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From: Electricity Engineers' Association of NZ

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Subject: EEA Submission – Draft Resilience Guidance Feedback

OVERVIEW

The Electricity Engineers' Association (EEA) welcomes the opportunity to provide feedback on the Commerce Commission's draft guidance document, Resilience Principles: Decision-making framework for critical infrastructure providers (3 July 2026), and the accompanying ResOrgs report, "Infrastructure Resilience: Key principles for regulating the performance of utilities".

The EEA is the technical and professional body for New Zealand's electricity sector. Our members span electricity distribution and transmission, generation, engineering consultancies, equipment suppliers, and specialist service providers. The EEA's mandate focuses on technical, engineering, operational, resilience, and long-term system investment matters rather than commercial market interests.

Consistent with that mandate, this submission does not take a position on the Commission's broader regulatory policy settings. Our comments are provided through a technical, engineering, and asset management lens, and focus on the practical application of the draft guidance by electricity network businesses.

Overall Comments

The EEA believes the draft Resilience Principles guidance document provides useful commentary for essential infrastructure providers, with focusses on investment economics, regulatory justification, consumer value, governance accountability and adaptive planning within uncertainty. The EEA strongly endorses the guide's publication.

It gave the EEA pleasure to see the Resilience Guide developed by the EEA's Asset Management Group referenced in paragraph 5.2 of the draft guidance. The EEA's Resilience Guide describes the electricity supply industry's obligations under the Civil Defence Emergency Management Act (CDEM) including the 4Rs (Reduction, Readiness, Response, Recovery), vulnerability assessment, emergency preparedness, mutual aid, critical spares and resilience assessment. The latest edition incorporates climate adaption, cyber resilience, workforce resilience, community hubs, resilience planning roadmaps and asset management system integration.

Resilience Principles

The EEA notes the Commerce Commission's rationale to set out and clarify its interest in infrastructure resilience. The resilience principles provide guidance for infrastructure providers who are evaluating resilience investments. This would apply to Lifeline utilities (which include entities that generate electricity for distribution through a network and those that distribute electricity

through a network) who have duties under the Civil Defence and Emergency Act 2002 to ensure they can function to their fullest extent during and following an emergency. It would also apply to the regulated parts of local authorities, who, under Section 101B of the Local Government Act 2002 have duties to prepare an infrastructure strategy that provides for the resilience of infrastructure assets, identifying and managing risks relating to natural hazards and making financial provision for those risks.

The impression is given that the intent is not to create new information disclosure requirements, but to provide guidance on how to evaluate resilience investments. We assume such evaluation would especially be needed if regulated entities are making investment case applications to the Commission for approval.

Resilience Definition

The definition in section 1.9 of the Commission's draft document refers to "national infrastructure's essential structures, functions and services". In the context of the CDEM Act 2002, which uses the term Lifeline Utility to refer to specific infrastructure owners, we note that many of the electricity distribution businesses are not national, but rather local or regional in their nature. Even so, the EEA believes that the draft guidelines have useful content applicable to infrastructure owners if they are not "national".

Application of the Resilience Principles

In light of the guide's introductory comments and resilience definition, there seems to be scope for the draft guidelines to clarify how the resilience principles apply to different essential infrastructure providers:

- a. With resilience being defined as applying to "national infrastructure", the resilience principles would seem to apply to Transpower, as owner of the national grid, with its regulatory period or major capex project applications.
- b. If the guidance is provided for infrastructure providers that are evaluating resilience investments, then they would likely apply to non-exempt EDBs who are seeking to make a Customised Price Path or Reopener application involving resilience investments, or possibly as part of unplanned interruptions reporting that involved exposure to a major event.
- c. Otherwise, the resilience principles might represent an expected good practice forming part of an infrastructure asset owner's integrated asset management system, in which resilience measures are communicated through Asset Management Plans.

It is likely that a graded approach would practically be taken toward resilience investments in which the most scrutiny is given to the larger investments that resolve hazards with national exposure, and lesser levels of scrutiny are given to smaller investments with more local impacts.

Changes in Statutory Framework

The EEA notes that if passed, the Emergency Management Bill will replace the Civil Defence Emergency Act 2002. At time of writing, the Bill had passed its second reading in Parliament in response to the Government inquiry into the Response to the North Island Severe Weather Events.

