Section 32 Report – Part 2

National Grid

prepared for the

Proposed Waikato District Plan

July 2018

Waikato
DISTRICT COUNCIL
Te Kaunihera aa Takiwaa o Waikato

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1 OVERVIEW AND PURPOSE

This Section 32 evaluation report addresses the Waikato Proposed District Plan (PDP) management of the National Grid. The National Grid is defined in the National Policy Statement for Electricity Transmission (NPS-ET) as the assets used and owned by Transpower NZ Limited. The National Grid comprises the electricity transmission network and includes lines and cables (aerial, underground and undersea, including the high-voltage direct current link), stations and sub-stations which convey electricity throughout the North and South Islands of New Zealand.

Transmission lines are the arteries of New Zealand's National Grid, and are owned and operated by Transpower NZ Limited. The electricity market is separated between:

- Generators
- Distributors (lines companies)
- Retailers
- Transmission companies (Transpower)

Transmission lines take power from the generators to substations where it is supplied to local distribution companies and large industrial consumers. Transpower owns and operates 12,175 km of high-voltage transmission lines. The core of the National Grid is the 220 kV, 110kV and 66kV network in each island and the high voltage direct current link between them. Electricity distribution lines operate at lower voltages such as 33kV. Within Waikato District, there is a network of overhead transmission lines and infrastructure such as towers and substations.

The following Transpower transmission lines are within, or traverse the Council's jurisdiction:

- Huntly - Otahuhu 220kV transmission line (HLY-OTA A);
- Bombay – Meremere A 110kV transmission line (BOB-MER A);
- Meremere - Takanini 110kV transmission line (MER-TAK A);
- Brownhill – Whakamaru North 40 kV transmission line (BHL-WHN A);
- Otahuhu – Whakamaru A 220kV transmission line (OTA-WKM A);
- Otahuhu – Whakamaru 220kV transmission line (OTA-WKM B);
- Otahuhu – Whakamaru 220kV transmission line (OTA-WKM C);
- Huntly – Taumaranui 220kV transmission line (HLY-TMN A);
- Hamilton – Meremere A CBL 110kV transmission line (HAM-MER A CBL);
- Hamilton – Meremere A110kV transmission line (HAM-MER A);
- Hamilton – Mercer B110kV transmission line (HAM-MER B);
- Hamilton deviation 220kV transmission line (HAM-DEV A);
- Hamilton - Waihau 110kV transmission line (HAM-WHU A);
- Huntly Deviation 220kV transmission line (HLY-DEV A);
- Huntly – Otahuhu 220kV transmission line (HLY-OTA A);
- Hamilton – Karapiro A 110kV transmission line (HAM-KPO A);
- Arapuni - Hamilton 110kV transmission line (ARI-HAM A);
- Arapuni - Hamilton B 110kV transmission line (ARI-HAM B); and
- Te Kowhai Deviation A.

There are also 5 substations and switching stations within the Waikato District, being:

- Western Road substation and training facility;
- Huntly Outdoor Switchyard;
- Meremere Switching Station;
- Te Kowhai Substation; and
- Ohinewai Switching Station.

This evaluation report pertains only to the National Grid, all other aspects of electricity such as renewable electricity generation and electricity distribution infrastructure are evaluated in the Section 32 evaluation report regarding Renewable Electricity Generation and Infrastructure respectively.

This evaluation report should be read in conjunction with Part 1 Section 32 Report – Introduction to the Evaluation Report, which provides the context and approach for the PDP as a whole.

1.1 Topic Description

There are three main matters pertaining to the National Grid which the PDP (and this Section 32 evaluation report) address:

1. Activities and structures in close proximity to the National Grid;
2. Operation, maintenance, upgrading, relocation, or removal of an existing transmission line, including any activities that relate to those things that is not covered by the National Environmental Standards for Electricity Transmission Activities; and
3. New National Grid structures and lines.

The PDP provisions pertaining to the National Grid are contained in Chapter 6 (objectives and policies) and Chapter 14 (Infrastructure and Energy). The National Grid is also mapped on the District Plan maps.

1.2 Significance of this Topic

The National Grid runs through Waikato District and traverses both urban and rural land. There are currently 1,062 properties affected by the National Grid, which constitutes 3% of the properties in the district (Map 1).

While this is not a high percentage of the District, the approach in the PDP to managing activities and structures in close proximity to the National Grid will be significant for those landowners and may constrain development options. Despite the directives in the Regional Policy Statement (RPS) and NPS-ET, the Operative Waikato District Plan only recognised the National Grid in certain areas (such as Plan Change 16 to the Franklin District Plan for Pokeno) and the Waikato Section identified the location of the lines on the planning maps and required a 20m setback from them. Thus for the landowners in close proximity to the National Grid, the PDP will be a significant shift in policy direction.

It should be recognized that houses and buildings that were lawfully established under and in close proximity to high voltage transmission lines are afforded existing

use rights under Section 10 of the Resource Management Act. Any options canvassed in this report will not apply to those activities and structures with existing use rights.

Map 1: Location and Alignment of the National Grid within Waikato District

Discussion with Council engineers indicates that undergrounding of Transpower's high voltage transmission lines would be the optimum outcome. However these lines have existing use rights through previous resource consents and designations, and there is no mechanism for requiring Transpower to underground these lines unless a new resource consent is required e.g. increasing voltage or new alignments. Transpower have indicated they have no plans to make either of these changes to the lines traversing Waikato District so this report assumes that the lines will remain overhead.

1.3 Resource Management Issues to be Addressed

There are three main issues which need to be addressed in terms of the National Grid:

1. Land use, urban growth and other forms of land development can have adverse environmental effects on the operation, maintenance, upgrading and long-term development of electricity transmission corridors.

   Activities can pose a potential risk to the safe and efficient continual operation of the line and support structures. Examples include:
   - new buildings close to transmission lines increase the risk of flashovers,
   - earthworks around towers can destabilize towers or reduce separation distances between the ground and lines by raising the ground level;
   - dust from construction earthworks may also adversely affect the functioning of the lines;
   - trees planted near the lines can increase the risk of flashovers.

2. Protecting the health and safety of people and property in close proximity to the National Grid.

   Activities have the potential to impact on the safety of the community. For example, building too close to a transmission line will increase the chances of a flashover and therefore the safety of the occupants of the building. A "flashover" is where electricity jumps the gap across from the conductor to another object or structure (such as an aerial on a house or a house itself). The lines expand and contract depending on temperature and the voltage they are carrying. Based on these two variables, the swing of each line is different and is a function of the spacing of the support structures. Sensitive activities such as childcare facilities locating directly beneath the lines increase the risk to people. Other activities in close proximity to the lines can increase the risk to human life such as undertaking earthworks with a digger underneath the lines.

3. New National Grid facilities, lines and structures may be necessary.

   While the National Environmental Standard for Electricity Transmission Activities (NES-ETA) covers many of the maintenance and replacement activities associated with the National Grid, it does not apply to the construction of new transmission lines, nor to substations. The NES-ETA only applies to existing transmission lines – more specifically those which were operating, or able to be operated as at 14 January 2010.

1.4 Current Objectives, Policies, Rules and Methods

The Waikato Section of the Operative District Plan identifies electricity transmission lines on the planning maps. The setback requirements are at least 20m from the centre line of any electricity transmission line designed to operate at 110kV or more in all zones.

The Franklin Section controls the location of buildings in particular zones or areas (e.g. Pokeno Structure Plan area), earthworks and subdivision in close proximity to electricity transmission lines throughout the district. There are no rules to control the location of sensitive uses such as schools, day-care, and hospitals or the planting of trees in close proximity to transmission lines.

Council prepared a draft Plan Change 6 (PC 6) late 2011/early 2012 although this work did not progress through to public notification for the following reasons:

- At Transpower's request, WDC postponed notification of PC 6 pending Transpower's investigative study of all span lengths that traverse Waikato district. The expectation is that this study will result in some buffer corridors having widths that are less than the 32 metre wide corridors (measured from the centreline of each pylon structure) originally supported by Transpower. Council agreed that this outcome would likely be more acceptable to affected parties and remains mindful of NPSET's directive that Councils consult with Transpower to determine appropriate corridors.
- WDC had not formally received the details of Transpower's investigative study. Without these details, there was no value in proceeding with the development of PC 6 or confirming the informal 'drop in' workshops that WDC intended to hold at Pokeno, Huntly and Matangi where affected owners and occupiers can discuss the specific implications of PC 6 for their properties with Council staff and Transpower representatives.
- WDC were not in a position to determine whether the Waikato District Plan (declared partly operative on 16 July 2011) already gave effect to the NPSET and what changes were necessary for the Franklin Section which WDC inherited on 1 November 2010 as a result of the changes in Auckland's governance.

1.5 Information and Analysis

A considerable amount of information has informed the development of the infrastructure and energy provisions in the PDP. While many of these are not specific to the management of the National Grid, some are relevant.

1.5.1 Waikato District Council discussion documents

As part of the District Plan Review process, the Council prepared a discussion document entitled: "Discussion Document - Infrastructure".

This document generally summarises the relevant statutory drivers for the Project, the relevant iwi management plans and the current approaches to infrastructure within the Waikato and Franklin Sections of the Waikato District Plan.

The discussion document identifies gaps between these aforementioned documents and provides (with an appendix) the key Waikato Regional Policy Statement provisions for Council to consider.

The discussion document also highlights the relevance of the following statutory documents:

- National Environmental Standards for Telecommunication Facilities;
- National Environmental Standard for Electricity Transmission Activities;
- National Policy Statement for Electricity Transmission; and
- National Policy Statement for Renewable Electricity Generation.

1.5.2 Infrastructure Issues/Desired State document

This document/table, which was dated 29 April 2016, set out the following headings and structure:

Topic Specific Desired State/Outcomes:

- The positive and negative effects of the use and operation of infrastructure are recognised and provided for.
- A district where growth is coordinated and infrastructure is efficiently provided and utilised.
- The road network on the Hamilton Urban fringe is managed to ensure it does not compromise the city's future road network.
- Development such as land use and land use intensification including subdivision is well serviced by utilities to avoid the adverse effects on the environment.
- Regionally significant industry, infrastructure, primary production and research sites can develop and continue to operate through the provision of supporting infrastructure and resources and the careful consideration of adjacent land uses.
- The road network and land use development are designed and managed to ensure the efficient and effective operation of the Land Transport Network.

ISSUE: Development and Operation of Infrastructure
ISSUE: Coordinating Growth and Infrastructure
ISSUE: Urban Expansion
ISSUE: Managing Growth Pressures
ISSUE: Scattered Development
ISSUE: Provision of Utilities
ISSUE: Significant Industry and Primary Production
ISSUE: Significant Infrastructure
ISSUE: Land Transport Network

It is however noted that the desired state/outcomes, numbering and issue topics listed above appear to have been superseded in subsequent documentation prepared by WDC.

1.5.3 Objectives document

This document assesses the current objectives within the Waikato and Franklin sections of the operative District Plan to determine if new objectives are required. It is noted the infrastructure desired states and issues identified in this document differ from those listed above:

Infrastructure Desired States:

- Infrastructure is designed, developed, maintained, managed and utilised in a way that support a safe, connected, accessible, sustainable, resilient and integrated built environment and enhances community wellbeing and amenity values.
- Development of the built environment is focused in and around settlement nodes in an integrated manner.

ISSUE: Development and Operation of Infrastructure

- The development and operation of infrastructure has the potential to positively or negatively impact on our ability to sustainably manage natural and physical resources and to provide for community wellbeing

ISSUE: Provision of Utilities Avoids Adverse Effects

- Land uses and land use intensification, including subdivision, can have adverse effects on the environment if wastewater and stormwater disposal, water supply, energy supply and telecommunications are not adequately provided for or managed.

ISSUE: Significant Industry, Infrastructure, Primary Production and Research Sites

- Regionally significant industry and infrastructure, primary production and research sites are important for community wellbeing and provide significant social and economic benefits, yet the continued operation and development of these activities can be constrained by the inefficient access to supporting infrastructure, resources and incompatible adjacent land use activities.

ISSUE: Operation of the Land Transport Network

- The integrated, safe, responsive and sustainable operation of the land transport network, particularly the road network, can be adversely affected by inappropriate design and construction, and connection between the network and adjoining land, as well as through the adverse effects of land use activities and subdivision.

ISSUE: Design, Construction, Maintenance and Operation

- Design, construction, maintenance and operation of the land transport network can adversely affect the environment through earthworks and structures, increases in sediment and stormwater run-off, and property and community severance.

ISSUE: Urban Expansion

- New roads on the Hamilton urban fringe may compromise the later future construction of an urban standard and density road network.

1.5.4 Designations discussion document

This document provides background on designations and how they are used under the RMA, details on time limits (lapse periods) for designations under the RMA, and outlines the link between the designating of land and the land acquisition processes under the Public Works Act.

