BEFORE COMMISSIONERS APPOINTED
BY THE WHAKATĀNE DISTRICT COUNCIL

IN THE MATTER OF	The Resource Management Act 1991, Part 6.
AND	
IN THE MATTER OF	An application for resource consent by Helios BOP Op LP to construct, operate and maintain a solar renewable energy facility in two areas, forming one Site at Orini and McLean Road, Edgecumbe.

COMMISSIONERS' DECISION
Dated 23rd **November 2023**

Commissioners:

John Maassen (Chair)

Nándor Tánczos

Carolyn Hamill

Legal Representation:

Ms Arthur-Young and Ms Gilbert for the Applicant.

Ms Paddison for Orini Farms Limited.

Result: The Application is approved with the conditions in **Attachment 3** by unanimous decision of the Commissioners.

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Note: Underlining indicates hyperlinking to places inside or outside of the decision.

The Panel's pronouns are 'we', 'us' or 'our'.

1.0 Summary

[1] Helios BOP Op LP (Helios) proposes to construct, operate and maintain an approximately 115MWac photovoltaic solar renewable energy facility across two properties totalling 209 hectares (ha) on McLean Road and Orini Roads, Edgecumbe. The Site comprises two blocks, the largest of which is southwest of McLean Road (Area 1) and a smaller block east of Orini Road (Area 2). See Attachment 1.

[2] To put the proposed facility's potential generation capacity in context, the facility at full operation will produce sufficient energy to meet the daily requirements of 30,000 homes. Using the average of 2.7 people per home equates to meeting the domestic energy requirements of a population roughly the size of Palmerston North, New Zealand's eighth largest city.

[3] The Site has highly productive Paroa silt loam soils. The Paroa silt loam will produce dry matter of 1600-1800 T DM/Ha/year. That translates to 300,000 kg/ms/year from the Site, sufficient for about 10,000 people based on 1/litre/milk/day consumption.

[4] It is apparent, therefore, that the Proposal required the Panel to confront the tension in achieving two key environmental goals for Aotearoa |New Zealand. It is the same trade-off challenge confronting other countries, including Australia.[1] The tension is between the policy of enabling and promoting the development of solar energy facilities at scale on flat land in sunny regions to combat climate change and protecting high-class soils for food production in similar environments.

[5] Ideally, at a hearing for resource consent, a Panel has comprehensive local policies providing detailed guidance for navigating this tension. That was not fully the case here because the national direction on highly productive soils (NPS-HPL) is very recent and has not been implemented in the District Plan policies by the Whakatāne District Council because of insufficient time. Further, the largest

[1] ABC report on solar farming in the Murray Darling Catchment

threat to versatile production soils is urban development and rural residential subdivisions that are well-managed pressures in Whakatāne through the Plains Zone methods.

[6] The relevant policy framework, while not comprehensive, is sufficient for our purposes. First, because the NPS-HPL provides some guidance on whether a renewable energy solar facility is an inappropriate use of highly productive land, recognising that any activity using finite resources will require limits. Secondly, the Whakatane District Plan has a well-developed renewable energy policy, and the Plan acknowledges that versatile soil protection is not an absolute value. It recognises the potential for activities in the Plains Zone not associated with food production to be located there if the activity has functional requirements for that environment.

[7] There is no evidence of unacceptable cumulative loss of versatile soil in the Rangitāiki Plains to non-food production uses.

[8] Helios' proposal supports the national effort towards a zero-carbon Aotearoa | New Zealand without losing the soil resource for future generations.

[9] The Panel is satisfied that the Proposal is appropriate, considering all relevant policies in the national direction and the Whakatāne District Plan and considering the limited use of versatile soils for renewable energy on the Rangitāiki Plains.

[10] The Panel acknowledges the Proposal is a very large facility by New Zealand standards, but large problems need bold solutions.

[11] Any future measures or methods instituted by the Council under national direction to control the use of highly productive land will need to consider land used for renewable energy solar facilities in combination with other production activities and set limits by planning measures and methods.

[12] The other effects arising from the Proposal are interface effects with adjoining properties. Some neighbouring properties were notified because of these potential effects. The potential effects included loss of rural character, visual amenities, and noise. These effects are less determinative than the highly

productive land issue because they can be managed, or even solved, by design and mitigation measures.

[13] The Applicant responsibly modified its application before the hearing to respond to the particular interface issues relevant in this case. That included addressing the needs of sensitive receptors, such as rural residential properties in various locations on Orini Road and Putiki Roads.

[14] The Panel considers that with appropriate conditions, these interface effects are addressed appropriately.

[15] The Panel recognise the interim effects on adjoining properties while mitigation planting becomes established; however, we do not regard these effects as unacceptable. It is impractical to require planting to be fully established before the renewable energy solar facility is constructed.

[16] The Panel approves the Proposal. The conditions the Panel set on this approval are in Attachment 3.

[17] The Panel thanks all participants who responsibly engaged in this hearing to address the Panel on significant issues for them and the community.

2.0 The Proposal and Activity Classification

Elements of the Activity and the Graphics Bundle

[18] Helios comprehensively addressed the activity and its potential effects in the AEE, which included 11 Appendices containing technical visual, transportation, acoustic, and land productivity assessments.

[19] At the Panel's request, the Applicant helpfully prepared a graphics bundle for the hearing showing the Site, the amended layout and the location of the submitters' land included in this decision as Attachment 1.

[20] The Proposal is to construct, operate and maintain an approximately 115MWac photovoltaic solar renewable energy facility across two properties totalling 209 hectares (ha) on McLean Road and Orini Roads, Edgecumbe. The location comprises two blocks, the largest of which is southwest of McLean Road (Area 1) and a smaller block east of Orini Road (Area 2). See Attachment 1.

[21] The larger area (Area 1) is also called the Brady's farm, formerly owned by the Law family interests. The smaller farm that makes up Area 2 is part of a block acquired by former share milkers, the Rowlands.

[22] By New Zealand standards, the proposed solar renewable energy facility is large. It is roughly 2 x 2 kilometres.

[23] To put the facility's potential generation capacity in context, the facility at full operation will produce sufficient energy to meet the daily requirements of 30,000 homes. Using the average of 2.7 people per home that equates to meeting the domestic energy requirements of a population the size of Palmerston North, New Zealand's seventh largest city.

[24] The proposed development will comprise about 220,000 solar panels, associated infrastructure and a substation. The solar farm would comprise rows of bi-facial monocrystalline panels mounted on specially designed arrays in north-south rows driven by a tracking system that rotates the panels to follow the sun's movement during the day.

[25] Ancillary infrastructure includes:

- Approximately 28 cabinets, which would contain the inverters, transformer and associated equipment;
- A new substation building measuring 16m x 6m x 3.5m (LxWxH);
- A battery storage facility;
- A new 33kV transmission line comprising single poles with a maximum height of 35m from the Site's boundary to the Edgecumbe substation that does not form part of the application. Details of the final alignment of the transmission line are still under investigation. However, it is likely to extend from the proposed Site substation and along the Site boundary before routing along Putiki Road and passing across agricultural fields to the northeast of the Edgecumbe substation before connecting to the existing substation;
- New site access tracks;

- 2m high perimeter (security) fencing consisting of timber posts and mesh wire (similar to deer fencing) and security cameras distributed around the periphery of the Site;

- Lighting at the substation and battery storage area (motion sensor or infrared) and each inverter (manual lighting for urgent and unexpected night-time checks only).

- A Site office including car parking.

[26] Mr Schlichting is one of the executive team for Helios and a co-creator of the proposed solar facility concept. He said at [4.11] of his SOE that:

> *"The solar farm is a $150 million investment in the Whakatane District. The construction period will generate between 200-250 jobs, and, where possible, Helios will look to procure from the local area (this will also include procurement of ancillary items and services such as fencing, planting, quarries and food/accommodation for workers during construction). Specialist subcontractors (ideally locally based) will also be engaged to maintain and operate the solar farm and the surrounding land on an ongoing basis (approximately 4-5 full-time equivalent (""TE"" roles for the 35-year term of the solar farm*)".

Notification and Activity Classification

[27] The expert planners who gave evidence to us were Mr McCroskie for the Applicant and Ms Maguire for the Council.

[28] Ms Maguire assessed the application notification under RMA, Part 6. In a thorough report dated 30 June 2023, Ms Maguire concluded that the effects were of a scale and reach that only required limited notification - mainly based on the anticipated visual amenity and acoustic effects – of properties at the Site's boundaries or nearby. Thirteen land parcels were identified as affected based on the requisite statutory effects assessment. Of those, seven owners filed submissions; all opposed the Proposal.

[29] The Proposal is categorised as discretionary in the Plains Zone. There are other non-compliances with specific rules, such as construction noise limits with lesser activity classifications. The planners agreed at the hearing that the Proposal is overall classified as discretionary, applying the bundling principle so that all relevant land use effects controlled by the Council may be considered subject to

any permitted baselines applied to specific non-compliances under RMA, s 104. We agree.

Adjustments to the Application before and during the hearing

[30] Helios identified shortly before the hearing further improvements to its design and mitigation strategy through engagement with submitters, resulting in modifications to the Site layout to reduce the Project's externalities.

[31] The main changes were summarised by Helios' representative, Mr Schlichting, at [7.8] of his SOE as follows:

> *"7.8 This updated Site layout has resulted in:*
>
> *(a) The substation and BESS relocated 250m to the northwest from the original location. These facilities are now more centrally located within the Site and further from boundaries with adjacent properties.*
>
> *(b) The solar panel arrays have been realigned to run parallel with roads and property boundaries, which minimises the area of new roads and increases the setbacks between panels and property boundaries for 361 McLean Road in the north and 181A Putiki Road in the south.*
>
> *(c) There are no longer panels shown on the corner of McLean Road and Western Drain Road, as there is now a setback to the western side of the house to be retained as a Site office.*
>
> *(d) The setback from the fault line has been removed. This is a result of onsite geophysical testing, which has shown there is no evidence of an active fault line in this precise location. The removal of this internal setback allowed panel and component adjustments within the Site (including the relocation of the substation / battery storage more centrally within the Site)".*

[32] There were also modifications to the mitigation planting plan by Helios' landscape architect, Ms Ramsay, summarised at [2.5] of her SOE as follows:

> *"2.5 An amended Mitigation Planting Plan and amended Planting List (that are respectively included at Appendix 1 and Appendix 2) have been prepared to include:*
>
> *(a) large grade planting (1.5m minimum height at the time of planting) along portions of the northern boundary of the Site adjoining 361 McLean Road to screen the Site and proposed development from view more quickly;*
>
> *(b) notes to ensure there is site walkover to confirm ground conditions and species choices prior to planting in response to knowledge of variable ground conditions around the Site (wet areas) to make sure planting is*

successful. A range of species for a range of ground conditions is included in the Planting List;

(c) notes to finalise species choice with landowners (from the Planting List) to enable further discussion with landowners if they have species preferences; and

(d) planting along a portion of the adjoining boundary with 181B Putiki Road where there was previously no boundary planting proposed to be provided".

Site Selection

[33] The Site was selected based on a series of attributes as follows:

- Flat land (>5 0 slope).
- Proximity to a grid connection point.
- Large enough land area for economic viability.
- Free of ecological, heritage or cultural features.
- Medium to high sunshine hours.
- Limited shading from natural features such as mountains.

[34] Mr Schlichting elaborated on the site selection process in section 5 of his SOE. In our view, he demonstrated a rational approach to assessing the requirements for successfully implementing a large renewable solar project. We acknowledge there are multiple factors influencing decision-making to deliver a project of this scale.

3.0 The Site, the Soil Resource and the Locality

The Locality

[35] The Site is on the Rangitāiki Plains, bounded by the Bay of Plenty coastline in the north and by the Raungaehe Range, Putauaki/Mt Edgecumbe, and the northern foothills of Maungawhakamana to the south, east and west.

[36] The plains landscape is mainly flat, with slight variation in topography. Land use in the immediate vicinity predominantly comprises agricultural farmland with some plots in orchards or food/crop production, such as kiwifruit orchards

located southeast of the Site. Fields are small to medium-sized and generally regular in shape. Field boundaries are defined by post and wire fencing, with some hedgerows and occasional shelter belts of mature trees.

[37] Edgecumbe is the main settlement near the Site, located approximately 1 km west southwest of the Site at its closest point. The town lies on the western banks of the Rangitāiki River and is dissected by State Highway 2 / Matata Road.

[38] Several canals and drains form linear features across the landscape. The closest to the proposed development, Reid's Central Canal, runs along the Site's western boundary. These features are highly modified watercourses comprising straight edges and contained by flood banks with grassed riparian margins (See Attachment 2).

The Soil resource and its special qualities

[39] Under the NPL-HPL, the Site is classified as highly productive land ("HPL"), i.e. Land Use Class 1-3.

[40] The soil mapped at the two properties making up the Site are classified under the New Zealand Land Resource Inventory system as Land Use Class 2w1 and 2s2. These classifications indicate water and sulphur constraints but these are now overcome by drainage and fertiliser inputs.