It is assumed that the Commission sees low risk with releasing the draft guidelines in the midst of an impending statutory change. The draft guidance does not seem to be misaligned with the terminology used in the Bill. For instance, it uses the term "essential infrastructure" reflecting how

lifeline utilities would become known as “essential infrastructure providers” should the Bill pass into statute. It is also noted that some of the recommendations from the recent report on the government inquiry¹ can be seen in the Commission’s draft guidance, including a focus on communities in emergency management, the role of iwi Māori, local government’s role in taking leadership in emergency management, and the importance of capability and specialist skills in emergency management.

Recommendations

1. It would be useful if the Commission could outline its thinking on how the resilience principles are expected to be applied by different essential infrastructure providers.
2. There is a risk that the impending new legislation could compromise how the principles are expressed in the draft guidelines.

Focus on Investment Decision Making

The EEA notes the Commission’s draft guidance focusses on the investment decision making process for resilience related investments. It is noted that this intent aligns with some of the objectives of the National Disaster Resilience Strategy (2019), which, in comparison with previous strategies, increased the focus on managing risks, reducing vulnerabilities, disaster risk reduction and equitable outcomes. The recent Report of the Government Inquiry into the response to the North Island Severe Weather Events also recommended increasing the focus on readiness and risk reduction.

We also recall that the Commission has been interested in how to assess resilience investment applications for many years. For instance, the Commission’s open letter of 9 November 2017 referred to an increased focus on the ability to maintain and restore electricity to consumers, particularly following high impact low probability (HILP) events, engaging with consumers to understand their resilience preferences, understanding condition and criticality, and other things. It is possible that non-electricity infrastructure organisations could have less familiarity with these past communications.

As the draft guide points out though, infrastructure resilience relies equally on other aspects in addition to investment decision making and a sole focus on infrastructure investments in isolation from other aspects might end up being suboptimal. For example, the approach towards organisational resilience, which refers to the “ability of an organisation to plan, manage, respond and recover from an event to achieve the desired resilient outcomes”², can be just as important as (or moreso, than) the quality of investment decision making and that point would be worth reiterating.

In catering for all types of investment decision making, the draft guidance sets a high bar of assessment rigour within all of the principles. This is appropriate for large resilience investment decisions of national consequence. However, as mentioned in clause 1.3, some winding back of the levels of assessment scrutiny would seem to be practical for accommodating smaller sized project investments or longer term incremental style improvement campaigns, such as might be implemented by the smaller EDBs. While we do not think it is reasonable to be specific about aspects of the principles that could be scaled back, we note that usually the delegated financial

¹ Government Inquiry into the Response to the North Island Severe Weather Events, March 2024

² Global Forum on Maintenance and Asset Management (GFMAM) Asset Management Landscape.

authority processes within infrastructure organisation recognise that less justification is needed for smaller amounts of expenditure. This point could be mentioned in the guidance.

Recommendations

3. Some allowance for dialling back the levels of assessment rigour for smaller sized project investments or longer term incremental style improvement campaigns, such as might be implemented by the smaller EDBs, would be useful to make in the guidance document.
4. In addition to the recommendation above, it would be useful to reiterate that resilience investment proposals are best accompanied by an understanding of organisational and informational resilience maturity.

Interactions with Asset Management and Risk Management

Management System Integration

The foreword to the draft Guidance document reflects on how resilience is a key element of an infrastructure organisation's asset management and risk management systems. The expectation is that resilience initiatives are integrated to work together coherently with other asset management systems. This approach is well aligned with the intent expressed in ISO55000, where integrating existing management systems can reduce effort in implementing resilience capabilities in an organisation, and can improve how organisations work across different departmental disciplines.

Role of Asset Criticality

Specially managing critical assets is closely aligned with system resilience. The identification and knowledge of critical assets was found to be a general area for asset management improvement in Audit New Zealand's recent auditing programmes. Audit NZ found reasonable coverage by local authorities on risks, hazards and resilience, but found that strategies were "typically silent on critical assets", which "seems odd as critical assets should be central to risk, hazard and resilience"³. Another of Audit NZ's reports⁴ considered the extent that critical assets had been identified, and the level of knowledge about the critical and non-critical assets. Critical assets without redundancy were considered, along with the anticipated length of time to rectify following a failure. The report recommended that one of the questions governors and senior managers could ask would be "Have we identified our critical assets?". Identifying assets as critical allows the work to manage and maintain them to be prioritised.

