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Strengthening the resilience of Aotearoa  
New Zealand's critical infrastructure  
system

Payments NZ Limited submission

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August 2023

## 1.0 Executive summary

1. Payments NZ Limited (Payments NZ or the company) is a governance body at the heart of Aotearoa New Zealand's payment system. While we do not operate or own payments infrastructure, we govern core payment systems and open banking systems, and work alongside industry to lead the future direction of payments in Aotearoa. Today, the systems we manage transact over \$6 trillion annually.
2. The ability to make and receive payments is fundamental to participation in society and therefore payment systems constitute critical infrastructure in Aotearoa. That said payment systems are not homogenous, and the criticality of an individual payment system will differ depending on the extent of its network interoperability and distribution, the transaction volume and value and the degree of customer reliance.
3. Resilience is one of our key concerns. That is reflected in the criteria we use when we admit new participants<sup>1</sup> to our clearing systems<sup>2</sup>. The ability to demonstrate resilience on an ongoing basis is a key factor in each institutions ongoing involvement with the clearing system. Further, our clearing system rules provide for an Industry Incident Management Plan to ensure operational problems in our clearing systems can be resolved promptly with minimal customer impact.
4. We support the initiative led by the Department of Prime Minister and Cabinet to improve the resilience of critical infrastructure system in Aotearoa. Specifically, we concur that:
  - It is important to have a common definition of what constitutes critical infrastructures and a framework for identifying which infrastructures are most critical.
  - It is important to have an open conversation about what steps should be taken to enhance critical infrastructure resilience.
  - The government has a responsibility to partner with the industry to achieve a socially optimal level of resilience.
  - More comprehensive information sharing between the public and private sector would be useful to manage the risks around critical infrastructure.
5. Payment systems comprise a diverse network of entities, processes and technologies that together operate as a collective ecosystem. There is a need to bring a wide range of relevant voices to the table on the issue of critical infrastructure and the payments system. Our position as a governance body and our reach across the payments ecosystem means we can bring together a broad mix of industry entities. We are ideally placed to contribute to the policy development required as further work on critical infrastructure resilience takes place.

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<sup>1</sup> Participants are financial organisations that exchange payments directly with other participants in one or more of our clearing systems.

<sup>2</sup> There are three clearing systems which are defined by payment type and which cover the range of different payments methods used in Aotearoa.

6. As a kaitiaki of the payments system, Payments NZ understands the importance of our payments infrastructure to the economy and is focussed on the resilience of the payment system and ensuring the clearing systems which we manage remain safe and efficient. We work with industry to ensure this is reflected in industry planning.
7. We also lead the strategic direction for the payments industry through our Payments Direction programme.<sup>3</sup> This looks at the evolving future of payments and sets out plans, roadmaps, and ecosystem characteristics for that future. Payments Direction has set two long term strategic plans. The first was in 2015 with its Payments 2025 paper and then in 2020 with its Payments Modernisation Plan (PMP). In 2024, we will be publishing an updated PMP, reflecting developments across the ecosystem with a focus on a next generation payments system which is grounded in the real-time transfer of funds, enriched data and which includes consideration of how improved operational resiliency can be delivered (e.g., off-line payments capability).
8. It is timely that we engage with the National Emergency Management Agency on payment system operational resilience and how we can add value in an emergency management situation. Separately we are about to engage with our payment association counterparts in other jurisdictions to understand what role those associations play in ensuring the resilience of the payment system. Finally, as part of our real-time payments capability programme we are considering how improved operational resiliency can be delivered (e.g., off-line capability) in a next generation payments platform.
9. We look forward to participating in the next phase of the consultation in the first half of 2024.

## 2.0 Introduction

10. This submission is made in response to the Department of Prime Minister and Cabinet's discussion document on strengthening the resilience of critical infrastructure system in Aotearoa (the discussion document).
11. Our submission begins by outlining the role and work of Payments NZ and comments on resilience and payment systems. We then move on to make some general observations about the discussion document before commenting specifically on
  - The definition of critical infrastructure.
  - The mega trends.
  - The financial consequences of enhancing resilience.
  - Minimum resilience standards.
12. We conclude our submission with:
  - An outline of specific current actions Payments NZ is taking in respect of resilience.
  - Suggestions about how Payments NZ could assist in the further development of this important area of policy work.