[41] The soil type at the proposed solar farm is Paroa silt loam. That soil is described as "suitable for cash cropping for maize, market gardening, dairy farming and horticulture." (Puller, NZ Soil Survey Report 86, 1985).[2] However, while the soil is versatile and can support a range of production, the reality is that it has been used for dairying and maize cropping only in the last 80 years.

[42] The distribution of soils on the Rangitāiki Plains is shown in the map below, supplied by a submitter, Mr Askey.

[2] Askey SOE at 9.3

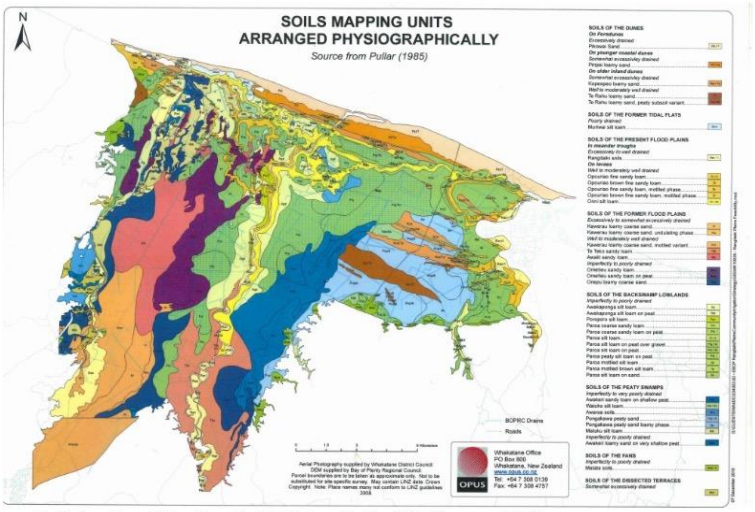

Figure 3: Soil units of the Rangitaiki Plains (Pullar NZSS report #86)

[43] The Paroa soil classes are described as back swamp lowland soils reflecting the lowland floodplain characteristics of the locality.

[44] Helpfully, Mr Askey brought to the hearing an augured sample showing the soil profile of the Paroa silt loam. Underneath the topsoil layers is a fine particled silt loam, a deep section of river sands with reasonably fine particle sizes and volcanic ash layers borne by fluvial processes.

[45] Some layers of the soil profile operate as filters that limit drainage causing surface flooding and very wet conditions.

[46] The Paroa silt loam will produce dry matter of 1600-1800 T DM/Ha/year. That translates to 300,000 kg/ms/year, sufficient for about 10,000 people based on 1/litre/milk/day consumption. A nearby farm has achieved 16.33 tonne/year/hectare of maize, which feeds 25,000 people corn based on 136 kilos/year/person using data from countries where corn is the key source of macronutrients.[3]

[3] Refer Askey's calculation orally and checked using Mexican consumption for corn datasets.

4.0 The Parties

The Applicant

[47] Helios is a private company involved in project management and coordinating investment in solar energy in New Zealand. We infer it is an energy generation intermediary or entrepreneur developing and packaging investment-grade projects.

[48] Mr Schlichting introduced Helios in this way at [3.4] – [3.6]:

> *"Over the past three and a half years, the Helios team has evaluated more than 60 potential project sites across New Zealand, narrowing this list to seven priority projects, resulting in approximately 1GW of new renewable energy generation.*
>
> *Helios is focused on large-scale projects connecting to the National Grid owned and operated by Transpower. These projects will make a meaningful contribution to the generation of new renewable energy in New Zealand, stimulate economic activity in the regions our projects are located, create both short term work and training opportunities as well as a number of permanent full-time jobs over each solar project's 35 year operational life.*
>
> *Helios' vision is to create an enduring, positive legacy of a more sustainable future through our work".*

[49] Helios aims to contribute greatly to renewable energy production in New Zealand. It aims for large-scale development because it regards that as economically wise the only viable means Aotearoa | New Zealand will meet its renewable energy targets.

The Submitters who attended the Hearing

The Askeys

[50] Peter and Robyn Askey own land at 181B Putiki Road (Lot 2 DP 396577), 163 Putiki Road, 151 Putiki Road, 111 Putiki Road and 118 Putiki Road. They share a common boundary of 1092m with the Brady property (176 McLeans Road) on land title 181B and 80m on 151 Putiki Road Orini Farms and Dairies. Their landholdings are coloured green in Attachment 1 – Plan 5.

[51] The Askey family has farmed for 20 years at the home farm at 151 Putiki Road and for 75 years by the wider family. The land has always been operated as

a dairy farm. It has been farmed in all conditions, including when major floods occurred in 2004 and 2017.

[52] Mr Askey spoke to his submission with a thoughtful, detailed statement of evidence.

[53] Mr Askey holds a Bachelor of Engineering (Ag) degree from the University of Canterbury (1980). Mr Askey is an environmental engineer with WSP and is familiar with resource management processes, particularly for landfills. The particular topics Mr Askey paid attention to are set out in Section 4.

Orini Dairies Limited

[54] The Law family own Orini Dairies Limited. Alan Law spoke on behalf of the Law family interests. Mr Law said the family came from England in 1856 and farmed in the Whakatāne district shortly after the First World War. The Law family are career farmers operating on a 300-hectare platform, milking approximately 700 cows. The family was awarded the AC Cameron Memorial Award in 1995, recognising farming excellence and community involvement. The Law family was associated with the Brady property for 50 years, from 1965 to 2014, and Mr Law worked on that farm. Therefore, Mr Law has a good understanding of Area 1.

[55] Mr Law noted that in about September 2022, Helios approached them to purchase some land. After extensive negotiations, the Laws indicated a willingness to sell some of their land at a significant per-hectare rate because it would help reduce debt. That deal never eventuated, and now the Law family oppose the Helios application, including on the basis highly productive soils will be lost.

Orini Farms Limited

[56] Murray and Delwyn Langdon farm the property marked purple in Attachment 1 – Plan 5 on the southern side of Site 1. The family has farmed in that area since 1917, and the Langdons purchased their farm eight years ago.

[57] Murray and Delwyn love their property and want larger buffer areas to protect their amenity. They felt they were being asked to pay a high personal price to enable the national interest in renewable energy production.

[58] Ms Paddison, legal counsel, provided legal submissions for the Langdons and Orini Farms Limited. The focus of those submissions was on the extent to which the activity was appropriate based on the NPS-HPL.

Suzanne Davies

[59] Suzanne Davies lives on the property marked yellow in Attachment 1 – Plan 1, 181 Putiki Road. It is a small rural residential lot with a dwelling recently purchased. Ms Davies looks after a disabled daughter and one of the valued attributes of the locality is its rural amenity and relative quietness. These features are important because Ms Davies' daughter is susceptible to stimuli. This asset is Ms Davies' only property. She left a residential property in Whakatāne for the quieter Putiki Road environment.

The Suttons

[60] Odell and Trevor Sutton live at 181A Putiki Road. It is the rural residential property in Attachment 1 – Plan 1 off Putiki Road, marked red. Their property is closer to the Site than their neighbour, Ms Davies. It has direct frontage to the Site and is viewable on their north-facing veranda.

5.0 The areas of commonality and major matters in contention

The Planners' joint evaluation

[61] The planners reached the same evaluative conclusion that the activity should be given consent, and they had minor differences in the appropriate conditions during the hearing.

Appropriateness of renewable energy solar facility on Highly Productive Land

[62] The key environmental issue was the appropriateness of the activity considering the NPS-HPL because the land is the best quality pastoral land in the Whakatāne district. The Askeys, the Laws and the Langdons were particularly concerned the Plains' valuable soils were at risk from a gold-rush mentality from the pursuit of renewable energy opportunities on flat land often ideal for food production. They are also concerned about associated effects on rural identity and

impacts on the economic viability of farming support enterprises that rely on contracting.

[63] Mr Allen provided expert evidence on the productive capability of the land for the Applicant and Ms Greig for Mr Askey.

[64] Ms Greig and Mr Allen (see below) addressed the feasibility of combining solar farming and sheep farming – a combined land use concept called 'agrivoltaics'.[4] Neither of these witnesses are LUC classification specialists; however, collectively, the information they provided gave the Panel a clear picture of the productive capabilities of the Site's soils and was within their general experience and expertise.

Feasibility of ongoing sheep farming as part of the Proposal

[65] The Proposal has an ancillary and complementary rural sheep farming enterprise in and around the solar arrays.

[66] The Askeys and the Laws contend that sheep farming is not viable in this part of the Plains because of its wetness, making it unsuitable for smaller cloven animals, especially sheep.

[67] Mr Askey called an expert, Ms Tonya Greig, who has extensive farm advisor experience and a B.AgSc from Massey University. Her evidence concerned the difficulty of running sheep on the plains. She runs a small mob of ewes on the Plains, and this gives her some insight into the level of attention sheep require if run on the Plains.

[68] Mr Allen, for the Applicant, provided the evidence on the feasibility of the sheep farming activity. Mr Allen is a director of Agfest Waikato and holds a Bachelor of Agricultural Commerce and a Masters in Agri-Business from Lincoln University.

Visual Amenity Effects

[4] See, for example, Andrew AC, Higgins CW, Smallman MA, Graham M and Ates S (2021) Herbage Yield, Lamb Growth and Foraging Behavior in Agrivoltaic Production System. Front. Sustain. Food Syst. 5:659175. doi: 10.3389/fsufs.2021.659175

[69] All submitters were concerned with the visual amenity effects of the Proposal. They accurately described the Proposal as having an industrial mechanised character. They say that would be inappropriate in a currently rural pastoral farming-dominated landscape. They were also concerned about losing more distant views of Moutohora (Whale Island), Pūtauaki Maunga and other notable features visible from that part of the Rangitāiki Plains.

[70] A key issue was the delay between the proposed planting becoming established above 3-4 metres and the construction of the solar renewable energy facility. That led to requests that the planting be established before construction commences.

[71] The landscape and visual impact assessment by Ms Ramsay at Boffa Miskell was provided in the AEE. Ms Ramsay also provided evidence to the hearing. She addressed the amended Planting Mitigation Plan, which picked up changes to the Site layout and work undertaken as part of ongoing consultation with affected landowners after submissions closed.

Glint and Glare Effects

[72] Solar panels have reflective qualities; a significant concern is the impact of glint and glare on neighbouring properties. The Applicant gave the only professional assessment of glint and glare. That comprised a glint and glare assessment of the original proposal in the AEE and a further assessment by Messrs McRae, a landscape architect at Boffa Miskell specialising in glint and glare assessment. The reassessment was required as part of the Site rearrangement in the modified Site layout.

Noise Effects

[73] Many submitters, notably those with lifestyle properties on the boundary, were concerned about the potential for noise effects and their enjoyment of their properties. The main noise emissions sources are the inverters and the proposed battery storage facility to store energy temporarily, called a BESS. The only professional assessment of noise effects was that undertaken by the Applicant's

acoustician, Mr Cottle, who is an associate of Marshall Day Acoustics at Hamilton.

Non-inclusion of transmission lines outside the Site from the Application

[74] As noted in the application description above, the activity will convey electricity by 33 kV transmission lines to the substation at Edgecumbe. That will require overhead power lines, and the indicative alignment is through Putiki Road. This feature of the application particularly angered Mr Askey, and he was critical that the application did not specifically identify the alignment and assess the visual effects of that component of the Proposal.

Assessment of Alternatives

[75] Mr Askey criticised what he saw as the absence of a robust site selection process by Helios. He argued that Helios had to demonstrate by a multi-criteria analysis, similar to those used for Notices of Requirement, that there were no reasonable alternatives to using the best land in the Rangitāiki Plains.

Reverse Sensitivity/Interface Effects

[76] The adjoining submitter farmers were very concerned about reverse sensitivity effects, and Mr Askey described that as his primary concern.

[77] Mr Askey pointed out that Policy 9, section 3.13 of the NPS-HPL requires that: "*reverse sensitivity effects are managed so as to not constrain land-based primary production activities in highly productive land*".

[78] In Mr Askey's opinion, the solar farm is a sensitive activity capable of limiting rural production in the following respects:

(a) Dust on solar panels caused by normal farming practices, including seed sowing and spreading fertiliser;

(b) Shading effects on solar panels affect solar production because shelter belt planting is essential for livestock health. Mr Askey pointed out an existing set of tall shelter trees on the Brady property. If these were removed for shading reasons, he said he would replace them immediately with fast-growing Poplars or Eucalypts on the side boundary to protect his stock.

[79] Another risk is falling trees on neighbouring properties, which in the past did not cause problems but could be a significant risk for farming.

Effects of Earthworks on the Reid's Floodway Scheme

[80] The Reid's Floodway Scheme controls the floodplain upstream of Edgecumbe to avoid damage to that town and the farming land downstream. It involves, amongst other things, the direction and containment of flood waters to land on the true right bank of the Rangitāiki River, including on land adjoining the Site. The Bay of Plenty Regional Council manages the Reid's drain and is constructed to withstand a one-in-100-year event.