Complicating Matters

Conversely, major events do not always follow usual risk identification. For example, major rural fire events may be caused by failures of electricity network assets that would otherwise be regarded as low criticality. The 2009 Victorian bush fires were considered one of Australia's worst disasters⁵ in which five of the fifteen fires investigated were found to have had a cause associated with the failure of electricity assets, and in three of those fires, the age of the electricity assets was

³ Audit NZ report "Asset Management and Long Term Planning – Learning from Audit findings 2015 – 2017", page 27.

⁴ Audit NZ report "Asset Management and Long Term Planning - Learning for local government long-term planning 2021-31"

⁵ http://royalcommission.vic.gov.au/finaldocuments/summary/PF/VBRC_Summary_PF.pdf, page 1. A series of fires across Victoria occurred in early February 2009 when temperatures soared well above 40 degrees C.

considered to be a contributory cause. That SWER lines, lines through bush areas and long span lines featured in the Royal Commission's recommendations indicates a focus on rural distribution assets that would otherwise be considered low criticality.

Role of Contingency Planning

Contingency plans can act as important resilience risk controls, usually in the context of business continuity, crisis management, disaster management or emergency response. Yet little appears to be said in the guide about the role that contingency planning could play in respect to risk management for major events. Contingency planning might include investment in response agreements and capabilities, or it might include contingent holdings of spare assets (critical asset spares and non critical spares held for emergency situations). Both can be very useful for reducing the consequence of asset failures with long procurement lead times.

The EEA feels that the guidance would benefit from some coverage of risk controls using asset spares (and their optimal holding levels), the role and benefits of response agreements, and how best to approach mutual probabilities when risks are controlled through asset duplication.

Recommendation

5. The role of asset criticality is covered in the draft guidance under Principle 6. Principle 2 also considers the role of asset criticality in hazard analysis, although its consideration looks to be confined to asset replacement. A suggestion would be to also consider the potential for asset duplication, redundancy, spares holdings or supply chain agreements in relation to managing the risks of critical asset failure.
6. Recognition should be expressed that major events may not follow the conventional norms of risk and criticality no matter how much analysis and planning is done.
7. Mention of the role that contingency plans can play in resilience analysis would be useful within the resilience guidelines. Consideration of contingency planning using holdings of asset spares and response agreements would perhaps best sit within Principle 7.

Stakeholder and Consumer Engagement

Stakeholder Perspectives

The EEA notes that the infrastructure stakeholders do take an interest in the resilience and preparedness of the infrastructure that affects them towards major events. In part this follows the impacts of recent events on the continuity of infrastructure service. It also follows New Zealand's commitment to the Sendai Framework, which aims to see a shift in focus to "managing risk" from "managing disasters" and more focus on "reduction" and "readiness" activities (as expressed by the Civil Defence Emergency Management Act 2002), involving better understanding and governance of disaster risks, investment for risk reduction and preparedness enhancements. It is noted that with Aotearoa New Zealand's insurance exposure and proportion of GDP associated with major natural events⁶, it makes sense for infrastructure stakeholders to be supporting efforts to reduce major event risks.

⁶ According to clause 31 of the Government Inquiry into the Response to the North Island Severe Weather Events, Aotearoa New Zealand is second on Lloyds of London's list of most exposed countries to natural

The draft guidance indicates that a transition to mature practice is expected within a reasonably short timeframe (paragraph 2.5). However within this context lies a tension between the commercial environment and the long term needs for the community. The government inquiry suggested that some local authorities had de-prioritised their emergency management functions⁷. It is also noted that interest in resilience can wane between major events and can become crowded out by other “business as usual” concerns. With the long and usually uncertain return periods of major natural events, resilience investments can struggle to compete against more normal asset development and renewal works. Infrastructure organisations exist within a commercial context in which it may be difficult to gain funding approval for events that may not be front of mind for directors and business owners.

