

15 December 2017

Powerco CPP
Commerce Commission
PO Box 2351
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Via email: powercocpp@comcom.govt.nz

Dear Commission

Re: Powerco CPP draft decision

1. Introduction

- 1.1 Thank you for the opportunity to provide comment on your Customised Price Path (CPP) draft determination for Powerco.
- 1.2 As an electricity retailer with around 30,000 customers on the Powerco network, our focus is on ensuring the best outcomes for our customers who will ultimately bear the costs of the CPP. It is they who must be assured that Powerco is making fiscally prudent investment decisions on their behalf.
- 1.3 This submission is focused on three main areas:
 1. We think third party alternatives must be considered by Powerco and processes should enable this.
 2. The investment analysis that underlies the draft decision is flawed.
 3. The draft decisions that have been reached by the Commission are inconsistent.
- 1.4 We are otherwise broadly supportive of the Commission's draft decision and maintain our support for elements of Powerco's proposed network evolution capex.
- 1.5 Our submission sets out specific matters in which these themes can be addressed:
 - (a) **Projects in Tauranga:** We believe that the Commission's draft determinations on projects in Tauranga are inconsistent, and rely on inadequate major project investment analysis.
 - (b) **Whangamata major project:** We are of the view that the Commission has not evaluated all options, including third party alternatives, and relies on inadequate major project investment analysis.
 - (c) **External consultation process:** We continue to consider that an external consultation process needs to be put in place for major projects to ensure third party network alternatives are sufficiently considered by Powerco, and to enable investment analysis and decisions to be externally verified. The additional information provided to us upon asking, following the release of the draft determination, has demonstrated the benefits that would come from an external consultation process on major projects. We believe optimal outcomes for consumers can be better assured through improved processes.
 - (d) **Network evolution capex:** We maintain our support for elements of Powerco's proposed network evolution capex.

2. Projects in Tauranga

Network support – ripple receivers

- 2.1 The Commission's draft determination rejected Powerco's planned \$10m purchase of ripple receivers in the Tauranga region.
- 2.2 The Commission rejected that spending because it was not satisfied that Powerco had explored all options to ensure the most cost-effective load control solution for consumers on the network. We shared that concern and made the point in our earlier submissions that other technologies and network support providers could supply the required service.
- 2.3 We endorse and support the draft determination, and the encouragement that this gives to Powerco to explore other options that do not require the purchase and renewal of assets which affect the value of the regulated business.
- 2.4 A requirement to evaluate other load control solutions will require more than Powerco's internal analysis. Powerco can only put itself in a position to evaluate the most economical solution by engaging with the market for third party network support. We ask that your final determination make this point more explicit.
- 2.5 In our view this will require Powerco managing a competitive process including (at a high level):
 - (a) identifying where and when in Tauranga the network needs upgrading
 - (b) identifying credible and preferred traditional solutions, with cost and timing
 - (c) based on the preferred traditional solution, the annual value available for network support
 - (d) the network support requirement and timeframe to defer/avoid the traditional solution
 - (e) developing network support requirements for third parties, e.g. event duration
 - (f) determining how network support will be contracted, remunerated, measured and verified
 - (g) running a competitive process for network support which is:
 - (i) customer agnostic (residential, SME, commercial, industrial)
 - (ii) device agnostic (hot water cylinders, batteries, heating/cooling, etc)
 - (iii) communications agnostic (ripple, API, etc)
 - (h) making a final investment decision to meet the network need, which may involve:
 - (i) traditional investment with no network support, or
 - (ii) network support to defer a traditional network investment, or
 - (iii) network support to permanently avoid traditional network investment.
- 2.6 We ask that your final determination should make these points explicit as well.
- 2.7 Following a process like this will provide Powerco with information on the most economical network support options for Tauranga. But this information is only of use when assessed in conjunction with the cost of the potential traditional network upgrades that might be required.
- 2.8 The only reason to implement network support would be if it provides a more economical alternative than the cost to consumers of a traditional network upgrade.