[81] The flood works failed in 2004, leading to the 'Cullen Inquiry'. That, in turn, resulted in strengthened by-laws governing works adjacent to the flood banks because suspicion was held that certain adjacent activities punctured the weakest parts of the subsurface adjoining the stop bank, creating hydraulic forces that undermined the stop bank from the non-river side.

[82] A concern of the Askeys and the Laws was the potential impact of numerous poles supporting the solar arrays within the 200-metre envelope controlled by a Bay of Plenty Regional Council by-law restricting engineering works adjacent to the Reid's Canal stop bank.

Implications for the Halls Drainage Scheme including increased run-off

[83] One matter that Mr Law emphasised was the implications of having a non-active farming owner who owns a land within a crucial part of the Halls Drainage Scheme. The Halls Drainage Scheme is a sub-scheme of the wider Rangitaiki Plain Drainage Scheme. It collects water from the Site that passes through drains. It ultimately discharges back into the Rangitāiki from the Orini Dairies farm using a pump operated by a tractor volunteered by the Law family. Mr Law painted a picture where, in heavy flood conditions, a cooperative landowner approach is required by farmers to supply materials and money to support the mechanics of operating the drainage network, much like a Polder Scheme.

[84] The Suttons were concerned about increased run-off from the Proposal, accentuating surface flooding at the front of their property during heavy rainfall.

Monitoring

[85] Several submitters were concerned that active monitoring needed to be undertaken by the Council because the facility's operator would not have an on-site presence and would not be able to address non-compliance promptly.

Decommissioning and Bond

[86] Mr Askey emphasised the need for a bond and specific conditions governing decommissioning. Mr Askey pointed out that returning the land to its original state will require the removal of the 220,000 panels, all the mounting arrays and all of the cabling and inverter stations. This, he claimed, was a significant endeavour that would be prohibitively expensive, creating a risk of an orphaned site with the community to face the clean up cost. In Mr Askey's opinion, only a bond would be able to mitigate that risk.

6.0 The District Plan and Higher-Order Policy Setting

Whakatāne District Plan

[87] Mr McCroskie summarised the planning setting in this way:

> *"3.5 The District Plan context for the Site is summarised below:*
>
> *(a) The Site is zoned Rural (Plains).*
>
> *(b) McLean Road, Western Drain Road and Orini Road surrounding the Site are classified as 'Local Roads' in the District Plan.*
>
> *(c) The Reids Central Canal - Rangitiki floodway (brown stippling - Natural Hazard) is located adjacent to the western boundary of Site 1.*
>
> *(d) A biodiversity site (Orini Wildlife Management Reserve) is situated to the north of Site 1 (black/white diagonal hatching). The Rangitiki River is situated to the west of Site 1 (blue hatching).*
>
> *(e) The natural hazard map shows the land which was subject to the 2004 flood (blue stippling). An additional hazard layer is identified over Site 2 (land hazard).*
>
> *(f) No known cultural heritage sites are located within the Site or on adjacent properties".*

[88] Chapter 2 of the District Plan outlines the Plan's spatial methods and the policy thrust for each. The Plan uses zoning and policy areas to implement the planning scheme.

[89] Clause 3.1.1.1 of Chapter 2 concerning the Rural Plains Zones states:

> *"The Rural Plains Zone includes land which has the potential for high value production due to the inherent characteristics of the land including high ratings for versatility under the New Zealand Land Resources Inventory System (i.e. versatile land). The primary purpose of this zone is to retain the characteristics of the finite land resource and protect the rural production potential and economic growth of the District. There is also a need to provide for other activities which have a fundamental need to be located within the zone".*

[90] The Rural Zone's Objective 1 and its associated policies seek to support primary production without specifying particular forms of production. This is a matter left to the choices of the individual farmer.

[91] The principal concern is to maintain the long term options for food production on versatile soils. The relevant provisions are set out below.

> *"**Objective Rur To sustain the productive potential of rural land and provide for rural production activities***
>
> *Policy 1 To protect land in the Rural Plains Zone, which includes versatile land, for primary productive use and to maintain the productive land resources for future generations.*
>
> *Policy 2 To provide for the growth and efficient operation of primary productive use and rural production activities in the Rural Zones.*
>
> *Policy 3 Where land is degraded by a non-productive activity, it should be rehabilitated to a level similar to that of the surrounding area or to the original state of the site before degradation.*
>
> *Policy 4 To require the sustainable use and development of rural land in a manner which does not reduce existing primary productive use or compromise existing and future primary productive use options".*

[92] Objective 3 recognises the Rural zone is a production zone where people pursue economic activity. Objective 3 and Policy 1 state:

> *"Objective Rur3*
>
> *To ensure that development is located and operated to enable people and communities to provide for their social, economic and cultural well-being and for their health and safety, while ensuring that adverse effects including cumulative effects on the rural environment are avoided, remedied or mitigated.*

Policy1

To enable rural activities such as farming, intensive farming, production forestry and mining to continue and prosper as part of the rural environment and provide for directly related rural service activities and rural processing, whilst avoiding significant adverse and/or cumulative effects on the surrounding environment".

[93] Chapter 20 of the WDP addresses, works, network utilities and renewable electricity generation.

[94] Section 20.7 sets out the objectives and policies for renewable electricity generation. We set these out in full below:

20.6 RENEWABLE ELECTRICITY GENERATION

20.7 OBJECTIVES AND POLICIES

Objective RE1	***To recognise the national significance of renewable electricity generation activities and provide for the efficient operation, maintenance and upgrading of existing renewable electricity generation activities and the development of new renewable electricity generation activities in a manner that:*** ***a. contributes to the New Zealand national target for the generation of electricity from renewable resources;*** ***b. provides for the economic, cultural, social and environmental wellbeing of people locally, regionally and nationally;*** ***c. recognises the benefits of renewable electricity generation activities;*** ***d. to the extent practicable and reasonable avoids, remedies or mitigates adverse effects on the environment or otherwise addresses such effects through measures such as environmental off-setting or compensation;*** ***e. acknowledges the practical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities; and*** ***f. avoids reverse sensitivity effects on existing and consented renewable electricity generation activities.***
Policy 1	To ensure that any significant adverse effects on the **environment** resulting from renewable electricity generation activities are avoided, remedied or mitigated while recognising the significant benefits that renewable electricity generation activities create locally, regionally and nationally.
Policy 2	To recognise and provide for the continued operation, maintenance and upgrading of existing and consented renewable electricity generation activities and the development of new renewable electricity generation activities, including small and community-scale schemes.
Policy 3	To have particular regard to the logistical and technical requirements of renewable electricity activities when determining the appropriateness of any adverse effects from such activities.
Policy 4	To ensure existing and consented renewable electricity generation activities have continued physical access to energy resources.
Policy 5	To avoid unnecessary constraints or controls that have the potential to compromise the continued efficient operation, upgrading and development of the Kawerau Electricity Generating Plant which crosses district boundaries, and the Matahina Hydroelectric Power Generation Scheme.
Policy 6	To recognise the opportunity for environmental off-setting or environmental compensation where it is not practical or feasible to fully avoid, remedy or mitigate the effects of renewable electricity generation activities.

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NPS-REG

[95] Climate change is the world's most pressing environmental issue, and it can only be overcome if everyone, every region and every country pull their weight to address it. The policy direction of the NPS-REG reflects that reality.

[96] Some policies in the NPS-REG obtain greater heft given recent (i.e. after the 2011 making of the NPS-REG) national efforts to de-carbonise Aotearoa | New Zealand responding also to international commitments.

[97] Some context and analysis on those matters are set out in the following sections.

Analysis of the NPS-REG

Context of New Zealand's international commitments concerning GHG emissions reductions

[98] National Policy Statements are secondary legislation construed according to the Legislation Act 2019, making the context relevant.[5]

[99] International instruments of New Zealand concerning climate change goals are relevant context[6] and inform the following:

(a) The appropriate recognition of the benefits of renewable energy as directed by Sub-Objective A and Policy A in NPS-REG.

(b) To appreciate the *practical implications of achieving New Zealand's target for electricity generation from renewable resources* under Sub-Objective B.

(c) To scale the degree to which meeting and sustaining the target will *require the significant development of renewable electricity generation activities* under Sub-Objective B, Policy B.

(d) The CCRA regime affects the *energy demand context*.

[100] The relevant international covenants demonstrate the need for a long-term commitment to renewable energy development. These commenced with the Kyoto Protocol, with the 2nd Kyoto Commitment approved around the same time as the NPS-REG for the long-term management of GHG emissions.

[5] The usual interpretation tools apply in performing the interpretation task, and the Legislation Act 2019, s 10 provides an accepted standard of analysis based on RMA, s 52(4), which states; *A national policy statement under this section is secondary legislation*. The method involves ascertaining meaning from its text and in the light of its purpose and its context.

[6] LoNZ Statutes, Statutory Interpretation: External Contextual Guides pt V - see para 165 The Laws of New Zealand; and Carter, Statute Law 5th Edn Lexis Nexis. Chapter 15.

[101] On 12 December 2015, New Zealand adopted at the UN Climate Change Convention (COP21) in Paris (*the Paris Agreement*) an overarching goal to *hold the increase in the global average temperature to well below 2°C above pre-industrial levels* and to pursue efforts to *limit the temperature increase to 1.5°C above pre-industrial levels*. The UNFCCC at its website states:[7]

> "*Implementation of the Paris Agreement requires economic and social transformation based on the best available science. The Paris Agreement works on a five-year cycle of increasingly ambitious climate action -- or ratcheting up - carried out by countries. Since 2020, countries have been submitting their national climate action plans, known as nationally determined contributions (NDCs). Each successive NDC is meant to reflect an increasingly higher degree of ambition compared to the previous version*".

[102] To reinforce their importance to the CCRA framework, the Kyoto Protocol and Paris Agreement articles are annexed to the CCRA.

CCRA 2022

[103] The purpose of the CCRA, following the Kyoto Protocol and the Paris Agreement, is to develop a framework to:[8]

(a) Contribute to the global effort under the Paris Agreement to limit the global average temperature to 1.5°C above pre-industrial levels.

(b) Allow New Zealand to prepare for and adapt to the effects of climate change.

[104] Under the CCRA, a more ambitious, wide-ranging and sophisticated approach to GHG emissions reduction is established. That includes the development of an Emissions Reduction Plan for each emission budget period defined in the CCRA to achieve the *2050 target*. The first Emissions Reduction Plan is available from the Ministry for the Environment website.[9]

[105] That *2050 target* and the framework to achieve it is addressed in the CCRA in Part 1B at s 5Q onwards. The *2050 target* is a defined term to reach net zero greenhouse gas emissions by 2050 under s 5Q(1)(a).[10]

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[7] https://unfccc.int/process-and-meetings/the-paris-agreement.
[8] CCRA, s 3.
[9] First Emissions Reduction Plan.
[10] CCRA, s 5.

[106] The *2050 target* will be achieved by energy budgeting for the prescribed energy budget periods using plausible energy demand, substitutionary and mitigation scenarios over emission budget periods.

[107] To achieve the *2050 target*, it will be necessary to reach close to 100% renewable electricity for:

(a) All existing and new demands for electricity; and

(b) Growth in renewable energy supply to replace current fossil fuel use and all future energy demand.

The NPS-REG and its target

[108] The NPS-REG should be:

(a) Applied to circumstances as they arise under Legislation Act, s 11. In this case, the *energy demand context* informs the significance of most policies in the NPR-REG and the requirement to sustain the 90% target.

(b) The other side of the coin of (a) is that the NPS-REG is always speaking while in force.

[109] The target referred to in the NPS-REG Objective is a level of generation of 90% of electricity generated from renewable sources. That is addressed in the third paragraph of the Preamble to NPS-REG. That target is derived from the generation level in the New Zealand Energy Strategy 2011– 2021. The 2025 achievement date recognises that in 2011, the generation level was well below that level. It does not mean that the target if achieved in 2025, the GHG reduction project ceases despite increasing so that planning for renewable energy ceases to matter. The reasons for that are somewhat obvious and include:

(a) The context of the NPS-REG is achieving the long-term Project of GHG reductions to meet New Zealand's international climate change commitments.

(b) The broader NPS-REG aims can only be achieved by meeting anticipated electricity demand over reasonable timeframes.

(c) The reference to 2025 in the NPS-REG only functions to make the 90% level timebound, not to ossify the instrument, so there is no long-term planning for renewable energy beyond that date. To read the instrument any other way would be unreasonable.

(d) The companion strategy, called New Zealand Energy Strategy 2011–2021, was for a defined period to provide a clear pathway but in the context of meeting long-term GHG reductions over the long term to meet New Zealand's international commitments, i.e. beyond 2025.

[110] The NPS-REG Objective aims to achieve a proportion of New Zealand's electricity generation that *meets or exceeds* the New Zealand Government's national target.[11] The point about exceeding the target is emphasised. In light of the current circumstances,[12] any decision-maker today should aim to exceed the national target percentage of renewable electricity generation. To meet peak demand, some fossil fuel contribution will be required to provide security of supply. It is not necessary to assume that 100% renewables will achieve acceptable levels of security of supply. But it must be close to that percentage to meet the *2050 target*.

