TRANSPOWER

1 November 2023

Inquiry into Climate Adaptation

Submission to:
Chair and Members of the Environment Select Committee
Parliament Buildings
Wellington

PRELIMINARY MATTERS

Our submission does not contain confidential information.

Transpower's address for service is:

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INTRODUCTION

1 Transpower New Zealand (**Transpower**) is a State-owned enterprise that plans, builds, maintains, owns and operates New Zealand's high voltage electricity transmission network (**National Grid**).

2 The National Grid is nationally significant infrastructure, and a lifeline utility under the Civil Defence Emergency Management Act 2002. We are a Climate Reporting Entity under the Climate Change Response (Zero Carbon) Amendment Act 2019, prepare climate statements in accordance with the climate-related disclosure framework of the External Reporting Board (**XRB**) and are a member of the Climate Leaders Coalition.

3 Transpower's role as Grid operator is to reliably, and efficiently, transport electricity from where it is generated to some large electricity users and the distribution companies that deliver it to homes and businesses all over the country. We have a diverse range of assets, which cross almost every type of environment. How the Grid adapts to climate change and other hazards has received increased focus, in part due to the increased severe weather events related to climate change and in part due to emerging science in areas, such as seismic hazards.

4 Transpower has an interest, and welcomes the opportunity to take part, in the Inquiry into Climate Adaptation. We would also welcome the opportunity to work with officials on the complex issues relating to adaptation as it applies to infrastructure.

Summary

5 Infrastructure is different from housing and other community facilities – the regulatory response in both the Climate Adaptation Bill and any national direction should, as a

consequence, be different. A different response is called for in relation to risks to infrastructure compared to protecting lives and homes. For infrastructure, it is important that any decisions in relation to adaptation activities are driven by factors in the wider system, including other parts of the electricity sector, and interdependent infrastructure – not merely community driven matters.

6 While different, infrastructure cannot be excluded from any regime – it needs to be appropriately included. Communities cannot retreat without consideration being given to the infrastructure that supplies those communities, both directly and indirectly. Some but not all infrastructure may need to retreat at the same time as communities, some may be able to adapt and stay in situ.

7 We are concerned about the number of overlapping Inquiries and reform initiatives that are underway. There is a risk of duplication, inconsistent and/or inappropriate regulation being developed. We urge the Inquiry to consider the appropriate vehicle, timing and means for understanding, and progressing any reform in relation to infrastructure adaptation.

Focus of Inquiry and related inquiries and reform initiatives

8 In making this submission, we have reviewed the Terms of Reference, the Ministry for the Environment papers "Community-led retreat and adaptation funding: Issues and Options" (**Options Paper**), the Report of the Expert Working Group on Managed Retreat (**Working Group Report**), and the proposed National Policy Statement on Natural Hazard Decision-making (**pNPS-NHD**) and its accompanying discussion document. The options paper contemplates that submissions on the Inquiry would inform the development of national direction on natural hazards (pages 10, para 8).

9 There is very little discussion in the Options Paper about infrastructure adaptation. By contrast, the pNPS-NHD applies the same policy and consenting hurdles to (existing and new) uninhabited infrastructure as it does to residential buildings and community facilities. As a result, Transpower does not support the pNPS-NHD.

10 The differences between infrastructure and residential buildings and community facilities must be recognised when making recommendations about how any Climate Change Adaptation Bill and any national direction should proceed.

11 There are multiple overlapping Inquiries and policy initiatives underway that impact on the resilience of infrastructure, including in relation to climate-change related threats (see, by way of example, the image in Appendix B). These include:

(a) the Government Inquiry into the Response to the North Island Severe Weather Events, which sits alongside this Inquiry (Options Paper, page 10). Transpower was appeared before that Inquiry;

(b) the Cyclone Recovery Taskforce, initially let by Brian Roche. Transpower has taken part in that Inquiry/Taskforce;

(c) the Emergency Management Bill. Transpower will be lodging a submission;

(d) the Department of Prime Minister and Cabinet's workstream in relation to *Strengthening the Resilience of Aotearoa New Zealand's Critical Infrastructure System.* Transpower has lodged a submission;

(e) the National Adaptation Plan, and actions in relation to infrastructure, including a Transpower Specific Adaptation Plan (action 5.10) and development of infrastructure standards (action 5.6); and

(f) the proposed NPS-NHD. Transpower's submission is attached in appendix B. This submission raises concerns about infrastructure being subjected to the same policy hurdles and scrutiny as residential housing and other community facilities, when the risks and appropriate responses are quite different. We also raise concerns that the proposed NPS-NHD is premature given other workstreams on infrastructure resilience.

12 Some, if not all, of these matters will be relevant to this Inquiry – the Options Paper (at para 152) notes the linkages when discussing the trade-off between using national direction to set standards and lift quality and maintaining flexibility at a local level, while also noting that local adaptation and emergency planning (including lifeline plans) must be well integrated. We are concerned that given the number of overlapping Inquiries and reform initiatives underway, there is a risk of duplication, or inconsistent and inappropriate regulation being developed. We urge the Inquiry to consider the appropriate vehicle, timing and means for understanding, and progressing any reform in relation to infrastructure adaptation.

Infrastructure adaptation

13 It is also important that the complexities of the infrastructure system are understood. Not all infrastructure is the same, requiring the same response. An appropriate response for flooding will be different from a land slip. What is appropriate for electricity transmission and its operation may not be appropriate for an electricity distribution business or a generator. The extent that parts of the infrastructure system should adapt, and in what way, will depend on what is happening in other parts of the system or value chain – there is little benefit in one part of the chain being out of step with interdependent infrastructure. Further, and as recognised in the DPMC workstream, these interdependencies go beyond the electricity system, and extend to other infrastructure that is reliant on electricity. What is appropriate for the electricity system may not be appropriate for other infrastructure operators and their assets.

14 To illustrate some of the nuance and complexity of matters, we note just one input into any Transpower risk assessment – return periods. We use return periods as criteria to assess the ability of our assets to withstand natural hazards. We may allow for flooding of a given transmission tower every 20 years, whereas we build our IL4 buildings to withstand a 1:2500 year seismic event. We use a resilience criteria to identify our assets that are more vulnerable to major hazards. Our new build design criteria for substation assets is to withstand a 1:450 year flood as a threshold. But, to identify our most vulnerable substations, we use a 1:250 year flood as a threshold. Existing sites beneath this threshold will need planning to determine whether mitigation works can be undertaken. Climate change has had the effect of reducing return periods. What used to be considered a 1:100 year flood may now be expected to recur every 75 years in some locations.

