Sustainable Energy
Association New Zealand

Reply to Comcom Open Letter 25 August

Context

As per letter:

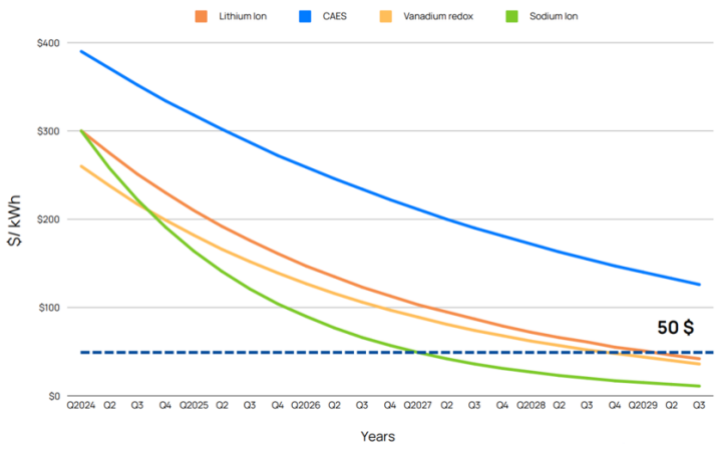
The energy sector is in a period of change and uncertainty, and the pace of change may accelerate over the period leading to DPP5. Where and when investment may be required will depend on a number of policy, consumer demand and market evolutions. At the same time as electricity demand is expected to increase, there are new technologies and alternative solutions for accommodating growth on electricity networks.

Scope of Submission

SEANZ was not involved closely with the DPP4 process and does not have feedback on this.
The focus of our submission is on the considerations for DPP5. We will not propose specific regulatory solutions but will focus on the key issues that we believe need to be addressed.
These are detailed below.

Environment – Technology

Over the next 5-years we expect a significant increase in the deployment of distributed solar and battery storage at residential, commercial and distribution level
At current prices, rooftop solar PV provides an LCOE of around 13c/kWh and solar with battery storage around 18c/kWh. Financially, it is recognised that investments in these solutions "makes sense" for most customers and with increased awareness / availability of finance options the rate of uptake will accelerate.
Technology advances in battery technology will see rapid price reductions, which will see battery storage becoming standard with solar installations. This will be likely driven by Sodium Ion batteries which will be in mass production by the end of 2025, with a forecast price by end of 2029 of US$10/kWh (versus current Li Ion pack prices of $US300/kWh)



https://www.energymonitor.ai/energy-storage/exclusive-sodium-batteries-to-disrupt-energy-storage-market/?cf-view

There will be an increase in electricity demand as customers migrate off gas. Forecasts of additional electricity demand need to allow for application of heat pump technologies in many of the substitution applications.
EV uptake also needs to be accounted for, along with potential impact of new loads such as data centres.

Combined, these 3 scenarios present high levels of uncertainty in demand forecasting. This will impact both total electricity usage and the shape of the demand profile.

Network investments based on speculative assumptions of future demand growth and / or assumptions based on historic trends should be discouraged. EDB's should provide detailed methodologies for their demand forecast assumptions - which should be validated.
Mechanisms are needed to discourage over estimation resulting in unnecessary investments and to support flexibility (without financial disincentive) to adjust projects during the regulatory period if they can be delayed / need to be accelerated.

Along with this, opportunities to delay investment through flexibility solutions should be encouraged to avoid inefficient investments.
This could be through mandatory "flexibility first" requirements (e.g. for projects greater than a set $$ value) and/ or through financially incentivising load shifting / demand reduction over network investment. These incentives need to be clear and material.

Environment – Customer Behaviour

Customers over the next 5 years will see significant price increases, both due to DPP4 related network price increases and energy price increases being passed through by retailers.
In addition, there are new requirements for TOU pricing to be offered and for peak export rates to be included in EDB tariffs.

These increases will likely drive customers to consider opportunities to reduce electricity usage and to shift usage to lower price periods.
As with the technology changes described, customer behavioural change could see greater uncertainty regarding future demand profiles.

Alongside this however there is a strong trend for EDB's to apply increases to fixed daily charges rather than variable rates. This dilutes the incentive for customers to use less energy or to shift energy to off peak periods.

Any disconnect between an EDB's pricing strategy and network investment planning should be considered in DPP5.

Note: *Fixed daily pricing will increasingly encourage grid defection which based on forward costs of battery storage and solar PV will become a viable option for an increasing number of customers over the next few years.*

Integration of Distributed Energy Resources

As has been seen internationally (whether driven by incentives or not) uptake of distributed generation can happen quickly. The need for preparation and the issues needing to be considered are covered well in this article by the CEO of South Australia Power Networks.

Asset Management plans of EDB's should provide a detailed strategy of how they will meet customer requirements to connect increasing levels of solar PV, storage and EV charging in an effective and efficient manner.
This needs to cover:

- Systems to optimise (e.g. plans for DSO capability)
- Customer incentives to gain rights to manage customer devices
- Details of methodologies used to establish hosting capacity and constraints
- Application process efficiency. (SEANZ has already seen bottlenecks in DG processing even at current relatively low volumes)

This should be a mandatory requirement.

Process for Consideration of Non-traditional Solutions

Increasing penetration / reducing costs of solar PV, battery storage and EV's will provide increasing opportunities for non-traditional network solutions.
To effectively consider flexibility services as an alternative to network investment, appropriate processes need to be in place to support this.
Included in this should be proper evaluation of off grid / local micro-grid solutions where this provides a lower cost alternative than maintaining a grid connection.
Currently Asset Management plans tend to include generic statements about considering alternative solutions, but this is insufficient. We sense a certain level of embedded inertia within EDB's and without specific plans in place, non-traditional solutions will not be considered seriously.

As part of Asset Management planning, EDB's should provide details of how they will:

- Procure flexibility services sufficiently ahead of the start date needed for the traditional investment
- Engage with the market for flexibility services
- Methodology to be used to value the flexibility service
- Systems that will be used to manage the flexibility services if implemented
- Ensure transparency of flexibility opportunities and procurement
- For each growth-related CAPEX project, the plan to seek non-traditional solutions should be defined. (The plan should include timings, characteristics of the flexibility solution needs – volumes, when needed etc.)

This should be a mandatory requirement.

Improvements to EDB Efficiency

The government in its October 1 energy plan, has set expectations that EDB's increase efficiency and collaboration. This is recognition that 29 EDB's is not cost effective if all functions are provided individually and not efficient for customers if each EDB has its own specific processes.

As part of Asset Management planning, EDB's should provide specific details of how they will:

- Collaborate with other EDB's to reduce operating costs through shared resources or systems
- Processes that will be standardised in conjunction with other EDB's

Expectations of cost efficiencies should be reflected in OPEX allowances.

General Comment re. Asset Management Plans

Asset Management Plans in many cases have moved away from their intended purpose to become costly marketing documents.
This has resulted in less focus on strategy, engineering and analytical content to generic statements of purpose, values and aspiration.
This makes the documents inconsistent across EDB's and difficult to digest.

There should be a reset of the Asset Management content and format required to be submitted by EDB's to ensure that the level of detail that is required to readily support assessment of asset management practice and plans is provided and does not include irrelevant content.
A detailed AMP template (potentially including an exemplar plan) that all EDB's follow, would assist.