Doug Dixon - Web form submission

Critical Infrastructure Resilience

What is your name?

Doug Dixon

What is your email address?

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Are you responding as an individual or on behalf of an organisation?

Individual

Do you consent for your submission (including identifying information) to be published and shared in lines with terms for this public consultation?

Yes

Do you consent for your submission (including identifying information) to be published and shared in lines with terms for this public consultation? - Please note what should be withheld and for what reasons.

[Nil]

Does more need to be done to improve the resilience of New Zealand's critical infrastructure system?

Yes

Have you had direct experience of critical infrastructure failures, and if so, how has this affected you?

No

How would you expect a resilient critical infrastructure system to perform during adverse events?

It may perform more slowly, or incompletely, but must still support basic functioning of the country.

Would you be willing to pay higher prices for a more resilient and reliable critical infrastructure system?

Yes

The work programme's objective is to enhance the resilience of New Zealand's critical infrastructure system to all hazards and threats, with the intent of protecting New Zealand's wellbeing, and supporting sustainable and inclusive growth. Do you agree with these objectives? If not, what changes would you propose?

Drop the growth part.

Do you agreed with the proposed criteria for assessing reform options? If not, what changes you would propose?

Yes

Do you think the megatrends outlined pose significant threats to infrastructure resilience?

Yes

Are there additional megatrends that are also important that we haven't mentioned? If so, please provide details.

No

Do you think we have described the financial implications of enhancing resilience accurately? If not, what have we missed?

I think there's a problem with the statement "In designing options for reform, the Government would seek to lift resilience at least-cost" because that ignores effectiveness and complexity. You don't mean this, so I suggest you re-state your intentions.

Also, I think "cost" is too negative a term. We should also talk about "investments" in resilience that have a positive financial return in the long run. For example, building NZ-owned and -controlled cloud infrastructure would be a significant investment, which would increase resilience, but also prosperity, sovereignty and geopolitical strength in the long term.

How important do you think it is for the resilience of New Zealand's infrastructure system to have a greater shared understanding of hazards and threats?

Very

If you are a critical infrastructure owner or operator, what additional information do you think would best support you to improve your resilience?

N/A

What do you think the government should do to enable greater information sharing with, and between, critical infrastructure owners and operators?

I think the discussion paper covers this well, as did the in-person talk.

Would you support the government having the ability to set, and enforce, minimum resilience standards across the entire infrastructure system?

Yes

Would you support the government investing in a model to assess the significance of a critical infrastructure asset, and using that as the basis for imposing more stringent resilience requirements?

Yes. I think a full model of the infrastructure ecosystem is needed, including a full description of dependencies, and then threat modelling should be carried out against this model.

What criteria would you use to determine a critical infrastructure asset's importance? Investing in a model to assess a critical infrastructure asset's criticality, and using that as the basis for imposing resilience requirements that are more stringent on particularly sensitive assets?

See answer to previous question.

Do you think there is a need for the government to have greater powers to provide direction or intervene in the management of significant national security threats against a critical infrastructure? - Is there a need for greater powers? If so, what type of powers should the government consider? What protections would you like to see around the use of such powers to ensure that they were only used as a last resort, where necessary?

Yes. They government should be able to take control over critical infrastructure providers in the event of a national security threat.

This must include the most critical infrastructures for the running of the state and economy, including cloud computing.

This is the biggest problem you will have in increasing resilience, because NZ has foolishly chosen to outsource close to 100% of its cloud computing infrastructure to US firms that will never surrender to NZ control under any circumstances. This is our biggest weakness as a country today.

Do you think there is a need for a government agency or agencies to have clear responsibility for the resilience of New Zealand's critical infrastructure system?

Yes.
A consistent, cost-effective approach requires a single agency to be responsible.
I don't have a view on whether this should be a new vs. existing entity.
System/sector regulation is essential for setting and enforcing standards and compliance.

Do you think there is a need for compliance and enforcement mechanisms (eg. mandatory reporting, penalties, offences) to ensure that critical infrastructure operators are meeting potential minimum standards?

Yes. I don't currently have a view on how they should be applied or to whom.

What additional comments do you have?

Ownership and control.

In short: All critical infrastructures must be sufficiently New Zealand owned and controlled. This should be a test with targets across all critical infrastructures.

In more detail: The present effort to improve New Zealand's critical infrastructure resilience acknowledges that we've got this far by a mixture of luck and regulation of some infrastructures - but many critical infrastructures have evolved without oversight, and need to be legislated and regulated to ensure a minimum level of resilience.

Nowhere is this more evident than in the case of Megatrend #4: Rapid technological change.

I welcome the official recognition of Cloud Computing as critical infrastructure.

However, we should all have grave concerns about the resilience of cloud infrastructure for three reasons:

1. Next to power and water, Cloud is New Zealand's most critical infrastructure. Why? Our government and our economy literally cannot function without it. If we lose access to cloud systems, or those systems are damaged or withdrawn, it's game over.
2. Our country's critical digital systems are concentrated into 3 mega-corporations: Microsoft, Amazon Web Services, Google. There is no failover between them; on the contrary, there is significant vendor lockin. This means if there is a critical failure with one of the providers, a huge percentage of NZ's critical systems will be affected all at once, and that failure is likely to cascade.
3. New Zealand does not own or control any of this cloud infrastructure, the United States does. These companies are uncontrollable. This is the antithesis of resilience, and the antithesis of sovereignty.

We need long term, inter-generational thinking. Yes, wholesale adoption of the US clouds by the NZ government may seem like a permanent, inevitable reality today, but that is an illusion caused by our inherent human short-sightedness: what we can't see, we sometimes can't imagine. And what is convenient to believe, we easily accept.

But we must not give up on building NZ-owned and controlled cloud computing, and indeed whatever other technologies emerge over time. We must catch up, invest over decades, and gradually take back sufficient sovereign control of our critical digital systems.

Yes, we live in a complex world with real trade-offs to be made. But if we consciously abdicate national self-determination in digital technology - just as the new age of digital technology begins to take flight - then we are failing as guardians of future generations of New Zealanders.

The subject of ownership and control cannot be ignored when assessing critical infrastructure resilience, and when forming any serious plan to improve it.