15 Transpower considers that any adaptation approach needs to be based on the full PARA model (protect, accommodate, retreat and avoid), as identified in the Options Paper. The response needs to be proportionate to the risk being faced in any situation (as well as the characteristics and use of the asset that is identified as being at risk).

16 We need the ability to retreat where necessary. But, importantly, if the required resilience can be maintained with the asset remaining in situ that outcome should be enabled. Even

within a single substation site, it is possible that the different service levels required of assets mean that different responses are warranted. As a result, any risk assessment and the appropriate response needs to be determined by Transpower for National Grid assets. Councils or the community do not have the knowledge or expertise to carry out this assessment.

17 Where assets are to retreat or relocate, that needs to be enabled in an efficient manner. It is likely that some Grid assets will be located in sensitive environments, and need to retreat further into those areas. Property rights will likely be required. The regulatory frameworks, beyond the Resource Management Act (and its replacements) must be enabling. Amendments must be made to the Public Works Act, Wildlife Act, Conservation Act, among others.

What we need to successfully adapt to climate change

18 It is crucial that there is a greater shared understanding of hazards – the resilience of our infrastructure to climate risks will only be as good as the data on hazards that is available. Some information is readily available to a high standard. However, collection of some hazard data is incomplete or out of date. By way of example, flood modelling is devolved to local authorities, who in some instances have inadequate funding, capabilities, or other priorities.

19 This uncertainty, and lack of agreement about hazards and risks can place projects at risk, particularly where the infrastructure operator and regulator are not aligned. By way of example, there could be agreement that flooding is a risk, but the regulator[1] may not agree with the risk assessment of where it will happen, how badly it will flood, or how frequently. This broader agreement is necessary to ensure regulated investments are approved.

20 In order to successfully adapt to climate change, we need:

(a) Up-to-date data and information, about climate impacts, at a national level, including:

i Accurate climate data. We are currently relying on ageing datasets published by MfE and others;

ii Probabilistic risk models for landslides for our infrastructure;

iii Wider coverage of 2D and 3D flood modelling, including climate change scenarios;

(b) Understanding of Community expectations, including the appetite to bear the increased costs for resilience;

(c) Understanding of respective responsibilities of Transpower, compared to others in the electricity industry, other infrastructure providers, or Councils and communities more generally;

(d) As much notice of an intention to retreat as possible, noting relocating a line or substation could take 5-8 years, to ensure appropriate asset management practices in the intervening period;

[1] In this scenario, Transpower's regulator is the Commerce Commission. Transpower is also regulated by the Electricity Authority. Other infrastructure providers have different regulators.

(e) The ability to fund adaptation projects, including necessary changes to the Commerce Act;[2]

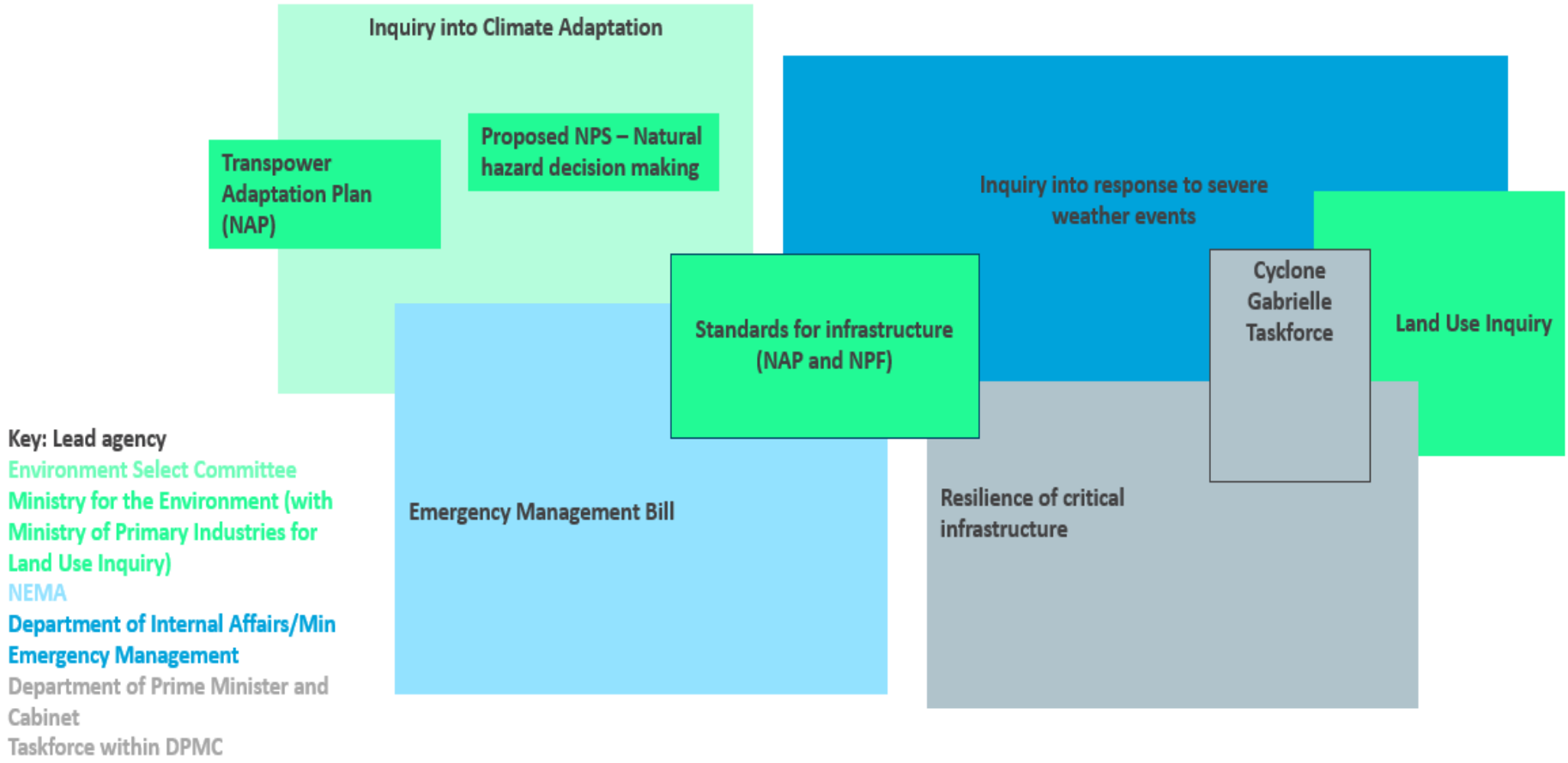
(f) The full suite of environmental and property legislation to strongly enable adaptation activities to be authorised and constructed, and in a way that is proportionate to the risk. These legislative settings are not limited to the Resource Management Act (and its replacements), but for Transpower also extend to the Commerce Act, Public Works Act, Electricity Act, Conservation Act and Wildlife Act;