The document provides the lists of the existing requiring authorities which have designations within both the Waikato and Franklin Sections of the Waikato District Plan. It is noted the names of two requiring authorities will require updating: Waikato Regional Council and KiwiRail Holdings Limited (currently listed as Environment Waikato and The New Zealand Railways Corporation respectively).

The document also outlines the engagement Council have already had with the requiring authorities with regards to whether the existing designations within both the Waikato and Franklin Sections of the Waikato District Plan need to be rolled over. This section of the document notes that requiring authorities from the Franklin Section (Counties Power, Spark NZ Ltd., Chorus NZ Ltd., Auckland Council and Watercare Services Ltd.) will need to be added to the existing list of requiring authorities within Chapter 30 of the Waikato Section as part of the District Plan Review process.

1.5.5 Issues and Options Report

MWH (now Stantec) prepared this report on behalf of Waikato District Council in November 2016. The Issues and Options Report was prepared to inform the future drafting of transport, utility and energy provisions for the PDP and the associated preparation of Section 32 evaluation reports. The purpose was to:

- Provide a comprehensive summary of the baseline situation;
- Help clearly define any key issues;
- Identify and assess the benefits and disadvantages of various options to address key issues;
- Determine whether any new issue statements need to be added; and
- Provide a critical comparison of the options.

This report is attached as Appendix 2 to this report.

1.6 Consultation Undertaken

Council prepared a draft Plan Change 6 (PC 6) late 2011/early 2012 which was intended to address the matter of protecting the National Grid although this work did not progress through to public notification. In terms of consultation, Council undertook the following previous processes:

- WDC's 'touch base' letter sent in December 2011 to owners and occupiers of all properties within 32 metres of the Transpower lines, statutory bodies and key stakeholders.
- Staff report to WDC in February 2012 requesting Council resolution to notify PC 6.
- Various email correspondence from Transpower.

- WDC staff also met with Transpower staff and their planning consultant on 15 September 2011, 8 March 2012 and 25 July 2012.

The Council has been collating feedback from a range of stakeholders to inform the District Plan Review process since 2015. This feedback has been captured within a spreadsheet entitled the District Plan Issues Register and includes a tab for Infrastructure. There were no issues raised with regards to the National Grid.

Development of the Infrastructure and Energy provisions were informed by two stakeholder groups:

1. infrastructure providers (which included Transpower NZ Limited) and surveyors; and
2. an internal Council group of planners and engineers.

Two workshops were held with both groups to initially identify issues with the Operative Waikato District Plan, then a subsequent workshop to look at the proposed provisions in more detail and provide feedback. This feedback is summarised in the following tables, but as representatives from Transpower NZ Limited did not attend, there was very little discussion of the National Grid.

Specific and targeted consultation with Transpower NZ Limited was also undertaken.

Table 1: Summary of feedback received through infrastructure workshops

Date	Group	Subject Matter	Feedback
11 July 2016	Workshop with infrastructure providers and surveyors McCracken Surveys; Counties Power; Blue Wallace Surveyors; NZ Transport Agency; Watercare Services; Auckland Transport; Waipa Networks; Hamilton City Council; Spark; Vodafone; and BCD Group Ltd.	What is working well with the Operative District Plan, and areas where the structure or rules could be improved.	The participants of the workshop identified the following as being key matters in respect to transport and utility provisions: • Try not to be overly prescriptive on utility dimensions as there are industry standards; • Early consultation in re-zoning is required, particularly in rural areas; • Support for a stand-alone chapter for transport and utilities; • District Plan needs to anticipate future land uses; • Standardise the utility layouts within road corridors; • Increase permitted limits from current 110kV for electricity lines; • Remove the exclusion of lightning rods as part of the height requirements; • The need to futureproof and enable constant changes to best-practice due to technological advances; • Increase permitted limits for telecommunication mast heights; and • Alignment with Hamilton City Council Plan rules, particularly at the boundary.
14 July 2016	Council engineers and planners from consents, compliance and monitoring and policy	What is working well with the Operative District Plan, and areas where the structure or rules could be improved.	The following were identified by the internal stakeholders in attendance as being key matters in respect to transport and utility provisions: • Waikato Section should be clear and easy to use; • Support the approach of rules by zone; • The structure of the Waikato Section is good – tables of activity, what is permitted etc.; • Keep cross-referencing minimal; • Low impact design currently within the Waikato Section is good – extend to whole plan; • Earthworks provisions need to link to the Regional Plan; • Activity statuses need to reflect importance/focus of objectives and policies; and • District Plan outcomes need to be direct and quantitative.
14 July 2017	Council engineers and planners from consents, compliance and monitoring and policy.	Review of the draft Infrastructure and Energy provisions	• Cross over of the management of stormwater with the regional plan • Green infrastructure • Encouraging low impact design and the relationship with catchment

			management plans • The definitions of infrastructure versus regionally significant infrastructure • Management of minor upgrading • Temporary infrastructure • Electric vehicle charging stations • The relationship of the New Zealand Electrical Code of Practice with the district plan • Overhead distribution lines and support structures • Enabling new way of generating renewable electricity • Wastewater treatment ponds and whether this is municipal or rural • Impervious surfaces • Management of new roads and getting those into the Plan • On-site parking and loading standards
21 July 2017	Workshop with infrastructure providers and surveyors Madsen Lawrie Birch Surveyors McCracken Surveys; Counties Power; Blue Wallace Surveyors; NZ Transport Agency; Watercare Services; Auckland Transport; Waipa Networks; Hamilton City Council; Spark; Vodafone; Ultrafast Broadband BCD Group Ltd	Review of the draft Infrastructure and Energy provisions	• Ensure consideration of scheduled areas, trees, heritage items, Maaori sites of significance. • Support the single chapter. • Support alignment with neighbouring DPs. • Need row heading on the top of each page of the table. • Support identification of whole network, i.e. Regionally Significant Infrastructure + others. • Tables work well. • Minor structures – need to cover minor utility structures for electricity cabinets for link pillars. • Definition covers transformers, need to cover pillar boxes, transformer boxes. Look at HCC sizes rather than blanket term. UP distribution substations different terms. • Switchgear found in road reserve, RoW, pole-mounted or ground-mounted. • Minor utility structure in unitary plan. • Like temporary infrastructure provisions, but questioned what happens if it is longer than 12 months. • Subdivision for substations - no preference on which chapter but need to know that normal subdivision requirements will apply and no financial contribution. • Why have minimum lot size for network utility subdivisions

			• Subdivision and easements – clearance under s224 • Reference to tree regulations and trimming, pruning protected trees and works in the drip line for network utilities. • Drilling included in trenching? • Would prefer permitted drilling and trenching for network utilities • References to NZECP. • Minor upgrade definition – difficulty with 2m movement put in new pole while old one still there. 2m not enough, more practicable.
17 August 2016	Transpower NZ Ltd	Feedback on the draft provisions	• Development of policies relating to this objective can expand on what is provided e.g. the construction, operation and maintenance of infrastructure. • Need for recognition that infrastructure can have positive effects and is in most cases essential for people's well-being. • Alternative wording for objectives to recognise that there are a range of adverse effects of use and development that have no relationship to infrastructure. Not all adverse effects of use and development will be avoided by the provision of infrastructure. • Alternative wording of the objective to align development with appropriate infrastructure. • The integration of development with infrastructure is a key objective and policy matter in the Waikato RPS and is recommended that it is explicitly addressed in the Waikato Proposed District Plan. • Explicit recognition of the National Grid versus inclusion in regionally significant infrastructure with a specific objective framework to give effect to the National Policy Statement for Electricity Transmission. • Absence of issues or objectives that acknowledge that subdivision, land use and development has the potential to have reverse sensitivity effects on infrastructure other than regionally significant infrastructure. Or that inappropriate development can negatively impact the safety of communities e.g. sensitive uses in close proximity to the electricity transmission

			network (refer Policies 10 and 11 of the NPS on Electricity Transmission).
September 2017	Transpower NZ Limited	To understand the provisions Transpower they have been seeking in district plans.	• Outlined Transpower's model district plans provisions.
February 2018	Transpower NZ Limited		Transpower generally supports the approach taken by the Council to providing for the National Grid in this preliminary phase of the District Plan review. In particular, Transpower supports the inclusion of provisions that: • recognise the significance of the National Grid; • provide a pathway for any future major upgrade or development of the National Grid (should that occur in the lifespan of the District Plan); and • provide for the protection of the National Grid from the effects of others' activities, including activities that may compromise its efficient operation, maintenance, upgrading and development.

More recently in November 2017, Council made available a draft proposed district plan for public feedback. The following comments related to the National Grid were made.

Table 2: Summary of feedback received on draft Proposed District Plan

Topic	Feedback
Definitions of 'Building', 'Infrastructure' and 'National Grid'	Supports these three definitions.
Definition of 'minor upgrading of existing infrastructure'. Performance standards relating to realignment.	Supports the intent of this draft definition but requests clarify. 'minor upgrading' is more precisely 'defined' by the permitted activity performance standards (excluding the 'note') accompanying these standards.
Definitions of 'National Grid Yard' and 'National Grid Corridor'	Seeks amendments to both definitions - so that it is clear that NGY or NGC do not apply to NG transmission lines that are designated, undergrounded or removed.
Requests new definition for NZECP34:2001	Requests new definition: 'NZECP34:2001 means the New Zealand Electrical Code of Practice for Electrical Safe Distances 34:2001 ISSN 0114-0663
Definitions for 'sensitive activity' and 'sensitive land use'	The definition of 'sensitive activity' is not consistent with the NPSET definition and not sufficiently certain. Therefore requests a further definition to ensure that Policy 11 of the NPSET is given effect to ie 'Sensitive activities in relation to

	the National Grid means residential activities, rest home, retirement village, marae complex, child care facility, schools, educational facility and health care facility'.
Requests new definitions for 'operational, functional and technical constraints'	Requests new definitions for these terms. States that a number of District plans do include definitions to explain these concepts.

1.7 Iwi Authority Consultation and Advice

1.7.1 Consultation

Clause 3 of Schedule 1 of the RMA set out the requirements for local authorities to consult with tangata whenua through and iwi authorities. Clause 3 also requires Local Authorities to consult with any person, group or ministry that may be affected by changes made to the District Plan.

Council used the following methods to create an Iwi Reference Group.

- Joint Management Agreement
- Tai Tumu Tai Pari Tai Ao (Waikato Tainui Environmental Plan)
- Partnerships
- Collaboration

The purpose of the Iwi Reference Group was to provide Council with a single forum to socialise the proposed changes to the Operative District Plan.

The Iwi Reference group was made up of all iwi and hapuu within the district that council currently consults with via the Resource Consent Process.

Engagement and consultation with the Iwi Reference group took place between December 2014 and December 2017. (See Part 1 Section 32 Report – Introduction to the Evaluation Report)

1.7.2 Advice

Under Clause 4A of Schedule 1 of the RMA sets out the requirements for local authorities to consult with iwi authorities before notifying a proposed plan. Clause 4A(1)(b) requires Council to have particular regard to any advice received on a draft proposed policy statement or plan from those iwi authorities.

Council with discussions with the relevant Iwi and Hapuu and through Te Kahui Mangai website:

Council undertook consultation with:

Iwi authorities within Waikato District:

- Waikato Tainui
- Ngaati Tamaoho

Iwi for the purpose of RMA list on Te Kahui Mangai

- Tainui o Tainui

Iwi that have relationship from other districts

- Hauraki
- Ngaati Maniapoto
- Ngaati Paoa - Hauraki

The above Iwi groups were consulted with and a summary of their comments issues and Council's consideration are listed in Part 1 Section 32 Report – Introduction to the Evaluation Report.

1.8 Decision-making

A number of workshops were held with Councillors to discuss the structure and function of the infrastructure chapter of the PDP, and the management of the National Grid was one of the matters discussed. The following table sets out the timing of these workshops and the subject matter.

