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Elloise Kidd, Electricity Distribution Team
Commerce Commission
Via email: infrastructure.regulation@comcom.govt.nz

Tēnā koe,

Decision making in infrastructure resilience: guidance to encourage maturing practice

Powerco Limited (**Powerco**) welcomes the opportunity to respond to the Commerce Commission's (**Commission**) draft guidance document Resilience Principles: Decision-making framework for critical infrastructure providers (**draft guidance**). We support the Commission providing guidance on expectations for regulated infrastructure providers assessment of risks, including resilience risks, in making investment decisions.

New Zealand infrastructure providers, including electricity and gas distributors, have made advances in strengthening resilience planning and investment decision making and continue to evolve their approaches as our understanding of resilience risk evolves. The draft guidance provides a valuable opportunity to support this ongoing development and promote consistent understanding across infrastructure providers. We encourage the Commission to ensure the guidance encourages maturing practice:

The principles are sound and maturity is evolving

- We support all eleven principles as they reflect mature approaches to resilience assessment and integrated decision-making.
- The description and examples for each of the principles is particularly helpful and could be further developed in some areas such as reflecting limitations (eg where the infrastructure provider is not in control of data or relevant decisions) or providing more commentary on integrating resilience with other decision-making principles.

Clear distinction between good practice and regulatory expectations

- The guidance should support ongoing maturity of approaches to resilience by providing clear workable expectations.
- Expectations should be sufficiently clear and capable of being applied in a proportionate and pragmatic manner across a range of circumstances.

Clarification and additional examples will assist

- Based on our experience to date, we have made a number of suggestions to enhance the guidance with additional aspects relevant in decision-making or additional examples illustrating practice.
- The guidance will prove most helpful if it reflects different ways of approaching resilience decision-making in an encouraging, integrated and simple way.



We comment further on these priority topics in the attachment. This submission does not contain any confidential information and may be published in full. If you would like to follow up this submission, please contact Irene Clarke ([REDACTED]).

Nāku noa, nā,



Emma Wilson

Head of Policy, Regulation and Markets

POWERCO

Powerco response: draft guidance on Resilience Principles in decision-making

1. The principles reflect best practice for an organisation at high maturity

Summary of response:

- The guide, with adjustments, will provide a valuable reference for infrastructure providers as resilience practice evolves
- All eleven principles are sound, noting the guidance reflects approaches to resilience assessment and integrated decision-making for an organisation at a high level of maturity
- Clarity is required in the intent to provide aspirational guidance vs the minimum requirements that the Commission *expects to see*
- The guidance will add most value to infrastructure providers' practice if it avoids an expectation of unnecessarily elaborate process, often in an environment of limited or uncertain information. But rather, provides examples and options for organisations on a pathway in their resilience work.
- The guidance should better reflect limitations and situations where the infrastructure provider is not in control of data or relevant decisions.

All eleven principles are sound and align with what would be defined as best practice in decision making across a range of risks, hazards and asset vulnerability, including resilience, but not confined to resilience. Resilience is one area of risk and investment evaluation as part on Powerco's integrated planning approach.

Powerco has been on the path of developing a framework for decision making on resilience risks, with an initial focus on climate risks, for many years. The principles in the draft guidance generally align, at a high level, with what Powerco has been doing. But we would call our work on resilience, and the integration of decision-making principles for resilience, only partly complete. Based on our experience, the principles and the explanation around them in the draft guidance are for an organisation at a high level of maturity, not one at the start, or part way on, the resilience journey.

It will be important for organisations to have clarity on what the Commission 'expects to see' in a highly mature asset manager and what the Commission expects in a maturing or developing organisation. This level of maturity will take some time to evolve, and therefore we think the Commission should provide greater clarity on how they will judge the level of performance against the guidelines as infrastructure providers look to develop their practices over time. We also note there is a reliance on external parties for inputs and assessments so understanding enforcement is important

Section 3.3 of the draft guidance states the Commission's expectation is that infrastructure providers would work towards good practice over time to progressively achieve the baseline described in the guidance.¹ However, the examples of what the Commission 'expects to see' are a high baseline and it is not clear what working towards it looks like, or the pace of progress expected, or how the expectations will be considered alongside all other aspects of asset management.

¹ Commerce Commission, Draft Resilience Guidelines, 3 July 2026, Section 3.3.

There are also some challenges which we believe the guidance should acknowledge, that are largely outside the control of infrastructure providers. For example, external hazards to our assets such as climate resilience warrant principled assessment of risk and investment options, these investments are inherently difficult to forecast as they are often linked to decisions by other organisations such as, a council decision on managed retreat, a collaborative project with lifeline utilities, or a regional council flood protection project.