(g) A formal role for nationally significant infrastructure operators, in determining tolerability of risk, including in any spatial planning exercises.

21 Further details about these matters, including case studies, are contained in Transpower's previous submission to MfE on the early policy development of the Climate Adaptation Bill. Transpower's submission to DPMC on resilience of the critical infrastructure system provides detailed comments on infrastructure resilience more generally. We are happy to provide our submission on the Emergency Management Bill once it is lodged (on 3 November) if that is useful. Our submission on the pNPS-NHD is contained in Appendix B.

[2] Transpower recently lodged a submission to the Commerce Commission on its review of the input methodologies (IMs). The IMs impact on what we can spend its money on, and how our service is delivered. Our submission raised concerns about the draft decision not making explicit provision within the IMs for resilience expenditure (as it had with the IMs for the electricity distribution businesses). Link to Transpower's submission: IM review: draft decisions

Appendix A: Some of the overlapping Inquiries and Reform Impacting on Infrastructure



Appendix B: Transpower submission on the proposed National Policy Statement Natural Hazard Decision-making

TRANSPOWER

1 November 2023

Proposed National Policy Statement on Natural Hazard Decision Making

Ministry for the Environment
By email: naturalhazardRMA@mfe.govt.nz

PRELIMINARY MATTERS

Our submission does not contain confidential information.

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INTRODUCTION

1 Transpower New Zealand (**Transpower**) is a State-owned enterprise that plans, builds, maintains, owns and operates New Zealand's high voltage electricity transmission network (**National Grid**). Transpower welcomes the opportunity to comment on the Proposed National Policy Statement for Natural Hazard Decision-making (**proposed NPS-NHD**), and the accompanying Discussion Document.[1]

2 The National Grid includes over 170 substations, approximately 11,000km of transmission lines and cables (overhead, underground and submarine) and one of the country's largest telecommunication networks. Transpower has over 15,000km of access tracks which are used to access our assets.

3 The National Grid extends from Kaikohe in the North, to Tiwai Point in the South. In doing so, it traverses and is located in many areas subject to natural hazards. It is in flood plains, in river beds, in coastal waters, slip zones, erosion prone land and crosses numerous fault lines.

4 Resilience of the National Grid is a critical consideration for Transpower. The resilience of our assets to natural hazards has received increased focus, in part due to the increased severe weather events due to climate change and in part due to emerging science in areas such as seismic hazards. That said, it is critical that any policy guidance or regulation is both appropriate and proportionate. It must assist us in managing risks, rather than merely creating an additional regulatory and administrative burden.

[1] Ministry for the Environment. 2023. *Proposed National Policy Statement for Natural Hazard Decision-making: Discussion Document*. Wellington: Ministry for the Environment ('**Discussion Document**').

Summary of position on the proposed NPS-NHD

5 For Transpower, resilience to natural hazards is a key consideration in decision making with regard to the maintenance, operation, upgrading, planning and development of the National Grid.

6 However, we do not support the proposed NPS-NHD in its current form. Our key concerns are that in relation to infrastructure, the proposed NPS-NHD:

(a) Takes a 'one size fits all' approach in subjecting uninhabited nationally significant infrastructure to the same policy hurdles and scrutiny as would apply to private (e.g. residential) development. A different policy response is called for in relation to risks to infrastructure compared to protecting lives and homes – hazard risks must be considered in the context of the 4Rs[2] or PARA[3] frameworks, depending on the risk. Further, it is important that any decisions in relation to natural hazard risks to National Grid infrastructure are driven by factors in the wider system, including other parts of the electricity sector, the community and interdependent infrastructure. A systems-based approach, rather than piecemeal decision-making in the context of individual consent applications is required.

(b) Is premature. It risks duplicating or being inconsistent with policy developed under other workstreams, including the critical infrastructure resilience work being led by the Department of the Prime Minister and Cabinet (**DPMC**)[4] and the Select Committee Inquiry into Climate Adaptation.[5]

(c) Has a number of issues or inconsistencies in its drafting, as outlined further below.

7 Accordingly, Transpower seeks that the proposed NPS-NHD not apply to infrastructure (or nationally significant infrastructure), and that any policy direction with regard to managing the effects of natural hazards on infrastructure is deferred until the outcome of the DPMC resilience workstream and various reviews and Inquiries have concluded. This deferral will provide further time to understand the complexities of infrastructure investment and risk mitigation, consider options,[6] and refine the approach, including in consultation with infrastructure providers.

PART ONE – HIGH LEVEL CONCERNS

Background – DPMC resilience workstream

8 DPMC has recently concluded the first phase of consultation in relation to the resilience of New Zealand's critical infrastructure. Through this consultation, it sought views from critical infrastructure owners, operators and local government about the resilience of critical infrastructure and how the system's resilience can be improved. This process will inform the development of options to improve the regulatory approach to delivering resilient critical

[2] Readiness, Response, Reduction and Recovery.
[3] Protect, Avoid, Reduce, Adapt.
[4] Department of the Prime Minister and Cabinet. 2023. *Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system: Discussion Document*. Wellington: Department of the Prime Minister and Cabinet
[5] https://www.parliament.nz/en/pb/sc/make-a-submission/document/53SCEN_SCF_A3FE0E05-8ABB-418D-8F44-08DBA45709B6/inquiry-into-climate-adaptation
[6] There appears to have been no consideration of addressing natural hazard risks to the Grid via the review of the National Policy Statement on Electricity Transmission, which is presently underway.

infrastructure.[7] Those options could include all critical infrastructure owners and operators meeting shared minimum 'resilience standards' (whether those standards are prescriptive, principles-based, or process-based).[8]

9 Transpower's submission on the DPMC discussion document highlights a range of complexities, in terms of the regulatory burden on infrastructure providers and the need to avoid a one size fits all approach.[9] In summary, Transpower sought that:

(a) Any regulatory change related to infrastructure resilience must be incremental to reduce the significant cost and administrative burden on infrastructure providers, which will impact the cost of services to the country.