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<sup>3</sup> [Payments Direction | Payments NZ](#)

### 3.0 Role and work of Payments NZ

13. We are a governance organisation at the heart of the payments ecosystem. Payments NZ is committed to ensuring everyone has complete confidence in the payments system in Aotearoa, now and into the future.
14. For the most part, payment systems are invisible – they are the rails that makes the trusted transfer of value possible. While they might lack visibility, those rails are crucial to the effective functioning of our society and economy, enabling consumption, savings, investment, commerce, and trade to take place safely and efficiently. Payment systems are one of the most significant social infrastructures in any economy.<sup>4</sup>
15. Payments NZ seeks to empower the payments future of Aotearoa. Our vision is world class payments for Aotearoa, and we intend to achieve this by:
  - Leading the industry into the future.
  - Enabling the trusted transfer of value.
  - Driving a collaborative, innovative and open payments network.
16. Unlike many of our international counterparts, Payments NZ does not own or operate any physical or electronic payments infrastructure. Our core functions are focused on payment systems governance to:
  - i. develop and manage the rules and standards that govern the core payment clearing systems in Aotearoa;
  - ii. encourage and facilitate new participants to join those clearing systems;
  - iii. improve interoperability within our clearing systems and between our participants; and
  - iv. promote interoperable, innovative, safe, open and efficient payment systems.
17. Our rules and standards are used to facilitate the exchange of payments between financial institutions at an operational level. The rules are effectively a multilateral contract binding only the participants who are party to them. The interoperability provided by those rules allows consumers, businesses and organisations that hold funds at different financial institutions to transfer funds to each other seamlessly.
18. Our Management Committees<sup>5</sup> are each responsible for a specific clearing system, and for the development of those rules and standards mentioned above and for the efficient resolution of industry issues and regulatory requirements through collective negotiations and work efforts. In carrying out these responsibilities, Management Committees must act in the best interest of Payments NZ and with the principal objective of ensuring the efficient operation and management of the clearing system.
19. Our API Centre (the Centre) is responsible for the open banking standards and protocols needed to ensure fast, secure, user-friendly data sharing for Aotearoa. The importance

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<sup>4</sup> [European Financial Review Feb2012.pdf \(bbweb-arena.com\)](#)

<sup>5</sup> [Each Management Committee is made up of subject matter experts from each of the participants in that clearing system. Payments NZ facilitates and supports the operation of the Management Committees.](#)

of the Centre's work has been highlighted by the Commerce Commission in its recent request for views paper on 'Payments Between Bank Accounts' and by the Ministry of Business, Innovation and Employment in its Customer Product and Data Bill discussion document 'Unlocking value from our customer data'.

20. A wide range of organisations are actively involved in our work, making substantive contributions to payment system governance, rules and standards development, partnering frameworks, policies, guidelines and strategy development. Those organisations include 14 Participants, 3 Infrastructure Members and 33 Industry Members<sup>6</sup>, 25 API Centre Standards Users made up of 8 API Providers and 17 Third Parties and over 230 API Centre Community Contributors.<sup>7</sup>
21. Our Payments Direction programme is where we work collaboratively with the industry to determine what needs to be done to contribute to and prepare for the evolving future of payments. One of the key current deliverables of that programme relates to a next-generation payments platform for Aotearoa that is grounded in real-time payments capabilities. Resilience of that new platform is one of the issues currently being considered as part of our stakeholder engagement efforts.
22. Payments NZ has recently set a foundational Te Ao Māori Strategy, Tō Mātou Haerenga – our journey. This strategy sets out our commitment to te ao Māori and upholding Te Tiriti o Waitangi by ensuring representation and the rangatiratanga of Māori in the payments ecosystem of Aotearoa. We believe payments that enable equity for Māori will enable equity for all. Our role as a kaitiaki of the payments system is to help enable the financial wellbeing and equity of Māori whānau, hapū and iwi.