Other Tauranga projects (Papamoa, northern Tauranga, Pyes Pa)

- 2.9 Powerco's asset management plan includes \$83m of traditional network investment in the Tauranga region over the next 10 years. It includes the following major projects:
- (a) Papamoa Region Reinforcement \$19m
 - (b) Northern Tauranga Reinforcement \$12m
 - (c) Pyes Pa Substation \$5m
- 2.10 The Commission's draft determination seems to accept these projects. We believe this is inconsistent with the determination you have come to in relation to network support in Tauranga. We are unclear, and no reasons have been provided, as to why these other projects should not be approached in exactly the same way as replacing the existing ripple systems, as per 2.5 above.
- 2.11 The requirements you look to impose on Powerco to evaluate the most economical network support in Tauranga is the process by which the other projects could and should also be evaluated. It is the best way to ensure project investment decisions are a sensible, fiscally prudent use of consumers' money, including evaluation of the following options:
- (a) proceed with traditional network capex and replace network support as planned, or
 - (b) utilise additional network support to defer/avoid part of the planned network capex, or
 - (c) increase the capacity of planned network capex to replace the existing network support.
- 2.12 If the exercise had been done already, we could have more confidence in the determinations that you have come to with your assessment of those projects. Powerco's PODs for the Tauranga major projects show otherwise. While non-network options were apparently considered, these were not shortlisted for reasons including Powerco not identifying any winter peaking consumer loads to control, and for cost.
- 2.13 In your draft determination your response to our submissions highlighting concern over a lack of consideration of third party alternatives is as follows:
- "In respect of Powerco's proposed major growth projects, it was clear to us that Powerco's Eastern region (i.e. Tauranga and the Coromandel) is experiencing significant population growth and that demand side responses alone would not be sufficient to meet this increased demand."*
- 2.14 This view on future demand is problematic. Powerco has not tested the market for demand side responses. There is no factual basis of which we are aware, for the view adopted by the Commission.
- 2.15 Regardless of that point, demand side responses do not need to meet 100% of projected future demand – there may be value in deferring capex for one or more years. Logically, therefore, not being able to meet 100% of future demand is not a reason to presumptively exclude from consideration demand side responses.
- 2.16 In our previous submission we raised our concern that:
- "based on the information provided, Powerco is evaluating and dismissing non-network options without transparently engaging with the market to understand what demand management solutions might exist and how competitive third party services are".*

- 2.17 Your draft determination confirms those concerns.
- 2.18 By rejecting Powerco's proposed \$10m ripple investment (due to Powerco not evaluating the most economical form of network support), the Commission highlights that Powerco's assessment of non-network options for the other major projects must be inadequate. There is no indication that Powerco has approached any of these projects in any materially different way.
- 2.19 On that basis, we query how, in relation to the major projects, the Commission can reach a conclusion that:

“... both the PODs and OAEETs for each of Powerco's projects provide an assessment of the merits of each proposed project, and that the costs and methodologies applied by Powerco are appropriate”.

3. Whangamata major project

- 3.1 We are concerned that the draft determination on the Whangamata project has not evaluated all options, and relies on inadequate major project investment analysis.
- 3.2 In our earlier submission we raised concerns that Powerco's assessment of options for the Whangamata major project was inadequate, including the following:
 - (a) Diesel generation prior to a line upgrade was not considered as an option.
 - (b) The costs and benefits of adding battery storage to the diesel generation were not considered.
 - (c) Third party ownership of network support options were not considered.
- 3.3 Your draft decision does not address any of these concerns. From the information provided in the Whangamata POD and OAEET, as well as the Commission's Q&A responses, it is unclear how the Commission has reached the conclusion that the “costs and methodologies applied by Powerco are appropriate”. From that, it is unclear to us how you have been satisfied that you ought to approve the major project.
- 3.4 We set out our own analysis of what we see as the shortcomings with Whangamata in the sections that follow. Our concerns are raised under the following headings:
 - (a) The OAEET shows that the costs of the battery outweigh the benefits
 - (b) Other material deficiencies with the OAEET
 - (c) Reasons for a diesel only solution not being an option are not robust
 - (d) Reasons for rejecting the need for a future 33kV line upgrade are not robust
 - (e) Powerco does not need to own generation and storage assets
 - (f) An external process for third party alternatives and investment analysis verification is needed and beneficial
 - (g) Network evolution funds can enable Powerco to test batteries and third party network support