(b) Investment into improving the resilience of infrastructure should not be imposed by deterministic standards. Any investment should be considered on a risk-weighted basis and within the broader investment programme of the business.

(c) A common data-set is required, so that infrastructure providers can work to the same base of information on the risk and impact of natural hazards and threats, including their frequency and severity.

(d) Shared understanding of community expectations around resilience in an increasingly electrified world and the cost benefit trade-off from proactive spend versus fast response capability.

10 We understand that the outcomes of this first phase of work will inform the development of more detailed options to improve the government's regulatory approach to delivering resilient critical infrastructure. A second round of consultation on options was indicated to follow in the first half of 2024.

11 Overall, Transpower considers that for nationally significant critical infrastructure, the development of principles for resilience is better addressed through the DPMC workstream than through policies that apply to all land uses under the RMA. Further, it would be premature to include critical infrastructure in the proposed NPS-NHD at this stage, before the DPMC workstream has been completed.

Once size fits all approach – infrastructure vs other activities

12 In broad terms, Transpower agrees with the 'problem definition' in the Discussion Document,[10] in terms of inconsistent identification and assessment of natural hazards and risks, lack of agreed framework for decision makers, and more 'weight' often being given to other factors.

13 However, we consider that the starting point or focus of any interim policy direction should be in relation to housing, as this is the context in which people are most exposed to the significant risks from natural hazards. The significant pressure councils are facing to enable further development to meet housing requirements and request for central government to give them a stronger mandate for assessing and managing climate risk is identified in the National

[7] Department of the Prime Minister and Cabinet. 2023. Discussion document: '*Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system*' at page 27.
[8] Department of the Prime Minister and Cabinet. 2023. Discussion document: '*Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system*' at page 33.
[9] Transpower submission on the DPMC Discussion Document: Strengthening NZ's critical infrastructure system
[10] As set out in Part 2: Problems to solve.

Adaptation Plan (**NAP**).[11] The NAP also identifies the need for risk assessment guidance for housing – including development of an assessment framework to help building owners, developers and new home builders identify relevant climate hazards and understand their building's adaptation requirements (action 5.7). By contrast, for infrastructure, other actions are proposed, including the development of infrastructure standards (action 5.6), development of guidance for assessing risks and impact on physical assets and services (action 3.8) and industry specific adaptation plans (including for Transpower (action 5.10), and Waka Kotahi (action 8.1)).

14 The Transpower-specific adaptation plan will outline how we will adapt to climate change through design, delivery and operation of the National Grid. Transpower's adaptation plan will improve our capability to plan for multiple risks to the Grid from climate hazards, including coastal inundation, increased frequency of high-impact flood and wind events, and accelerated erosion. Improving our capability will consider adaptation for exposed assets in maintenance, renewal, and development programmes, using the PARA framework.

15 The NAP does contain an action for national direction on natural hazard risk management and climate adaptation through the National Planning Framework under the Natural and Built Environment Act (action 4.2). This national direction is to set out "*hazard risk assessment methodologies and direction …. This direction will be integrated with direction on other outcomes across the natural and built domains*." The proposed NPS-NHD (while under the RMA) does not provide methodologies, nor is it integrated with other national direction – including the National Policy Statement for Electricity Transmission (**NPSET**), which is currently being reviewed.

16 In addition to the NAP action, Transpower has existing obligations under the Emergency Management Act 2002 (**CDEMA**) as a 'lifeline utility' to:[12]

(a) Ensure that it can function to the fullest extent possible, even though this might be at a reduced level, during and after an emergency.

(b) Ensure its plan for functioning during and after an emergency is available.

(c) Participate in the development of the national civil defence emergency management strategy and civil defence emergency management plans.

(d) Provide technical advice to civil defence emergency management groups, and ensure any info disclosed to Transpower is used only for the purpose of the CDEMA.

17 These obligations remain in the Emergency Management Bill (which is intended to replace the CDEMA). In meeting these obligations, and ensuring appropriately resilient assets, Transpower applies the 4Rs of hazard management (reduction, readiness, response and recovery).

18 Accordingly, Transpower already has existing obligations and processes in place (or under development) in relation to the National Grid that do not apply to other activities, such as housing.

19 With regard to infrastructure, the proposed NPS-NHD and Discussion Document are not sufficiently clear on what is being protected and why. For example, it is not clear if the

[11] Ministry for the Environment. 2022. *Aotearoa New Zealand's first national adaptation plan.* Wellington, p68.
[12] Civil Defence Emergency Management Act 2002, section 60. Transpower comes within the definition of a 'lifeline utility' in Schedule 1 Part B of the CDEMA as it is: "An entity that generates electricity for distribution through a network or distributes electricity through a network."

objective is to manage risks to third parties (i.e. health, life, private property) as a result of infrastructure failing or being damaged by a natural hazard, or to protect the integrity or resilience of the infrastructure itself (and service provision), or both.

20 We presume that a key part of the rationale for the proposed NPS-NHD is to protect the ultimate residents or occupants of, in particular, residential and commercial buildings, in the event of a natural hazard or disaster. That intervention can be justified on the basis that these people or communities may not be involved at the time that a development is originally proposed, but would be the most affected. Infrastructure providers such as Transpower are in a wholly different position – we manage the risks to our assets from natural hazards, as a matter of course.