## 4.0 Resilience and payment systems

### Our role as a governance body and our rules and standards

23. In its 2021 publication on Operational Resilience in Digital Payments, the International Monetary Fund notes that innovation in the payments landscape has created further challenges in strengthening resilience. Users of electronic payment services increasingly expect speed, rapid delivery times, and 24/7/365 service level availability requiring real-time (or near real-time) uninterrupted payments processing. As an industry, payments, is now characterised by multiple outsourcing partners, deeper interconnections, integration with domestic and overseas service providers, and higher dependency on utilities in a world where cyber risk and cyber-terrorism have reached new levels of sophistication.<sup>8</sup>
24. An extended disruption to the functioning of payment systems in Aotearoa would have widespread impact including but not limited to:

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<sup>6</sup> [Infrastructure and Industry Members are associated with Payments NZ through our Membership programme. This allows fintechs and others to have a voice in the future development of Aotearoa's payments system.](#)

<sup>7</sup> [API Providers, Third Party Standards Users and Community Contributors are associated with Payments NZ through the API Centre.](#)

<sup>8</sup> [Operational Resilience in Digital Payments: Experiences and Issues in: IMF Working Papers Volume 2021 Issue 288 \(2021\)](#)

- The ability of consumers and businesses to the complete time critical transactions.
  - The receipt of benefit payments.
  - The functioning of supply chains.
  - The functioning of public transport, especially if ticketing systems were impacted.
  - Reduced public confidence in the integrity of the payments system (and perhaps reflecting on the wider financial system).
25. Accordingly, as a governance body, we have a close interest in the resilience of the payments system and its capacity to withstand or to recover quickly from disruption.
26. When an organisation seeks to join one of our clearing systems as a participant, they are required to demonstrate they can achieve prescribed resilience outcomes to fulfil clearing system operational requirements. That is also a key feature in their ongoing participation, after they have joined one of our clearing systems.
27. Our rules extend to the provision of an Industry Incident Management Plan (IIMP). The IIMP is a comprehensive process for the resolution of an operational problem in our High Value Clearing System (HVCS) or the Settlement Before Interchange (SBI) system used by participants in our Bulk Electronic Clearing System (BECS) and Consumer Electronic Clearing System (CECS).
28. The IIMP has been set up to ensure the management of the problem:
- is efficient and neutral;
  - includes all affected organisations;
  - provides effective oversight of the problem;
  - enables Payments NZ and its clearing system Participants to focus on resolving the operational problem; and
  - minimises the effect of the operational problem on customers of the participant.
29. Earlier this year Cyclone Gabrielle presented an opportunity to look at resilience again to see how the payments system had held up. Our BECS and HVCS were unaffected by Cyclone Gabrielle and continued to operate normally. This was also the case during the Christchurch earthquakes.
30. With CECS, once electricity had been restored after the cyclone, the Electronic Offline Voucher (EOV) process allowed retailers to continue to transact electronic transactions in offline mode. There have been two important enhancements since EOVs were launched in 2018. One is the advent of Starlink which enabled retailers to use a satellite connection to upload their EOV transactions for processing. This ensured transactions could continue without being subject to any limit. The second is the use of improved SIM cards in point-of-sale (POS) devices which enabled those devices to communicate in the absence of landline connections. Unsurprisingly the need for electricity is fundamental. POS terminals and ATMs cannot operate if electricity is not available (noting there are portable terminals which may be able to function off battery power for a limited time).

31. As might be expected the disruption to electronic payments resulted in localised increases in the demand for cash. ATMs were generally inaccessible, offline or empty and many bank branches in the cyclone affected areas were unable to open. The physical movement of cash into and out of the areas by road was problematic due to damage to the roading network.