Table 3 Summary of decision-making processes

Meeting / Feedback	Document	Decision/direction
23 August 2016 Presentation to Councillors	• The Infrastructure chapter will include what was previously the utilities and land transport network provisions; • The Infrastructure provisions are required to address a number of higher order planning documents; • New provisions relating to 'Essential Infrastructure' are proposed as well as amendments to the existing infrastructure objectives; • The Significant Industry, Infrastructure, Primary Production and Research Sites issue requires further refining; • A new issue and objective relating to Reverse Sensitivity of Land Use with Regionally Significant Infrastructure is proposed; • The existing Urban Expansion issue and objective within the Waikato Section is no longer required specifically for the Infrastructure chapter; and • The existing objectives contained within in Appendix B of the Waikato Section are either covered by the other objectives or they can be developed as policies	Support for the stand alone Infrastructure chapter An understanding of the directives of the RPS and NPS-ET with regards to management of the activities and structures around the National Grid
7 August 2017 Presentation to Councillors	• Update on progress • Feedback from the stakeholder workshops • Findings from the Issues and Options Report • Principles to guide development of the chapter • Statutory considerations including the RPS, NPS, NES, NZCPS • Broad approach of objectives • The draft issues, objectives and policies • Draft definitions	Draft objectives Statutory framework for managing the National Grid
15 August 2017 Presentation to the Councillors	• Structure of the rules • Organisation of chapter by the type of infrastructure • Approach to the chapter • General themes	Draft rules

	• Rules associated with general infrastructure • Rules associated with National Grid • Electricity distribution • Electricity generation • Small-scale renewable electricity • Wastewater, water supply and stormwater • Infrastructure standards • Development standards • Telecommunications • Transportation • Parking and access • Liquid fuels and gas • Meteorological • Matters that were still being worked on	

1.9 Reference to Other Relevant Evaluations

This Section 32 topic report should be read in conjunction with the following Section 32 evaluations:

- Historic heritage;
- Tangata whenua;
- Landscapes and natural character; and
- Biodiversity.

2 ISSUES, OBJECTIVES, POLICIES AND RULES

2.1 Higher Level Planning Documents and Legislation

Under section 75(3) of the RMA, a district plan must give effect to the following:
(a) any national policy statement; and
(b) any New Zealand coastal policy statement; and
(c) any regional policy statement.

In respect to infrastructure provisions, these statutory documents are discussed in terms of their relevance to the Project.

2.1.1 National Policy Statement for Electricity Transmission

The NPS-ET was gazetted on 13 March 2008 (it took effect on 10 April 2008) and sets out one objective and a number of policies to standardise the approach to the electricity transmission network (the National Grid) across the country. The NPSET

recognises as a matter of national significance the need to operate, maintain, develop and upgrade the electricity transmission network.

The NPSET seeks to ensure that, in providing for the transmission of electricity within a region or district and in managing the effects of the transmission network on the environment, the operational and long-term development requirements of the network are appropriately considered and its status as a linear cross-boundary network is fully recognised.

NPSET Objective and Policies	Recommended response of the District Plan
Objective To recognise the national significance of the electricity transmission network by facilitating the operation, maintenance and upgrade of the existing transmission network and the establishment of new transmission resources to meet the needs of present and future generations, while: • managing the adverse environmental effects of the network; and • managing the adverse effects of other activities on the network	The NPSET requires local authorities to provide some form of specific recognition and provision for the transmission network in their district plan objectives, policies, methods and rules (if appropriate). The transmission network should be specifically provided for. Ways the District Plan could give effect: • an objective be developed which flows through into policies and assessment criteria (for appropriate activities) that aligns with the NPSET objective. • an objective and policy is developed which addresses managing the effects of other activities (including structures and buildings) on the electricity transmission network. • revise the approach to electricity transmission lines to include all buildings and structures as well as some critical activities such as activities sensitive to electricity and earthworks.
Policy 1 In achieving the purpose of the Act, decision-makers must recognise and provide for the national, regional and local benefits of sustainable, secure and efficient electricity transmission. The benefits relevant to any particular project or development of the electricity transmission network may include: i) maintained or improved security of supply of electricity; or ii) efficient transfer of energy through a reduction of transmission losses; or iii) the facilitation of the use and development of new electricity generation, including renewable generation which assists in the management of the effects of climate change; or	Ways the District Plan could give effect: • a similar policy to NPSET Policy 1 be introduced into the District Plan to recognize the benefits of sustainable, secure and efficient electricity transmission. This will enable the District Plan to give effect to the NPSET. • the National Environmental Standard for Electricity Transmission Activities be recognized by the District Plan as an "other method" for giving effect to policies. • assessment criteria be developed to apply when a component of the electricity network requires a resource consent. The National Environmental Standard for Electricity Transmission Activities only covers existing transmission networks. The assessment criteria would apply to those activities not covered by the NES-

iv) enhanced supply of electricity through the removal of points of congestion. The above list of benefits is not intended to be exhaustive and a particular policy, plan, project or development may have or recognise other benefits.	ETA such as new networks, switching stations or substations. In the case of these activities the District Plan rules apply and a resource consent may be required where a performance standard is exceeded, not met or the development is in an overlay.
Policy 2 In achieving the purpose of the Act, decision-makers must recognise and provide for the effective operation, maintenance, upgrading and development of the electricity transmission network.	Ways the District Plan could give effect: • Development of a policy that supports the operation, maintenance and upgrading of electricity transmission networks • Revise the approach to electricity transmission lines to manage sensitive land-use activities. This will more effectively manage safety issues. • Revise the approach to electricity transmission lines to manage the construction of buildings and structures. This will enable operation, maintenance, upgrading and development of the transmission network. • Develop additional policies to more closely align with that of the NPSET. • Develop assessment criteria for those transmission activities that will require resource consent.
Policy 3 When considering measures to avoid, remedy or mitigate adverse environmental effects of transmission activities, decision-makers must consider the constraints imposed on achieving those measures by the technical and operational requirements of the network.	Ways the District Plan could give effect: • Strengthening the District Plan through development of a policy which recognises the technical and operational requirements of the network. • Assessment criteria along the lines of the NPSET Policy 3 should also be developed for activities / structures that apply to electricity transmission (those that are not captured by the National Environmental Standard for Electricity Transmission Activities).
Policy 4 When considering the environmental effects of new transmission infrastructure or major upgrades of existing transmission infrastructure, decision-makers must have regard to the extent to which any adverse effects have been avoided, remedied or mitigated by the route, site and method selection.	Ways the District Plan could give effect: • Introduce a new policy to support Policy 4 of the NPSET. • Develop specific bulk and location standards for electricity transmission activities. • Develop associated assessment criteria which only relate to transmission structures and activities.
Policy 5 When considering the environmental effects of transmission activities	The "operation, maintenance, and minor upgrading" aspects of this policy will be largely implemented through the National Environmental

associated with transmission assets, decision-makers must enable the reasonable operational, maintenance and minor upgrade requirements of established electricity transmission assets.	Standard on Electricity Transmission Activities. Policy 5 refers to "established electricity transmission assets" which is addressed by the NES-ETA. Policy 5 may apply to substations and switching stations as even existing substations and switching stations are not covered by the NES-ETA. Ways the District Plan could give effect: • A policy to enable reasonable operational, maintenance and minor upgrade requirements of established electricity transmission assets. • Associated assessment criteria are developed in the case of substations and switching stations (as these are not covered by the NES-ETA)
Policy 6 Substantial upgrades of transmission infrastructure should be used as an opportunity to reduce existing adverse effects of transmission including such effects on sensitive activities where appropriate.	The "upgrading" aspects of this policy will be largely implemented through the National Environmental Standard on Electricity Transmission Activities where the upgrade involves existing transmission infrastructure and networks. Ways the District Plan could give effect: • Review the existing policies relating to residential environments and ensure they adequately cover reduction of existing adverse effects • Develop policies to cover the development of new transmission networks (not covered by NES-ETA) • Develop assessment criteria that would apply in the case of new networks, substations and switching stations
Policy 7 Planning and development of the transmission system should minimise adverse effects on urban amenity and avoid adverse effects on town centres and areas of high recreational value or amenity and existing sensitive activities.	Ways the District Plan could give effect: • Review the characteristics of urban amenity that are critical to be maintained. Ensure that there is adequate policy support to protect these components of urban amenity. • Identify areas of high recreational or amenity value and ensure there is adequate policy support to protect these from inappropriate new electricity transmission development. • Develop policies to provide guidance on the appropriate ways to minimise adverse effects on these environments. • Develop assessment criteria to apply when a component of the electricity network requires a resource consent for those activities / structures not covered by the NES-ETA. The assessment criteria would apply to those activities not

	covered by the NES-ETA such as new networks, switching stations or substations.
Policy 8 In rural environments, planning and development of the transmission system should seek to avoid adverse effects on outstanding natural landscapes, areas of high natural character and areas of high recreation value and amenity and existing sensitive activities.	Although there is a robust policy framework in the District Plan for protecting regionally significant landscapes, significant coastal areas and significant natural areas, this does not flow through into rules with regard to transmission networks. Ways the District Plan could give effect: • Develop an additional policy • Strengthen methods to give effect to policies regarding outstanding natural landscapes, areas of high natural character and areas of high recreation value and amenity and existing sensitive activities. • This may include reviewing the activity status of transmission structures within these overlays and strengthening the existing overlays where appropriate.
Policy 9 Provisions dealing with electric and magnetic fields associated with the electricity transmission network must be based on the International Commission on Non-ionising Radiation Protection *Guidelines for limiting exposure to time varying electric magnetic fields (up to 300 GHz)* (Health Physics, 1998, 74(4): 494-522) and recommendations from the World Health Organisation monograph *Environment Health Criteria* (No 238, June 2007) or revisions thereof and any applicable New Zealand standards or national environmental standards.	It is recommended that further discussions are held with Transpower to confirm that the numerical standards already contained in the District Plan are aligned with relevant international standards. Ways the District Plan could give effect: • Include a policy referring to the International Commission on Non-ionising Radiation Protection guidelines • It may be appropriate for International Commission on Non-ionising Radiation Protection *Guidelines for limiting exposure to time varying electric magnetic fields (up to 300 GHz)* (Health Physics, 1998, 74(4): 494-522) and recommendations from the World Health Organisation monograph *Environment Health Criteria* (No 238, June 2007) to be referenced in association with the existing electric field strength and magnetic flux density standards.
Policy 10 In achieving the purpose of the Act, decision-makers must to the extent reasonably possible manage activities to avoid reverse sensitivity effects on the electricity transmission network and to ensure that operation, maintenance, upgrading, and development of the electricity transmission network is not compromised.	Ways the District Plan could give effect: • When considering the Waikato Section and Franklin Section, there are different setbacks standards from the centerline of electricity transmission lines. It is recommended that this matter be discussed with Transpower to confirm the different approaches as being appropriate to each areas, and ensuring an adequate evidence base for the setbacks. • Develop an appropriate objective.

Policy 11 Local authorities must consult with the operator of the national grid, to identify an appropriate buffer corridor within which it can be expected that sensitive activities will generally not be provided for in plans and/or given resource consent. To assist local authorities to identify these corridors, they may request the operator of the national grid to provide local authorities with its medium to long-term plans for the alteration or upgrading of each affected section of the national grid (so as to facilitate the long-term strategic planning of the grid).	• Develop supporting policies. • Revise the policies to recognize the potential for reverse sensitivity issues to arise around existing electricity transmission networks. • Review assessment criteria. • Develop policies to control subdivision within close proximity to electricity transmission lines. • Revise the existing assessment criteria for subdivision to ensure that building envelopes are identified clear of the setbacks.
Policy 12 Territorial authorities must identify the electricity transmission network on their relevant planning maps whether or not the network is designated.	No changes are required as the planning maps are already giving effect to this Policy.
Policy 13 Decision-makers must recognise that the designation process can facilitate long-term planning for the development, operation and maintenance of electricity transmission infrastructure.	Ways the District Plan could give effect: • Develop a similar policy to the NPSET Policy 13 be introduced into the District Plan to recognise the value of the designation process and encourage use of it for electricity transmission infrastructure. • Add "designation process" to "other methods" in the District plan to recognize the ways of giving effect to policies.

2.1.2 New Zealand Coastal Policy Statement

The purpose of the New Zealand Coastal Policy Statement (NZCPS) is to state objectives and policies in order to achieve the purpose of the RMA in relation to the coastal environment of New Zealand. The NZCPS 2010 took effect on 3 December 2010.

The NZCPS has relevance to the National Grid; recognising the provision of infrastructure and energy generation within the coastal environment is important to the social, economic and cultural well-being of people and communities, and addressing issues such as the risk to existing infrastructure from coastal erosion and coastal hazards.

The identification of the extent of the coastal environment (as required by Policy 1 of the NZCPS) will be critical for application of the NZCPS. Indeed, Objective 1(2)(i) recognises that the coastal environment contains physical resources and built facilities, including infrastructure, that have modified the coastal environment.