Consumer Engagement

Principle 2 outlines a need to understand risk within the communities served, while Principle 4 describes the need to maintain social equities within diverse communities. Both of these principles involve a need to understand the needs of the communities served. Liaising with iwi Māori is covered in various principles. These concepts are aligned with the findings of a disconnect between the CDEM agencies and their respective communities in the recent Government Inquiry⁸.

Consistency of Definitions and Terminology

The draft guidance introduces definitions of ‘infrastructure resilience’ and ‘reliability’ that differ in framing from some of the definitions already in use across the sector, including those in the EEA Resilience Guide, the National Disaster Resilience Strategy, and ISO 22372:2025. Multiple, partially overlapping definitions across regulators and agencies (including the Electricity Authority’s Future Security and Resilience programme, the Department of the Prime Minister and Cabinet’s critical infrastructure work and NEMA frameworks) risk inconsistent interpretation and reporting.

Resilience and Reliability

In practice, resilience and reliability investments on electricity networks may be closely interlinked. For example, hardening against chronic weather-related hazards also improves day-to-day reliability performance. From a risk management perspective, resilience may be considered in how high impact low probability (HILP) threats may be managed, while reliability may be considered in the context of the more regular low consequence impacts for which response can become operationalised, but can mount up over time to cause customer dissatisfaction if not well managed.

Section 3.6 of the Institute of Asset Management (IAM) Subject Specific Guideline (SSG) 32 on Contingency Planning and Resilience Analysis makes a distinction between threats that bring a loss of function and threats that could cause total devastation, based on the scale of the consequences. The diversity of threat consequences can result in completely different business outcomes, which highlight the strategic importance of undertaking the major event Threat, Risk, Vulnerability and Impact assessments.

hazards, and the average cost of natural disasters to New Zealand’s economy is estimated as 0.7% of GDP per year.

⁷ Clause 54 of Government Inquiry into the Response to the North Island Severe Weather Events.

⁸ Clauses 38 to 42 of Government Inquiry into the Response to the North Island Severe Weather Events.

Recommendation

8. In Principle 5, the wide breadth of major event consequences and consequence magnitudes would be useful to describe in the context of their potential to stress an infrastructure entity's viability.

Interdependencies and cross-sector coordination

The EEA concurs that managing interdependencies is central to resilience outcomes. For example, electricity networks are an upstream dependency for telecommunications, water services and fuel systems, but are in turn dependent on road access and communications. The recent government inquiry highlighted the value of prioritising critical infrastructure restoration, recognising the importance of situational awareness and the value of common operating platforms in response efforts. Lifelines and CDEM groups would be useful current forums for the respective infrastructure providers to discuss these interdependencies.

In a similar vein, robust multi-hazard risk assessment depends on access to consistent, authoritative hazard datasets (seismic, flood, wind, landslip, tsunami, volcanic, and climate projection data). If each infrastructure provider independently sources and interprets this data, the result could be duplicated cost and inconsistent assessments across sectors and regions. The role of working with central government agencies and research providers to support shared, nationally or regionally consistent hazard datasets and modelling assumptions is perhaps best currently coordinated at Lifelines or CDEM group level.

In Principle 3, the expectation is that the impacts on other sectors should be included in a provider's commercial assessment for investment options. However there is a concern that questions of accountability and cost allocation might arise between essential infrastructure providers. It is assumed that these assessments should be ideally approached in a way that ensures the best outcome for the country as a whole, and a suggestion is that the guide could set out this philosophy.

It is noted that Clause 23 of the Emergency Management Bill refers to the establishment of Emergency Management Committees and it appears that these may have the role of coordinating readiness and reduction responsibilities between essential infrastructure providers. How this will work in practice, should the Bill pass into statute, remains to be seen. However the EEA can see that the Commerce Commission will inevitably need to have a role in enabling the right kinds and balances of resilience investments from the regulated essential infrastructure providers.

Recommendation

9. It is suggested that a statement is made in the guidance document that interdependencies between essential infrastructure providers are approached in a manner that ensures the best outcome for the country as a whole.