### **Financial market infrastructure legislation**

32. In May 2021, the Financial Market Infrastructures Act 2021 (the Act) was passed into law. The Act establishes an enhanced regulatory framework for financial market infrastructures (FMIs). Given the key role that FMIs play in the financial system, the disruption or failure of an FMI has the potential to cause significant adverse impacts on financial markets, businesses, and consumers. If not managed properly, FMIs can pose a major risk to the financial system because they are interconnected with many financial market entities.

33. Regulator objectives are to promote the development of FMIs that:

- are efficient, open and flexible;
- have a high level of integrity; and
- are robust in the face of financial crises.

34. The powers given to the regulators, that is the Reserve Bank of New Zealand Te Pūtea Matua (Reserve Bank) and the Financial Markets Authority Te Mana Tātai Hokohoko, allow, among other things, legally binding standards to be set for FMIs designated under the Act and for powers to oversee the rules and contingency plans of those FMIs that are designated.

35. The Reserve Bank has indicated that HVCS and the SBI system managed by Payments NZ are likely to be designated as systemically important FMIs. In terms of the Act, Payments NZ is the “operator” of these systems (section 2 of the Act provides that “operator” includes a person who is wholly or partly responsible to the FMI’s participants for maintaining or administering the FMI’s rules). The Reserve Bank has recently released the standards which will apply to designated FMIs. These include standards requiring an operator to:

- Have a sound risk management framework pertaining to the FMI that sets out how the operator comprehensively manages operational, and other relevant and material risks.
- Identify and mitigate reasonably foreseeable sources of operational risk and ensure that its internal systems are designed to ensure a high degree of security and operational reliability, including the ability to continue to provide essential services.
- Maintain contingency plans.
- Take all reasonable steps to ensure the continued provision of critical services by managing the relationship with its critical service providers (e.g., ensuring the provider’s critical services are available, reliable, and resilient; and that the provider has robust business continuity management plans and disaster recovery plans to support the timely resumption of its critical services in the event of an outage).

- Ensure that the FMI maintains cyber resilience in a manner that is commensurate with the FMI's exposure to cyber risk and enables the FMI to remain sound and efficient.
36. The Act is concerned with preventing the disruption or adverse impacts that would occur, if for example, an FMI operator was to underinvest in infrastructure and risk management compared to the level of investment that is socially optimal to minimise systemic risk. And, to that end, the Act is relevant in assessing how certain critical infrastructures will soon be regulated. Therefore, as government policy focusses on increasing the resilience of Aotearoa's critical infrastructure, it is essential there is co-ordination, rather than duplication, of requirements.

## 5.0 Discussion document - general observations

37. Critical infrastructure is vital to the social and economic stability, and security of Aotearoa. Without well-functioning and resilient critical infrastructure services, the economic prosperity and social cohesion of Aotearoa could be put at risk.
38. As the discussion document notes, other jurisdictions such as Australia are looking more closely at how to prevent critical infrastructure failures in response to a wide range of threats. Canada's National Strategy for Infrastructure Resilience lists "finance" as one of ten critical infrastructure sectors.<sup>9</sup> Accordingly, we regard the discussion document as timely and making an important contribution to how greater resilience might be achieved.
39. Operators and owners of all types of critical infrastructure face a more complex environment. Hazards and threats from natural disasters appear to be rising in number. Cyber threats are increasing in frequency and sophistication.
40. In some instances what constitutes 'critical infrastructure' is highly context specific. During the height of COVID-19, it was the frequency and severity of the virus' impact on essential workers that put the operation of certain critical infrastructure at risk. In effect, the workforce was integral to the infrastructure. In that instance, there was a need to balance public safety, the health and safety of the workforce, and the continued delivery of essential critical infrastructure functions.<sup>10</sup>
41. Convergence of technologies means there are greater connections between critical infrastructure systems. The implication is that a failure of one system can have cascading impacts across other systems. In Norway, for example, the central bank has identified the potential impact of concentration risk because the banking and payment system in Norway is dependent on a very small number of ICT providers and data centres that are also vital to other critical infrastructure.<sup>11</sup>