[111] The NPS-REG Objective must assume that renewable electricity generation will supply the requisite proportion of energy arising from growth in demand. Hence, the Preamble of NPS-REG in paragraph 2 states:

> *"New Zealand's energy demand has been growing steadily and is forecast to continue to grow. New Zealand must confront two major energy challenges as it meets growing energy demand. The first is to respond to the risks of climate change by reducing greenhouse gas emissions caused by the production and use of energy. The second is to deliver clean, secure, affordable energy while treating the environment responsibly."*

[112] NPS-REG Objective B and Policy B states:

> ***"B. Acknowledging the practical implications of achieving New Zealand's target for electricity generation from renewable resources***
>
> *POLICY B*
>
> *Decision-makers shall have particular regard to the following matters:*

[11] NPS-REG, Objective.

[12] Including the current Emissions Reduction Plan under Climate Change Response Act 2002. New Zealand has also signed up to the Powering Past Coal Alliance, which commits New Zealand to phasing out coal in electricity generation by 2030.

a) maintenance of the generation output of existing renewable electricity generation activities can require protection of the assets, operational capacity and continued availability of the renewable energy resource; and

b) even minor reductions in the generation output of existing renewable electricity generation activities can cumulatively have significant adverse effects on national, regional and local renewable electricity generation output; and

c) ***meeting or exceeding the New Zealand Government's national target for the generation of electricity from renewable resources will require the significant development of renewable electricity generation activities****".* (emphasis added)

NPS-HPL

[113] The NPS-HPL came into force on 17 October 2022. It has immediate effect but will not be incorporated in District Plans for up to five years. The National Policy Statement of Highly Productive Land Guide to Implementation ("the Guidance")[13].

Analysis of the NPS-HPL with an eye to its implications for renewable energy solar facility applications on HPL

[114] The NPS-HPL is also secondary legislation to be interpreted following the Legislation Act 2019.

[115] The relevant statutory context for national policy is the following provisions of the RMA, s 45 and 45(a) below.

*"**45 Purpose of national policy statements***

(1) The purpose of national policy statements is to state objectives and policies for matters of national significance that are relevant to achieving the purpose of this Act.

(2) In determining whether it is desirable to prepare a national policy statement, the Minister may have regard to-

(a) the actual or potential effects of the use, development, or protection of natural and physical resources:

[13] Ministry for the Environment 2023, National Policy Statement for Highly Productive Land: Guide to Implementation. Wellington: Ministry for the Environment at page 9 states:
"There will be a period of time where local authorities and applicants will need to consider the policy direction and implementation requirements in the HPL without HPL being mapped (up to three years) and without specific policy direction and implementation requirements in other Regional Policy Statements (up to three years) or in District Plans (up to five years) in relation to protection of HPL for land-based primary production."

(b) New Zealand's interests and obligations in maintaining or enhancing aspects of the national or global environment:

(c) anything which affects or potentially affects any structure, feature, place, or area of national significance:

(d) anything which affects or potentially affects more than 1 region:

(e) anything concerning the actual or potential effects of the introduction or use of new technology or a process which may affect the environment:

(f) anything which, because of its scale or the nature or degree of change to a community or to natural and physical resources, may have an impact on, or is of significance to, New Zealand:

(g) anything which, because of its uniqueness, or the irreversibility or potential magnitude or risk of its actual or potential effects, is of significance to the environment of New Zealand:

(h) anything which is significant in terms of section 8 (Treaty of Waitangi):

(i) the need to identify practices (including the measures referred to in section 24(h), relating to economic instruments) to implement the purpose of this Act:

(j) any other matter related to the purpose of a national policy statement."

"45A Contents of national policy statements

(1) A national policy statement must state objectives and policies for matters of national significance that are relevant to achieving the purpose of this Act.

(2) A national policy statement may also state-

(a) the matters that. local authorities must consider in preparing policy statements and plans:

(b) methods or requirements in policy statements or plans, and any specifications for how local authorities must apply those methods or requirements, including the use of models and formulae:

(c) the matters that local authorities are required to achieve or provide for in policy statements and plans:

(d) constraints or limits on the content of policy statements or plans:

(e) objectives and policies that must be included in policy statements and plans:

(f) directions to local authorities on the collection and publication of

specific information in order to achieve the objectives of the statement:

(g) directions to local authorities on monitoring and reporting on matters relevant to the statement, including-

(i) directions for monitoring and reporting on their progress in relation to any provision included in the statement under this section; and

(ii) directions for monitoring and reporting on how they are giving effect to the statement; and

(iii) directions specifying standards, methods, or requirements for carrying out monitoring and reporting under subparagraph (i) or (ii):

(h) any other matter relating to the purpose or implementation of the statement.

(3) A national policy statement may apply-

(a) generally; or

(b) to any specified district or region of any local authority;

or

(c) to any specified part of New Zealand.

(4) A national policy statement may include transitional provisions for any matter, including its effect on existing matters or proceedings.

(5) Consultation undertaken before this section comes into force in relation to a matter included in a national policy statement satisfies the requirement for consultation under section 46A."

[116] Other than RMA, s 45A(2)(e), RMA, s 45A does not authorise the use of national policy to reach down and override existing settled lower-order planning objectives and policies when performing resource consent discretions before the national policy is implemented under Part 5. That said, national direction often gives a clearer picture of how decision-makers should understand the requirements of Part 2.

[117] The NPS-HPL does not specify any objectives and policies that must be immediately included in regional or district plans. It provides a timeframe for giving effect to a national policy statement, which is directed to amending plans under RMA, Part 5.

[118] There is an interim definition of *highly productive land* pending regional mapping. That does not suggest that NPS-HPL will reach down and powerfully affect discretions under RMA, s 104 because the interim definitions are mainly useful for managing rezonings under clauses 3.6 and 3.7.[14]

[119] Both clauses 3.8 and 3.9 refer to territorial authorities taking *measures* referred to in subclauses 3.8(2) and 3.9(3). In their context, the reference to *measures* in these clauses does not refer to the performance of discretions under RMA, s 104. Instead, *measures* are strategic planning techniques for achieving well-conceived outcomes using the RMA Schedule 1 process.

[120] In the case of clause 3.9(3) governing inappropriate use and development, the *measures* required include minimising or mitigating actual loss or potential cumulative loss or availability and productive capacity of highly productive land.

[121] The words in clause 3.9(3) contain contextual determiners and suggest scope for evaluating the degree to which otherwise appropriate development should be controlled.[15] That assessment requires an integrated assessment meeting the requirements of clause 3.2, which requires *taking a long-term strategic approach to protecting and managing highly productive land for future generations*.

[122] Excluded from the definition of "inappropriate use" under clause 3.9.2 is item 3.9(2)(j), which reads:

> *"(j) it is associated with one of the following, and there is a functional or operational need for the use or development to be on the highly productive land:*
>
> *(i) the maintenance, operation, upgrade, or expansion of specified infrastructure:*
>
> *(ii) the maintenance, operation, upgrade, or expansion of defence facilities operated by the New Zealand Defence Force to meet its obligations under the Defence Act 1990:*
>
> *(iii) mineral extraction that provides significant national public benefit that could not otherwise be achieved using resources within New Zealand:*

[14] See for example, *Balmoral Developments (Outram) Ltd v. Dunedin City Council*, [2023] NZEnvC 59 (2023).
[15] The definition of 'Minimise" = reduce (something, especially something undesirable) to the smallest possible amount or degree.

(iv) aggregate extraction that provides significant national or regional public benefit that could not otherwise be achieved using resources within New Zealand."

[123] Renewable energy developments are specified infrastructure under NPS-REG.

[124] The assessment under clause 3.9(2)(j) is not whether there is an alternative location but whether the activity has a functional or operational need to be located on *the* highly productive land on which it to be sited.

[125] Policy C of NPS-REG provides some insight into the functional and operational needs as follows:

> ***"C. Acknowledging the practical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities***
>
> *POLICY C*
>
> *Decision-makers shall have particular regard to the following matters:*
>
> *a) the need to locate the renewable electricity generation activity where the renewable energy resource is available;*
>
> *b) logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity;*
>
> *c) the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities, the distribution network and the national grid in relation to the renewable electricity generation activity, and the need to connect renewable electricity generation activity to the national grid".*

[126] Productive capacity is defined in NPS-HPL as follows:

> *"**productive capacity**, in relation to land, means the ability of the land to support land-based primary production over the long term, based on an assessment of:*
>
> *(a) physical characteristics (such as soil type, properties, and versatility); and*
>
> *(b) legal constraints (such as consent notices, local authority covenants, and easements), and*
>
> *(c) the size and shape of existing and proposed land parcels".*

[127] In developing measures to achieve clause 3.9(3) NPS-HPL, a territorial authority must recognise the point above and the direction in NPS-REG, Policy

A(d) of the *reversibility of the adverse effects on the environment of some renewable electricity generation technologies*.

How to 'have regard to' the NP-HPL under RMA, s 104

[128] The features of the NPS-HPL identified above show that the national directions' primary function is for an inventory of HPL and a tight protection regime in the lower-order plans that include matters of assessment required as part of the *measures* to achieve the requirements of the NPS-HPL. While some elements of the HPS-HPL are properly treated as "directive", an important point is to recognise they are directive concerning a particular function, i.e. the preparation and changing of plans under RMA Part 5, not RMA, s 104.

[129] The following points are pertinent following the preceding paragraph:

(a) The statutory requirement in preparing plans is to give effect to both the NPS-REG and the NPS-HPL.[16] The recent decision of the Supreme Court in *Port Otago Limited v. Environmental Defence Society*[17] recognised that policies that may be characterised as directory may require reconciliation at a local level through a structured decision. The NPS-REG and the NPS-HPL both contain directory policies. Following *Port Otago* that does require local authorities to address the tensions in a way that fulfils both policies in an appropriate manner. One cannot leave a directory suite of policies wholly unachieved.

(b) It is an error of law to elevate the NPS-HPL in the context of an RMA s 104 application so that it is treated as a set of well-constructed policies implemented according to the circumstances of all territorial areas and, therefore, to be placed on an equal footing with policies that implement NPS-REG in relevant district plans.

(c) The NPS-HPL is not an NES.

[130] It is also relevant and reasonably necessary under RMA s104(1)(c)when determining a renewable energy application to consider that the NPS-HPL policy is relatively recent and existing applications are for infrastructure planned and

[16] RMA, Part 5.
[17] *Port Otago Limited v. Environmental Defence Society* [2023] NZSC 112.

designed before the national policy was gazetted. The point of the NPS-REG was to encourage investment by coherent strategic planning.

[131] Therefore, considerable care is required regarding the extent to which the NPS-HPL is *relevant* and the weight that should be given to that statutory factor in an RMA s 104 assessment of current proposals to develop solar farms.

Possible reconciliation of NPS-HPL and NPS-REG in a strategic planning process

[132] A decision-maker acting under RMA s 104 should not presume to reconcile NPS-HPL and NPS-REG appropriate to the circumstances of a district. Despite that, we reflect briefly on what may inform a strategic assessment.

[133] Both the NPS-HPL and NPS-REG implement matters about RMA, s 7. We disregard the broad language of RMA, s 5, which lacks operative features. The NPS-REG aims at the matters in RMA, s 7(i) and (j). The NPS-HPL has its provenance in RMA, s 7(b) and (g).

[134] The finite characteristic of productive land is its capability for use in primary production, where renewable energy may not have permanent adverse effects. The relative significance of availability compared with capacity needs to be read in the context of RMA, s 7(b) and efficient use and development that does not affect the capability and only to some degree availability is usually delivered through market mechanisms. That may inform how the minimisation or mitigation is pursued through planning measures.

[135] Furthermore, in addressing the measures under NPS-HPL, it will be necessary to reconcile the requirements of NPS-REG and NPS-HPL, and that, in part, will be informed by the availability of resources and the contribution a district can make to national renewable energy targets.

7.0 Assessment of the appropriateness of the activity on Highly Productive Land

Orini Farm's legal arguments

[136] The first argument from Ms Paddison is that the activity is not a temporary activity within the meaning of NPS-HPL and therefore is not an

exception to the policy in NPS-HPL 3.9.1. We agree that reliance on clause 3.9(2)(g) of NPS-HPL is inapt for this Proposal.