The OAEET demonstrates that the costs of the battery outweigh the benefits

- 3.5 Powerco's OAEET shows the following:
 - (a) The average outage duration on the 33kV line for both a fault and maintenance is six hours.
 - (b) The average load at risk during these times is around 6MW.

- (c) Post the proposed \$7m battery/diesel solution, average load at risk will be around 3MW.
- (d) The combined solution can therefore be assumed to provide 3MW * 6 hours = 18MWh per outage.
- (e) Proposed size of the battery is 2MWh. Therefore the average diesel supply per outage is 16MWh.
- (f) The reliability benefits of the proposed battery/diesel solution are ~\$800k per year.

3.6 The table below shows our indicative analysis on the costs and benefits of the diesel and battery.

Payback analysis	Diesel generation	Battery
Cost of solution	\$2m	\$4m
Reliability benefits pa	\$700k	\$100k
Indicative payback	3 years	40 years

3.7 The following observations are also pertinent, and worthy of some comment. The battery planned by Powerco will provide power for, at most, one to two hours. Therefore, to cover six-hour line outages, for every MW of battery built, a MW of diesel generation will also need to be built. In this scenario, the diesel generation itself could essentially provide all of the circa \$800k reliability benefits without the battery storage even being built:

- (a) Peak load events could be forecast with enough time to start the diesel generation.
- (b) Maintenance events could be managed by bringing diesel generation online in advance.
- (c) Fault events would require the battery for a short amount of time to cover load until the diesel generation is brought online (this could be just minutes).

3.8 Your draft determination appears to be asking consumers to pay considerably more than they ought to:

- (a) \$6m: cost of the proposed battery/diesel solution.
- (b) \$2m: cost of a diesel solution owned by Powerco, and used for network purposes only.
- (c) \$0-1m: our estimate of the equivalent upfront cost to consumers if the diesel generation was owned by a third party, and fully utilised in wholesale energy and ancillary services markets, as well as providing services to Transpower through its demand response programme. There may also be additional customer resiliency benefits through deploying a more distributed solution.

3.9 Finally, although your draft determination approves Powerco's budgeted battery cost of ~\$2,000/MWh (\$4m for 2MWh), we have delivered residential battery projects at around half this cost. There are demonstrable advantages from procuring services for contestable assets from a competitive market, rather than approving funding for monopoly infrastructure that will ultimately be borne by consumers.

3.10 All of our reflections should give the Commission pause to reconsider the analysis brought to this proposed expenditure, and whether the purposes of Part 4 are in fact being served by the determinations proposed in this area. It is our position that they are not.

Other material issues with the OAEET

3.11 We have identified errors in the OAEET which in combination are responsible for almost 100% of the benefit of the proposed battery/diesel solution:

OAEET errors	Description	Battery/diesel benefit
Base case	No change.	\$8.2m
TAI-3 Hikuai fault	Status quo assumes 12-hour outage. Battery/diesel case assumes 4 hours, even though Hikuai project to improve outage time is unrelated.	\$0.8m (-\$7.4m impact)
Battery opex	OAEET assumes 33kV line maintenance is 1% of capex in diesel/battery case, and 2.5% of capex in 33kV line upgrade only case.	\$0.1m (-\$0.7m impact)

Reasons for a diesel only solution not being an option are not robust

3.12 In our earlier submission, we proposed Powerco looks at a diesel only solution to save money for consumers. This was not addressed by the Commission in its draft determination. The Commission's subsequent response to our questions, made available on the Commission's website, suggests that your reasons for not considering this option are not well grounded. The table below summarises these points.