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<sup>9</sup> [National Strategy for Critical Infrastructure \(publicsafety.gc.ca\)](https://publicsafety.gc.ca)

<sup>10</sup> [Guidance on the Essential Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response \(Version 4.1\) \(cisa.gov\)](https://www.cisa.gov)

<sup>11</sup> [How important is it for a nation to have a payment system? \(norges-bank.no\)](https://www.norges-bank.no)



42. We note the concepts of partnership among government and the critical infrastructure sectors and more comprehensive information sharing recurs in several critical infrastructure plans and strategy documents we have reviewed from multiple different jurisdictions.<sup>12</sup>
43. Partnership and more comprehensive information sharing will help ensure that steps to enhance resilience in one sector are not undermined by a lack of resilience in another sector.
44. In general, we agree with the following propositions in the discussion document:
- Critical infrastructures are becoming increasingly connected and complex.
  - It is important to have a common definition of what constitutes critical infrastructures and a framework for identifying which infrastructures are most critical.
  - It is important to have an open conversation about what steps should be taken to enhance critical infrastructure resilience. One of the significant benefits of that conversation is that, in some instances, improving resilience will hinge on collaborative efforts of many parties; some of whom may not be familiar with cascading effects into areas beyond and outside their own organisation or sector.<sup>13</sup>
  - The government has an important responsibility to partner with the industry to achieve a socially optimal level of resilience.
  - More comprehensive information sharing between the public and private sector would be useful to manage risks around critical infrastructure.
45. While we concur with the propositions listed above, it is difficult to address some of the feedback questions set out in the discussion document without further and more detailed information on the policy proposals under consideration. For example:
- Offering an opinion on how a system regulator might coexist with a sectoral regulator would depend on how the boundaries between the two regulators might be set.
  - Our thinking on the need for additional compliance and enforcement mechanisms to ensure minimum standards are met, would depend on the extent to which those mechanisms were consistent with mechanisms that already exist in each sector.
46. The discussion document makes it clear that any reform that emerges from the consultation will be consistent with the principles of Te Tiriti o Waitangi. We agree this is highly important. However, for the most part the discussion document does not go into any detail on how strong, meaningful, and enduring relationships with Māori could inform steps to improve critical infrastructure resilience. In that respect the discussion document is quite different to Rautaki Hanganga o Aotearoa 2022 - 2052 (New Zealand Infrastructure Strategy) which touches on those issues in some detail.

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<sup>12</sup> [National Strategy for Critical Infrastructure \(publicsafety.gc.ca\)](https://publicsafety.govt.nz/national-strategy-for-critical-infrastructure)

<sup>13</sup> [Challenges for critical infrastructure resilience, van Laere et al, 2017](#)

## 6.0 Defining critical infrastructure

47. From a public policy perspective, we agree with the definition of critical infrastructure and resilience contained in Appendix A of the discussion document and note the similarity with other definitions in relevant material we have reviewed. However, we think the definition should look beyond the simple functioning of those infrastructures to the quality of the services they are able to support. For example, the contamination of Canberra's water supply following the 2003 bushfires focused people on much-needed filtering and treatment of that water and led to a redefinition of the boundaries of critical infrastructure.<sup>14</sup>
48. Additionally, we note some differences between the way Rautaki Hanganga o Aotearoa 2022 - 2052 (New Zealand Infrastructure Strategy) defines both infrastructure and economic infrastructure and the definition of critical infrastructure given in the discussion document. Rautaki Hanganga o Aotearoa does not include banking or payment systems within its definition of economic infrastructure. That definition is concerned with energy, telecommunications, transport, waste and water sectors. Consideration should be given to better aligning the definitions as some of the utilities (i.e., energy, telecommunications, and transport) that comprise 'economic infrastructure' provide essential support to payment systems.
49. In the payments field, industry-specific definitions of operational resilience already exist, along with existing international principles relating to the same. One example of those international principles can be found in The Basel Committee on Banking Supervision Principles for Operational Resilience.<sup>15</sup>
50. Accordingly, we suggest the definitions in the discussion document need to be applied sector by sector, looking at specific market and industry characteristics that prevail and considering existing industry standards or guidance on resilience, including regulator issued guidance.
51. We note regulatory bodies have recently concluded consultation on some of the issues canvassed in the discussion document, albeit through a different lens. Two examples would be the Reserve Bank consultation on draft guidance for the financial sector on managing climate-related risks and their cyber risk management guidance for all entities they regulate.
52. Taking a sector-by-sector approach will reveal insights useful to ascertaining the issues to be navigated in each sector. Several examples underline this point more fully:
  - The evolution of edge computing, where computing process occur closer to the source of the data and away from the cloud, potentially presents some challenges in determining where to draw the line between infrastructure that is critical and infrastructure that is not. If cloud infrastructures are deemed critical,