The King Salmon Supreme Court decision has had wide ranging consequences and has changed the way policies are interpreted. This decision has set a precedent

that applying an overall judgment is not appropriate when giving effect to provisions in higher order planning documents and prescriptive policies are likely to be awarded more weight than flexible ones (e.g. highly directive verbs such as avoid, protect etc). The decision has indicated that the use of the word "avoid" adverse effects is an absolute for the matters listed. This is of particular relevance to policies which require adverse effects to be *avoided* (Policies 5, 11, 13 and 15). What this means for the National Grid are those infrastructure activities in the following areas in the coastal environment will need to be managed differently from the rest of the district:

- land or waters in the coastal environment held or managed under the Conservation Act 1987 and any Act listed in the 1st Schedule to that Act; or other Acts for conservation or protection purposes (Policy 5)
- areas of outstanding natural character (Policy 13(1)(a))
- outstanding natural features and outstanding natural landscapes in the coastal environment (Policy 15(a))

In order to protect indigenous biological diversity in the coastal environment, Policy 11 requires activities avoid adverse effects on:

> *(i) indigenous taxa* that are listed as threatened** or at risk in the New Zealand Threat Classification System lists;*
> *(ii) taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;*
> *(iii) indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare***;*
> *(iv) habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;*
> *(v) areas containing nationally significant examples of indigenous community types; and*
> *(vi) areas set aside for full or partial protection of indigenous biological diversity under other legislation; and*
>
> *(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:*
>
> *(i) areas of predominantly indigenous vegetation in the coastal environment;*
> *(ii) habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;*
> *(iii) indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;*
> *(iv) habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;*
>
> *(v) habitats, including areas and routes, important to migratory species; and*
> *(vi) ecological corridors, and areas important for linking or maintaining biological values identified under this policy.*

All of the NZCPS policies referring to activities or use and development are relevant to infrastructure. However there are a number which are specific to infrastructure including:

- Policy 6(1)(a) and (b) – which recognises the provision of infrastructure, including the generation and transmission of energy, are important activities; and considers the rate at which infrastructure should be enabled to provide for the reasonably foreseeable needs of population growth without compromising the other values of the coastal environment;
- Policy 25(d) – where practicable, encourage the location of infrastructure away from areas potentially affected by coastal hazards over at least the next 100 years.

2.1.3 Waikato Regional Policy Statement

The Operative Waikato Regional Policy Statement (WRPS) provides an overview of the resource management issues in the Waikato region, and the ways in which integrated management of the region's natural and physical resources will be achieved.

The provisions of the WRPS which are considered to be applicable are outlined in below. The National Grid is included in the term "regionally significant infrastructure" so all the objectives and policies relevant to regionally significant infrastructure also apply to the National Grid.

The WRPS highlights providing for energy demand and managing the built environment as key issues for the Waikato Region.

A large number of the issues, objectives and policies of the WRPS are relevant to the management of infrastructure to some degree, but the most relevant are discussed below.

Objective 3.12 Built Environment	Development of the built environment (including transport and other infrastructure) and associated land use occurs in an integrated, sustainable and planned manner which enables positive environmental, social, cultural and economic outcomes, including by: c) integrating land use and infrastructure planning, including by ensuring that development of the built environment does not compromise the safe, efficient and effective operation of infrastructure corridors; e) recognising and protecting the value and long-term benefits of regionally significant infrastructure; i) providing for the development, operation, maintenance and upgrading of new and existing electricity transmission and renewable electricity generation activities including small and community scale generation
Policy 6.6 Significant infrastructure and energy resources	Management of the built environment ensures particular regard is given to: a) that the effectiveness and efficiency of existing and planned regionally significant infrastructure is protected; b) the benefits that can be gained from the development and use of regionally significant infrastructure and energy resources, recognising and providing for the particular benefits of renewable electricity generation, electricity transmission, and

	municipal water supply; and c) the locational and technical practicalities associated with renewable electricity generation and the technical and operational requirements of the electricity transmission network.
Implementation methods 6.6.2 Transmission corridor management approach	Waikato Regional Council will work with territorial authorities and energy companies and in consultation with other relevant industry organisations, to develop a transmission corridor management approach which: a) recognises the benefits of the national electricity grid; b) identifies key transmission corridors in district plans, and: i) protects the corridor and electricity transmission network from inappropriate activities (including "sensitive activities", as defined in the National Policy Statement on Electricity Transmission); and ii) manages the adverse effects (including reverse sensitivity effects) of subdivision, use and development on the operation, maintenance, upgrading and development of the electricity transmission network. c) identifies and addresses potential effects on people and communities and natural and physical resources from new transmission infrastructure; d) seeks opportunities for alignment with other infrastructure corridors; e) recognises that energy companies may be affected parties with respect to land use change, including subdivision and development; and f) seeks to manage the effects of third parties on the safe and efficient operation of the transmission network.
6.6.5 Measures to avoid adverse effects	Local authorities should ensure that appropriate measures are implemented to avoid adverse effects of development of the built environment on the safe, efficient and effective operation of regionally significant infrastructure. With respect to electricity transmission corridors, development of the built environment should also take into account National Policy Statements, National Environmental Standards and Transmission Corridor Guidelines as relevant to the circumstances.
6A Development Principles	New development should: h) be directed away from identified significant mineral resources and their access routes, natural hazard areas, energy and transmission corridors, locations identified as likely renewable energy generation sites and their associated energy resources, regionally significant industry, high class soils, and primary production activities on those high class soils;

The main messages from the RPS are:

- Integrate infrastructure with land use;

- Infrastructure enables people and communities to provide for their well-being;
- Manage reverse sensitivity with regards to infrastructure;
- Development maintains and enhances the safe, efficient and effective use of existing infrastructure;
- Recognise and protect regionally significant infrastructure, including electricity transmission and renewable electricity generation activities;
- Provide for all electricity transmission and renewable electricity generation activities, including maintenance, operation, upgrading and new facilities;
- Protect existing and planned infrastructure corridors; and
- Recognise the need for electricity generation to locate where energy sources exist, and transmission infrastructure to connect these generation sites to the national grid or local distribution network.

2.1.4 Tainui Vision and Strategy

As set out in Section 2 of the WRPS, the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (the Settlement Act) gives effect to the Deed of Settlement signed by the Crown and Waikato-Tainui on the 17 December 2009. The Settlement Act has an overarching purpose to restore and protect the health and wellbeing of the Waikato River for future generations. Section 9(2) of the Settlement Act confirms that the vision and strategy for Waikato River (Te Ture Whaimana o Te Awa o Waikato) applies to the Waikato River and activities within its catchment affecting the Waikato River.

The Vision and Strategy expresses concern about the development of new transmission lines, particularly where they are 400kV above ground lines, and potential adverse effects on Waikato-Tainui environmental, spiritual, and cultural values (Issue 26.2). Those objectives and policies specific to electricity transmission in the Waikato-Tainui Environmental Plan are outlined below.

Objective – Waikato-Tainui engagement	*26.3.1 Infrastructure development, upgrade, and maintenance within the Waikato-Tainui rohe occurs in partnership with Waikato-Tainui.*
Policy – Waikato-Tainui engagement	*26.3.1.1 To ensure that infrastructure development, upgrade and maintenance within the Waikato-Tainui rohe occurs in partnership with Waikato-Tainui.*
Objective – infrastructure development, upgrade, and maintenance	*26.3.2 Infrastructure development, upgrade, and maintenance manages economic, social, cultural, spiritual, and environmental effects.*
Policy – infrastructure development, upgrade and	*26.3.2.1 To ensure that infrastructure development, upgrade, and maintenance manages economic, social, cultural, spiritual, and environmental effects.*

maintenance	*Methods* *(a) Infrastructure development shall avoid land in Maaori ownership except with the agreement of the Maaori owners.* *(b) New infrastructure development shall take into account the enhancement principles contained in Chapter 7 "Te Whakapakari i Te Taiao - Towards environmental enhancement". As a minimum all existing infrastructure shall be managed to sustain the ability of the environment to provide for future generations.* *(c) Ensure that, in the development of new infrastructure, best practice approaches and appropriate environmentally sustainable and enhancing technologies are applied to ensure, as far as practicable, any adverse impacts on the environment or cultural and/or spiritual resources are avoided.* *(d) Infrastructure development and management shall be planned to manage adverse effects on water bodies, stormwater, water supply and wastewater systems.* *(e) The cumulative effect of infrastructure provision shall be considered as well as the effect of a single piece of infrastructure.* *(f) When assessing infrastructure needs or making decisions on designations or consents regarding infrastructure, the adverse effects should be managed so as to achieve the objectives in this Plan. In particular adverse effects should be avoided on:* *i. Land held in Maaori title or in the ownership of Waikato-Tainui;* *ii. Waahi tapu and other sites of significance to Waikato-Tainui;* *iii. Oceans, rivers, lakes, and wetlands that would hinder achieving the objectives and policies contained in the water management, fisheries and cultural chapters of the Plan;* *iv. Areas of significant indigenous vegetation or habitats of taonga species;* *v. Customary activities or fisheries;* *vi. Natural hazards; and* *vii. Culturally and/or spiritually significant landscapes and view shafts.* *(g) In the event that adverse effects cannot be avoided, discussions shall be held with Waikato-Tainui to agree if the effects can be managed.* *(h) Any local adverse effects of infrastructure that cannot be avoided, remedied, or minimised should be discussed with Waikato-Tainui to discuss whether the effect can be mitigated and compensated near the locality where the adverse effects occur, or elsewhere as agreed with Waikato-Tainui.*
Objective - electricity generation and transmission	*27.3.1 In partnership with Waikato-Tainui, existing and new electricity generation activities, and the structures and operations to transmit electricity to end users, effectively manages adverse social, cultural, spiritual, environmental, and economic effects.*
Policy – electricity generation and transmission	*27.3.1.1 In partnership with Waikato-Tainui, to ensure that existing and new electricity generation activities, and the structures and operations to transmit electricity to end users effectively manages adverse social, cultural, spiritual, environmental, and economic effects.* *Methods* *(a) Electricity generation and transmission activities are developed or operated in a manner consistent with the parts of this Plan that are*

	relevant to the proposed or existing electricity generation or transmission activity. *(c) Efficient conservation and use of electricity ensures electricity wastage or leakage from electricity generation or transmission is minimised.* *(f) In designing new transmission lines, upgrading, or replacing transmission lines, alternatives to overhead lines, such as undergrounding, will be the preferred option provided there are no adverse effects on cultural or spiritual sites.* *(g) Large transmission structures shall not be located in close proximity to marae, culturally or spiritually sensitive sites, or in the river and its environs (such as banks, floodplains, estuaries, or bed).* *(h) Other than as required for safety purposes, electricity transmission lines and supporting infrastructures blend in with the surrounding environment. (such as by control of colour, use of vegetation cover, undergrounding infrastructure, minimising visual profile, and minimising size)*

2.1.5 Maniapoto Environmental Management Plan

The Maniapoto Environmental Management Plan was prepared by Maniapoto Māori Trust Board on behalf of the people of Maniapoto and is a high level direction setting document and describes issues, objectives, policies and actions to protect, restore and enhance the relationship of Maniapoto with the environment including their economic, social, cultural and spiritual relationships.

The objectives and policies most relevant to electricity transmission are outlined below:

22.3.2 Objective: Energy generation and transmission	*To ensure electricity generation, transmission and distribution benefits Maniapoto and protects the mauri of the environment*
22.3.2.1 Policy	*Electricity generation, transmission and distribution within Maniapoto rohe does not result in negative effects on the mauri of the environment* *Actions* *(f) Ensure energy generation and transmission infrastructure is developed in a manner otherwise consistent with this Plan.*
22.3.3 Objective: Energy generation and transmission	*Maniapoto has access to reliable, sustainable and efficient energy sources*
22.3.3.1 Policy	*To ensure Maniapoto has access to reliable, sustainable and efficient energy sources*

2.1.6 National Environmental Standard for Electricity Transmission Activities

The National Environmental Standards (NES-ETA) for Electricity Transmission came into effect on 14 January 2010. The NES sets out a national framework of permissions and consent requirements for activities on existing electricity

transmission lines. Activities include the operation, maintenance and upgrading of existing lines.

The NES-ETA:

- specifies that electricity transmission activities are permitted, subject to terms and conditions to ensure that these activities do not have significant adverse effects on the environment; and
- specifies the resource consent requirements for electricity transmission activities that do not meet the terms and conditions for permitted activities.

The NES-ETA only applies to existing high voltage electricity transmission lines owned and operated by Transpower; more specifically those which were operating, or able to be operated as at 14 January 2010. It does not apply to the construction of new transmission lines, nor to substations. The NES-ETA does not apply to electricity distribution lines either - these are the lines carrying electricity from regional substations to electricity users.

The NES-ETA provides rules for:

- Operation of a transmission line
- Use of access tracks
- Works on conductors and support structures
- Increasing current or voltage
- Undergrounding
- Temporary structures and line deviation
- Relocation, replacement and removal of support structures
- Earthworks
- Access tracks to existing lines
- Vegetation trimming / felling / removing
- Discharge of contaminants
- Occupation of the Coastal Marine Area.

The NES-ETA does not apply to:

- New transmission lines and substations;
- The distribution network (i.e. lines carrying electricity from regional substations to electricity users);
- The construction of new transmission lines; or
- Substations.