Commission's response to Contact's question	Contact's response
<p>Difficulties black starting generators without a voltage reference; it takes some time to do this and is fraught with difficulty.</p> <p>The implications of unstable supplies in terms of widespread appliance damage during black starts.</p> <p>Powerco considered the addition of the battery provides a voltage reference and sufficient time to bring the generation on line and stabilise.</p>	<p>Diesel generators are the primary means of black start in the NZ electricity system. There are a number of providers, including Contact, who have experience providing black start services to the System Operator. Powerco could be supplied with a similar service.</p>

3.13 Following the Commission's response to our initial questions and provision of additional information, we requested that you update the OAEETs to reflect the issues and inconsistencies we had raised. The Commission declined to do this and referred us to Powerco, hence we have run our own numbers.

- 3.14 To test the value of this option, we made the following updates to the OAEET model:
- (a) Started with Option F (battery/diesel followed by 33kV line), corrected for errors above.
 - (b) Removed the battery from the capex in Option F.
 - (c) Made no changes to reliability on the basis that the amount of outages that could not be covered by the diesel generation would be negligible.
 - (d) Maintained the same opex from 2024/25 out to 2036 (1% of diesel/battery capex only).

3.15 This analysis results in the net benefits/costs for consumers in the table below.

Scenario	Net benefit/cost
Powerco Option F (corrected for errors)	\$0.1m
Powerco Option F (corrected for errors, diesel generation only)	\$4.2m

3.16 This analysis highlights that all solutions must be fully considered to ensure project investment decisions are a sensible, fiscally prudent use of consumers' money. This is especially the case for major projects given the larger consequences on costs to consumers.

Reasons for rejecting the need for a future 33kV line upgrade not robust

3.17 The Commission's Q&A response says:

"... we are therefore of the view that the circa. \$18m proposed by Powerco for an enduring solution for Whangamata via a 33kV line upgrade is not required, and that the \$7.6m we have proposed to allow is a far better option for consumers in the longer term."

3.18 To test this view, we made the following updates to the OAEET model:

- (a) Started with Option F (battery/diesel followed by 33kV line), corrected for errors above.
- (b) Removed the 33kV line from the capex in Option F.
- (c) Maintained the same reliability costs from 2024/25 out to 2036 (impact of line not built).
- (d) Maintained the same opex from 2024/25 out to 2036 (1% of diesel/battery capex only).

3.19 This analysis results in the net benefits/costs for consumers in the table below.

Scenario	Net benefit/cost
Powerco Option F (corrected for errors)	\$0.1m
Commission Option F without 33kV line upgrade	(\$2.8m)

- 3.20 The Commission's proposed approach to not build the 33kV line does not therefore appear to be "a far better option for consumers in the longer term", especially as c. 50% of the Whangamata community will have no n-1 resiliency and continue to be subject to power outages in the longer term.

Powerco does not need to own generation and storage assets

- 3.21 In our earlier submission we expressed our view that there was no need for Powerco to own the diesel generation (and battery storage if its inclusion was justified). We said that the network need presented an ideal opportunity for Powerco to engage with third party network support providers to deliver a solution.
- 3.22 Diesel generation and battery storage are contestable assets and there is nothing preventing Powerco utilising regulated opex to procure services from a competitive market. It seems highly likely that this approach will reduce the cost of the regulated network service for Powerco consumers, by more efficiently optimising the use of generation assets.
- 3.23 On ownership we believe there are three other points that need to be considered.

- (a) Powerco contends that the Whangamata generation and storage project "could be the basis of similar solutions in the future at other n-security supply areas".

These opportunities exist across all distribution networks in New Zealand. Hence the Commission's final determination will set an important precedent which will impact whether a competitive market develops to deliver network support services that can reduce the cost of the regulated network service for consumers, or whether consumers continue to pay for monopoly infrastructure solutions which are not evaluated against alternatives.