[137] Ms Paddison agreed with Helios that the solar farm is 'specified infrastructure' under clause 3.9(2)(j)(i). That means the activity is not inappropriate if it falls within that clause. The subclause reads:

> *"it is associated with one of the following, and there is a functional or operational need for the use or development to be on the highly productive land:*
>
> *(i) the maintenance, operation, upgrade, or expansion of specified infrastructure".*

[138] Ms Paddison argued clause 3.9(2)(j)(i) does not provide for "new" specified infrastructure. Ms Paddison at [33]-[34] of her submissions stated:

> *"33. The wording of the provision is clear and implicit that the use relates to existing infrastructure because it must be associated with the maintenance or operation or upgrade or expansion of it. It is a specified list of alternatives that the use must fit within, and it does not include "new."*
>
> *34. Such an interpretation is consistent when the surrounding provisions are considered. Within clause 3.9(2)) itself, there are four categories, two of which use the qualifying wording of "maintenance, operation, upgrade or expansion" (specified infrastructure and defence facilities), whereas two other activities (mineral extraction and aggregate extraction) are listed without any qualifying words. Within the broader clause 3.9(2) 'an activity by a requiring authority' is also listed without any qualifying words. If 'new' was intended to be included, there would be no need to have the qualifying words".*

[139] Supporting that interpretation Ms Paddison said that where a list of related items is set out it is presumed to be exhaustive. She also noted that new specified infrastructure was not intended to be included in the clause because the exposure draft of the NPS-HPL referred to *new* specified infrastructure but this did not carry over into the Gazetted version.

[140] Ms Paddison also told us that a discussion document issued by the Ministry for the Environment is proposing to reintroduce the word "new" to clarify the law.

[141] The Panel considers Ms Paddison's reasoning is not sufficiently sensitive to the purpose of the instrument and its function as policy. Interpretation of policy is not the same as interpreting, for example, regulation.

[142] The definition of specified infrastructure in the NPS-HPL is as follows:

> *"**specified infrastructure** means any of the following:*
>
> *(a) infrastructure that delivers a service operated by a lifeline utility:*
>
> *(b) infrastructure that is recognised as regionally or nationally significant in a National Policy Statement, New Zealand Coastal Policy Statement, regional policy statement or regional plan:*
>
> *(c) any public flood control, flood protection, or drainage works carried out:*
>
> *(i) by or on behalf of a local authority, including works carried out for the purposes set out in section 133 of the Soil Conservation and Rivers Control Act 1941; or*
>
> *(ii) for the purpose of drainage, by drainage districts under the Land Drainage Act 1908".*

[143] Infrastructure under (b) of the definition above can refer to existing and future infrastructure. Indeed, NPS-REG's primary function is to promote the expansion of renewable energy generation. Infrastructure, in that definition, must include future facilities recognised by national policy as nationally important.

[144] Expansion of that infrastructure under clause 3.9(2)(j)(i), as Commissioner Tānczos pointed out at the hearing, can include making more extensive or enlarging specified infrastructure.

[145] It is, therefore, not a strained meaning of Policy 3.9(2)(j) to treat expansion, whether new or existing, of specified infrastructure as coming within the exception. Further, it makes no sense that an extension of an existing renewable energy facility would be treated differently than a new one. The effects on productive soils are the same.

[146] We do not consider that expansion is a thing that can only occur adjacent to an existing infrastructure.

[147] The Proposal is to expand specified infrastructure, i.e. renewable energy generation in the Whakatāne District.

[148] Ms Paddison also argued that for the purpose of clause 33.9(2)(j), Helios had not demonstrated a functional or operational need for the development to be on highly productive land. At [49]-[50] of her submissions Ms Paddison stated:

> *"49. In terms of 'functional need', the Applicant has provided no evidence that the activity can only occur on the Site. The activity can occur on any land if it is flat, sunny, and proximate to the substation. A solar farm does not have to occur on highly productive land let alone this Site.*

> *50. Operational need is less rigid than functional. However, the Applicant's evidence on operational need could apply to any land, highly productive or otherwise. There is no evidence as to any actual technical, logistical, or operational constraints that means the activity must be carried out on this highly productive site".*

[149] The National Planning Standards 2019 state:

> *"'Functional need': the need for a proposal or activity to traverse, locate or operate in a particular environment because the activity can only occur in that environment.*
>
> *'Operational need': the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical, logistical, or operational characteristics or constraints".*

[150] As Ms Paddison noted, operational need is less restrictive than functional need.

[151] Ms Paddison argued the Applicant had failed to demonstrate the Proposal could not be delivered elsewhere than the Plains.

[152] The fallacy of that analysis is to treat operational need as requiring an applicant to display attributes of the locality that make it a *sine qua non* to the development of solar generation rather than containing a cluster of highly desirable characteristics that, in combination, can satisfy the necessity requirement.

[153] The Panel considers that operational need is satisfied by the range of factors Helios considered in selecting the Site. It is noteworthy that the need relates to the Proposal in the definition. The large solar electricity generation Proposal reinforces technical, logistical and operational characteristics or constraints that might not arise with small-scale generation. However, in the calculus of the NPS-REG, more significant contributions to renewable energy supply reinforce the beneficial attributes of the Proposal and, correlatively, the Site selection constraints.

[154] The Panel is satisfied that there is a demonstrable operational need for this location, and the co-location of other activities and the renewable energy facilities in the vicinity indicates the rational choice made by Helios in the Site selection.

[155] Ms Paddison also pointed us to clause 3.9(3), which requires territorial authorities to undertake measures to minimise or mitigate actual potential cumulative loss. She argued we must do the same, and the Proposal does not meet that requirement.

[156] In the context of a resource consent process, it is difficult to address cumulative loss. That is more appropriately done through a District Plan process. However, in establishing limits, a distinction must be made between the loss of availability and productive capacity. To the extent that agricultural production continues, its availability is not lost, and its production capacity is reduced but not eliminated.

[157] We disagree with Ms Paddison that clause 3.9(3) should be applied in RMA s 104 contexts as if it were a rule and that we were in a suitable position to institute measures and mitigations directed by that subclause, particularly in the context of the small scale of cumulative loss already existing on the Rangitāiki Plains.

[158] Finally, Ms Paddison argued that Policy 3.19 is highly directive, like a rule, and no conflicting directive policy exists. Therefore, at [67], Ms Paddison said:

> *"67. There is no other conflicting directive policy, which Port Otago indicated could be an exception to not following a directive policy. E1 of The National Policy Statement Renewable Energy Generation (NPN REG) requires that regional and district plans shall include objectives, policies and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing renewable electricity generation activities using solar... to the extent applicable to the region or district.*
>
> *68. The NPS HPL directs local authorities to avoid certain activities on highly productive land, the NPS REG is a region wide policy. The NPS REG can still be given effect to in the region, but in respect of new 'specified infrastructure' (and "defence facilities") if they are to be on highly productive land it is by way of designation. Even if there was a conflict, Ei is less specific and directive than the NPS HPL and so the more restrictive avoidance directive should carry greater weight as directed in King Salmon".*

[159] Policy E1 states:

> *"E1 Solar, biomass, tidal, wave and ocean current resources*
>
> *POLICY E1*
>
> *Regional policy statements and regional and district plans shall include objectives, policies and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing renewable electricity*

generation activities using solar, biomass, tidal, wave and ocean current energy resources to the extent applicable to the region or district".

[160] Policy C1 provides insight into the meaning of the words *to the extent applicable to the region in Policy 1* by requiring recognition of functional constraints.

[161] It is difficult for us to see how a local authority could simply exclude renewable energy entirely from productive soils in the face of these directive policies despite other attributes strongly supporting electricity generation in that location.

[162] The fact that E1 is less specific and, arguably, directive than NPS-HPL clause 3.9 rather understates the overall thrust of the NPS-REG.

[163] Furthermore, *Port Otago* said the policy text remains important but not determinative. In addressing the tensions, regional context is also important. As long as respective competing policies are in the directive class, there is a need to reconcile the tensions.

[164] We consider that the exception in Policy 3.9 of NPS-HPL is deliberate and, in the context of NPS-REG, requires us to consider functional and operational requirements following the direction of the NPS-REG.

What are the effects on soil capability and availability?

[165] The Panel found Mr Allen's evidence for Helios on this topic persuasive.

[166] He addressed the impact on productive capacity during the project's life-cycle in Table 1 and compared that with the impact on productive capacity after decommissioning. His summary conclusions at 5.13 were the following:

> *"5.13 In summary, during the life of the solar farm, with appropriate mitigations during construction (such as avoiding mixing of sub and top soils):*
>
> *(a)* ***Soil Type/Properties****: The Project will not negatively impact the land's soil type or properties. In fact, there will be improvements to soil properties of the land due to reduced soil compaction by removing dairy cows from the Site, and a reduction in nutrient leaching by grazing sheep as opposed to cows and cattle.*
>
> *(b)* ***Versatility****: Throughout the duration of the Project there will be some reduction in the ability to change land use. For example, bovine dairy farming or maize cropping will not be possible throughout the duration of the panels being in place. Regarding bovine farming, these*

animals can damage the solar infrastructure including the Tracking System.

(c) ***Productivity**: Compared to the current land use (predominantly dairy), the Project will cause some degree of temporary shading, which has been assumed to have some impact on the amount of solar radiation on pasture and thus a reduction in pasture production.[3] This assumption is based on the limited research information available. However, the solar panels also increase moisture retention and provision of shade and shelter for sheep, which helps to offset this reduction in pasture growth. As previously noted, it is possible that livestock production could be at higher levels than without solar, although there is insufficient research in New Zealand to make a definitive comment on this".*

Evaluation of the HPL issue

[167] Our evaluation is that there will be a modest loss of productive capacity due to the constraints of the extensive infrastructure proposed by the renewable energy solar facility; however that capacity will be largely restored at the end of the 35-year project. In the meantime, large parts of the soil (including because of the density of solar farming) will remain available for primary production.

[168] The Panel is satisfied that the Proposal is appropriate and will not create a loss of options for future generations.

8.0 Feasibility and benefits of continued pastoral farming

Overview of the evidence

[169] The Panel heard from Mr Allen for Helios about the ability of the Site to be used as an grazing block for sheep-farming. He referred to the successful practice of grazing sheep within solar farms in other countries such as Australia, North America and the UK. He mentioned there was limited research in the emerging field of agrivoltaics but referred to an Oregon study where although shading caused by solar panels was estimated to cause 38% less dry matter production, lamb live weight gains per hectare were not significantly different from lambs grazed on open pasture.[18] Mr Allen also stated in his opinion that the soil properties will be improved due to reduced soil compaction from dairy cows and a reduction in nutrient leaching.

[18] Fn 4

[170] Mr Allen outlined a viable self-contained operation where the block could winter 2400 mixed-age ewes and 2-300 winter trade lambs. To enable this, the site would require the construction of sheep yards, a shearing shed, sheep-proof fencing for 10-ha paddocks and a water system for each paddock. Good pasture management would be essential to minimise long, rank pasture.

[171] Mr Askey outlined the versatility of the Rangitāiki Plains soils for dairy farming and maize production but expressed cynicism at the proposal to graze sheep under the panels. He commented that production from sheep-farming will be only a small proportion of that achievable by dairy farming, and this ancillary usage does not achieve the NPS-HPL aim of prioritising primary land-based production. Mr Askey also commented on the relatively high rainfall levels in the area, which would cause concentrated rainfall along the panel margins and probably soil compaction. He expects that sheep grazing will result in animal health problems such as foot rot, facial eczema and heavy worm burdens, and the difficulties with managing sheep will make it unsustainable. His suggestion to ensure that the land is actually utilised long-term for agricultural production is to introduce a bond system. He also requested a peer review condition that an independent expert oversees the future agricultural usage of the site.

[172] Ms Grieg, an expert witness for Mr Askey, disagreed with the recommendations of Mr Allen's AgFirst report and expressed concern that the soils and climate on the Rangitaiki Plains were inherently unsuitable for sheep production.

[173] The Langdons, Laws and the Suttons agreed with Mr Askey in the view that sheep farming on the Rangāitiki Plains was not an appropriate use of highly productive land when compared to dairy farming. Most submitters also expressed concerns that without an on-site manager there may be security and animal welfare issues. The Laws requested an animal welfare plan and yearly audit to ensure sheep health remains paramount.

Further evidence on sheep farming impacts compared with other pasture farming

[174] The Panel understands that using the Site as a dairy support block or for dairy grazing is not an option, as cattle can cause too much damage to solar panel

structures. The major issues of contention on using sheep as a complementary primary land-based production option are outlined below.

Soil compaction

[175] There were differing views from Mr Allen and Ms Grieg on the effect of sheep grazing on soil compaction. Mr Allen stated that there will be improvements to soil properties due to reduced soil compaction by removing dairy cows, whereas Ms Greig argued that sheep with their smaller cloven hooves, inherently cause more pugging and soil compaction than cows. She also stated that sheep farming may cause more drain blockage than dairy farming.

Nutrient leaching

[176] In Mr Allen's opinion, there would be a reduction in soil nutrient leaching by grazing sheep as opposed to dairy cows. However, Ms Grieg states in her evidence that she believes there will be potassium and sulphur leaching along solar panel edges and a resulting loss of soil fertility. This latter opinion is not a consequence of grazing sheep vs cattle: it is simply related to increased rainwater in concentrated areas.

Social and security effects

[177] Mr Askey and Ms Greig both expressed concern that sheep farming without a manager on-site 24/7 will lead to stock-rustling issues.