21 Importantly, whether it is justifiable to address a risk depends on a number of variables, including interdependencies with other critical infrastructure operators and the resilience of communities and individuals more generally, as well as the location of the assets and their role. Hardening infrastructure to reduce a risk of failure may not be justifiable if a fast response to recover is sufficient for the relevant location or community. Similarly, retreating (or relocating) existing linear infrastructure that ultimately serves a community that is itself retreating is not a trivial matter. It may be more appropriate to harden assets, rather than retreat.

22 By contrast to the proposed NPS-NHD, this difference between infrastructure and other activities appears to be acknowledged in policy 25 of the NZ Coastal Policy Statement (**NZCPS**), which provides a direction:

(a) to '*encourage* the location of infrastructure away from areas of hazard risk *where practicable'*. The word 'encourage' is less directive than other directions that could have been used (such as 'avoid'), and the phrase 'where practicable' acknowledges that it may not always be practicable.

(b) that activities which increase the social, environmental or economic harm from coastal hazards are to be 'avoided'.

23 The intention in drafting the proposed NPS-NHD may have been that these considerations and the differences between infrastructure and other activities could be picked up via the assessment of 'tolerance' under Policy 2(b). However, we are concerned that in the absence of clear direction reliance on interpretation of the word 'tolerance' will confer too much discretion to RMA decision makers and will not promote consistent or predictable outcomes.

24 If there is to be national direction on natural hazards that applies to infrastructure a similar approach to that in the NZCPS should be taken - giving greater flexibility for infrastructure than other activities is required. However, for the reasons above Transpower considers that the proposed NPS-NHD (which is an interim measure) must not apply to infrastructure.

Insufficient guidance in the proposed NPS-NDH in terms of how risks are to be assessed

25 While the proposed NPS-NHD is intended to increase guidance to decision makers, in our view it leaves considerable scope for discretion and inconsistency in decision making. As discussed in more detail below, terms like 'intolerable' or 'generally acceptable' lack supporting standards, methodologies, or principles to guarantee consistent decision making.

26 In this respect, we note that the proposed "Comprehensive National Direction" is intended to include:[13]

(a) Standardised methodologies for mapping natural hazards and assessing risks to inform land use planning decisions;

(b) Defined risk thresholds, established by developing and implementing a standardised risk tolerance assessment methodology to define areas that may be 'tolerable' or 'intolerable' to natural hazard risks;

(c) Standardised terms such as 'significant natural hazard risk' and 'intolerable natural hazard risk'; and

(d) A nationally consistent policy approach to managing land use activities in areas exposed to natural hazard risks.

27 The proposed NPS-NHD, as drafted, does not go that far – and is particularly lacking in terms of defined risk thresholds or methodologies.

28 We note that the Discussion Document on community-led retreat and adaptation funding,[14] appears to present the proposed NPS-NHD as delivering a standardised approach to categorising risks as tolerable or intolerable. However, as proposed the NPS-NHD will not deliver this in the absence of further guidance. The Discussion Document also asks submitters to set out what they consider makes a risk 'tolerable or intolerable (i.e. acceptable or unacceptable)',[15] which suggests these terms are not clearly defined and are open to interpretation (and may also take on different meanings in the context of these different workstreams).

PART TWO – DRAFTING ISSUES

29 Transpower's strong preference is for the proposed NPS-NHD to exclude infrastructure. Despite this position, we provide comments on drafting issues below.

Interpretation – clause 1.4

30 A number of the proposed definitions in the proposed NPS-NHD are ambiguous or confusing.

New development

31 The definition in the proposed NPS-NHD is:

> **new development** means development:
>
> (a) of new buildings, structures, or infrastructure on land that currently does not have buildings, structure, or infrastructure located on it; or
>
> (b) that is the extension or replacement of existing buildings, structures, or infrastructure."

[13] Ministry for the Environment. 2023. Discussion document: '*Proposed National Policy Statement for Natural Hazard Decision-making*'.
[14] Ministry for the Environment. 2023. Discussion document: '*Community-led retreat and adaptation funding: Issues and options*'.
[15] Community-led retreat discussion document, Question 15.

32 It is unclear what 'on land' means, in this context - does it means a certificate of title or should it be applied more broadly, such as within a certain distance, within the same hazard area, or within a transmission corridor.

33 It is also not clear why new structures on a given piece of land would be exempt if that land already has existing structures on it, but an extension to or replacement of those same existing structures would be captured.[16] This distinction is difficult to understand either in terms of the level of risk, or the ability to manage it. For example:

(a) Transpower will often alter or replace National Grid structures as part of routine maintenance works. When doing so, there is no choice but to carry out the activity where the transmission line or structures are already located. Nonetheless, these activities would qualify as 'new development' under clause (b) of the definition.

(b) In contrast, when constructing new lines or structures there may be greater flexibility in relation to where the infrastructure is located (including in terms of relative natural hazard risk). However, new transmission lines or structures would seemingly not be captured as 'new development' (and therefore not by the proposed NPS-NHD at all) to the extent that it happens to occur 'on land' that already has buildings or structures on it.

34 Accordingly, we suggest that this definition needs to be re-worked (or simply exclude infrastructure altogether).

High, moderate, and low natural risk

35 The proposed NPS-NHD definitions are as follows:

> **high natural hazard risk** means a risk from natural hazards that is intolerable.
>
> **moderate natural hazard risk** means a risk from natural hazards that is more than a low risk but is not intolerable.
>
> **low natural hazard risk** means a risk from natural hazards that is generally acceptable.

36 The Discussion Document describes these definitions as providing a 'transparent, certain and consistent approach to categorising risk'. We are concerned that without further guidance these terms could be overly subjective, with inconsistent application. In this respect, we acknowledge that the Discussion Document describes these terms as principle-based rather than highly prescriptive, and provide decision makers with discretion on how to apply them.

37 In relation to the high/medium/low risk categories and definitions proposed for decision-making, we question whether the proposed approach (even if further developed) will be able to clearly set out risk tolerances for use in decision-making. In risk assessments, high, medium, and low typically refer to the risk assessed based on the evaluation of both likelihood and consequences. High, medium, or low risks may not necessarily consistently align with risk appetite or risk tolerance. We consider that alternative approaches could provide more clarity to support setting national direction and policy that considers both societal risk and individual

[16] It is also not clear if this consequence was intentional; the Discussion Document states at page 18 that: "The proposed NPS-NHD would apply to planning decisions that result in or enable new physical development of buildings or structures. It defines new development to include all new buildings or structures, extensions to existing buildings, replacement of existing buildings and the construction, extension or replacement of infrastructure. This includes residential and multi-unit dwellings, papakāinga, marae, educational facilities, health facilities, visitor accommodation, community facilities, commercial and infrastructure developments".

risk, such as a consequence-based approach to setting risk tolerances, and having a precautionary approach, rather than setting acceptable levels.