In addition, some of the principles in the draft guidance require a high level of hazard data availability to implement. In many cases, the data is not available, for example for slip hazards or seismic hazards. This should not hold back infrastructure providers understanding risk to an appropriate level and evaluating/designing investment responses according to the information they have available.

The principles in the draft guidance could be referenced in, or incorporated into, the EEA Asset Management Maturity Assessment Tool². This tool provides a reference for assessing maturity over time for electricity asset management.

2. Clarifications and examples to build on the 11 principles

Summary of response:

- **Recognise practical limitations:** Infrastructure providers face significant data gaps, inconsistent datasets, and challenges quantifying risks. Multi hazard risk awareness often sits outside the AMP and evolves as data quality improves.
- **Staged and integrated assessment:** Initial screening should focus on hazard exposure and asset vulnerability, then detailed criticality, customer impact, and investment analysis follows for priority assets
- **Resilience is one investment driver:** Resilience decisions must be balanced with factors such as growth, reliability, safety renewal, affordability and customer expectations, not considered in isolation.
- **Strengthen guidance on interdependencies and criticality:** Understanding infrastructure interdependencies remains an emerging area. Criticality assessments should incorporate service disruption consequences, public safety, interdependencies, and wider community impacts.
- **Responsibilities with customer and community impacts:** Distributional impacts, customer vulnerability, willingness to pay, and community engagement are important inputs, but infrastructure providers face limits in managing socio economic impacts and community preferences in trade-offs.
- **Investment optioneering is complex:** Resilience investment decisions should consider timing, cost benefit trade-offs, adaptive pathways, long term uncertainty and interdependencies.
- **Flexible, adaptive decision making is important:** Guidance should provide practical examples of indicators, trigger points, and scenario monitoring to support adaptive pathways, while recognising that regulatory obligations and organisational risk tolerance may not always align with community.

2.1 Understanding the risk – principles 1-2

From what we have experienced, we recommend that this step of the process should be updated to focus on the high-level screening to understand the risk, rather than assessing and prioritising the risk. As currently written, the draft guidance examples and expectations stray into the actual assessment. We also think the guidance should reference an infrastructure provider's risk appetite as it is relevant to identifying and understanding risk.

² [Asset Management Maturity Assessment Tool | Electricity Engineers' Association](#)

Principle 1

To understand multi-hazard risk assessments (**principle 1**), asset exposure to climate hazards is often assessed using linked hazard pathways rather than considering hazards independently. For example, increased rainfall may act as a common climate driver resulting in multiple related hazards, such as flooding, erosion, and landslips. GIS-based assessments are useful for understanding these interactions. Powerco's Climate Adaptation & Resilience Plan³ was developed to provide a structured hazard identification, exposure and vulnerability assessment methodology, rather than duplicating that information in the AMP. Vulnerability matrices (refer Section 5.3 of the Climate Adaptation & Resilience Plan) map specific asset fleets against multiple hazards (noting this is focused on climate hazards only, not all hazards).

While Powerco has identified multiple hazards, our risk assessment is not multi-hazard per asset. There are also some key gaps in our understanding of risk due to data gaps eg Hikurangi trench impact for Wairarapa region. Or in other cases, there is no consistent dataset or infrastructure providers are having to commission their own data. For example, there is no public safety risk dataset available to all infrastructure providers. Our assessments can only be as good as the input data, and this can change frequently and/or not always enable quantitative review of risks. Comparison and prioritisation of different risks affecting an asset (e.g. seismic, flooding or landslide risk) is more appropriately undertaken later in the assessment lifecycle through consequence, criticality and investment assessment processes (**principle 6** onwards).

Principle 2

In understanding the scale of risk (**principle 2**) a staged assessment approach is valid and should be recognised in the guidance. For example, initial network-wide screening may focus on hazard exposure and asset vulnerability, with priority assets identified using factors such as customer numbers and network significance based on broad categories like high voltage assets vs low voltage assets. More detailed assessment of community impacts and consultation can then be undertaken during the next evaluation phase for prioritised assets. Powerco maintains a register of priority assets and associated performance metrics that are regularly reassessed to support risk evaluation, mitigation planning and investment decisions. These outcomes are reflected in external performance reporting⁴. The defined scale of risk linked to ICP numbers, SAIDI/SAIFI and customer impacts (including consultation) is more appropriately addressed from Principle 6 onwards.