- (b) Distributed generation assets have a role to play in providing wholesale, distribution and transmission services. Costs to consumers can be minimised when distributed generation assets are optimally used, rather than only providing a service to one party. For this to occur, the assets must be owned by non-regulated entities. In this way, regulated monopoly assets are not participating in and distorting competitive markets.

- (c) We accept that there needs to be a transition period between networks relying on only their own monopoly infrastructure (poles and wires, as well as ripple control systems) to meet their reliability obligations, to a future where third parties provide peak demand, outage management and other services that collectively enable networks to achieve these obligations.

This is especially the case when the network services are being supplied by new technology such as batteries.

In our view, there may be value in networks owning assets like battery storage through this transition period to aid in a better understanding of the technology and to facilitate the development of competitive network services markets. These are limited purpose ownership circumstances. They are short term and temporary. Accordingly, funding should be 'one off' as part of network evolution funding, rather than considered 'business as usual' as part of major project funding.

Approaching things in this way will also deal with the precedent issues we have outlined above. We provide further comment in relation to Whangamata in the network evolution section below.

An external process for third party alternatives and investment analysis verification is needed and beneficial

3.24 In our previous submission we noted:

“A cost-benefit process which is subject to external consultation would assist in ensuring decisions like this are verified, and ensure costs to consumers on the Powerco network are minimised.”

3.25 We commend you for seeking and releasing the PODs and OAEETs. These documents have enabled some external verification to occur. We must highlight how much more insightful the PODs and OAEETs are than other documents (like asset management plans) in order to gain insight into the investment decisions being made. There is no other way for us to obtain access to this sort of information and no other way for us to understand, verify and critique the decisions that are being taken. Full information and consultation is absolutely necessary to ensure there is an effective process that will give the best possible chance to achieve the mandated objectives of Part 4.

3.26 The issues we have been able to engage with and have raised in relation to the Whangamata major project demonstrate why we contend more is required to ensure that the options chosen are the best outcome for consumers who will be paying for the extra reliability.

3.27 What is needed is the following:

- (a) An external consultation process for third party alternatives. This should be 'technology agnostic' based on network requirements, and enable third parties to deliver services from diesel generation, battery storage, or other load-based demand response.
- (b) A subsequent external consultation process on an OAEET which takes into account the options identified through the process for third party alternatives, and the value of deferring or avoiding Powerco's preferred 33kV line upgrade.

Network evolution funds can enable Powerco to test batteries and third party network support

3.28 Network evolution funds have a role to play in helping networks understand new technology. Network evolution funds also have an important role to play in developing third party network support markets at a distribution level (just like Transpower's regulated funding to test network support through its demand response programme). Both of these activities have the potential to reduce costs to consumers over the longer term, because network reliance on third party network support will become increasingly common practice.

3.29 If the Whangamata network requirements present Powerco with an opportunity to test and learn about batteries and the services they could provide, we believe a pilot should include both:

- (a) Powerco's planned centralised battery solution, and
- (b) Powerco contracting services from a third party(s) battery solution.

This will ensure the pilot is focused on both Powerco developing an understanding of the technology, as well as Powerco road testing the development of a commercial model around procuring network services from third party battery solutions.

3.30 We have concerns with your Q&A response in relation to Powerco's Whangamata battery where the Commission notes:

“The sizing of the inverter is such that more batteries can be connected and the expectation is that Powerco would go to open market for the provision of these services.”

3.31 We do not support this approach for the following reasons:

- (a) From a technical perspective, having batteries owned by multiple parties utilising a common inverter appears challenging. Only one control system can integrate with an inverter, which is responsible for controlling the batteries.
- (b) This approach involves Powerco, rather than the market, deciding which battery solution is developed. Third parties should have the freedom to develop battery/inverter solutions where they deem suitable on the network (which may be distributed with customers), in order to develop the lowest cost network services they can for Powerco.
- (c) Finally, any process Powerco may develop in relation to a battery project at Whangamata must be a separate network evolution project. This should not alleviate the need for an external consultation process for third party alternatives for the broader network support requirements (including the potential to contract network support from third party diesel generation).