Evaluation tools and the Value of Lost Load

The EEA agrees with the ResOrgs report's observations on the limitations of the Value of Lost Load (VoLL) when applied to long-duration, wide-area resilience events, and supports supplementing VoLL with broader assessment approaches where material. The focus on minimising social inequities in Principle 4's consideration of distributional impacts is also noteworthy. These points are consistent with the treatment of economic impact assessment in the EEA Resilience Guide. The EEA notes that several of the tools referenced in Chapter 4 of the draft guide (e.g. CGE modelling, MERIT, agent-

based modelling) require specialist skills that sit beyond the in-house capability of most providers, and their expected use should remain clearly proportionate to the scale of the decision being supported.

Chapter 3 sets out the indicators that the Commission identifies as good practice, while item 1.3 states that expectations will be applied proportionately to the scale, context, and materiality of investments, recognising differing levels of maturity across sectors. Several of the stated expectations – including quantified multi-hazard forecasting, GIS-based consequence layers, Monte Carlo analysis, real options analysis, and dynamic adaptive pathways – require specialist capability, data, and resources that may not be uniformly available, particularly for smaller electricity distribution businesses. Meanwhile, the Report of the Government Inquiry notes that specialist skills are needed and that there are “significant gaps in capability and capacity throughout all parts of the emergency management system”⁹.

Recommendation

10. As covered in Recommendation 3 above, in Chapter 3, it is suggested to remind readers that the level of analysis in the principles can be proportionate to the scale, context and materiality of the investment being considered.

General Points

Further Reference Material

There is a lot of useful material generally available about infrastructure resilience that comes from an asset management perspective. Some of it is high level, but it appears that the breadth of available material might not be generally well known within infrastructure organisations, or at least, knowledge may be fragmented and not easily collated into one form that is easy to use. Some useful reference material relating to infrastructure resilience includes Section 3.2 of the International Infrastructure Management Manual (IIMM 2020) and the IAM SSG 32. High level sources include the Global Forum on Maintenance and Asset Management (GFMAM) Asset Management Landscape (2024) section 3.9 and the IAM’s An Anatomy of Asset Management (2024) section 7.5.6, which describe the various essential components of good asset management.

Recommendation

11. It is suggested that the reference material described above could be listed in Section 5 of the guide on how consideration of resilience integrates with asset management systems.

Existing Sector Guidance

The EEA Resilience Guide represents an established, industry-tested practice for electricity networks and addresses many of the same matters as the draft guidance, including extreme event and High Impact, Low Probability (HILP) risk analysis, cost–benefit evaluation of mitigation options, critical spares management, climate change risk and resilience planning roadmaps. It also includes the Resilience Management Maturity Assessment Tool (RMMAT), a self-assessment framework built on similar principles to the Commission’s Asset Management Maturity Assessment Tool (AMMAT), which enables electricity businesses to benchmark and track their resilience maturity over time.

⁹ Government Inquiry into the Response to the North Island Severe Weather Events, March 2024, p. 18.

While the EEA Resilience Guide considers resilience from an engineering perspective, the Commerce Commission's draft principles approach resilience from a somewhat different lens. The Commission's resilience principles move further into investment economics, consumer value, regulatory justification and governance accountability.

The EEA suggests that the two approaches are complementary. A suggestion is that smaller EDBs could find aligning with the EEA's Resilience Management Maturity Assessment Tool as a practical equivalent way of monitoring and improving their own levels of resilience.

Electricity Engineers Association

Finally, for accuracy, we note that the correct name of our organisation is the Electricity Engineers' Association (not "Electricity Engineers Authority" as expressed in clause 5.2), and that the current edition of the referenced document is the EEA Resilience Guide (Third Edition, December 2025).

Recommendation

12. The guide could recognise the application of sector-specific tools such as the EEA Resilience Guide and RMMAT as accepted means of demonstrating the maturity, risk assessment, and decision-making expectations set out in the guidance. This could reduce some of the hurdles that smaller infrastructure entities might face while trying to fulfil the requirements.

Closing comments

The EEA appreciates the Commission's engagement with industry on resilience investment decision making. The EEA and its Asset Management Group, including the Resilience Guide Technical Working Group, would welcome the opportunity to discuss this submission and to support alignment between the final guidance and established electricity sector practice.