Every local authority and consent authority must observe and enforce national environmental standards. Although Councils are required to implement the NES-ETA, Section 44A of the RMA requires that District Plans do not duplicate nor conflict with an NES. However section 44A(6) does allow references to the NES-ETA to be included in a District Plan. This would be useful in ensuring that members of the public reading the District Plan are aware of rules that sit external to the Plan.

2.1.7 Future Proof

Future Proof contains directives regarding the National Grid in the following way:

- Protect existing and future infrastructure and transport corridors, from development that could constrain or compromise the efficiency of infrastructure operation.
- Ensure development is directed away from areas suited to energy generation and transmission, and important mineral resources (including sand and aggregate) and access routes to these resources.

2.2 Issues

The evaluation of objectives and provisions in the following sections relate to the resource management issue stated below:

Issue statement	Land use, urban growth and other forms of land development can have adverse effects on the operation, maintenance, upgrading and long-term development of electricity transmission corridors.
Activities can pose a potential risk to the safe and efficient use of the line and support structures. Examples include: • new buildings close to transmission lines increase the risk of flashovers, • earthworks around towers can destabilize towers or reduce separation distances between the ground and lines by raising the ground level; • dust from construction earthworks may also adversely affect the functioning of the lines; • trees planted near the lines can increase the risk of flashovers.	
Issue statement	Protecting the health and safety of people and property in close proximity to the National Grid.
Activities have the potential to impact on the safety of the community. For example, building too close to a transmission line will increase the chances of a flashover and therefore the safety of the occupants of the building. The lines expand and contract depending on temperature and the voltage they are carrying. Based on these two variables, the swing of each line is different and is a function of the spacing of the support structures. Sensitive activities such as childcare locating directly beneath the lines increase the risk to people. Other activities in close proximity to the lines can increase the risk to human life such as undertaking earthworks with a digger underneath the lines.	
Issue statement	New National Grid facilities, lines and structures may be necessary.
While the National Environmental Standard for Electricity Transmission Activities (NES-ETA) covers many of the maintenance and replacement activities associated with the national Grid, it does not apply to the construction of new transmission lines, nor to substations. The NES-ETA only applies to existing transmission lines – more specifically those which were operating, or able to be operated as at 14 January 2010.	

3 EVALUATION OF OBJECTIVES

Below is a summary of the objectives that have been identified as the most appropriate to address this resource management issue and achieve the purpose of the Resource Management Act 1991.

The following objectives are considered to be the most appropriate way to achieve the purpose of the Act.

Table 3 Summary of objectives

Objective	Summary of evaluation
6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.	The National Grid consists of the physical structures and networks that support and provide essential electricity to the communities of the district. The recognition and protection of the National Grid as a physical resource is critical to the District's economic productivity, environmental outcomes and wellbeing of the community. The benefits of this infrastructure to the functioning of the district are therefore substantial. A secure and reliable electricity supply is vital to the functioning of the District. It enables people and communities to provide for their social, economic and cultural wellbeing. The recognition and protection of the National Grid is fundamental to both present and future communities. In this respect the Objective achieves this part of Section 5 (s5(2)(a)) sustain the potential of natural and physical resources to meet needs of future generations). It also achieves Section 5(2) which seeks to enable people and communities to provide for their social, economic and cultural well-being. While the National Grid can have significant local, regional and national benefits, it is recognised that the nature of the National Grid generates adverse environmental effects. These effects may result from activities involved in establishing the infrastructure or be associated with the maintenance and operation of the infrastructure. Such activities may adversely affect landscape values, ecological resources, indigenous vegetation, amenity, streetscape, and public health and safety. There is also the potential for some activities undertaken in the vicinity of the National Grid to lead to adverse reverse sensitivity effects on the lawful operation of existing infrastructure. This Objective is consistent with and achieves Section 5(2)(c) of the RMA. The importance of the National Grid is recognised by both the NPS-ET and the RPS. This Objective gives effect to both of these higher order planning documents. The NPS-ET Objective is to "To recognise the national significance of the electricity transmission network…". Similarly the RPS recognises the importance through Objective 3.5(h) and (i) and Objective 3.5(c) and (e).
6.1.6 Objective – Reverse Sensitivity Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the	The National Grid consists of the physical structures and networks that support and provide essential electricity to the communities of the district. The protection of the National Grid from reverse sensitivity effects is critical to the District's economic productivity, environmental outcomes and wellbeing of the community. The benefits of

National Grid) is not compromised.	this infrastructure to the functioning of the district are therefore substantial. A secure and reliable electricity supply is vital to the functioning of the District. It enables people and communities to provide for their social, economic and cultural wellbeing. In this respect the Objective achieves this part of Section 5 (s5(2)(a)) sustain the potential of natural and physical resources to meet needs of future generations). It also achieves Section 5(2) which seeks to enable people and communities to provide for their social, economic and cultural well-being. Protecting the National Grid from reverse sensitivity issues also ensure the health and safety of people and communities in accordance with Section 5(2) of the Act. Activities such as building too close to the transmission lines can cause flashovers and endanger the occupants of the building. In addition, the National Grid generates electric and magnetic fields which can affect people's health and safety. The potential for reverse sensitivity effects is recognised by both the NPS-ET and the RPS. This Objective gives effect to both of these higher order planning documents. The NPS-ET Objective is includes "(b) managing the adverse effects of other activities on the network." Similarly the RPS recognises the potential for activities and structures to compromise the National Grid through Objective 3.5(h) and (i) and Objective 3.5(c) and (e).

4 SCALE AND SIGNIFICANCE EVALUATION

The level of detail undertaken for the evaluation of the proposed District Plan provisions has been determined by an assessment of the scale and significance of the implementation of the proposed District Plan provisions. The scale and significance assessment considered the environmental, economic, social and cultural effects of the provisions. In making this assessment regard has been had to the following, namely whether the provisions:

(a) Are of regional or district wide significance;
(b) Have effects on resources that are considered to be a matter of national importance in terms of Section 6 of the Act;
(c) Adversely affect people's health and safety;
(d) Result in a significant change to the character and amenity of local communities;
(e) Adversely affect those with particular interests including Maori;
(f) Limit options for future generations to remedy effects;

(g) Whether the effects have been considered implicitly or explicitly by higher order documents; and
(h) Include regulations or other interventions that will impose significant costs on individuals or communities.

The evaluation has focused on those provisions that will result in a substantial change to the landowners affected by National Grid lines and are of greater importance to ensure the objective of the protecting the National Grid from reverse sensitivity effects are achieved.

Policies and rules have been evaluated as a package, as together they address a particular issue and seek to meet a specific objective. Some rules implement more than one policy, and therefore have been referred to multiple times.

The following table contains a summary of the policies and rules considered to be of a scale and significance to justify a more comprehensive evaluation of options.

The analysis by Market Economics (Appendix 3) estimated that 1,062 properties (covering a land area of 1,232ha) are intersected by the National Grid (and its buffer areas / corridors). The National Grid corridor therefore directly impacts on 3% of the district's freehold properties parcels and less than 1% of total district freehold land area.

Table 4 Scale and significance assessment

Issue	Provisions evaluated	Scale and Significance Reasoning
Land use, urban growth and other forms of land development can have adverse effects on the operation, maintenance, upgrading and long-term development of electricity transmission corridors.	6.2.1 Objective – National Grid 6.1.6 Objective – Reverse Sensitivity 6.2.2 Policy – Recognise the National Grid 6.2.3 Policy – Maintenance and Minor Upgrade the National Grid 6.2.6 Policy – Reverse Sensitivity and the National Grid 6.1.7 Policy – Reverse Sensitivity and Infrastructure Section 14.4 rules National Grid Yard National Grid Corridor	While this is a significant issue for the landowners in close proximity to the National Grid, it is also significant for the district for the following reasons: (a) The National Grid is of regional and district wide significance, and indeed nationally significance; (b) Adversely affect those with particular interests including Maaori; (c) There are highly directive objectives and policies in higher order planning documents; and (d) Include regulations or other interventions that will impose significant costs on individual landowners.
Protecting the health and safety of people and property in close proximity to the National Grid.	6.2.1 Objective – National Grid 6.1.6 Objective – Reverse Sensitivity 6.2.6 Policy – Reverse Sensitivity and the National Grid Section 14.4 rules National Grid Yard National Grid Corridor	While this is a significant issue for the landowners in close proximity to the National Grid, it is moderately significant for the district for the following reasons: (a) The National Grid is of regional and district wide significance; (b) Adversely affects those with particular interests including Maaori; (c) There is highly directive objectives and policies in higher order planning documents; and (d) Include regulations or other interventions that will impose significant costs on individual landowners.
New National Grid facilities, lines and structures may be necessary.	6.2.1 Objective – National Grid 6.2.3 Policy – Operation and Development of the National Grid Policy –Environmental Effects Section 14.4 rules	This is a moderately significant issue for the district for the following reasons: (a) The National Grid is of regional and district wide significance; (b) Could potentially have effects on resources that are considered to be a matter of national importance in terms of Section 6 of

		the Act; (c) Potential to adversely affect people's health and safety; (d) Result in a significant change to the character and amenity of local communities; (e) Adversely affect those with particular interests including Maaori; (f) Limit options for future generations to remedy effects; and (g) There is highly directive objectives and policies in the higher order planning documents of the RPS and NPS-ET.

5 EVALUATION OF PROPOSED POLICIES, RULES AND METHODS

Section 32 (1)(b) requires an evaluation of whether the provisions are the most appropriate way to achieve the objectives by identifying other reasonably practicable options, assessing the efficiency and effectiveness of the provisions in achieving the objectives, and summarising the reasons for deciding on the provisions. The assessment must identify and assess the benefits and costs of environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including opportunities for economic growth and employment. The assessment must if practicable quantify the benefits and costs and assess the risk of acting or not acting if there is uncertain or insufficient information available about the subject matter.

5.1 Identification of Reasonably Practicable Options – for Achieving Objectives

The following assessment consists of an examination of all reasonably practicable options for achieving Objective 6.2.1. This high-level screening process considers the effectiveness of each option. Only those options considered to be reasonably practicable will be evaluated in this section.

There are two parts to this evaluation; firstly the management of new National Grid lines and structures which are not addressed by the NPS-ET, and secondly the managing of activities in close proximity to the National Grid.

The higher order planning documents such as the NPS-ET and RPS direct district plans to manage land uses around the National Grid to protect it. The NPS-ET is explicit in its requirements:

> *Policy 10*
> *In achieving the purpose of the Act, the decision-maker must to the extent reasonably possible manage activities to avoid reverse sensitivity effects on the electricity transmission network and to ensure that operation, maintenance, upgrading, and development of the electricity transmission network is not compromised.*
>
> *Policy 11*
> *Local authorities must consult with the operator of the national grid, to identify an appropriate buffer corridor within which it can be expected that sensitive activities will generally not be provided for in plans and/or given resource consent. To assist local authorities to identify these corridors, they may request the operator of the national grid to provide local authorities with its medium to long-term plans for the alteration or upgrading of each affected section of the national grid (so as to facilitate the long-term strategic planning of the grid).*

Therefore the only valid options considered were not *whether* to protect the National Grid, but *how* to protect the National Grid. The District Plan is certainly the most appropriate mechanism for giving effect to the NPS-ET and also the

Regional Policy Statement. The identification of the electricity transmission network needs to be shown on the District Planning maps in accordance with the NPS-ET. The NPS-ET does not distinguish underground from overhead transmission lines so it is assumed that this identification needs to be for both. However the NPS-ET does not establish the size of an appropriate "buffer corridor" and Council needs to determine what size this is and how the District Plan might give effect to it.