4. External consultation

- 4.1 The Commission's determination on this CPP gives you an opportunity to promote the development and implementation of an effective investment decision-making template process. This template can and should ensure third party alternatives are rigorously tested. Such a template would prevent the issues we have raised through our analysis of the Tauranga and Whangamata projects from arising. Such a template would ensure that Powerco makes sensible and fiscally prudent investment decisions on behalf of consumers.
- 4.2 We have shared with the Commission our views on what this template or process could include at a high level in both our submissions on this CPP, and in more detail in our response to Transpower's capex IM review. The Commission's draft determination for this CPP has not addressed any of the points we have raised.
- 4.3 Our proposal for Transpower is related to base capex between \$5m and \$20m. We believe this process would be equally suitable for Powerco's 17 major projects, which comprise growth and security projects with investment levels above \$5m.
- 4.4 Any process must be project specific, based on consultation at the appropriate time for each of the major projects as part of Powerco's investment decision process for that major project.
- 4.5 The process we propose involves three stages which we outline below.

Stage One: non-network options RFP

- 4.6 A request for proposals is distributed seeking non-network options. It would include:
 - (a) identified network need, including location and requirement
 - (b) credible and preferred traditional solutions, with cost and timing
 - (c) network support required and timeframe to defer/avoid upgrade
 - (d) network support service parameters, e.g. maximum event duration

- (e) annual deferred/avoided value available for network support.
- 4.7 The first two items, (a) and (b), are effectively included in Powerco's asset management plan and PODs. The next three information items, (c) to (e), are not currently available. The only additional requirement that would be placed on Powerco from this process is therefore:
 - (a) the preparation of information on network support requirements, and
 - (b) Powerco having to manage a competitive process to evaluate network support options.
- 4.8 Neither appears to impose significant requirements. Both of those matters are the critical things that serve the purpose of Part 4, as they ensure Powerco's project options analysis results in optimal investment outcomes for consumers. If options are not generated in the first instance, there is little hope that they will be considered at any later stage.
- 4.9 Additional information disclosure required by what we propose is in line with what we outline above in paragraph 2.5 (in relation to Powerco running a competitive process to evaluate whether investment in ripple control in Tauranga is the most economical option for consumers). A process to evaluate network support options only makes sense as part of a process assessing traditional network investment against network support.
- 4.10 Not all Powerco major projects will have potential network support options to defer or avoid capex. Rather than prescriptively selecting asset types for external consultation (which is not a durable approach as technology changes), if Powerco believes network support is not a feasible option for any particular major project, it could provide a simple notice with its reasons for not issuing a non-network options RFP. Potential network support providers should be able to dispute this notice.

Stage Two: summary document consultation

- 4.11 A summary of the investment options then arising needs to then be prepared in draft and circulated for consultation, including:
 - (a) an overview of credible options
 - (b) cost-benefit analysis on the options, both traditional and network support
 - (c) identification of the preferred option.
- 4.12 We observe that the information proposed to be included in this document is already prepared for the Powerco POD and OAEET documents. As such, this would appear to place negligible (if any) additional administrative overhead on Powerco. The only change would be that the PODs and OAEETs will include the outcomes that have been derived from the effective consultation on third party network support alternatives.

Stage Three: final investment decision

- 4.13 The final investment decision report can then be prepared and circulated, including:
 - (a) any changes to the draft summary of investment options based on consultation feedback, and
 - (b) the final investment decision.
- 4.14 Just like the draft report/PODs, preparation of the final report would place negligible additional requirements on Powerco. An updated report would only be required if consultation had identified issues with the earlier investment options analysis. Any administrative effort would be justified as it would all be ensuring the correct investment decision can be made.

What about an ex post facto end of year reporting system?