The draft guidance would benefit from more clarity and examples about how to approach understanding resilience risk alongside other key risks – eg growth risk, reliability risk and renewal risk. For our asset management investment decisions, we must consider all risks. It is our experience that resilience-specific risk assessment is likely to be phase one for an infrastructure provider, but in practice, this moves towards more integrated assessment and decision making as an organisation matures.

The guidance could better recognise limitations in understanding risk in terms of data inputs, quantification, and that multi-hazard risk awareness may sit separately to the AMP while organisations make best endeavours to evaluate all risks (resilience being one) for the purpose of investment decisions.

³ Powerco Climate Adaptation & Resilience Plan, published July 2024

⁴ Powerco Integrated Report 2026, Pages 53-56. Available here: [Powerco Integrated Report 2026](#)

2.2 Evaluating impacts – principles 3-6

We agree that customer engagement is a key input to evaluating impacts and designing options.

Many risk assessments are qualitative or relative due to the nature of inputs and need for decisions. The guidance should address options for quantitative measures of risk (eg risk dollars) to allow direct evaluation of impacts across risk types.

Principle 3

Resilience guides frequently reference the need to understand the interplay between different types of infrastructure (**principle 3**). Powerco's Climate Adaptation & Resilience Plan identifies interdependencies eg roads, communications, water, and fuel networks as 'core to resilience'. The guidance could better recognise that understanding and quantifying interdependencies is still developing, often requiring cross-sector collaboration, and may be most appropriate as an input into criticality, consequence and investment prioritisation rather than a standalone mapping exercise as the draft guidance suggests.

Regional lifelines groups are our key mechanism for sharing information related to interdependencies. These groups operate on voluntary basis, lack adequate funding, and are inconsistent across regions. There are some examples of interdependencies work in lifelines groups although these are either at early stages of development (eg Bay of Plenty Lifelines group work on consequence analysis and sharing information), have found that multi-agency information does not equal interdependence information (eg Wellington lifelines group work on PELOS) or may be more focused on works interdependencies rather than hazard interdependencies (eg Taranaki lifelines group works planner).

Powerco is scoping a potential trial with the Urban Intelligence resilience explorer⁵ which is a software platform that could help fill in some of these gaps in interdependencies by drawing data from multiple sources (eg council data and asset owner data) and identifying key risks geographically. Resilience explorer is identified in the draft guidance evaluation tools (section 4).

Principle 4

We agree that distributional impacts are an important consideration in evaluating risk (**principle 4**). Powerco's Climate Adaptation & Resilience Plan explicitly identifies that remote rural and coastal communities are disproportionately affected. It uses GIS to map and rank the vulnerability of 150 community emergency hubs.

Powerco is currently doing some work to review the 'value of customer reliability' framework (traditionally value of lost load, VOLL) which is relevant for this principle and how we value customer views in investment decisions. The Electricity Authority is also reviewing the VOLL framework. This will become more nuanced as distribution system operator (DSO) functions and non-network options grow.

There is a connection between customer vulnerability assessments, willingness-to-pay research and community engagement activities, in resilience investment decision-making. The socio-economic considerations are part of our evaluations, particularly at a regional level, but in practice this aspect is still developing. There remains an important

⁵ [Urban Intelligence Resilience Explorer](#)

role for government in smoothing distributional impacts rather than relying on infrastructure providers to manage it with our more vulnerable customers. The guidance should reflect on the relevance of roles in evaluating distributional impacts and limitations for infrastructure providers.

The Urban Intelligence work referenced above may also assist Powerco in evaluating isolation concepts, as trialled in Tasmania with the Urban Intelligence tool.

Principle 5

In terms of risk tolerance and risk-bearing capacity (**principle 5**), infrastructure providers, particularly price-quality regulated organisations, are already required to meet service levels and reliability standards, and resilience investment decisions typically involve assessing a range of options and trade-offs within the boundaries of those service levels. The guidance could provide further examples of how risk-bearing capacity and community resilience should be incorporated into investment decision-making alongside reliability, affordability, safety and regulatory requirements, as well reflecting the outcomes of community engagement which may support trade-offs in a direction that is inconsistent with those regulatory expectations.

An infrastructure provider's risk tolerance and legal obligations may, appropriately, override an individual community's view of risk tolerance which is predominantly influenced by short term price. Powerco has considerably increased effort in community engagement, particularly in communities with resilience impacts, and we are working to better integrate this understanding into our Copperleaf value framework.

Principle 6

Defining asset criticality (**principle 6**) is central to evaluating impacts, mitigation options and informing investment decisions. The description of criticality in the draft guidance does not reflect current thinking on interdependencies and vulnerability modelling, for example developed through lifelines. Criticality should consider the consequence of service disruption, including public safety, interdependencies and broader community impacts. This assessment can then be combined with probability of failure to support risk-based investment decisions.