Table 5 Reasonably Practicable Options for Achieving Objective

Objective(s)	6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.				
Options Approach to achieve objective(s)	**Description (brief)** Describe the option and acknowledge the source of this option (if there is one e.g. feedback from consultation, suggestions from workshops with elected members etc).	**Relevance** How effective provisions are in achieving the objective(s).	**Feasibility** Within council's powers, responsibilities and resources, degree of risk and uncertainty of achieving objectives, ability to implement, monitor and enforce.	**Acceptability** Level of equity and fair distribution of impacts, level of community acceptance. Where possible identify at a broad level social, economic, environmental, cultural effects.	**Recommendation** Discard or evaluate further (with brief explanation).
Option 1: Do nothing (remove all policies and associated methods)	This option would not address the issue. It would set no policy direction or activity status to either encourage or discourage new infrastructure associated with the Nation Grid.	This would be highly ineffective. This approach would not achieve the objectives at all.	This approach would not achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements.	This approach would create a lot of uncertainty for both landowners and Transpower NZ Limited.	**Discard.** This option would be contrary to the NPS-ET, the Regional Policy Statement. This approach would create significant inconsistencies with how electricity transmission lines are being treated by adjoining territorial authorities.
Option 2: Retain existing policies and methods in the Operative District Plan – Waikato Section and apply them across the	The Waikato Section of the Plan does not specifically address the matter of the National Grid in its policies. The National Grid is	This approach would be effective in achieving the Objective. It would ensure that the effects of the new National Grid	This approach is within Council's powers and responsibilities.	This approach would allow the adverse effects of the proposal to be assessed, and conditions could be placed to ensure that adverse effects are	**Discard.** This approach is blunt and does not set any particular direction for how new National Grid infrastructure

Objective(s)	6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.				
Options Approach to achieve objective(s)	**Description (brief)** Describe the option and acknowledge the source of this option (if there is one e.g. feedback from consultation, suggestions from workshops with elected members etc).	**Relevance** How effective provisions are in achieving the objective(s).	**Feasibility** Within council's powers, responsibilities and resources, degree of risk and uncertainty of achieving objectives, ability to implement, monitor and enforce.	**Acceptability** Level of equity and fair distribution of impacts, level of community acceptance. Where possible identify at a broad level social, economic, environmental, cultural effects.	**Recommendation** Discard or evaluate further (with brief explanation).
whole District	largely swept up in the management of more general network utilities, although Policy 6.4.9A seeks to recognise the positive effects of network utilities including the National Grid transmission network. In terms of rules, new National Grid infrastructure is a discretionary activity in all zones and is not specifically recognised as an activity (it is included in the more general "network utility"	infrastructure was assessed, but is a rather blunt approach. It also does not specifically recognise the National Grid in terms of rules.		avoided, remedied or mitigated in accordance with Section 5 of the Act.	should be located or designed.

Objective(s)	6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.				
Options Approach to achieve objective(s)	**Description (brief)** Describe the option and acknowledge the source of this option (if there is one e.g. feedback from consultation, suggestions from workshops with elected members etc).	**Relevance** How effective provisions are in achieving the objective(s).	**Feasibility** Within council's powers, responsibilities and resources, degree of risk and uncertainty of achieving objectives, ability to implement, monitor and enforce.	**Acceptability** Level of equity and fair distribution of impacts, level of community acceptance. Where possible identify at a broad level social, economic, environmental, cultural effects.	**Recommendation** Discard or evaluate further (with brief explanation).
	term and activity status).				
Option 3: Retain existing policies and methods in the Operative District Plan – Franklin Section and apply it across the District	The Franklin Section of the Plan does not specifically address the matter of the National Grid in its policies. The activity status would be non-complying in most zones as the activity is not specifically listed.	This approach would not be effective in achieving the Objective. The National Grid is not recognised in policies or rules.	This approach would not achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements.	This approach would create a lot of uncertainty for both landowners and Transpower NZ Limited.	**Discard.** This approach does not set any particular direction for how new National Grid infrastructure should be located or designed.
Option 4 – Permissive activity status for new National Grid lines and structures	This option would enable new National Grid lines and structures as a permitted activity throughout the	This approach would be highly effective at achieving the Objective. New lines and structure could be	While this is technically within Council's powers it arguably does not achieved the purpose of the RMA in Section 5(2)(c)	This approach would not be acceptable to the community. There would be no certainty as to where lines and structures may be located and the	**Discard.** This option would assist in giving effect to the RPS in terms of enabling development of the

Objective(s)	6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.				
Options Approach to achieve objective(s)	**Description (brief)** Describe the option and acknowledge the source of this option (if there is one e.g. feedback from consultation, suggestions from workshops with elected members etc).	**Relevance** How effective provisions are in achieving the objective(s).	**Feasibility** Within council's powers, responsibilities and resources, degree of risk and uncertainty of achieving objectives, ability to implement, monitor and enforce.	**Acceptability** Level of equity and fair distribution of impacts, level of community acceptance. Where possible identify at a broad level social, economic, environmental, cultural effects.	**Recommendation** Discard or evaluate further (with brief explanation).
	District.	constructed without any consent process.	which is "avoiding, remedying, or mitigating any adverse effects of activities on the environment." There are likely to be significant adverse effects from this approach. This option would also be inconsistent with the RPS, NZCPS and the NPS-ET.	adverse effects from this approach are significant in terms of environmental, cultural, social and economic.	National Grid but would not achieve the objectives and policies regarding significant natural areas, outstanding natural landscapes etc. It would not give effect to Policies 7 and 8 of the NPS-ET.
Option 5 – Blanket activity status for new National Grid lines and structures throughout the District requiring consent	This option would require all new National Grid lines and structures to be assessed by way of a resource consent, with a blanket	This approach would be effective in achieving the Objective. It would ensure that the effects of the new National Grid	This approach is within Council's powers and responsibilities. This approach would not recognise the importance of the	This approach would allow the adverse effects of the proposal to be assessed, and conditions could be placed to ensure that adverse effects are	**Discard.** This approach is blunt and does not set any particular direction for how new National Grid infrastructure

Objective(s)	6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.				
Options Approach to achieve objective(s)	**Description (brief)** Describe the option and acknowledge the source of this option (if there is one e.g. feedback from consultation, suggestions from workshops with elected members etc).	**Relevance** How effective provisions are in achieving the objective(s).	**Feasibility** Within council's powers, responsibilities and resources, degree of risk and uncertainty of achieving objectives, ability to implement, monitor and enforce.	**Acceptability** Level of equity and fair distribution of impacts, level of community acceptance. Where possible identify at a broad level social, economic, environmental, cultural effects.	**Recommendation** Discard or evaluate further (with brief explanation).
	activity status irrespective of whether the lines are above or underground, or their location / zone.	infrastructure was assessed, but is a rather blunt approach.	National Grid as significant regional infrastructure.	avoided, remedied or mitigated in accordance with Section 5 of the Act.	should be located or designed.
Option 6 – A tiered approach to activity status, dependent on whether the lines are above ground or below ground, and whether they are within an identified special area (e.g. outstanding natural landscapes, Maori Area of Significance, Outstanding Natural Character etc). Appropriateness:	This approach is a tiered approach with different activity statuses for: • Above ground versus below ground • Within identified sensitive areas versus outside	This approach would be effective in achieving the Objective. It would ensure that the effects of the new National Grid infrastructure was assessed, and sets a more restrictive approach for above-ground transmission lines, transformers, substations and switching stations	This approach would achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements. It gives effect to Policies 7 and 8 of the NPS-ET.	This approach would allow the adverse effects of the proposal to be assessed, and conditions could be placed to ensure that adverse effects are avoided, remedied or mitigated in accordance with Section 5 of the Act.	**Retain** This approach efficiently gives effect to the NPS-ET and the RPS. It is considered to be the most appropriate way to achieve the objective.

Objective(s)	6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.				
Options Approach to achieve objective(s)	**Description (brief)** Describe the option and acknowledge the source of this option (if there is one e.g. feedback from consultation, suggestions from workshops with elected members etc).	**Relevance** How effective provisions are in achieving the objective(s).	**Feasibility** Within council's powers, responsibilities and resources, degree of risk and uncertainty of achieving objectives, ability to implement, monitor and enforce.	**Acceptability** Level of equity and fair distribution of impacts, level of community acceptance. Where possible identify at a broad level social, economic, environmental, cultural effects.	**Recommendation** Discard or evaluate further (with brief explanation).
		within Identified Areas.			

Objective(s)	6.1.6 Objective – Reverse Sensitivity Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the National Grid) is not compromised.				
Option 1: Do nothing (remove all policies and associated methods)	This option would involve not acknowledging the existence of the high voltage transmission lines, either by way of indicating their presence on the planning maps, or by policies and objectives and associated rules.	This would be highly ineffective. This approach would not achieve the objectives at all. It would increase the risk to structures and people with additional buildings being constructed in close proximity to the National Grid in addition to the existing underbuild. This approach would not protect the National Grid.	This approach would not achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements.	This approach would allow maximum flexibility for landowners in terms of activities and structures, but increase the risk to health and safety.	**Discard.** This option would be contrary to the NPS-ET, the Regional Policy Statement and the key approaches contained in section 8.25.3 of Futureproof. This approach would create significant inconsistencies with how electricity transmission lines are being treated by adjoining territorial authorities.
Option 2: Retain existing policies and methods in the Operative District Plan – Waikato Section and apply them across the entire District	The Waikato Section identifies electricity transmission lines on the planning maps. The setback requirements are at least 20m from the centre line of any electricity transmission line designed to operate at 110kV or more in all zones. This	This approach would be partially effective in protecting both the National Grid and people's health and safety. This approach is somewhat of a blunt instrument though and the 20m may be more than enough for some	This approach would partially achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements. It is easily enforceable	This approach decreases the development options for properties within the corridor, particularly for placement of buildings. It may result in limiting the use of the no-build area to yards, roads or	**Discard.** This option would be partially effective at achieving the NPS-ET and RPS but would not constitute the most appropriate way to achieve the objectives.

Objective(s)	6.1.6 Objective – Reverse Sensitivity Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the National Grid) is not compromised.				
	approach does not manage subdivision in close proximity to the National Grid.	lines, and not sufficient in others. It is an easy approach to implement however. This approach does not address sensitive land uses as required by Policy 10 of the NPS-ET, or activities such as earthworks in close proximity to the National Grid.	because of its blanket approach across the district. Because this approach does not manage subdivision, there is the potential for additional lots to be created under the National Grid that cannot then be built on.	reserves. This approach does not recognise the significant underbuild that already exists and significantly limits the development potential of those buildings.	
Option 3: Retain existing policies and methods in the Operative District Plan – Franklin Section and apply them across the entire	The Franklin Section controls the location of buildings in particular zones or areas (e.g. Pokeno Structure Plan area), earthworks and subdivision in close proximity to electricity transmission lines throughout the district. There are no rules to control the location of sensitive	This approach would be partially effective in protecting both the National Grid and people's health and safety. This approach does not address sensitive land uses as required by Policy 10 of the NPS-ET.	This approach would partially achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements. Because this approach does not	This approach will limit the develop options for landowners in close proximity to the National Grid. This approach does not recognise the significant underbuild that already exists and significantly limits the development potential of those buildings.	**Discard.** This option would be partially effective at achieving the NPS-ET and RPS but would not constitute the most appropriate way to achieve the objectives.

Objective(s)	6.1.6 Objective – Reverse Sensitivity Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the National Grid) is not compromised.				
	uses such as schools, day-care, and hospitals or the planting of trees in close proximity to transmission lines.		manage sensitive land uses, there is the potential for more people to be exposed to radio and magnetic emissions, and exposed to the risk of flashovers.		
Option 4 – a nuanced approach that protects the National Grid based on the characteristics of the network.	This approach adopts two corridors – one for buildings and sensitive land uses and another for subdivision. The corridor is not a blanket distance from the lines, it varies in width depending on the support structure (pi pole, single pole or tower) and the voltage of the line. The approach also recognises that there is significant existing underbuild.	This approach will be highly effective in achieving the objective. It balances avoiding exposing more people and structures to potential damage or injury, protects the National Grid and recognises the existing underbuild.	This approach would achieve Council's responsibilities under Section 75(3)(a) and (c) which require district plans to give effect to national policy statements and regional policy statements. This approach manages: • Sensitive land uses • Structures and buildings • Subdivision • Activities such as earthworks; and	This approach does constrain the development opportunities of sites underneath the National Grid. It may also constrain subdivision opportunities but the benefit is that every newly created site near the National Grid will have a building platform outside the corridor and can be built upon.	**Retain** This approach efficiently gives effect to the NPS-ET and the RPS. It is considered to be the most appropriate way to achieve the objectives.

Objective(s)	6.1.6 Objective – Reverse Sensitivity Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the National Grid) is not compromised.				
			Existing underbuild.		

5.2 Evaluation of Selected Options

This section contains an evaluation of those options identified above for further evaluation. The short list of options has been developed further to include (where relevant) polices, rules and methods. In some instances, provisions have been bundled where they are expected to work together to achieve the objective(s). For efficiency, this second tier evaluation focuses on the approach and the policies and rules which implement that approach as a package, rather than a detailed analysis of every policy and every rule. How this section is approached in terms of level of detail depends to what extent the options are departing from the existing District Plans and the significance of the alternative options. The following table provides a summary of the evaluation results.