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<sup>14</sup> [What's critical about critical infrastructure? \(theconversation.com\)](https://www.theconversation.com/what-is-critical-infrastructure/)

<sup>15</sup> [Operational Resilience in Digital Payments: Experiences and Issues in: IMF Working Papers Volume 2021 Issue 288 \(2021\)](https://www.imf.org/en/Publications/Working-Papers/Issues/2021/Operational-Resilience-in-Digital-Payments-Experiences-and-Issues-in-IMF-Working-Papers-Volume-2021-Issue-288)

would the storage technologies and devices at the “edge” also be regarded the same?

- Submarine fibre optic cables linking Aotearoa with the rest of the world are essential for international connectivity. Aotearoa is serviced by multiple cables which provides a degree of redundancy. However, in some scenarios when data is routed via an alternative network because the primary cable system is unavailable, time sensitive transactions may be jeopardised due to the longer latency associated with the alternative network. In this instance the issues to be considered are more about impact than redundancy.
- In some instances, improving resilience will require coordination between multiple entities; some of whom reside outside Aotearoa. Looking ahead this is increasingly likely to be the case in payments as internationally there are moves afoot to link payment systems across international borders. For example, the linkage of the payment systems of Singapore, Thailand, Malaysia and India are part of a broader body of work to produce a network of linked retail payment systems across the Association of Southeast Asian Nations.<sup>16</sup>

53. Te Rautaki Matihiko mō Aotearoa (The Digital Strategy for Aotearoa) aims to position Aotearoa as a world-leading, trusted, thriving digital nation. That strategy document acknowledges the importance of resilience in digital networks. As the critical infrastructure policy work by the Department of Prime Minister and Cabinet unfolds, it will become increasingly apparent there are going to be trade-offs between resilience, convenience and performance as societally important facilities become increasingly integrated into digital networks.

## 7.0 Mega trends

54. The discussion document identifies four mega trends – climate change, a more complex geopolitical and national security environment, economic fragmentation, and the advent and rapid take up of new technologies.

55. Our most recent 2022 Environmental Scan Report, which examines global and local trends likely to impact our payments ecosystem, notes that security, privacy, and trust are increasingly the new pillars of the digital age. Successfully delivering these pillars is increasingly challenging as the number of connected devices and users grow, ecosystems become more complex, and traditional boundaries between organisations and systems become increasingly opaque.<sup>17</sup> In some respects the challenges identified in our Environmental Scan mirror the impact of the mega-trends identified in the discussion document.

56. We agree the mega trends in the discussion document are going to impact the way we think about managing the critical infrastructure system in Aotearoa. Collectively, these four mega trends have the potential to make it more difficult to manage the complexity of the challenges to our critical infrastructures that will lie ahead. Three of the mega

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<sup>16</sup> [Singapore links digital payments with India after Thailand - Nikkei Asia](#)

<sup>17</sup> [2022 Environmental Scan Report | Payments NZ](#)

trends, climate change, economic fragmentation and the more complex geopolitical and national security environment certainly pose material threats to infrastructure resilience.