Economic impact

[178] It is clear from the submitters and experts that sheep farming will not bring about the economic returns compared with dairy farming. Mr Law & Mr Askey, in particular, stated their concerns about the negative impact on the local Edgecumbe Fonterra milk factory and flow-on effects to the local community, with loss of employment (going from 4-5 FTE with dairy farming (not including contractors) to proposed 1 FTE sheep farm manager role). Ms Greig also stated that wool returns are already marginal.

Animal health and husbandry

[179] Sheep health and welfare was of paramount concern to Mr Askey, the Laws and the Langdons.

[180] Ms Greig expressed a strong opinion that sheep health would be extremely difficult to manage long-term. Her primary reasons were the risk of facial eczema (potentially increased by grazing grass shaded by solar panels), foot rot and internal parasitism. Mr Allen also agreed that internal parasitism would be an issue but advised that in his opinion it could be managed through regular parasite control and using a system with mixed-age ewes to dilute worm burdens.

[181] Both agricultural experts agreed that using facial eczema-resistant ewes was important, and Mr Allen discussed other control methods for facial eczema.

[182] The Submitters and Ms Grieg queried the lack of detail in the Applicant's proposal on the necessary infrastructure for successfully grazing sheep - such as yards, shearing shed and paddock layout. On questioning, Mr Schlichting responded that it was indeed the intent of Helios to concurrently graze sheep, but they would progress the design of yards, woolshed and paddocks at a more appropriate time.

[5] As the proposal is for an off-site manager for the sheep-farming operation, concerns were expressed about the long-term viability of such a system by submitters and Ms Greig. However, Ms Grieg, when questioned by Commissioner Hamill, did acknowledge that an on-site manager was preferable but not essential.

Evaluation of the sheep farming element of the Proposal

[183] Weighing up the differing opinions from experts, the Panel concludes that complementary grazing of sheep on the site is possible with careful management of pasture growth and animal health issues, albeit not as economically viable a proposition as that of dairy farming. However, the Plan and NPS-HPL do not direct the highest and best food production use of land, and in the case of specified infrastructure, do not even require successful ancillary agriculture alongside that use.

[184] Because farming is a permitted activity the Panel does not consider it appropriate to impose consent conditions controlling the nature and extent of

agricultural activity that is undertaken as an ancillary and complementary part of the Proposal.

[185] Animal welfare issues that arose from poor management are best addressed under other legislation and by other agencies.

9.0 Assessment of Landscape and Visual Amenity Effects

The evidence

[186] Ms Ramsay of Boffa Miskell provided evidence on the landscape and visual effects.

[187] The proposed development is located in the pastoral plains area. This is characterised by a flat, expansive landscape with little variation in topography. Sporadic shelterbelts and hedgerows are scattered across the landscape, particularly around horticultural developments, but the area is largely open pasture, with views to distant landmarks, Pūtauaki Maunga and Moutohorā. The Site itself is similarly flat and open, with few trees.

Landscape effects

[188] The proposed solar development will have a temporary adverse effect on the landscape character of the area, with earthworks and panel installation. This, however, will not result in permanent changes to the landform, and direct landscape effects are low. Proposed mitigation plantings of mixed native species along the boundary could be considered to enhance the landscape character.

Visual effects

<u>Public effects</u>

[189] Visual effects from public vantage points (primarily the roads running along the boundaries of the development) were assessed as moderate during construction, reducing to almost nothing after 5 years due to screening plantings. In her statement of evidence, Ms Ramsay said [5.10] that

"As the Site is flat, planting along the road boundaries is able to screen the proposed development after 5 years of establishment, reducing the effects to low and neutral. Driving along road corridors with intermittent hedgerows is not uncommon in the surrounding landscape."

Private effects

[190] Most submitters raised issues relating to landscape and visual effects on residential properties. Those submissions focussed on rural amenity and character, visibility of the solar farm and potential loss of distant views. Mr Sutton, for example, spoke in his written submission and in his oral presentation about his concern for the impacts of an "industrial sized solar farm … on our unobstructed views and (the) quiet rural lifestyle we have chosen…".

[191] Similarly, Suzanne Davies spoke of the loss of vista and loss of views, including Whale Island (Moutohorā).

[192] The Landscape and Visual Assessment (LVA) by Boffa Miskell assesses the visual effects during construction to be up to Moderate-High Adverse for neighbouring properties. This will reduce over time for all neighbouring properties due to mitigation plantings to screen views of the solar development.

Proposed mitigation planting

[193] The LVA sets out a plan for significant mitigation planting around the boundary of the development. It takes a granular approach and is responsive to the sensitivities around residential dwellings in the rural zone. The plan has undergone *several* refinements following feedback from affected parties, such as including *large-grade* plantings in some areas to speed up screening coverage, the extension of plantings to areas previously not proposed to be planted, further work on the planting list, and a site walkover to ensure that the plants selected are suitable for the specific conditions to be found in different places around the boundary.

[194] In her statement of evidence, Ms Ramsay said at [9.8] that

> *"Once established (at five years) proposed planting will result in the majority of immediately adjacent properties experiencing Low - Moderate or less visual effects. Moderate visual effects remain only where open views across the landscape (including the site) are lost with the addition of new screen planting….*
> *Proposed mitigation planting has been refined to provide large grade species … to provide plants at 1.5m high at the time of planting. While mature planting has a visual effect on the private property owners as assessed, hedgerow planting as proposed is characteristic of the Site and wider landscape and represents a change in rural outlook rather than a detraction from landscape character or rural amenity."*

[195] One submitter, Orini Dairies Limited, specifically asked that plantings be implemented in a way that mimicked a natural ecosystem, with clumping of species and irregular heights, rather than appearing like a hedge.

[196] Ms Paddison also made the point that the maintenance of plantings is important to ensure that the screening continues to be effective over the life of the proposal.

[197] Two submitters, Mr Askey and Mr Laws, raised concerns about the 5 year delay until the plantings are sufficiently advanced to screen the development. Mr Askey proposed that the plant list include some fast-growing exotic species, such as some eucalypt species, which could accelerate the screening and be cut out later for firewood. In response to this idea, the applicant has agreed to include some eucalypts in the plant list.

Evaluation of visual effects

[198] From the evidence, it seemed clear there would be up to moderate adverse visual effects for some neighbours during the construction phase. However, after 5 years, the entire development would be enclosed and visible only where neighbours had specifically requested lower screening plants to preserve some distant views. While the views after 5 years would be more enclosed, they would be quite natural and not unexpected in a rural environment. We considered that, in a zone where shelter belts and large trees are relatively common, it is not possible or appropriate to protect every view.

10.0 Non-Inclusion in the Application of Transmission Lines outside the Site

[199] Helios will connect the solar facility to the Edgecumbe Substation outside the Site with a new 33 kV transmission line. That will include support poles at a voltage of up to 110 kV.

[200] Under the Whakatāne District Plan, transmission lines within the formed road reserve are a permitted activity.[19]

[19] See WDP Table 20.2.11 of the District Plan.

[201] This benign regulatory environment reflects the national direction to facilitate electrical transmission. Indeed, in the strategic objectives part of the Plan Policy 1 of the District Plan states:

> *"To ensure that rural zones continue to be utilised for rural production activities while giving effect to National Policy Statements on renewable energy generation and electricity transmission and national environmental standards for telecommunication facilities and electricity transmission:."*

[202] The final alignment of the transmission line is still to be resolved and no doubt Transpower will have input into that decision. So will the Whakatāne District Council as the roading manager.

[203] As currently proposed, part of the new transmission line will pass through Putiki Road, and Mr Askey contended that there is no reason why that should not be placed underground like the internal transmission line. When we questioned the applicant of the feasibility of undergrounding transmission lines along Putiki Rd, Mr Schlichting responded that the cost was prohibitive.

[204] Mr Askey at [12.2] of his evidence stated:

> *"The 33 kV line is an essential part of the Solar power station project, without which the solar power station is inoperable and the resource consent* ***cannot be exercised****. In our view the transmission line must be treated as an integral part of the Solar Power Station Application and the combined effects evaluated in a holistic manner irrespective of the consent status of the transmission line itself".*

[205] The Panel disagrees with Mr Askey's analysis. A deliberate policy decision was made to enable transmission lines without consent to convey electricity reflecting national direction. The consequence is that the activity of transmission lines is a permitted activity under RMA, Part 3, s 9.

[206] RMA, s 87A(1) states:

> "*If an activity is described in this Act, regulations (including any national environmental standard), a plan, or a proposed plan as a permitted activity, a resource consent is not required for the activity if it complies with the requirements, conditions, and permissions, if any, specified in the Act, regulations, plan, or proposed plan".*

[207] It would be erroneous to require resource consent for any permitted ancillary utility component, particularly that is off-site infrastructure such as transmission lines. Treating the activity as discretionary with the Proposal would

run against the deliberate planning scheme for transmission lines established by the Whakatāne District Plan.

[208] RMA, Schedule 4, clause 3 states:

> *"An application must also include any of the following that apply: (a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1))".*

[209] The AEE met that requirement for the transmission line beyond the Site.

11.0 Assessment of Glint and Glare Effects

[210] Solar voltaic panels aim to capture as much light as possible, so the goal is to minimise reflections. Depending on the cover material, incidence angle, or coatings, there is the potential to cause glint and glare. Glare is specular and diffuse reflections that, in combination, have the potential to be hazardous. Glare hazard analysis divides glare into green and yellow, with the latter having the potential for a retinal after-image. The most serious is permanent eye damage from retinal burns, which is unusual and not relevant in this context.

[211] The AEE contained a study by Page Power, "Solar Photovoltaic Glint and Glare Study" (December 2022), based on proposed and existing planting mitigation. It assessed these effects on 44 dwellings. The assessment was undertaken on the Site layout and expected tracking of the solar panels. The methodology applied uses a geometric model.

[212] Concerning impacts on sensitive dwelling receptors, mitigation was excluded where the effects were less than three months per year or 60 minutes per day. Anything above that threshold required mitigation.

[213] The modelling results indicated that while solar reflections *are geometrically possible towards 30 of the 44 assessed dwelling receptors,* none of the receptors are predicted to experience inappropriate impacts due to the existing screen or screening proposed by Helios.

[214] Ms McRae assessed glint and glare based on the amended layout for the 11 notified properties. Bare earth modelling indicated glare effects for all of the 11 dwellings assessed. Three have low effects, two have low-moderate effects,

five have moderate effects, and four have moderate-high effects. The greatest potential for adverse effects is along the northern Site boundary. That model was then run applying existing screening, reducing the predicted impacts.

[215] Once mitigation planting is accounted for, the effects are reduced to low for almost all dwellings. The exception is 181 Putiki Road, where low planting proposed at the owners' request results in low to moderate adverse effects.

[216] Where adverse effects have been identified as moderate or greater on the northern or north-western site of the boundary, Ms McRae told us that she proposed *advanced grade planting of around 1.5 metres in height implemented to provide immediate mitigation of potential glare effects.* With the completion of that planting plan, Ms McRae assessed the potential adverse effects as low.

[217] At [9.7] of Ms McRae's SOE she said:

> *"For the property ID1 (361 McLean Road) to the north of the Site which experiences the greatest potential glare effects, advanced grade planting is proposed to provide immediate mitigation. The same advanced grade planting is proposed for ID9 (42 Orini Rd) where effects are initially moderate. For dwellings where effects are lower, screening will take longer to establish but effects are reduced by existing vegetation and buildings, which generally reduce these adverse effects to low-moderate".*

[218] Ms McRae also addressed the late submission by Orini Dairies Limited. Then, at [9.13] Ms McRae said:

> *"The Boffa Miskell Assessment identifies 42 Orini Road (ID9) as having the potential for 25.1 hours of green glare and 14.8 hours of yellow glare per annum, based on a bare earth scenario. This is a moderate effect. This glare is predicted to occur from the panels to the northeast of the dwelling not from the west of the site. Proposed advanced grade screening, which is to be implemented as part of the mitigation scheme, would reduce effects to low once established".*

[219] The evidence demonstrates that the effects of glint and glare are within acceptable levels once the mitigation is implemented. Ms McRae relied upon relevant international standards about exposure, including the New South Wales Guidelines on glint and glare.

[220] The key point is that Ms McRae assesses these effects as acceptable once the planting (including higher grade plants where required) is established. 'Established' in this context means the planting is achieved at 3 metres. This is Scenario 3 in Section 2 of the Revised Assessment "McLean's Road Solar Farm" 11 October 2023.

[221] That means for the higher-risk areas on the Northern side, there is a period between planting at 1.5 metres and establishment at 3 metres, where effects may be moderate for taller people. Assuming about 12 months to grow 0.5 metre high planting in a benign climate with good soils, the Panel expects these effects to become acceptable in an appropriately short timeframe.

[222] We assess that the effects of glint and glare can be and are appropriately mitigated by the Proposal and the conditions in Attachment 3.