Contact

The EEA's contact person for this submission is Nicki Sutherland (nicki@eea.co.nz or 0220120765).

Consultation Question Responses

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?*

Partially clear. The intention behind the resilience principles and the way they are described is clear. How the resilience principles will apply within the regulatory context, and how they would apply to different essential infrastructure providers (such as Transpower, EDBs on Customised Price Paths, EDBs on default price paths and exempt EDBs) could be further clarified.

2. *Is it clear how the draft guidance should be applied proportionately across sectors with different levels of maturity?*

Partially clear. The guide allows judgement and recognises the differing levels of maturity between sectors and between organisations. There is scope to clarify how proportionate analysis by scale, context and materiality could be effected in practice, and it may take time to settle.

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. One of the main issues foreseen involves settling the accountabilities when one type of infrastructure affects another. A potential source of inefficiency occurs if organisations have to individually obtain the information they need to study major event risks when the same information might benefit multiple organisations across sectors. There seems to be an opportunity for cross infrastructure collaboration.

4. *What areas should the Commission prioritise in further work (for example, business case guidance, resilience measures, maturity assessment, interdependency information, or reporting)?*

Areas for the Commission to prioritise include clarifying:

- the expectations of how guidance will be applied by different regulated organisations,
- how the guidance should be varied proportional to the scale, context and materiality of the investments being evaluated, and
- what role the EEA Resilience Guide could play amongst EDBs for demonstrating their alignment.

There is also a role in convening cross sector approaches to hazard information and interdependences.

5. *Which aspects of the draft guidance are most helpful for informing your investment decision making, and why?*

The draft guidance is valuable firstly because it makes a powerful statement that resilience thinking is important and needs to be taken seriously. Secondly, the draft guidance provides a benchmark of what good resilience analysis looks like and recognises that maturity takes time and effort to improve.

6. *Which parts of the draft guidance are unclear, unnecessary, or could be improved? Please explain.*

The main improvements would be to explain how the guidance will be used in a regulatory context, how the guidance should be adjusted in practice to accommodate scale and proportionality.

7. Are any principles missing? Are there areas of overlap where the principles could be simplified or streamlined?

The role of contingency planning (such as spares holdings, asset duplication, response agreements) as a risk control is a topic in which coverage could be improved. The guide focusses on investment decision making but offers less coverage of other aspects of resilience management such as informational and organisational resilience. A suggestion is for the guide to allow alignment to the EEA Resilience Guide or other integrated system to be used as a measure of resilience performance. Some of the advance analytic tools require specialist skills and the suggestion is that they should not necessarily be considered as mainstream, particularly for smaller organisations.

8. Are there any missing frameworks or evaluation tools that should be included or referenced?

A range of references is given earlier in our submission on how resilience integrates with asset management processes. These include the International Infrastructure Management Manual, the Subject Specific Guidelines and the document “An anatomy of Asset Management” from the Institute of Asset Management, and the Global Forum on Maintenance and Asset Management document “Asset Management Landscape”.

9. To what extent do you already apply these principles in your resilience-related decision-making processes? If not, what currently guides your resilience-related investment decisions?

Within the electricity supply industry, resilience maturity and capability varies between organisations depending on organisational size, resources and on the vulnerabilities to which their networks are exposed. Involvement in Lifelines groups is widespread. Resilience investment is commonly approached from an asset management mindset, while from an operational perspective, it is common for organisations to align with the CIMS (Coordinated Incident Management System) framework.

10. Do you have practical examples of applying these principles - in a specific sector, or cross-sector - that could be shared to support other users of the guidance?

The EEA coordinated the preparation of all three revisions of the EEA Resilience Guide throughout the previous eight or so years. The EEA Resilience Guide contains some highly useful case studies describing the application of a range of resilience principles.

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?

The guide does already include coverage on Māori, iwi and hapū perspectives. We feel that the guide rightly allows flexibility for organisations to develop their own working relationships with iwi and hapū (and vice versa) as part of developing resilience outcomes.

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?

From an electricity networks perspective, the most salient dependencies involve access to telecommunication systems, road access corridors, fuel, skilled personnel, equipment stores and spares, water and waste water, helicopters (in remote areas), and cloud services.