57. We note the growing international interest in Environmental, Social, and Governance (ESG) issues on corporate behaviour and accountability, especially in the infrastructure space where there is increased focus on responsible and sustainable investment. ESG considerations in infrastructure are certainly relevant to some, if not all, of the mega trends identified in the document, especially climate change. When setting minimum standards of infrastructure resilience, which we touch on in more detail later, it will be important to be aware of how ESG considerations are changing patterns of responsible and sustainable investing and how this relates to socially optimal levels of investment. Additionally, like socially optimal investment, ESG is not a steady state concept with the relative importance of its components varying over time and across jurisdictions.<sup>18</sup>
58. We wish to make several observations about the final mega trend - the advent and rapid take up of new technologies.
  - That trend is very broadly stated and could benefit from being unpacked to a greater level of granularity. Technology is constantly evolving and innovating. Technologies that are currently adjacent to critical infrastructure can move from adjacent to being critical in a very short space of time.
  - While the advent and uptake of new technologies has the potential to compound the consequences of the shocks identified in the discussion document, those same technologies also have the potential to improve resilience. This should be acknowledged more directly in the discussion document, noting that the focus needs to move beyond the technology itself and consider how it is deployed and used. It is not clear this mega trend only unambiguously exposes the limitations of the current approach to critical infrastructure resilience in Aotearoa. We expand on this immediately below.
59. The discussion document alludes to but does not directly discuss convergence of technologies, both existing and new. From our perspective it is the issue of convergence that will present the greatest challenges and opportunities in the infrastructure resilience space. There are specific convergences that pose serious risks to each critical infrastructure as well as those whose convergence may convey significant benefits to both individual critical infrastructures and their allied networks. An example would be the convergence of artificial intelligence, quantum computing and cryptography.
60. More freely available and low-cost access to these types of technologies is expected to land advanced capabilities in the hands of those who would use it to harm others and to undermine critical systems, while the same access to these technologies is also able to buttress against those harms. In some ways it is akin to an arms race.

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<sup>18</sup> [esg\\_thought-leadership\\_linklaters.ashx](https://www.esg-thought-leadership-linklaters.ashx)

## 8.0 Financial consequences of enhancing resilience

61. In general, we agree with most of the points made on the financial consequences of enhancing critical infrastructure resilience.
62. There are five issues we wish to draw to your attention.
  1. Even acknowledging that many critical infrastructures are performing well, it does not necessarily follow that the owners/operators would not face a significant increase in their expenditure to meet any new requirements. That proposition can only be fully tested once the new requirements are more clearly articulated.
  2. In many instances, the types of threats to critical infrastructure, especially digital native systems, that are now apparent would have been difficult to mitigate through earlier additional investment. This is especially true in relation to cyber threats.
  3. The additional investment required to enhance resilience may not relate to the implementation of new capabilities or functionality but instead to the cost of maintaining older legacy systems as “backups” or “just-in-case” alternatives. At some point these legacy systems start to incur a large cost of ownership that may not be able to be borne by individual critical asset owners alone. Yet removing these “just-in-case” alternatives arguably impacts those in the community who may face economic and social circumstances more complicated than most.
  4. In practice, it may prove difficult to align any new regulatory requirements with businesses’ existing investment plans because the timing of those plans will vary considerably across the different sectors that fall under the banner of critical infrastructure. Again, this underscores the need for a sector-by-sector approach.
  5. Certain critical infrastructure assets are characterised by planning and development/construction schedules that can often span time horizons of more than ten years. In practice it may prove difficult to incorporate changing infrastructure resilience and ESG criteria into those schedules without significantly delaying the delivery of the asset into service or incurring significantly increased costs.

## 9.0 Minimum resilience standards

63. We consider there would be merit in investigating minimum resilience standards for critical infrastructures where that is needed.
64. In practice, setting and keeping current those standards across the entire infrastructure system will pose some considerable challenges. For example:
  - The resilience standards that are likely to be appropriate may well vary according to the type of asset under consideration. For example, the issues concerning the resilience of long-lived physical assets, their digital control systems (industrial control systems), and digital native assets are quite different.
  - Government would need to secure a high degree of subject matter expertise from industry to make sure the resilience standards are appropriately set and updated over time.