Objective – clause 2.1

38 The proposed objective is as follows:

> **Objective:** The risks from natural hazards to people, communities, the environment, property, and infrastructure, and on the ability of communities to quickly recover after natural hazard events, are minimised.

39 The objective of the proposed NPS-NHD is that the risk from natural hazards is 'minimised'. 'Minimised' is not defined in the proposed NPS-NHD or National Planning Standards, but a common dictionary definition of 'minimise' is "to reduce to the smallest possible amount, extent, or degree".[17]

40 This is an onerous standard, especially in situations where there may be little that can practicably or cost-effectively be done to minimise a risk natural hazard. A more realistic and achievable standard for this objective such as 'managed appropriately' for example, would be preferable. Amendments of this kind would recognise that retreat or asset hardening is not the only option available to infrastructure operators.

Policies 1–4: determining the level of natural hazard

41 Policies 1-3, in combination, provide for the determination of levels of natural hazard as either 'low', 'moderate' or 'high' (discussed above).

Policy 1 and 4

42 Policy 1 provides that decision-makers must determine the risk level as part of all 'planning decisions' (being a decision on a resource consent, a designation, or a planning document). In addition, Policy 4 states that natural hazard risk must be a matter of control or discretion (as relevant) for any new development that is a controlled or restricted discretionary activity.

43 These policies would mean that natural hazards would be a live consideration for virtually all decision-making under the RMA that might result in a 'new development', and an additional matter that must be the subject of expert evidence for any hearing.

44 The obligation on decision-makers to consider these matters will require more input from expert technical advisors – both in project development and through application and hearing processes. The burden of that will fall on applicants, and for infrastructure operators will in many cases be disproportionate. By way of example, Transpower's consents team considers that this burden will add at least 2 months of additional time to prepare consent applications for routine works on existing assets (works that are addressing the risks to our aging assets as a matter of course). We would also expect that Council processing time would increase.

Policy 2

45 Policy 2 goes on to provide the matters that decision makers must consider in approaching this task:

[17] Oxford English Dictionary, Sixth Edition, 2007.

> **Policy 2:** When determining natural hazard risk, decision-makers are to consider:
>
> (a) first, the likelihood of a natural hazard event occurring (either individually or in combination) and the consequences of the natural hazard event occurring, including potential loss of life, serious injury, adverse effects on the environment, and potential serious damage to property and infrastructure; and
>
> (b) second, tolerance to a natural hazard event, including the willingness and capability of those who are subject to the risk (such as a community, Māori, or the Crown) to bear the risk of that natural hazard (including its cost) and any indirect risks associated with it.

46 Clause (b) focusses on tolerance to risk. This would likely require applicants to bring evidence as to their own tolerance to risks.

47 When this criteria is applied to infrastructure, it is not clear if 'tolerance' is intended to refer to the physical resilience of (in this case) the National Grid, or to 'tolerance' in the wider sense of willingness to take a risk in the circumstances. For example, in some cases further work to increase resilience may not be justifiable if a fast response to recover is sufficient for the relevant location or community (and the costs which it could reasonably bear). Overall, it is unclear what evidence would be required, or from whom.

48 This uncertainty also points to infrastructure being excluded from this interim national direction. The need for national direction for infrastructure could be considered during the DPMC workstream.

Policy 3

49 Policy 3 requires decision-makers to "adopt a precautionary approach" to determining natural hazard risk where the natural hazard risk is "uncertain, unknown, or little understood" and "could be intolerable."

50 Transpower is concerned that natural hazard risk, particularly in relation to seismic activity, is inherently 'uncertain'. Similarly, climate change is increasing the impacts of natural hazards in unanticipated ways. There will often be a suggestion or possibility of intolerable risk in a worst-case scenario. As such Transpower is concerned that in the absence of further guidance (such as how much 'uncertainty' is required to trigger this policy, or what 'could' means) this policy will mean that an unduly conservative approach is adopted and risks are classified as 'high' unnecessarily.

Policy 5

51 Policy 5 is the key 'decision making' policy in the proposed NPS-NHD, and contains the principal 'avoidance' direction:

> **Policy 5**: Planning decisions must ensure that:
>
> (a) in areas of high natural hazard risk, new development is avoided unless the level of risk is reduced to at least a tolerable level or:
>
> (i) the new development is not a new hazard-sensitive development; and
>
> (ii) there is a functional or operational need for the new development to be located in the area of high natural hazard risk, and

(iii) there are no practicable alternative locations for the new development; and

(iv) risk is reduced to as low as reasonably practicable; and

(b) in areas of moderate natural hazard risk, mitigation measures are taken to reduce natural hazard risk to new development as low as reasonably practicable; and

(c) in areas of low natural hazard risk, new development is enabled.

52 Infrastructure does not fall within the definition of 'new hazard-sensitive development' but would fall within the current definition of 'new development'. It would be necessary for an infrastructure applicant to demonstrate either that the risk would be reduced to 'at least' a 'tolerable level', or that the requirements of subclauses (a)(ii), (iii) and (iv) would be met.

Clause 5(a)(ii) functional or operational need

53 We assume that the concept of 'functional need' and 'operational need' will have the same meaning as in the National Planning Standards.[18] We expect that this requirement would usually be met where new infrastructure is proposed to occur in a relatively high natural hazard area.

54 However, the requirement to establish a functional or operational need is unnecessary when applied to existing assets. There is no choice but to carry out routine works on existing assets (including their extension or replacement) where they are currently located.

Clause 5(a)(iii) no practicable alternative location

55 This consideration is likely to duplicate the functional and operational need requirement above (and again should not apply to existing assets).