- 4.15 In its draft determination on Transpower's capex IM, the Commission proposed an end of year reporting mechanism. We infer from that that you believe such a mechanism would be an adequate and proportionate requirement to assuage our concerns and effect the same sort of outcomes as our consultation proposals.
- 4.16 We do not share those views, and have made those points in our Transpower capex IM submission. Should you be of the view that a similar requirement might be appropriate for Powerco in this CPP, then we note the following:
- (a) It is the Commission's role to lead the development of standardised, effective consultation processes for third party network solutions. Looking to an industry-driven, passive 'after the event' self-assessment process is not the kind of regulation that is needed to incentivise certain behaviours.
 - (b) An end of year reporting process is a poor alternative to what we propose and would not be an effective tool that would lead to any material change. It would impose costs on networks for no apparent purpose in preparing documents that would be of no practical use to anyone. It would not serve the purpose of Part 4.

5. Network evolution capex

- 5.1 The task we believe lies in front of networks is looking to transition to intelligent, dynamic networks that can act as a platform for services. Hence we support network evolution funding. We appreciate that you have listened to stakeholder concerns in this area as reflected in your draft determination. You appear to have reflected on our concern that Powerco's network evolution funding not be used to develop energy services that infringe on competitive markets.
- 5.2 We do support elements of the network evolution funding. We detail this in our table in Appendix A.
- 5.3 As we noted earlier in this submission, we believe any Whangamata battery funding should be included in network evolution funding. We see a role for network evolution funding to be used to develop network support markets in the same way Transpower is developing a demand response programme at the transmission level. Importantly, this would require the Commission to approve network evolution opex, rather than just network evolution capex.

6. Concluding remarks

- 6.1 The analysis we have been able to carry out on the Tauranga and Whangamata major projects demonstrates oversights in the Commission and Powerco's own project investment analysis. These are oversights which, left unchanged, will result in outcomes that will see consumers paying more for the network service than necessary.
- 6.2 These oversights can be overcome through project-specific, external consultation processes to consider third party network support alternatives, and subsequent external verification of investment analysis and decisions through information disclosure such as the PODs and OAEETs.
- 6.3 We encourage the Commission to implement templates for the process we advocate, at a minimum for Powerco's major projects. We accept this will involve administrative costs for Powerco. However, we believe these will not be material, and those costs will be greatly outweighed by the benefits delivered by more rigorous and transparent investment decisions. The outcome of this can only be more optimal outcomes for consumers.

Yours sincerely

Louise Griffin
Head of Regulatory Affairs and Government Relations

Appendix A

Contact's support for network evolution investment

Network Evolution Investment	Support?	Comment
Automatic fault location and isolation	Yes	
Energy storage	Conditional	<ul style="list-style-type: none"> - Provided it is primarily focused on opportunities to participate in 3rd party battery trials to develop commercial and control framework for Powerco network support. - May have limited applications involving Powerco ownership, eg Whangamata network battery. - Not used for Powerco developing energy solutions. - Not utilised for ongoing regulated ownership of batteries, or participation in competitive markets including wholesale energy and reserves. - We have the same position on gas-fuelled generators/fuel cells – these are contestable assets regardless of whether they are connected behind the meter or network direct, any trials should be limited to leveraging 3rd party assets.
Real-time asset ratings	Yes	
Self-healing networks	Yes	
State estimation and network automation	Yes	
Voltage support applications	Conditional	Similar to our comments on battery storage above, opportunities to develop commercial and control framework for utilisation of non-Powerco owned customer-located resources which can provide voltage support.
Integrating community energy schemes	Conditional	Treatment should be consistent with the development of a broader network services market for applications like third party demand response and voltage support, i.e. the rewards/incentives are customer-agnostic.
Network insights	Yes	
Electric vehicle charging control systems	Conditional	- Treatment should be consistent with the development of a broader network services market for applications like third party demand response and voltage support, i.e. rewards/incentives are technology-agnostic.