5.3 Objective – National Grid

The following provisions achieve Objective 6.2.1:
6.2.2 Policy – Recognise the National Grid
6.2.3 Policy – Operation and Development of the National Grid
6.2.4 Policy – Maintenance and Minor Upgrade the National Grid
6.2.5 Policy – Environmental Effects
6.2.6 Policy – Reverse Sensitive and the National Grid
Activity status for:

- Below ground transmission lines associated with the National Grid
- New above-ground transmission lines associated with the National Grid
- Transformers, substations and switching stations associated with the National Grid

Matters of discretion for restricted discretionary activities
Section 14.4 rules
National Grid Yard
National Grid Corridor
National Grid on planning maps

5.3.1 Identification of Options

In considering options for recognising and enabling development of the National Grid, a number of factors were taken into account including:

- The directive objectives and policies in the NPS-ET
- The directive objectives and policies in the RPS
- Feedback from Transpower NZ Limited
- The approach of adjoining councils including Auckland Council and Hamilton City Council
- The approach of other councils throughout New Zealand
- Concerns raised through submissions on other district plans

5.3.2 Policy, Rule and Method Evaluation

This section assists to identify the provisions (i.e. policies, rules and methods) that are the most appropriate to achieve the objective.

Table 6 Evaluation of provisions

Provisions most appropriate for achieving Objective 6.2.1	Effectiveness and Efficiency	
	Benefits	Costs
6.2.2 Policy – Recognise the National Grid 6.2.3 Policy – Operation and Development of the National Grid 6.2.4 Policy – Maintenance and Minor Upgrade the National Grid 6.2.5 Policy – Environmental Effects 6.2.6 Policy – Reverse Sensitive and the National Grid Activity status for: • Below ground transmission lines associated with the National Grid • New above-ground transmission lines associated with the National Grid • Transformers, substations and switching stations associated with the • Activity status for new lines and transformers, substations and switching stations in identified areas	Environmental: Ensures that options are considered with lesser environmental effects Avoiding, remedying or mitigating adverse effects through consideration of route, site and method selection Potential to reduce the existing adverse effects as part of any substantial upgrade Avoiding, remedying or mitigating adverse effects through consideration of route, site and method selection Considering the effects on urban amenity (including town centres), areas of high recreational or amenity value and existing sensitive land uses Addressing the adverse effects on any	Environmental: There are still likely to be adverse effects with the development of the National Grid

Matters of discretion for restricted discretionary activities Section 14.4 rules National Grid Yard National Grid Corridor National Grid on planning maps	heritage values, outstanding natural landscapes, areas of high natural character, town centres, areas of high recreation value and existing sensitive activities including the avoidance of adverse effects where practicable. Less likely to have new National Grid infrastructure in the Identified Areas of: • Urban Expansion Area • Significant Natural Area • Outstanding Natural Feature • Outstanding Natural Landscape • Significant Amenity Landscape • Outstanding Natural Character • High Natural Character • Heritage Precinct • Heritage Items • Maaori Sites of Significance • Maaori Areas of Significance • Notable Trees Retains the values of the values of the Identified Areas.	
	Economic: Recognises the operational, functional and technical constraints of the National Grid. Ensures continuous electricity supply which is essential for economic activity.	Economic: May increase the cost of developing the National Grid with alternative locations or less desirable routes.

	There are national, regional and local benefits of having a sustainable, secure and efficient electricity transmission.	
	Social: Results in a more robust and reliant National Grid The social benefits of a continuous electricity supply. Effects in more sensitive areas are more extensively addressed and understood through a more restrictive activity status for new lines and structures associated with the National Grid.	Social: Social disruption with the installation of new National Grid lines and structures.
	Cultural: New National Grid lines and structures in culturally significant areas such as Maaori Sites of Significance area are a discretionary activity for underground lines and noncomplying for above-ground. This ensures a more rigorous assessment of the cultural effects and the consent can be declined if the adverse effects are too significant.	Cultural:
Opportunities for economic growth and employment		
There are likely to be a few additional opportunities for employment with installation of any new National Grid infrastructures. Contractors will be required to undertake the earthworks and construction. However the main opportunities are associated with a more resilient and reliable electricity supply. This in itself will not lead to economic growth, but it will support economic growth.		
Options less or not as appropriate to achieve the objective		
The options are outlined in Section 5.1 of this report, and include: • Do nothing – (remove all policies and associated methods)		

- Status quo – Retain existing policies and methods in the Operative District Plan – Waikato Section
- Status quo – Retain existing policies and methods in the Operative District Plan – Franklin Section
- Highly permissive approach with new National Grid lines and structures as a permitted activity
- A blanket activity status for new National Grid lines and structures throughout the District, irrespective of zone or location

Appropriateness:
The options were all discarded as not giving effect to the RPS and NPS-ET. In additional they would not achieve the objective.

Risk of acting or not acting

Uncertainty or insufficiency of information:
It is uncertain whether Transpower NZ Ltd will be putting in new lines or infrastructure associated with the National Grid. Therefore it is not known whether this is an issue for this district plan.

Risk of acting or not acting:
The risk of not acting is that the district plan would not give effect to the RPS or NPS-ET. It is better for the district plan to have a policy and rule framework to guide any new National Grid infrastructure.

Efficiency and effectiveness

How will the suite of provisions be efficient at achieving the objective?
The approach is an efficient way of dove-tailing with the NES-ETA and creating a policy and rule framework to guide the activities that sit outside the NES-ETA such as new lines and structures associated with the National Grid. The policies generally provide an efficient way to achieve the Objective, as the benefits of providing for the efficient development of the National Grid outweighs the costs. The primary benefits from the policies and rules is that new National Grid infrastructure is guided away from the most sensitive parts of the District, and a more lenient rule framework for more appropriate locations.

The policies also give effect to the NPSET and NPSREG. The policies recognise the national significance of the electricity transmission network and facilitate the establishment of new transmission resources. The policies and rules efficiency manage the adverse environmental effects of developing the network.

How will the suite of provisions be effective at achieving the objective?
The NPS-ET requires the following:
Policy 7
Planning and development of the transmission system should minimise adverse effects on urban amenity and avoid adverse effects on town centres and areas of high

recreational value or amenity and existing sensitive activities.

Policy 8
In rural environments, planning and development of the transmission system should seek to avoid adverse effects on outstanding natural landscapes, areas of high natural character and areas of high recreation value and amenity and existing sensitive activities.

The approach of the provisions is that a more lenient activity status apply to new below-ground transmission lines and transformers, substations and switching stations not located within identified areas (restricted discretionary activity status). The matters of discretion relate to:
(a) The functional and operational needs of, and benefits derived from, the infrastructure;
(b) Visual, streetscape and amenity effects;
(c) The risk of electrical hazards affecting public or individual safety, and risk of property damage.

A discretionary activity status applies to:
- New below ground transmission lines associated with the National Grid within Identified Areas (as identified in the PDP which are largely Section 6 matters); and
- New above-ground transmission lines associated with the National Grid not located within Identified Areas.

A non-complying activity status applies to:
- Above-ground transmission lines associated with the National Grid located within Identified Areas; and
- Transformers, substations and switching stations associated with the National Grid located within Identified Areas.

This more stringent activity status indicates that these are not places where new National Grid infrastructure is appropriate. Identified Areas include those more sensitive environments that are sensitive to change and have certain values that need to be protected. For the Waikato District they include
- Urban Expansion Area
- Significant Natural Area
- Outstanding Natural Feature
- Outstanding Natural Landscape
- Significant Amenity Landscape
- Outstanding Natural Character
- High Natural Character
- Heritage Precinct
- Heritage Items

- Maaori Sites of Significance
- Maaori Areas of Significance
- Notable Trees

In conclusion, the recommended approach constitutes an effective way to give effect to the RPS and NPS-ET, by recognising the importance of the National Grid and creating a policy and rule framework to guide the development of the National Grid into appropriate locations.

5.4 Objective – Reverse Sensitivity

The following provisions achieve 6.1.6 Objective:
6.2.2 Policy – Recognise the National Grid
6.2.4 Policy – Maintenance and Minor Upgrade of the National Grid
6.2.6 Policy – Reverse Sensitivity and the National Grid
6.2.6 Policy – Reverse Sensitive and the National Grid
Section 14.4 rules (activity status, standards and assessment criteria) for:

- Buildings, structures and sensitive land uses
- Earthworks
- Subdivision

National Grid Yard
National Grid Corridor
National Grid identified on the planning maps

5.4.1 Identification of Options

In considering options for recognising and enabling development of the National Grid, a number of factors were taken into account including:

- The directive objectives and policies in the NPS-ET
- The directive objectives and policies in the RPS
- Feedback from Transpower NZ Limited
- The approach of adjoining councils including Auckland Council and Hamilton City Council
- The approach of other councils throughout New Zealand
- Concerns raised through submissions on other district plans

The costs and benefits are quantified in Appendix 3.

5.4.2 Policy, Rule and Method Evaluation

This section assists to identify the provisions (i.e. policies, rules and methods) that are the most appropriate to achieve the objective.

Table 7 Evaluation of provisions

Provisions most appropriate to achieve Objective 6.1.6	Effectiveness and Efficiency	
	Benefits	Costs
6.2.2 Policy – Recognise the National Grid 6.2.4 Policy – Maintenance and Minor Upgrade of the National Grid 6.1.7 Policy – Reverse Sensitivity and Infrastructure 6.2.6 Policy – Reverse Sensitive and the National Grid Section 14.4 rules (activity status, standards and assessment criteria) for: Buildings, structures and sensitive land uses Earthworks Subdivision National Grid Yard National Grid Corridor National Grid identified on the planning maps	Environmental: Reduced chance of flashovers.	Environmental: May result in development with more adverse effects on other matters, such as amenity and landscape. The national grid corridor contains 7 of the approximately 80 notable trees (or clusters of trees) on freehold land in the district (9%).
	Economic: Protects the integrity of the National Grid and ensures continuous electricity supply which is essential for economic activity Increased ease of access for inspection, operation and maintenance for the network provider. Increased security of the towers and supporting structures by limiting earthworks in close proximity. A significant benefit to approximately 8,650 current businesses in Waikato District and	Economic: Reduced value of properties in close proximity to the National Grid. Reduced development options in terms of land uses. Decreases the subdivision potential of properties within the corridor. Of the 1,062 freehold parcels directly impacted by the national grid corridor, the combined total capital value is $1.86bn and the combined total land value is $1.31bn. This equates to 7% and 8% of total district property and land value.

	550,210 businesses in NZ in total (source: Statistics NZ Business Directory, 2016). A significant benefit to approximately 71,600 current residents in Waikato District and 4,693,200 in NZ in total (source: Statistics NZ). Year ending June 2016.	
	Social: Protects buildings and structures from flashovers. Public safety is better maintained. An increased level of amenity for those living in close proximity to lines. Raises public awareness of the location of high voltage lines. In the case of greenfield development, the corridor can be used for other purposes such as roading or public open space. A significant benefit to approximately 71,600 current residents in Waikato District and 4,693,200 in NZ in total.	Social: Sub-optimal arrangement of a site in terms of location of buildings Properties directly impacted by the national grid corridor have an estimated population of 2,940 within 1,005 households (2016). They make up 4% of the total district population and household count. In the case of brownfield development, is likely to create unusable "dead space" on sites. Allowing public open space within the corridor could potentially result in increased numbers of people carrying out recreational activities in close proximity to the lines. The national grid corridor crosses/impacts 27 of the 42 community areas defined in Waikato District.
	Cultural: May constrain the development of Maaori Freehold or Customary Land	Cultural: There are 24 paa sites (8% of the district total) and 4 other Maaori sites of significance (5% of the total) contained within the national grid corridor. There are an estimated 109 NZAA Sites and 1 heritage

		item contained in the National Grid Corridor.

Opportunities for economic growth and employment

There is the potential for economic growth to be adversely affected by the recommended approach, particularly where the National Grid lines cross land zoned as Business or Industrial. Sites under or near the lines will not be able to develop to their full potential.

Options less or not as appropriate to achieve the objective

The options were addressed in Section 5.1 of this report as being:

- Do nothing – (remove all policies and associated methods)
- Status quo – Retain existing policies and methods in the Operative District Plan – Waikato Section
- Status quo – Retain existing policies and methods in the Operative District Plan – Franklin Section

Appropriateness:
The options were all discarded as not giving effect to the RPS and NPS-ET. They would impose significant costs and constraints on landowners and were not reflective of the characteristics of the National Grid network.

Risk of acting or not acting

Uncertainty or insufficiency of information:
The extent of the swing of the lines and therefore the setback distances set in the definitions of the National Grid Yard and National Grid Corridor has been based on information provided by Transpower NZ Limited. These have not been verified as it was considered that Transpower NZ Limited had the most accurate information.

Risk of acting or not acting:
The risk of not acting is extremely significant in terms of risk to the integrity of the National Grid which would affect thousands of homes and businesses. There is also a high risk to both structures and lives if people and property are within close proximity to the lines and support structures.

Efficiency and effectiveness

How will the suite of provisions be efficient at achieving the objective?
The provisions efficiently set out the activities which are of least risk as permitted, with gradually more restrictive activity status for those activities which pose the greatest risk to the integrity of the National Grid and the safety of people and property. The benefits of having a Yard and Corridor approach outweighs the costs and are a transparent way of managing the risk.