Clause 5(a)(vi) and (b): reducing risk to 'as low as reasonably practicable'

56 The final requirement for areas of 'high' natural hazard risk (and also the principal requirement for areas of 'moderate' risk under clause (b)) is that the risk is reduced 'to as low as reasonably practicable'. Two questions arise in terms of the drafting of this sub-clause:

(a) How the standard of 'to as low as reasonably practicable' differs from the standard of 'tolerable' in clause (a) (which is not otherwise used in the proposed NPS-NHD, except that being '*in*tolerable' is the definition of 'high' risk). The framing of this clause suggests that a 'tolerable' risk must be lower than 'to as low as reasonably practicable',[19] but that would not be obvious from the terms themselves.

(b) Whether the term 'to as low as reasonably practicable' is simply intended as a planning 'test' (akin to 'operational need'), or whether it is intended as a 'term of art' used to invoke a more formal or technical risk assessment methodology.

57 Further issues arise as to whether the 'as low as reasonably practicable' (**ALARP**) standard or test is appropriate for infrastructure in the natural hazard context. As discussed earlier, infrastructure operators must consider matters such as whether to harden assets, retreat or

[18] That is: operational need means the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical, logistical or operational characteristics or constraints.
[19] Because the options are for the applicant either to reduce risks to 'tolerable', or to reduce them to 'as low as reasonably practicable' while also meeting the additional requirements in clauses (a)(i) to (iii).

relocate, or to focus on a fast response. If hardening is considered the appropriate response, the question as to what design standard will need to be considered. Interdependencies with other infrastructure and community resilience is also factored in. Further, the level of hardening for infrastructure in one location would not be the same for similar infrastructure in another area.

58 ALARP is commonly used in the health and safety context, as is the related term 'so far as is reasonably practicable' (**SFAIRP**). The Health and Safety at Work Act 2015 provides a definition of 'reasonably practicable',[20] as that which is 'reasonably able to be done in relation to ensuring health and safety', taking into account and weighing up all relevant matters including likelihood of the hazard occurring, degree of harm, what is known (or ought to be known) about the hazard, available means of eliminating or minimising it, including whether the cost is grossly disproportionate to the risk. It does not however define ALARP or SFAIRP.

59 Notably the HSW Act also requires that any duty imposed under the Act requires the person to:

> "(a) to eliminate risks to health and safety, so far as is reasonably practicable; and
>
> (b) if it is not reasonably practicable to eliminate risks to health and safety, to minimise those risks so far as is reasonably practicable."[21]

60 Therefore, it seems as 'SFAIRP' in this context means that the decision maker must carry out the duty in a way that is reasonably able to be done at that time, taking into account and weighing up the relevant matters set out above. Importantly, this test is applied in the context of the statutory obligation to eliminate a risk, or if that is not possible, to minimise. Applying this test to housing development is appropriate, given the health and safety risks to occupants. However, it contrasts significantly with the test of infrastructure operators in the CDEMA.

61 ALARP is not used or defined in the HSW Act. However, it is used as a risk management tool in other areas in New Zealand. Broadly, the ALARP principle involves seeking to reduce dangers to just below a level commensurate with reasonable cost.[22] In its construction procurement guidelines, the Ministry of Business Innovation and Employment (**MBIE**) has stated that: [23]

> "For a risk to be considered as ALARP, it must be possible to demonstrate that the cost or time and effort involved in taking measures to reduce the risk **any more**, would be grossly disproportionate to the benefit that would be gained. This is essentially a cost-benefit analysis: ALARP is balancing risk reduction with the cost of achievement." (emphasis added)

62 It is evident from the MBIE procurement guidelines that action to reduce the risk is expected – the question is how far do you go before the costs outweigh the benefit. However, as discussed elsewhere, for uninhabited infrastructure broader factors must be considered before determining whether to retreat or harden assets, and if hardening, to what level. Accordingly, Transpower considers that imposition of ALARP (or SFAIRP) to natural hazard decision making for uninhabited infrastructure is inappropriate.

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[20] Health and Safety at Work Act, section 22.
[21] Health and Safety at Work Act 2015, section 30.
[22] Department of the Prime Minister and Cabinet. 1996. 'Integrated Risk Management for Natural and Technological Disasters'. at p 12.
[23] Ministry of Business, Innovation & Employment. 2019. 'Construction Procurement Guidelines – Risk Management' at page 6.

63 Overall, this Policy is not sufficiently clear about what is being protected and why. For example, is the objective to manage risks to third parties (i.e. health, life, private property) as a result of infrastructure failing or being damaged by a natural hazard, or is the objective to protect the integrity or resilience of the infrastructure (and service provision) itself.

64 Transpower considers that the NPS-NHD should not apply to infrastructure. In the event the proposed NPS-NHD does apply to infrastructure, neither ALARP or SFAIRP should be applied, but instead an approach consistent with the NZCPS.

Policy 6

65 Policy 6 directs that the 'most effective' hazard mitigation measures be adopted:

> **Policy 6:** The most effective natural hazard mitigation measures are adopted to reduce natural hazard risk over the life of any proposed new development, provided the natural hazard mitigation measures do not exacerbate natural hazard risks in other areas, and where possible:
>
> (a) nature-based solutions are preferred over hard-engineering solutions; and
>
> (b) comprehensive area-wide measures are preferred over site-specific solutions.

66 The requirement in policy 6 to adopt "the most effective" mitigation measures is not appropriate for infrastructure. If applied, it is likely to mean over-investment in many cases, and retreat where it is not necessary – such as if there are other weaknesses / interdependencies in the system (for example, there will be limited value in 'gold plating' parts of the electricity transmission network when associated parts of the electricity distribution network(s) remain highly vulnerable).

67 In addition, the direction in (b) will not apply to the National Grid or other infrastructure.

Interaction with the NZCPS

68 Clause 1.6 states that the provisions of the NZCPS prevail over the provisions of the proposed NPS-NHD in the event of conflict between them.

69 With respect to infrastructure, that would provide a simpler consenting pathway, given the direction in Policy 25(d) of the NZCPS is to 'encourage the location of infrastructure away from areas of hazard risk where practicable'. However, for other kinds of activity the NZCPS is likely to be more restrictive,[24] as Policy 25(a) is to 'avoid increasing the risk of social, environmental and economic harm from coastal hazards'.

70 We consider that the NZCPS adopts a preferable approach insofar as it provides a different level of direction than it does for other (more vulnerable) activities. However, this distinction should be recognised in all environments, not merely the coastal environment.