A standardised approach to criticality assessment across critical infrastructure and different risks would assist with aligning impact assessments. For example, consistency of aspects such as areas with high public safety concerns would go a long way in helping us assess high risk assets beyond just our network - for assets that are critical for other infrastructure providers, but we don't have consistent data available on this. A standardised measure to assess criticality across different risks is something that we are currently working towards. Examples of criticality assessments for both gas and electricity assets are shown in the Powerco 2026 Integrated Report (Pages 44-45)⁶.

Alongside a clearer definition for criticality, we would see benefit in a glossary to ensure standardised terminology for terms such as hazard and risk.

We would also see benefit in the guidance discussing an approach (and outcome) for individual infrastructure providers vs inputs and outcomes with a broader perspective as different views of criticality (and response) from interdependent infrastructure providers can create complexity. Powerco's Climate Adaptation & Resilience Plan (Appendix 4) provides a criticality ranking table based on the number and type of customers served. Other

⁶ [Powerco Integrated Report 2026](#)

examples are in our electricity AMP asset health and risk assessment (eg CNAIM), our Copperleaf investment framework, our prioritisation of district regulator stations in gas resilience investment, and our gas vulnerable networks assessment (see gas AMP⁷). Our work with lifelines on interdependencies is also building our understanding of criticality. For example, criticality from an outage perspective is more than just direct customer outage impact.

2.3 Designing mitigation options – principles 7-9

Principles 7, 8 and 9 are interlinked. For example, a project business case may include all three aspects of optioneering, cost benefit, and option evaluation.

Principle 7

Powerco's Climate Adaptation & Resilience Plan looked to develop a framework to inform more structured optioneering (**principle 7**). This is an area where we are looking to develop our approach to optioneering further as part of business and usual asset management and investment. It would be useful for the guidance to consider timing as part of optioneering. For example, we may think relocation is the right option, but in the interests of managing costs, we would do it at time of renewal or upgrade. Given this, we suggest this time vs cost/benefit should be part of the optioneering.

Principle 8

The cost benefit evaluation (**principle 8**) is closely linked to principle 5. The guidance could provide further examples of how resilience outcomes should be weighed alongside traditional investment drivers such as reliability, affordability and compliance. Powerco uses Copperleaf to quantify financial, environmental, health and safety, and network performance value. In addition, our gas volume to value strategy directs weighing up asset replacement and renewal costs with broader cost/benefit.

Principle 9

Option effectiveness (**principle 9**) may be demonstrated through ongoing asset performance monitoring and continual improvement processes, rather than being a standalone assessment. Measures such as SAIDI, storm restoration costs, repeated asset failures and maintenance trends, can help identify when operational responses are no longer sufficient and targeted capital investment may be warranted. The guidance could clarify this or provide additional examples in assessing options.

2.4 Making decisions – principles 10-11

Principle 10

Prioritising investment (**principle 10**) in resilience is one component of a distributors prioritisation of all investment in the asset management system. The guidance should reflect the need for assessment, trade-offs, and prioritisation, beyond just resilience.

⁷ [Powerco Gas AMP](#) section 2.2.3

Climate risk frameworks typically consider short, medium and long-term risks (eg 2035, 2050 and 2080), meaning some adaptation responses may fall outside a typical asset management planning cycle. This is particularly relevant for coordinated adaptation responses, managed retreat and council-led adaptation programmes, which often progress at different speeds. The guidance could recognise the need for flexibility in investment prioritisation frameworks to incorporate emerging adaptation projects and external dependencies (eg interdependent infrastructure or planning processes) as they reach decision stage, rather than relying solely on predetermined investment cycles or triggers.

Powerco has established a methodology and strategy for resilience assessment in our Climate Adaptation & Resilience Plan. An example of the outcome of this approach and prioritisation within the broader investment programme is outlined in the Powerco Gas AMP25⁸.

Principle 11

In terms of adaptive pathways and uncertainty (**principle 11**), Powerco uses three physical climate scenarios to assess future risks under different warming pathways. Existing metrics such as MED-SAIDI, associated storm restoration costs and asset performance trends provide some indication of understanding this changing risk and which scenario is playing out in real time. However, there is an opportunity for the guidance to provide further examples of how trigger points and indicators can be monitored over time to understand which future pathway is emerging and when resilience actions should be reconsidered. The transition scenario work for Powerco electricity and gas provides a useful example of linking future scenarios to observable metrics and decision triggers.