12.0 Assessment of Noise Effects

The Acoustician providing evidence

[223] The acoustician providing evidence in this case was Mr Mathew Cottle, based in the Hamilton office of Marshall Day Acoustics ("MDA"). He has 16 years of experience in acoustics and has a Master of Design Science (Audio and Acoustics) from the University of New South Wales.

[224] Mr Cottle provided an updated assessment in his statement following the revised Proposal layout.

Ambient Noise

[225] As Mr Cottle explained, the starting point for assessing effects on the acoustic environment is establishing the existing noise environment comprising the background (L_{A90}) and ambient (L_{Aeq}) descriptors.

[226] MDA performed noise measurements on 5 and 6 December over a 24-hour period at. The results are shown in Table 1.

Table 1: Summary of existing noise environment

Measurement Position	Measurement		Measured Level (dB)		
	Start Date / Time	Duration (hh:mm:ss)	L_{Aeq}	L_{A90}	L_{AFmax}
MP1	5/12/2022 4:51 pm	00:15:01	47	42	62
MP2	5/12/2022 5:45 pm	00:15:11	45	42	59
	6/12/2022 12:01 pm	00:15:02	44	40	54
MP3	5/12/2022 6:34 pm	00:15:04	53	48	73
	6/12/2022 10:05 am	00:15:08	52	43	70
MP4	5/12/2022 7:16 pm	00:15:23	39	35	58
	6/12/2022 11:21 am	00:17:02	50	36	72
MP5	6/12/2022 10:05 am	00:15:22	41	39	53
Noise logger	5/12/2022 to 6/12/2022	23:00:00			
Daytime	07:00am to 10:00pm		44	38	72
Night-time	10:00pm to 07:00am		36	29	53
Shoulder	05:00am to 07:00am		40	36	52

[227] Mr Cottle further interrogated the data to assess ambient noise when the project is in operation. At [3.4], Mr Cottle said:

> *"In addition to these results, I have interrogated the noise logging results for the 5:00am to 7:00am period, which is the period the Project could generate solar power and therefore, noise (during summer months). The ambient noise ranges between 37 to 41 dB L^Aeq (average is 40 dB L^Aeq). The background noise ranges between 35 to 38 dB LA90 (average is 36 dB L^A90). These results show that the noise environment in the 5:00am to 7:00am period is steadily increasing (towards daytime values) and is appreciably elevated above the lower night-time levels".*

Noise Generating Sources

[228] The noise generating sources of the Proposal include the following:

(a) 30 DC / AC inverters distributed throughout the Site;

(b) over 2,200 tracker modules (these contain a small -300W DC electric motor);

(c) 80 GridSolv Quantum BESS batteries;

(d) 14 BESS DC / AC inverters; and

(e) 7 two auxiliary transformers.

Construction Noise Effects

[229] WDP Rules 11.2.6.2 and 11.2.7.1 apply to construction noise in the Rural zone. The Council requires the construction noise to be measured in accordance with NZS 603:1999 Acoustics – Construction Noise. The limits in typical work

hours of 7.30 am to 6.00 pm for construction greater than 20 weeks duration are 70 dBL_{Aq} /85 $dB_{LAF\ max}$ measured 1 metre from any rural dwelling.

[230] The construction of the project will involve the following:

(a) Site enabling works such as clearing of vegetation, establishing a site office, vehicle parking and materials laydown area;

(b) Earthworks using articulated trucks, loaders and excavators;

(c) Delivery of equipment such as photovoltaic panels, inverters and other infrastructure, requiring trucks and small cranes; and

(d) Piling of photovoltaic panel support piles into place. Helios proposes to use a Vermeer PD10 Pile Driver for this purpose. It is a high-speed piling system.

[231] The principal noise and vibration source is the piling which is expected to exceed the 70 dbL_{Aq} noise limit. The factors that make this method less impactful than traditional impact piling are the following, as Mr Cottle explained:

(a) The piling proceeds relatively quickly, with no more than 5-minute intervals between each drive;

(b) Piling within a 120m radius of any one dwelling will occur for no more than several days, and

(c) The Vermeer pile driver is significantly smaller than typical impact piling machines on civil construction sites. It has a light, short-throw hammer that quickly " taps" the pile into the ground. It is markedly different from more traditional large drop hammer pile rigs. They emit appreciably less low-frequency noise and vibration than their larger counterparts.

[232] Vibration was also assessed. The assessment of Mr Ibbotsen following a section 92 FI request was the following:

> *"The closest dwellings around the site are 40 metres from the closest piles. Based on our field experience, vibration from the Vermeer piling rig is expected to be imperceptible at 40 metres [distance]".*

[233] The Applicant seeks consent to exceed the noise construction limits due to the piling activity. That will be managed using a Construction Vibration Management Plan (CVMP) offered in conditions and recorded in **Attachment 3**. That will mean that the management of the activity is undertaken in consultation with neighbours and in a way that minimises sensitive receptors.

Operating Noise Effects

[234] WDP Rule 11.2.6.1 governs operational noise in the Rural Zone. It sets limits for activities not listed in Table 11.2 as stated in 11.1 when measured or assessed at the notional boundary of any receiver in the Rural Zone. The notional boundary is 20 metres from the side of any dwelling.

[235] MDA managed three operational scenarios as follows:

(a) Generation only, excluding future Battery Energy Storage System ("BESS"), and no mitigation;

(b) Generation with future battery storage and no mitigation;

(c) Generation with future battery storage and attenuated BESS inverters.

[236] Based on those scenarios, predicted noise levels applying industry-recognised modelling are set out in Table 2 of Mr Cottle's evidence as follows:

Table 2: Predicted prcject noise level ranges from the MDA Noise Report (dB L_{Aeq})

Scenario 1		Scenario 2		Scenario 3
Daytime	Night-time	Daytime	Night-time	Night-time
20 – 40	13 – 34	21 – 41	17 – 39	16 – 37

[237] MDA identified further mitigation measures in [7.5] of Mr Cottle's evidence. At[7.6], Mr Cottle said:

> *"The MDA Noise Report stated that with the recommended mitigation in place, operational noise will be controlled to levels below WDP Rule 11.2.6.1. Comparing residual (mitigated) noise to the existing ambient and background noise environments I note:*
>
> *(a) calculated daytime operational noise levels are within the range of measured ambient noise 39 to 53 dB L_{Aeq};*
>
> *(b) without the BESS operating during the night-time, Project noise will be equal to or lower than existing ambient noise 27 to 42 dB L_{Aeq};*

(c) slightly above the averaged night-time ambient noise level of 36 dB L_{Aeq} at some receivers if the BESS is in operation in the night period;

(d) early morning Project noise will be equal to or lower than background noise 35 to 38 dB Lago, (measured between 5:00am and 7:00am) if the BESS is not in operation; and

(e) above the average night-time background noise level of 29 dB L_{A90} if the BESS is in operation in the night period".

[238] The more granular predictions per site at notional boundaries is set out in Table 3 of Mr Cottle's evidence at [8.3] as follows:

Table 3: Predicted prcject noise at submitter dwellings

Submitter	Address	MDA Report No.	Noise Rec.	Highest Predicted Noise (dB L_{Aeq})	
				Daytime	Night-time
Sutton	181A Putiki Rd	R23		40	38
Oriini Dairies Ltd	11 Orini Rd	R08		36	31
	41 Orini Rd	R07		39	34
	42 Orini Rd	R06		39	34
Oriini Farms Ltd	241 Putiki Rd	R22		35	32
	255 Putiki Rd	R21		36	32
Askey	111 Putiki Rd	Not assessed in ANE. Located further from site			
	118 Putiki Rd	Not assessed in ANE. Located further from site			
	151 Putiki Rd	R26		33	30
	151A Putiki Rd	R27		34	31
	163 Putiki Rd	R25		35	31
	181B Putiki Rd	Refer to evidence paragraph 8.8			
Henderson	361 McLean Rd	R04		40	37
S Davies	181 Putiki Rd	R24		37	34

Evaluation of Noise Effects

[239] The Panel considers that the construction and operational noise effects of the Proposal have been appropriately managed and that the mitigation strategies will potentially improve the noise environment levels for lifestyle properties.

[240] We paid particular attention to Ms Davies' property and predicted noise levels. We also noted the additional buffer area in that location offered by Helios to address the concerns of the Davies and Sutton families.

13.0 Assessment of Reverse Sensitivity Issues

[241] The WDP defines reverse sensitivity in Chapter 21 - Definitions in this way:

> *"Reverse sensitivity means the potential for the operation of an existing lawfully established activity to be compromised, constrained or curtailed by the more recent establishment of other activities which are sensitive to the adverse environmental effects being generated by the pre-existing activity".*

[242] The primary Plan method for managing reverse sensitivity effects is to use separation distances.[20]

[243] Under Rule 11.3.7.28, the Council has as an assessment matter regarding *the potential for reverse sensitivity effects on lawfully established uses*.

[244] Policy D in NPS-REG only addresses reverse sensitivity for established or existing activities.

[245] Strategic Policy 6 for the Rural Zone in Chapter 2 of the WDP states:

> *"To ensure that subdivision, use and development of rural areas does not compromise the efficient operation of rural production activities or result in reverse sensitivity effects on lawfully established activities.".*

[246] The NPS-HPL requires local authorities and plans to institute measures to address reverse sensitivity effects at [9.3] as follows:

> *"Territorial authorities must take measures to ensure that any use or development on highly productive land:*
>
> *(a) minimises or mitigates any actual loss or potential cumulative loss of the availability and productive capacity of highly productive land in their district; and*
>
> *(b) avoids if possible, or otherwise mitigates, any actual or potential reverse sensitivity effects on land-based primary production activities from the use or development".*

[247] Ms Paddison for Orini Farms Limited argued that if consent was granted conditions should be imposed that:

> *"Non complaints or restrictive covenants to ensure legitimate neighbouring activities are not restricted and agreeing to take no action in respect of any trees that are planted on boundaries (to address reverse sensitivity)".*

[20] See Chapter 11 – General provisions of the WDP.

[248] Mr McCroskie said about the reverse sensitivity issues the following at [6.6(f)]:

> *"The Section 42A Report does not explicitly address the concerns raised by Mr Askey in relation to reverse sensitivity effects associated with shading and tree fall effects on the solar farm from undertaking planting on their property. The submitters' concerns, as I understand them, relate to their desire to either plant or retain large trees on their property boundaries which could either shade the solar arrays or potentially fall and damage the arrays. In light of these concerns, the submitters have requested that Council either impose suitably large setbacks for the solar arrays or conditions of consent that prevent Helios from restricting legitimate and essential agricultural activity (ie provision of shelter and shade for livestock). In my opinion neither of these measures are required. In response to these matters:*
>
> *(i) Helios acknowledges and accepts that it is unable to control what a neighbouring landowner does in terms of planting on their property or near adjoining boundaries in terms of locations, species, or attained heights. If branches or foliage from a neighbouring property overhang or encroaches onto the solar farm site, the project landowners have rights to cut them back to the boundary only, but not to require their removal. For the sake of maintaining good relationships with neighbours, Helios has stated that it would talk to neighbours prior to the trimming of any trees that overhang a boundary. In general, the minimum distance from the submitter's boundary to the start of modules is 10m, however in most cases this will be quite a bit more.*
>
> *(ii) Helios's Solar Development Engineer, Mr Jackson White, has considered the potential for tree fall along the shared boundaries with the submitters property and advised me that having fencing and access track setbacks along the adjoining boundaries will sufficiently mitigate any potential effects of shading and tree fall from planting on the submitter's property along adjoining boundaries with the solar farm site. On the basis that boundary tree planning / retention is not considered to have a material impact on the Project, any potential reverse sensitivity effects are considered to be less than minor".*

[249] The Panel does not consider that the Proposal is sensitive to rural land use. The solar panels are periodically washed as required but are also surfaces that naturally get cleaned by rainwater.

[250] The industrial character that Mr Askey correctly attributed to the proposed facility rather belies the strength of his concern around reverse sensitivity. So does the fact that lifestyle properties currently enjoy the environment and are not constraining rural activity.

[251] Helios would not have a solid basis to challenge ongoing production activity and could not constrain normal rural activity legitimately.

[252] Concerning trees and the potential for shading in the future, we do not consider this an issue we should address at this point. The Panel accepts that tall

trees provide animal shade, which is important. These trees need to be as tall as Mr Askey suggested. Indeed, from an animal welfare perspective, it would seem that the most effective attenuation is strategic planting, which is evident in some of the rural landscapes to the east.

[253] A 'no complaints' covenant is inappropriate. Depending on the drafting, it could provide an open-ended right to rural production activity even if that causes unreasonable or unnecessary externalities. An adequately worded condition adds nothing to the reasonableness and common sense that must be applied on both sides.

[254] We consider that the provision in the consent for a community liaison person is the best means to manage contingencies that cannot be addressed adequately through consent conditions. That enables sensible human interaction to occur.

[255] By quoting Mr McCroskie's evidence, we have acknowledged in this decision, the position of Helios that it accepts the existing rural production activities on neighbouring properties.