How will the suite of provisions be effective at achieving the objective?
The rules are a balance of enabling development on existing underbuilt areas, and discouraging activities through a restrictive activity status for those activities which increases the risk to the integrity of the lines, and the risk of damage to buildings and injury or death to people. The two setback terms

have different applicability – the "National Grid Yard" applies to buildings and activities, while "National Grid Corridor" applies to subdivision. There are different risks associated with subdivision, buildings and activities and therefore the different setbacks for the National Grid Corridor and National Grid Yard reflects the risks of each.

The definitions of "National Grid Yard" applies to buildings and activities, while "National Grid Corridor" reflects the characteristics of the National Grid that determine the swing of the lines and the area around the lines and structures that need to be protected. This is a complex approach, but it reduces the amount of land affected by the National Grid and therefore is an effective approach. It is reflective of the:

- Voltage; and
- Support structures.

The activity status also reflects the risk – a more lenient activity status applies to activities and structures that pose less risk to the National Grid, and will not increase the risk to property or the health of people. This approach is reflected in the policies also.

Permitted activities include:

- Additions and alterations to existing buildings, and new buildings not for sensitive land-uses within the National Grid Yard to recognise that some parts of the network already have underbuild;
- Infrastructure within the National Grid Yard to recognise that electricity distribution infrastructure will need to connect to the National Grid;
- Yards for milking / dairy purposes;
- Structures for crop protection
- Earthworks outsider certain distances from National Grid support structures

The rules rely on compliance with the NZECP which sets out minimum distances for buildings from transmission lines which is an effective approach.

Activities that can damage the National Grid or affect the supply of power are restricted discretionary activities, Included in this group are activities that increase the risk to people's house by increasing the exposure of people to the National Grid. Restricted discretionary activities include:

- Earthworks in close proximity to National Grid support structures;
- Subdivision of land within the National Grid Yard – subdivision has the potential to increase the number of people in close proximity to the National Grid and therefore increases the risk to the lines and the health and safety of those people. The focus of this rule is ensuring that subdivision enables a building platform outside the National Grid Yard.

The matters of discretion include:

(a) Impacts on the operation, maintenance, upgrading and development of the National Grid;

(b) The risk to the structural integrity of the affected National Grid support structure(s);
(c) Any impact on the ability of the National Grid owner (Transpower) to access the National Grid;
(d) The risk of electrical hazards affecting public or individual safety, and the risk of property damage.
These effectively focus attention on those matters of concern.

Activities with a high risk to the integrity of the lines or the health and safety of people are non-complying activities:

- Any activity within the National Grid Yard that does not comply with one or more of the conditions of a permitted activity
- Any activity within the National Grid Yard that does not comply with one or more of the conditions of a restricted discretionary activity
- Any new building for a sensitive land use within the National Grid Yard
- Any change of use of an existing building to a sensitive land use within the National Grid Yard
- The establishment of any new sensitive land use within the National Grid Yard
- Any new hazardous facility that involves the storage and handling of hazardous substances with explosive or flammable intrinsic properties within 12m of the centre line of a National Grid Transmission Line
- Dairy/milking sheds or buildings for intensive farming within the National Grid Yard
- Any subdivision of land in any zone within the National Grid Corridor that does not comply with one or more of the conditions of Rule 14.4.2.1

The activity status indicates that these activities and buildings are inappropriate in close proximity to the National Grid.

Managing the risk to the National Grid network and the risk to people and property is an effective was to give effect to the following NPS-ET policies:
Policy 10
In achieving the purpose of the Act, decision-makers must to the extent reasonably possible manage activities to avoid reverse sensitivity effects on the electricity transmission network and to ensure that operation, maintenance, upgrading, and development of the electricity transmission network is not compromised.

Policy 11
Local authorities must consult with the operator of the national grid, to identify an appropriate buffer corridor within which it can be expected that sensitive activities will generally not be provided for in plans and/or given resource consent. To assist local authorities to identify these corridors, they may request the operator of the national grid to provide local authorities with its medium to long-term plans for the alteration or upgrading of each affected section of the national grid (so as to facilitate the long-term strategic planning of the grid).

Policy 12
Territorial authorities must identify the electricity transmission network on their relevant planning maps whether or not the network is designated.

6 CONCLUSION

After undertaking an evaluation as required by Section 32 of the RMA, The Objective is considered the most appropriate way to achieve the Purpose of the RMA (Section 5) for addressing the National Grid.

It is considered that the recommended policies and methods outlined above are the most appropriate way for achieving the objective, having considered:
(i) other reasonably practicable options for achieving the objective; and
(ii) assessing the efficiency and effectiveness of the provisions in achieving the objective.

APPENDIX 1 PROVISION CASCADE

Objective	Policies	Rules	Assessment Criteria
6.2.1 Objective – National Grid The national significance of the National Grid is recognised and protected.	6.2.2 Policy – Recognise the National Grid Recognise the operational, functional and technical constraints of the National Grid, and the interconnectedness of networks. 6.2.3 Policy – Operation and Development of the National Grid Provide for the operation, upgrading and development of the National Grid. 6.2.4 Policy – Maintenance and Minor Upgrade the National Grid Enable the repair, maintenance, replacement and minor upgrade of the National Grid. 6.2.5 Policy – Environmental Effects Manage the environmental effects of the development or upgrades (other than minor upgrades) of the National Grid, by: (i) Recognising the national, regional and local benefits of sustainable, secure and efficient electricity transmission; (ii) Avoiding, remedying or mitigating adverse effects through consideration of route, site and	New National Grid structures (Section 14.4): RD1 Below ground transmission lines associated with the National Grid not located within Identified Areas RD2 Transformers, substations and switching stations associated with the National Grid not located within Identified Areas D1 New below ground transmission lines associated with the National Grid within Identified Areas D2 New above-ground transmission lines associated with the National Grid not located within Identified Areas NC1Above-ground transmission lines associated with the National Grid located within Identified Areas NC2 Transformers, substations and switching stations associated with the National Grid located within Identified Areas Activities in close proximity to the	Discretion is restricted to: (a) The functional and operational needs of, and benefits derived from, the infrastructure; (b) Visual, streetscape and amenity effects; (c) The risk of electrical hazards affecting public or individual safety, and risk of property damage.

	method selection; (iii) Reducing the existing adverse effects as part of any substantial upgrade; (iv) Considering the effects on urban amenity (including town centres), areas of high recreational or amenity value and existing sensitive land uses; and (v) Addressing the adverse effects on any heritage values, outstanding natural landscapes, areas of high natural character, town centres, areas of high recreation value and existing sensitive activities including the avoidance of adverse effects where practicable. 6.2.6 Policy – Reverse Sensitivity and the National Grid Manage subdivision, use and development so that the operation, maintenance, upgrading and development of the National Grid is not compromised by ensuring that: (i) The National Grid is identified on the planning maps, and the National Grid Yards and National Grid Corridor establish buffer distances for managing subdivision and land use development near the National Grid; (ii) Sensitive land uses and buildings and structures that may compromise the National Grid,	National Grid: National Grid Yard National Grid Corridor National Grid on planning maps P1 Buildings, structures and sensitive land uses within the National Grid Yard in existing Residential or Village Zones as of 18 July 2018. P2 Buildings, structures and sensitive land use within the National Grid Yard in all other zones as of 18 July 2018. P3 Earthworks activities within the National Grid Yard RD3 Earthworks within the National Grid Yard that do not comply with one or more of the conditions of Rules 14.4.1.3(1) and 14.4.1.3(2) RD4 The subdivision of land in any zone within the National Grid Corridor that complies with all of the following conditions: (a) All allotments intended to contain a sensitive land use must provide a building platform for the likely principal building(s) and any building(s) for a sensitive land use to be located outside of the National	

	including intensive farming activities, are excluded from establishing within the National Grid Yard; (c) Subdivision is managed within the National Grid Corridor to avoid subsequent land use from compromising the operation, maintenance, upgrading and development of the National Grid; and (e) Changes to existing activities within a National Grid Yard do not further restrict the operation, maintenance, upgrading and development of the National Grid.	Grid Yard, other than where the allotments are for roads, access ways or infrastructure; or (b) The layout of allotments and any enabling earthworks must ensure that physical access is maintained to any National Grid support structures located on the allotments, including any balance area. NC3 Any activity within the National Grid Yard that does not comply with one or more of the conditions of Rule 14.4.1.1 NC4 Any activity within the National Grid Yard that does not comply with one or more of the conditions of Rule 14.4.1.2 NC5 Any new building for a sensitive land use within the National Grid Yard NC6 Any change of use of an existing building to a sensitive land use within the National Grid Yard NC7 The establishment of any new sensitive land use within the National Grid Yard NC8 Any new hazardous facility that involves the storage and handling of hazardous substances with explosive or flammable intrinsic properties	

		within 12m of the centre line of a National Grid Transmission Line NC9 Dairy/milking sheds or buildings for intensive farming within the National Grid Yard NC10 Any subdivision of land in any zone within the National Grid Corridor that does not comply with one or more of the conditions of Rule 14.4.2.1	
6.1.6 Objective – Reverse Sensitivity Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the National Grid) is not compromised.	6.2.2 Policy – Recognise the National Grid Recognise the operational, functional and technical constraints of the National Grid, and the interconnectedness of networks. 6.1.7 Policy – Reverse Sensitivity and Infrastructure Avoid reverse sensitivity effects on infrastructure from subdivision, use and development as far as reasonably practicable, so that the ongoing and efficient operation of infrastructure is not compromised. 6.2.6 Policy – Reverse Sensitivity and the National Grid Manage subdivision, use and development so that the operation, maintenance, upgrading and development of the National Grid is not compromised by ensuring that:	National Grid Yard National Grid Corridor National Grid on planning maps P1 - Buildings, structures and sensitive land uses within the National Grid Yard in existing Residential or Village Zones as of 18 July 2018 Standards14.4.1.1 P2 Buildings, structures and sensitive land use within the National Grid Yard in all other zones as of 18 July 2018 P3 Earthworks activities within the National Grid Yard	
		RD3 Earthworks within the National Grid Yard that do not comply with one or more of the conditions of Rule 14.4.1.3	Discretion is restricted to: (a) The subdivision layout and design in regard to how this may impact on the operation, maintenance,

	(i) The National Grid is identified on the planning maps, and the National Grid Yards and National Grid Corridor establish buffer distances for managing subdivision and land use development near the National Grid; (ii) Sensitive land uses and buildings and structures that may compromise the National Grid, including intensive farming activities, are excluded from establishing within the National Grid Yard; (c) Subdivision is managed within the National Grid Corridor to avoid subsequent land use from compromising the operation, maintenance, upgrading and development of the National Grid; and (e) Changes to existing activities within a National Grid Yard do not further restrict the operation, maintenance, upgrading and development of the National Grid.	RD4 The subdivision of land in any zone within the National Grid Corridor that complies with all of the following conditions: (a) In all existing Residential, Village and Country Living Zones, all allotments intended to contain a sensitive land use must provide a building platform, to be located outside of the National Grid Yard, other than where the allotments are for roads, access ways or infrastructure; or (b) In all zones other than the Residential, Village and Country Living Zones, all allotments must provide a building platform for the likely principal building(s) and any building(s) for a sensitive land use, to be located outside the National Grid Yard, other than where the allotments are for roads, access ways or infrastructure; and (c) The layout of allotments and any enabling earthworks must ensure that physical access is maintained to any National Grid Support structures located on the allotments, including any balance area. NC3 Any activity within the National Grid Yard that does not comply with one or more of the conditions of Rule 14.4.1.1	upgrading and development of the National Grid; and (b) The ability to provide a complying building platform outside of the National Grid Yard; and (c) The risk of electrical hazards affecting public or individual safety, and the risk of property damage; and (d) The nature and location of any vegetation to be planted in the vicinity of National Grid transmission lines.

		NC4 Any activity within the National Grid Yard that does not comply with one or more of the conditions of Rule 14.4.1.2 NC5 Any new building for a sensitive land use within the National Grid Yard NC6 Any change of use of an existing building to a sensitive land use within the National Grid Yard NC7 The establishment of any new sensitive land use within the National Grid Yard NC8 Any new hazardous facility that involves the storage and handling of hazardous substances with explosive or flammable intrinsic properties within 12m of the centre line of a National Grid Transmission Line NC9 Dairy/milking sheds or buildings for intensive farming within the National Grid Yard NC10 Any subdivision of land in any zone within the National Grid Corridor that does not comply with one or more of the conditions of Rule 14.4.2.1	

APPENDIX 2: ISSUES AND OPTIONS REPORT

APPENDIX 3: COSTS AND BENEFITS

APPENDIX 4: FEEDBACK FROM TRANSPOWER NZ LIMITED