As noted in relation to principle 5, risk tolerance, regulatory requirements (eg safety and SAIDI) and obligations to invest may not align with a community's preference for trade-offs. It would be useful for the guidance to touch on this in terms of principles 10 and 11.

3. Consultation questions

Consultation question	Powerco comment
1. Is the draft guidance clear about its purpose and practical status, including the level of analysis and rigour the Commission expects for more material resilience expenditure proposals?	No. The guidance needs greater clarity in its purpose, intent to provide an aspirational guide, vs what the Commission expects to see and will hold all infrastructure providers to account. The guidance is a mix of planning, investment justification and expectations for regulatory processes but is not clear enough on its primary purpose and how it will work alongside existing processes. Refer our comments in section 1.
2. Is it clear how the draft guidance should be applied proportionately across sectors with different levels of maturity?	No, we don't believe the guidance is clear enough about proportionality and level of maturity. Refer our comments in section 1.

⁸ [Powerco Gas asset management plan 2025](#), for Stations (page 124) and bridge crossings (page 142).

Consultation question	Powerco comment
3. Are there implementation barriers, overlaps, or accountability issues in the wider resilience and regulatory landscape that may affect how this guidance is applied in practice?	Yes, interdependencies are relevant for a number of the principles, and different responsibility will impact availability of data, risk evaluation and/or ability to respond appropriately. We have commented on this further in section 2.
4. What areas should the Commission prioritise in further work (for example, business case guidance, resilience measures, maturity assessment, interdependency information, or reporting)?	Our suggestions for further work are: • Develop resilience measures to facilitate standard format and ability to share priorities and progress across infrastructure providers • Clarify how the guidance will be used by the Commission (and should be addressed by infrastructure providers) across the various regulatory processes eg DPP resets, ID, reopeners. • Use the Commission's cross-sector role to support coordination of infrastructure providers on interdependencies • Consider integration of the guidance with existing tools such as the EEA maturity assessment tool, alignment with tools such as ISO 55001 or ISO 22372, or whether new tools are justified.
5. Which aspects of the draft guidance are most helpful for informing your investment decision making, and why?	The description of the principles, examples for each principle, and examples of tools and international experience. The 'what good looks like' is helpful, on the basis that further clarification will be provided on how the indicators will be used in assessing infrastructure providers at different levels.
6. Which parts of the draft guidance are unclear, unnecessary, or could be improved? Please explain.	We have provided a number of comments in sections 1 and 2 on areas for clarification or additional examples. The 'what we expect to see' could create difficulties for both the Commission and infrastructure providers and our recommendation is that this not be included until practice is further advanced and tested (including with reference to the guidance). Including a glossary in the guidance is recommended to improve clarity.
7. Are any principles missing? Are there areas of overlap where the principles could be simplified or streamlined??	We do not consider any principles to be missing. The 4 groupings of principles is useful. Principles 7-9 have some overlap and could be streamlined.
8. Are there any missing frameworks or evaluation tools that should be included or referenced?	Powerco uses the Copperleaf evaluation tool and we recommend including this example in the guidance.
9. To what extent do you already apply these principles in your resilience-related decision making processes?	The principles align with Powerco's recent work in resilience assessment.
10. Do you have practical examples of applying these principles - in a specific sector, or cross-sector - that could be	Powerco's Climate Adaptation & Resilience Plan, 2024. And subsequent use of the data, scenarios and prioritisation in our AMPs.

Consultation question	Powerco comment
shared to support other users of the guidance?	
11. How should the framework recognise and reflect iwi, hapū, and Māori perspectives, including capability, resources, and relationships that support resilience, particularly in smaller or more isolated communities?	In our experience community engagement, involvement and perspectives are critical elements in risk assessment and evaluating options. This is accentuated for isolated communities and iwi, hapū and Māori. We are developing our approach integrating community engagement into resilience planning. This can be challenging and there are limitations on the capability of infrastructure providers to address this. The guidance could helpfully reflect both the opportunities and limitations in the role of communities in resilience decisions.
12. Which cross-sector vulnerabilities and interdependencies should the framework place the greatest emphasis on, and expect infrastructure providers and the Commission to pay closest attention to?	There are regional and national plans and individual infrastructure provider plans which identify cross-sector vulnerabilities. But there are also significant limitations in the capability of infrastructure providers to fully assess and address these interdependencies at a local level. We have commented on this further in section 2. It would not be appropriate, or possible to do justice to, identifying or emphasising particular cross-sector interdependencies in this guidance. It is more important that the guidance address the approach to identifying and incorporating interdependencies into decision-making.