Flexforum: session III 03-03-22 notes

When	900 – 1200, Thursday 3 March 2022
Where	Virtual
Who	Shay Brazier (ReVolve Energy), John Campbell (Our Energy), Jason Christini-Crawford (Ecotricity), Glenn Coates (Aurora), Jenny Van der Merwe (Kāinga Ora), Terry Paddy (Cortexo), Eric Pyle (solarZero), Buddhika Rajapakse (Mercury), Tom Rose, (EVNex), Scott Scrimgeour, (Wellington Electricity), James Tipping (Vector), Evie Trolove, (Orion), Pam Walklin (Ara Ake), Fiona Wiseman (Trustpower/Manawa) Richard Spearman, Trustpower/Manawa (guest) Glen Baxter, Ara Ake Geoff Sharples - facilitator Craig Evans, Matt Smith - secretariat

Session notes

Three topics were discussed:

1. DER potential
2. Stakeholder mapping and engagement plan
3. Administration – governance, budget, and funding

Agenda overview

The group agreed the agenda.

The group noted the purpose and process for developing the discussion pathway and workplan. Members agreed to give feedback on the draft workplan prior to the next session.

The group noted the next session would focus on Network and Market Potential.

Topic 1: DER potential

The group discussed perspectives of DER potential provided by:

- Richard Spearman, Manawa/Trustpower, focusing on large-scale distributed generation and commercial & industrial load management

- Shay Brazier, re/volve energy, focusing on household and small/medium enterprise DER owners
- Tom Rose, EVnex, focusing on electric vehicles and charging.

The perspectives used an input – capability – output framework to identify 'what inputs do DER owners need to make decisions about access to the network and to maximise net benefit of their investment?'

- Inputs are the things which the DER owner responds to, ie, market inputs such as service required, payment, tariffs etc, and technical inputs such as network voltage, comms protocols etc
- Capabilities are the response available from the DER, and can be simplified to increase/decrease load and manage kvar
- Output are the outcome of using the capability, eg, reduced operating costs, voltage support etc.

The key insights from the discussion were:

- the interest and ability of the DER owner to use their resources to supply electricity-related (flexibility) services will be driven by their underlying reason for owning the DER and the effort required to deliver the service.
    - C&I DER owners typically are very focused on savings/income and the opportunity cost for their operations (including convenience) of supplying the resource. C&I DER owners with energy-intensive operations are typically more interested in supplying services due to the opportunity to manage input costs
    - SME and household DER owners will have broader reasons for investing in DER, including sustainability, but the investments in the examples provided were all commercial based on reductions to operating costs.
- DER owners have the capability to offer significant extra benefits (in addition to the benefits realised by the DER owner) by supplying flexibility services, but these benefits are not being realised due to a lack of critical market and technical inputs, particularly a lack of:
    - service/product definitions
    - payment/price mechanisms for compensating supply and the extra value of DER capability
    - localised network optimisation, automation and good information on network/market conditions
- DER owners, plus DER manufacturers and providers, would be able to make more informed decisions about investments in DER and DER capability which could

maximise the benefit of DER (eg, by supplying flexibility services) with access to a range of market and technical inputs

- potential compensation ranges and duration of compensation to understand the pay-off of supplying the service relative to the costs of purchasing, configuring, or installing the capabilities. Compensation may come through bilateral contracts or market pricing.
- clarity about potential compensation would provide DER manufacturers/suppliers with an indication of the benefits of investments in developing capability, eg, comms built into hardware. Without awareness of potential benefits, equipment manufacturers will prefer the cheaper (less capable) design options
- where input prices – spot, transmission, distribution etc – provide the compensation mechanism, the signal needs to reflect economic costs/benefits incurred by the purchaser/price setter, eg, connection costs could be set to reflect the economic costs/benefits of a 30amp connection rather than a 60amp connection
- input prices/compensation mechanisms need to be developed to provide useful long run signals (probably best reflected in tariffs) and short run signals (probably best reflected in contracted payments) of economic costs/benefits. For network operators, the key to deciding whether long run or short run signals are preferred for a particular issue is a having a better understanding of current and forecasted network conditions, and the impacts from material changes to those conditions (eg, addition/removal of a large load). Short run signals may have a role where there is less certainty or the goal is to optimise the last few kVA of available network capacity – in the long run the sole use of pricing or tariffs will likely deliver sub-optimal outcomes across the system
- performance criteria/service definitions – what do you need to do to deliver the service, and what happens if you don't deliver (ie, penalties, and cost). Explicit performance criteria enable an assessment of the costs to be able to provide the service and to understand the potential trade-offs of delivering the service (eg, what is the operational/household impact of delivering a load reduction in 1 second?)
- standards for evaluating performance – this underpins the performance criteria and penalties for non-performance. Both the type of service and data capabilities will have an impact, but it will be important that providers of flexibility services understand the evaluation process (eg, establishing a response occurred) to assess their capability to perform
- network access and network use requirements (eg, network design and connection) which reflect DER capability to respond to network conditions (eg, voltage, frequency etc). Common connection processes and requirements should

be considered (and are being considered as part of applying the ENA Network Transformation Roadmap)

  - automation through digitalisation across the supply chain to enable access by DER owners to the input signals (ie, spot prices, transmission/distribution needs) and network/market conditions which provide the economic costs/benefits to develop automated responses, including the supply of flexibility services
  - digitalisation includes improving visibility of performance/operation of low voltage networks which is necessary to understand current/future network conditions. Data requirements for LV visibility need to reflect the purpose of the data, for example whether it is planning (ie, historical data can be used) or operational (ie, near real-time data may be necessary)
  - common communication protocols, consistent with overseas standards used by technology manufacturers, must be used. The OpenADR work being coordinated by EEA and EECA on open standards and connectivity is relevant

- Compensation options will need to account for several factors, including the expectations and sophistication of DER owners regarding the temporal and locational value of flexibility services. UK experience showed that consumers felt compensation reflecting location of need was unfair, requiring the supplier/aggregator to average benefits across its customer base
- A pathway may be appropriate as reflected in thinking on the grid integration for EV charging (refer: https://www.charin.global/media/pages/technology/knowledge-base/60d37b89e2-1615552583/charin_levels__grid_integration_v5.2.pdf

Topic 2: stakeholder mapping, engagement approach and plan

The group approved a stakeholder engagement plan with the following elements:

- An inform element, including:
  - Announcement. Write to key stakeholders informing them of the process, purpose and expected outcome
  - Use a FlexForum micro-website/page to host workshop materials – pre-reading, on-the-day presentations, session notes – for people to follow along on the journey
  - Provide regular updates (eg, after each session) on progress to a mailing list and on the FlexForum website/page
  - Use industry associations and groups to share content.
- An involve element, including:

- seeking targeted input from stakeholders, either 1-1 or via workshops, at stage gates and on key assumptions/inputs to the outputs of the group
- seeking wider input on the outputs at the conclusion of the process.

The group asked that the engagement and communications plan be developed in parallel with the workplan to identify what, when and how to engagement with stakeholders.

Topic 3. Administration – governance, budget and funding

The group discussion governance, budget and funding arrangements.

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