Implications for and interaction with the NPSET

71 The Discussion Document does not include any commentary on the possible implications of the proposed NPS-NHD for the NPSET. As currently drafted there is a risk that that it could undermine or conflict with the NPSET provisions such as Policy 5, which is that decision

[24] As noted in the Discussion Document at p 27.

makers ‘must enable’ the reasonable operational, maintenance and minor upgrade requirements of established electricity transmission assets.

72 We suggest that the interaction between the proposed NPS-NHD and NPSET needs further consideration. Particularly as the NPSET is under review.

Appendix A Brief answers to questions posed in the discussion document

DISCUSSION DOCUMENT QUESTIONS	
Section	**Question**
Part 2: Problems to solve	*1. Is more action needed to reduce development from occurring in areas facing natural hazard risk?*
	In general terms yes, there is a need for further RMA guidance, but we have a number of concerns with the application of the proposed NPS-NHD to infrastructure, such as the National Grid.
	2. Are there other issues that have not been identified that need to be addressed through the NPS-NHD or the comprehensive National Direction for Natural Hazards?
	The differences between uninhabited infrastructure and housing/community development.
Part 3: Key policy proposals of the proposed National Policy Statement for Natural Hazard Decision-making	*3. Do you support the proposed NPS-NHD's requirement that decision-makers take a risk based approach when making decisions on new development in natural hazard areas? Why or why not?*
	Not as currently expressed, or as applying the same standard to infrastructure and private development.
Part 3: Key policy proposals of the proposed National Policy Statement for Natural Hazard Decision-making (proposed scope)	*4. Should all natural hazards be in scope of the proposed NPS-NHD? Why or why not?*
	We suggest that a defined list of the relevant hazards would assist applicants in preparing the necessary materials to support their application, where relevant. However, we do not consider application of the proposed NPS-NHD to infrastructure would be helpful for infrastructure operators.
	5. Should all new physical development be in scope of the proposed NPS-NHD? Why or why not?
	No – see concerns regarding application to infrastructure, and the definition of 'new development'.
	6. What impact do you think the proposed NPS-NHD would have on housing and urban development? Why?
	As drafted, the proposed NPS-NHD could result in unnecessary assessments and consenting timeframes. We are also concerned it would result in unnecessary hardening of assets or unnecessary retreat of assets when hardening would have been appropriate.

DISCUSSION DOCUMENT QUESTIONS	
Section	**Question**
Part 3: Key policy proposals of the proposed National Policy Statement for Natural Hazard Decision-making (proposed objective)	*7. Do you agree with the proposed objective of the NPS-NHD? Why or why not?*
	As noted above, we consider that a requirement to 'minimise' hazards in the objective sets too high a standard, is likely to be too onerous or unrealistic in some situations (depending on what the NPS-NHD ultimately applies to). It would be too onerous a standard for infrastructure.
Policy 1 and definitions: natural hazard risk categories	*8. What are the pros and cons of requiring decision-makers to categorise natural hazard risk as high, moderate or low?*
	Without further guidance this categorisation lacks certainty or predictability for applicants. Applicants should ideally be able to assess this categorisation with a reasonable degree of confidence in advance, before applying for resource consent. As discussed in the body of our submission, what is a high, moderate or low risk to housing will be different for infrastructure generally, and different given the variation of infrastructure types.
Policy 2: Assessing natural hazard risks	*9. What are the pros and cons of directing decision-makers to assess the likelihood, consequence and tolerance of a natural hazard event when making planning decisions*
	As discussed above, we are concerned the requirements of the proposed NPS-NHD will result in inappropriate and unnecessary assessments, and unnecessary retreat and/or hardening of assets, including hardening to a standard greater than necessary from a network or wider infrastructure perspective.
Policy 3: Precautionary approach in decision-making	*10. What are the pros and cons of directing decision-makers to adopt a precautionary approach to decision-making on natural hazard risk?*
	See concerns above. As worded, and without further guidance, we are concerned that application of the precautionary approach could lead to risk being categorised as 'high' unnecessarily.
Policy 4: Restricted discretionary and controlled activities	*11. What are the pros and cons of requiring natural hazard risk as a matter of control for any new development classified as a controlled activity in a plan, and as a matter of discretion for any new development classified as a restricted discretionary activity?*
	Will require additional evidence or reports to be prepared for every application, could be an undue burden on applicants. We do not consider that this additional evidence or report or testing is warranted for applications for consent for infrastructure, such as the National Grid.

DISCUSSION DOCUMENT QUESTIONS	
Section	**Question**
Policy 5: Direction on new development in areas of high, moderate and low risk	*12. What are the pros and cons of requiring planning decisions to ensure the specific actions to address natural hazard risk outlined in policy 5?*
	See concerns above.
	13. What is the potential impact of requiring decision-makers to apply this framework in their decision-making? Will it improve decision-making?
	See concerns above.
Policy 6: Reducing natural hazard risks through mitigation	*14. What are the pros and cons of providing direction to decision-makers on the types of mitigation measures that should be adopted to reduce the level of natural hazard risk?*
	There is a risk that the mitigation measures are not appropriate for infrastructure, including the National Grid – particularly given the complexity of the infrastructure system.
Implementation timing	*15. Is the implementation timeframe workable? Why or why not?*
	No. As discussed above, we consider that the need to include infrastructure in the proposed NPS-NHD should be considered on a more holistic basis, including as part of the DPMC resilience workstream.
	16. What do you consider are the resourcing implications for you to implement the proposed NPS-NHD?
	The resourcing implications are likely to be extensive, if the NPS-NHD requires extensive consideration of possible natural hazards for all RMA decision making (i.e. all planning decisions). We do not consider these resourcing implications are warranted for infrastructure, including the National Grid.
Implementation guidance	*17. What guidance and technical assistance do you think would help decision-makers to apply the proposed NPS-NHD?*
	There is a need for substantial guidance or technical assistance, beyond what is currently provided in the current draft of the NPS-NHD itself. Preferably this guidance would be added to the NPS (including by way of appendices) to avoid uncertainty as to its status (as compared with non-statutory guidance, which has no official weight). As discussed, we do not consider the proposed NPS-NHD is appropriate for application to infrastructure, including the National Grid.