and standards that apply to other forms of DER, beyond distributed generation (DG).

43. What are your thoughts on increasing the size threshold for Part 1 DG applications, including the benefits and drawbacks?

The Part 1 application process is working well. We recommend increasing the threshold for Part 1 applications from 10kW to 30kW, coupled with a strengthening of the standards and minimum level of inverter performance required. This would benefit consumers by reducing the time and cost of connecting systems up to 30kW. It would also benefit the system more broadly, by bringing inverter standards up to date.

44. If the threshold were to change, what do you think the new threshold should be and why?

The threshold should be increased from 10kW to 30kW, coupled with a strengthening of the standards and minimum level of inverter performance required. This would be a win for consumers (lower costs) and for distribution networks and system operators (more advanced inverter standards).

45. What are your thoughts on adjusting the ten-business day timeframe in part 1A?

The timeframe in part 1A should not be increased beyond ten business days. It is intended to be a streamlined process. If applications become more complex in future, it would be preferable to review and strengthen the requirements for streamlined approval (e.g. more advanced capability) rather than allowing additional time for bespoke assessment. Bespoke assessment should not be necessary for systems under 30kW.

46. What are your thoughts on maintaining the current approval timeframes in Part 1 (comprehensive) and Part 2?

Given that distributors can seek multiple extensions and a distributed generator cannot unreasonably withhold their consent for these extensions, we concur with the Authority's position that there is not a strong case for change at this time.

47. If you seek a change to approval timeframes, what evidence can you give to support this?

SwitchDin is not seeking a change to approval timeframes.

48. What are your thoughts on adding a new DG application process for large-scale DG to part 6? Please provide examples in support of why you think change is or is not necessary?

SwitchDin supports the proposal to differentiate between connection processes for medium-scale DG applications and large-scale DG applications. Connection issues for an 11kW system (for example) are materially simpler than for a system of 1MW or more.

49. If you think a new application process should be added, where should the threshold be and why?

SwitchDin recommends that the Authority:

- Increase the threshold for streamlined applications to 30kW,
- Continue to use the Part 2 application process for medium-scale systems, above 30kW and below the large-scale threshold, and
- Develop a new application process for large-scale connections above a threshold of 1MW or thereabouts.

51. Should the AS/NZS 4777.2:2020 standard be mandated for inverters in New Zealand? If so, how should this be accomplished?

Yes. Australia and New Zealand are a common market for inverters and most, if not all, inverters sold in New Zealand would already comply with AS/NZS 4777.2:2020. The Authority should also consider its system for verification and enforcement of DER technical standards to ensure that installers are

correctly setting inverters at the time of installation. In Australia, it will soon be possible to use a digital compliance approach for DER technical standards without the need for physical, onsite inspection. From 1 July 2023, all new connections to the South Australia (SA) distribution network will be required to demonstrate that the inverter is interoperable with the SA Power Networks utility server, and is capable of dynamic export limitation. This interoperability capability will enable the introduction of a digital compliance regime in the medium term. We understand that the Clean Energy Council (CEC) list of approved inverters already includes information about which inverters have a communication channel that is compliant to IEEE 2030.5 CSIP-Aus, either hosted locally on the inverter or a gateway device, or via a certified cloud connection to the network operator utility server. This list is based on testing conducted by SA Power Networks. This is in addition to the other capabilities included in the CEC inverter list, such as compliance with AS/NZS 4777.2:2020.

In Australia, most distribution networks have an application programming interface (API) connection between their server and the CEC server, to enable automatic updating of the current list of CEC approved Inverters which details, model numbers, listing approval and expiry dates, and available power quality response modes.

52. *What are your thoughts on the Authority reviewing the prescribed maximum fees in Part 6?*

SwitchDin recommends that the Authority:

- Increase the threshold for streamlined applications to 30kW,
- Continue to use the Part 2 application process for medium-scale systems, above 30kW and below the large-scale threshold, and
- Develop a new application process for large-scale connections above a threshold of 500kW or 1MW or thereabouts.

Large-scale connections are significantly more complex than smaller applications and it is fair that the fees charged reflect that cost difference.