

REGISTER OF TOP SECURITY AND RELIABILITY RISKS

SECURITY AND RELIABILITY COUNCIL

This paper is to help the SRC brainstorm about electricity industry risks with the objective of ensuring that they spend their time dealing with the most consequential matters that could manifest over a mix of timeframes.

Note: This paper has been prepared for the purpose of the Security and Reliability Council (SRC). Content should not be interpreted as representing the views or policy of the Electricity Authority.

Register of top security and reliability risks

1. Purpose and background

- 1.1. This paper presents the latest version of the SRC's register of top security and reliability risks (Table 1). The register supports the SRC to triage their time and attention in a risk-based way.
- 1.2. Risks are sorted into four categories:
 - a) risks that could manifest within one year.
 - b) risks that could manifest within five years.
 - c) risks that could manifest in more than five years.
 - d) persistent risks that could manifest at any time.
- 1.3. Within each category, risks are ordered by the SRC secretariat's rough estimation of consequence and likelihood.

2. Changes since the previous version

- 2.1 There has been one change from the 25 February 2021 meeting:
 - a) included the 'availability of imported goods/services' in P4.
- 2.2 For the August 2021 meeting, the secretariat will review and provide information on:
 - b) S1, S2, and P4 (COVID-19 and national pandemic risks) to ensure the risk descriptions are still appropriate given 18 months will have passed since the first COVID-19 lockdown
 - c) S4 and S5 to determine whether they still fall into the short-term risk category
 - d) an assessment of the impact of coincident risks.
- 2.3 Additions to the register are marked in red and removals with ~~strikethrough~~.

3. Questions for the SRC to consider

- 3.1 The SRC may wish to consider the following questions.

- Q1. What content changes would the SRC like made to this risk register for the next meeting?
- Q2. What further information, if any, does the SRC wish to have provided to it by the secretariat?
- Q3. What advice, if any, does the SRC wish to provide to the Authority?

Table 1: Top security and reliability risks

Short term Within 1 year	Medium term Within 5 years	Long term More than 5 years	Persistent Could arise at any time
<p>S1: COVID-19 coronavirus harms industry's:</p> <ul style="list-style-type: none"> a) personnel capability/travel. b) availability of imported goods/services. c) general level of preparedness and responsiveness for managing incidents. 	<p>M1: Market response to significant industrial demand reductions.</p>	<p>L1: Impact of increased climate and weather-related outages.</p>	<p>P1: Cyber-attack damages power system assets and/or cuts supply.</p>
<p>S2: Risk of lack of preparedness for a second wave of COVID-19 causing further economic hardship (with consequent impact on potential reduction in maintenance).</p>	<p>M2: Review of 'Tree Regs' fails to capture potential to boost reliability.</p>	<p>L2: Gas supply running down (in part due to exploration uncertainty) reduces generation adequacy and availability</p>	<p>P2: Physical attack (war, terrorism, sabotage) damages power system assets and/or cuts supply.</p>
<p>S3: Generator investor incentives weakened due to uncertainty arising from central government investigation of pumped hydro storage.</p>	<p>M3: Government setting of carbon goals.</p>	<p>L3: Ageing and/or under-invested generation, dist. and transmission assets lead to increased failures.</p>	<p>P3: Natural disaster damages power system assets and/or cuts supply.</p>
<p>S4: Black out risk rises if four-block extended reserve scheme delayed/poorly implemented.</p>	<p>M4: Thermal generation (Huntly, Taranaki) existence and availability adversely affecting back-up supply.</p>	<p>L4: Reduced resilience through greater dependence on automation/AI.</p>	<p>P4: National or international pandemic harms access to:</p> <ul style="list-style-type: none"> a) the availability of imported goods/services b) international specialists <p>and reduces ability for work</p>

Short term Within 1 year	Medium term Within 5 years	Long term More than 5 years	Persistent Could arise at any time
			crews to travel domestically.
S5: Reduced output from hydro due to National Policy Statement on freshwater management.	M5: Poor standards governance permits inadequate standards and/or significant non-compliance of equipment against standards.	L5: Undersized generation fleet due to demand growth from greater electrification.	P5: Insufficient information sharing and planning amongst industry participants in relation to reliability of supply risks.
S6: Uncertainty about how Electricity Price Review conclusions will be implemented.	M6: Increased peak demand on some LV networks from electric vehicles.		P6: Changes in industry live line and supply restoration operating guidelines lead to reduced supply reliability performance.
S7: Changing strategic priorities of the regulator increases investment uncertainty for industry participants.	M7: Commerce Commission's regulatory control period #3 impacts on reliability and asset health.	L6: Loss of industry knowledge and capability through an aging workforce.	P7: AUFLS is not set per the current Code requirements.
S8: Unreliable social media commentary impacting on assets or personnel in the industry (e.g. critical comments inciting physical attacks on repair personnel or equipment).		L7: Reliability treated less like a public good as new technology makes it more customisable.	P8: LV network congestion due to rapid increase in small scale distributed generation.
S9: Dry winter / official conservation campaign.		L8: Generation market structure not reacting to physical structural change, reducing investment incentives, e.g.	P9: Availability of obtaining sufficient gas supply may limit gas fired thermals.

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		pumped hydro, thermal decommissioning.	