- The resilience standards would need to be set in a way that allows innovation to take place and for items of legacy critical infrastructure to be replaced with more modern critical infrastructure that services new or emerging use cases. This is an important consideration for digital native critical infrastructure.
- Not all suppliers of critical infrastructure will be large organisations and depending on where those organisations are on their growth curve, they may be poorly placed to shoulder the costs of meeting minimum resilience standards.

65. The discussion document notes it will be essential that new minimum resilience standards do not conflict with or duplicate other regulatory regimes. A clear delineation of regulatory interests is paramount. Specifically, in relation to payments systems the Reserve Bank has a clear focus on resilience and as noted previously, has issued standards for FMIs which are directly relevant to this. The focus of the Reserve Bank on resilience is in step with developments in other jurisdictions. For example, in Norway the Norges Bank and the Financial Supervisory Authority of Norway are working together to introduce cyber resilience testing of the financial system and to clarify the role of cash as a contingency means of payment when electronic payment systems are disrupted.<sup>19</sup>

66. We suggest it is also important there is a close examination of how any minimum resilience standards align with existing rules and standards issued by current standards bodies, like Payments NZ and guidance material issued by policy bodies internationally. In the context of payments that would include, for example, principles and standards issued by the Committee on Payments and Market Infrastructures and the International Organisation of Securities Commissions. We note that the FMI standards issued by the Reserve Bank align with these principles and standards.

## 10 Concluding remarks

67. We welcome the idea Aotearoa should take a coordinated and systematic approach to building infrastructure resilience. That approach needs to:
- Be developed in partnership between industry and central and local government.
  - Be centred on voluntary public-private collaboration with regulation used only where that has not been effective or where it is required in exceptional circumstances. We note the Reserve Bank of Australia's (RBA) position that where payment systems are concerned, there is a presumption in favour of self-regulation by the industry, with the RBA only intervening where the industry is unable to address a public interest concern.<sup>20</sup>
  - Not duplicate existing regulatory interventions that have already been deployed and which are in train, such as the Emergency Management Bill that is before the House.
  - Reflect industry specific guidance material.
  - Reflect a holistic assessment of infrastructure criticality (as suggested in Appendix B of the discussion document).

<sup>19</sup> [Financial infrastructure report 2022 \(norges-bank.no\)](https://www.reservebank.govt.nz/financial-infrastructure-report-2022)

<sup>20</sup> [Approach to Regulation | RBA](#)

- In relation to banking and payment systems, make use of the Council of Financial Regulators to coordinate actions.
68. In principle, we support more comprehensive information sharing on critical infrastructure. That would be in step with developments in other jurisdictions and offers immediate cross sector benefits.
69. Those benefits would include:
- An improved understanding of the expected cascading effects of a failure of critical infrastructure, the consequences of those effects and the people and organisations who are impacted by them.
  - The identification of potential mitigating strategies.
  - The identification of the organisations who should be involved in designing and implementing such strategies.
70. Further for many critical infrastructure owners and operators, increasing resilience will be more of a journey than “a switch” and more comprehensive information sharing (in the first instance) will assist in informing this journey.
71. More comprehensive information sharing will raise a new set of issues about who is responsible for stewardship of data exchanged under that information sharing, its integrity, and for any data loss. These will not be straightforward issues to resolve.
72. Looking ahead, Payments NZ is:
- Ready to engage with the National Emergency Management Agency in relation to payment system operational resilience.
  - In the process of engaging with our payment association counterparts in other jurisdictions to understand what role those associations play in ensuring the resilience of the payment system.
  - Considering how operational resiliency can be delivered as part of our real time payments capability programme (e.g., off-line capability).
  - Continuing to review our rules and standards set to improve payment system resilience to meet regulator expectations.
73. Specifically, we would welcome the opportunity to use our reach across the payments ecosystem to contribute to the next stage of consultation on critical infrastructure planning set down for the first half of 2024 by working more closely with officials from relevant agencies.

Ngā mihi



Steve Wiggins  
Chief Executive