14.0 Flood Schemes and Stormwater Matters

[256] As noted and shown in Attachment 2, the Rangitaiki Plains have an elaborate flood protection network.

[257] In the Natural Hazards chapter of the WDP (Chapter 18), construction next to stop banks is controlled by Rule 18.2.2. This places extensive controls on activities within a 12-metre envelope.

[258] Advice Note 1 provides to those Rules provides:

> *"Any activity subject to the provisions in 18.2.2 Protection of Flood Control Stopbanks, Streams, Rivers and Public Drains and 18.2.3 Flooding may also be subject to approval by Bay of Plenty Regional Council under its Floodway and Drainage Bylaw 2008 and any subsequent revisions. The purpose of the Bylaw is to control and protect drains, pumping stations, defences against water, river edge protection works and floodways owned by or under the Bay of Plenty Regional Council. Review of the proposed activity by the Bay of Plenty Regional Council will be required".*

[259] There are exceptions to the Rules set out in Rule 18.2.3 onwards as follows:

18.2.2.3 Rules 18.2.2.1 and 18.2.2.2 shall not apply if;

a. such activities are undertaken under authority of the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908, the Rangitāiki Land Drainage Act 1956 or Part XXIX of the Local Government Act 1974; or

b. the written consent of the **maintenance** or administering authority has been obtained and a copy has been lodged with the **Council**; or

c. a fence referred to in 18.2.2.2(b) is a fence for the purpose of protecting a significant cultural heritage feature;

d. the removal of soil referred to in 18.2.2.2(d) constitutes boring holes up to 1.5m **depth** for immediate placement of posts or piles, or driving posts or piles.

[260] Following an RMA s92 request, Helios provided an assessment against these Rules, and the following table summarises that assessment:

Rule 18.2.2 Protection of Flood Control Stopbanks

Rule #	Rule Name	Comment
18.2.2.1	The activities listed in Rule 18.2.2.2 shall not occur; **a. within 12m (horizontal line) of any stream, river or public drain (measured from the lip of the stream, river or public drain) where the stream, river or public drain is administered by the Bay of Plenty Regional Council;** b. within 5m (horizontal line) or within the defined distance (whichever is greater) of any stream river or public drain (measured from the lip of the stream, river or public drain) where the stream, river or public drain is maintained by the Council; **c. within 12m (horizontal line) of the landward toe of a stopbank administered by the Bay of Plenty Regional Council;** d. within five metres (horizontal line) or within the defined distance1 (whichever is greater) of the landward toe of a stopbank maintained by the Council; e. on a stopbank; f. on the berm between a stopbank and a river or drain; or g. within a 12m radius of a pump station maintained or administered by the Council or Bay of Plenty Regional Council under the Land Drainage Act 1908, the Soil Conservation and Rivers Control Act 1941, the Rangitāiki Land Drainage Act 1956 or	a) The proposed solar farm will include activities listed in Rule 12.2.2.2 within 12m of a Bay of Plenty Regional Council administered public drains. These activities as listed in Rule 12.2.2.2 are: *a. the growing or allowing to grow of any shrub, hedge or tree or part thereof;* *b. the erection of any fence, building or other structure;* Bay of Plenty Regional Council has agreed to the following minimum setbacks from the Regional Council administered drains and flood protection works structures: • At least a 6m setback from the seepage trenches on the landward toe of the Reids Central Canal • 6m setback from Putiki Drain (both sides) • 12m setback from Western Drain • 6m setback along both sides of Section 72 Outlet • 6m setback from Bishops Outlet Written approval has been provided (**Attachment 2**), therefore Rule 18.2.2.1 does not apply as outlined in Rule 18.2.2.3. b) We have reviewed the Council maps and do not believe any District Council managed stream, rivers or public drains are located in proximity to the site.

	Part XXIX of the Local Government Act 1974;	c) As per our response in a) above, there will be planting and the installation of a fence within 12m of the landward toe of the Reids Canal stopbank. Written approval has been provided by BOP RC (**Attachment 2**), therefore Rule 18.2.2.1 does not apply as outlined in Rule 18.2.2.3. d) We have reviewed the Council maps and do not believe there are any Whakatane District Council managed stopbanks in proximity to the project. e) No planting, fencing or solar components will be located on a stopbank f) No planting, fencing or solar components will be located on a berm between a stopbank, river or drain. g) No planting, fencing or solar components will be located within 12m of a maintained pump station.
18.2.2.3	Rules 18.2.2.1 and 18.2.2.2 shall not apply if: a. such activities are undertaken under authority of the Soil Conservation and Rivers Control Act 1941, the Land Drainage Act 1908, the Rangitāiki Land Drainage Act 1956 or Part XXIX of the Local Government Act 1974; or **b. the written consent of the maintenance or administering authority has been obtained and a copy has been lodged with the Council; or** c. a fence referred to in 18.2.2.2(b) is a fence for the purpose of protecting a significant cultural heritage feature; d. the removal of soil referred to in 18.2.2.2(d) constitutes boring holes up to 1.5m depth for immediate placement of posts or piles, or driving posts or piles.	In line with 18.2.2.3 (b), the written consent of the BOP Regional Council Rivers and Drainage Assets Manager has been provided (**Attachment 2**). Therefore Rule 18.2.2.1 does not apply.

[261] The WDP rules demonstrate that managing hazards, including construction potentially affecting the operation of stop banks, is a territorial function.

[262] But for the Regional Council bylaw, these effects would only be managed under the RMA by the territorial authority.

[263] However, the design of the WDP rules provide for the Regional Council to be the lead agency and recognises the Regional Council's bylaw as a sufficient method for managing the risks of land use on stop banks.

[264] Consistent with the scheme of the WDP, the Applicant did not ask for consent to breach these rules and, therefore, did not provide detailed geotechnical evidence to this hearing, preferring to use the bylaw procedure to avoid duplication. The submitters did not present expert evidence in either.

[265] The AEE included a letter from the Bay of Plenty Regional Council's Rivers and Drainage Asset Manager as follows:

> *"Helios Energy Limited contacted Bay of Plenty Regional Council (BOPRC) in early 2022 regarding proposed developments in the Rangitaiki Plains area. Since then, various meetings and site visits have been undertaken and correspondence exchanged regarding the site at 176 & 351 McLean Road, Edgecumbe.*
>
> *At a site visit held in July 2022 (attended by Helios Energy Limited, BOPRC Rivers and Drainage Operations and Assets staff) it was determined that BOPRC had confidence that rivers and drainage maintenance and operations work could be carried out at setbacks less than 12 metres along some of the BOPRC managed drains and assets (stopbank) relating to the site. The agreed setbacks are listed below:*
>
> - *At least a 6 metre setback from the seepage trenches on the landward toe of the Reids Central Canal*
> - *6 metre setback from Putiki Drain (both sides)*
> - *12 metre setback from Western Drain*
> - *6 metre setback along both sides of Section 72 Outlet 6 metre setback from Bishops Outlet*
>
> *Helios Energy Limited is in the process of finalising the geotechnical investigation for the site prior to applying for a Flood Protection and Drainage Bylaws Authority and this is expected within the next quarter of 2023. The Flood Protection and Drainage Bylaws Authority will be approved for infrastructure placed outside the agreed reduced setbacks (listed above) provided other considerations assessed within the Bylaws authority process are sufficient".*

[266] We do not have jurisdiction or sufficient information to address the risks of the Proposal on the Reid's Canal stop bank. We are satisfied that the regional council has a process in place for meeting its requirements such that the Proposal can be permitted and there is no need to duplicate that process in this process.

[267] An advice note has been added to the consent, noting that a bylaw approval is needed.

[268] Concerning Mr Law's anxiety around the Halls Drainage Scheme, the Panel finds:

(a) The Regional Council's flood protection and drainage bylaw provides the mechanism by which financial contributions are required from beneficiaries of the flood scheme. That will include Helios because a beneficiary is not limited to landowners engaged in rural production. Instead, it is governed by land ownership.

(b) Conditions have been added to ensure that internal drainage within the Site is maintained at an acceptable level, even though this is also required under the flood protection and drainage bylaws.

(c) It is acknowledged that liaising with the consent holder is qualitatively different from dealing with the next-door neighbour farmer. However, the conditions ensure there is always someone to contact to address any issues concerning flood protection matters.

[269] The Suttons were concerned about increased surface flooding from the Proposal. Mr Schlichting confirmed to us and replied that there would be no increase in run-off. The land water passes quickly from the solar panels to the land, which retains its absorption capacity. There is no evidence that solar panels, by reducing evapotranspiration, increase the saturated nature of land to the point where increased surface flooding arises. However, to cover this unlikely eventuality, we have expressly provided in the review condition the power to reassess the sufficiency of conditions if there is any evidence of increased surface flooding due to the proposed activity.

15.0 Site Selection

[270] The Council asked Helios under RMA s92 for further information about the appropriateness of the activity, given that the land is highly productive, including an assessment of the potential cumulative effects on versatile land from renewable energy solar facilities. In response, Helios set out the following:

> *"We are working with external agricultural consultants to prepare a response to the discussions to date in regards to the National Policy Statement for Highly Productive Land. This will be provided shortly and is currently an outstanding matter.*
>
> *The application as submitted outlines the key criteria for Helios when selecting a solar farm site, namely:*
>
> • *Adequate flat land (less than a 5 degree slope)*
>
> • *Proximity to a feasible grid connection point*
>
> • *Of a sufficient area to develop a solar farm of a size which is viable and will make a meaningful contribution to the generation of new renewable energy in New Zealand*
>
> • *Free of ecological, heritage or cultural constraints which would make the project untenable by a responsible developer*

• Medium to high sunshine hours / limited shading from natural features such as mountain

It is noted that there is no developable land in the Rangitaiki Plains that is less than LUC 3. During the project site selection process, Helios was mindful of ensuring the site was of sufficient size to support a solar project which utilises the full 33kV connection capacity allocated to Helios by Transpower at their Edgecumbe substation (115MWac), in order to make a meaningful contribution to New Zealand's energy targets which are supported by the National Policy Statement for Renewable Energy Generation.

The project site we have selected allows for a system with a Ground Coverage Ratio (GCR) of approximately 40%. This GCR is higher than what is optimal for this type of solar farm design, but it can still facilitate a viable project. We have made this decision in order to use the smallest possible land area and limit the use of additional farmland.

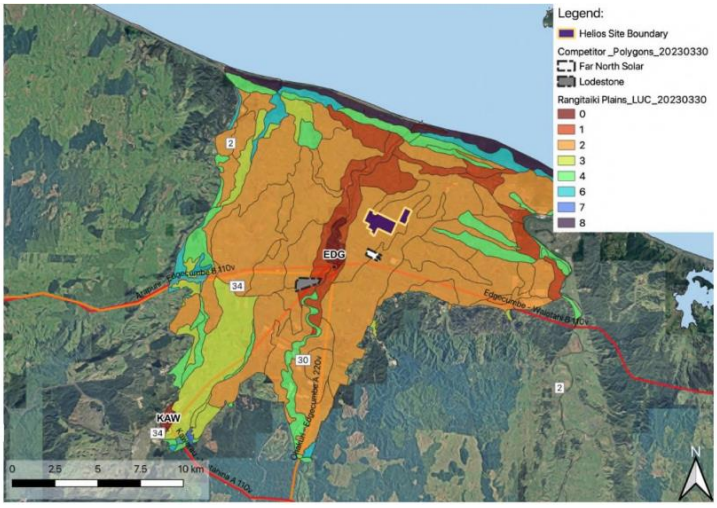
As well as the proposed Helios solar farm, two additional solar projects have been approved within the Rangitaiki Plains.

1) Lodestone Solar Farm

2) Far North Solar Farm.

These three solar farms in the context of the Rangitikei Plains are shown below".

[271] The total number of solar energy developments, including the Proposal, is shown in the diagram below in Helios's response to the Council's enquiry.



[272] Helios then said in its response the following:

"As a percentage, the total area proposed for solar development is 1.2% of the total land within the Rangitaiki Plains considered Highly Productive (LUC 1-3). In addition, the total area of land proposed for solar development is only 1.93% of the land currently utilised for dairy within the Rangitaiki Plains, or 0.7% of the dairy land within the Whakatane District".

[273] The cumulative effects were identified in tabular form in Helios' response as follows:

Land Type	All Solar submitted for consent in Rangitaiki Plains	All Solar submitted for consent in Whakatane District	Helios Solar Farm as % of Rangitaiki Plains
Dairy Land	1.93%	0.7%	1.3%
Highly Productive Land (LUC 1-3)	1.20%	0.57%	0.8%

[274] Mr Askey criticised the quality of the Site selection analysis in his Statement of Evidence. Mr Askey deconstructed the various claims of Helios as to why the Site was appropriate for the location. His evidence included paragraphs [8.2]-[8.6] as follows:

> *"[8.2] I refer to Section 4.2 of the Assessment of Effects, which lists the following selection criteria: 'The subject site has been selected due to its solar exposure and proximity to the Edgecumbe substation. The proximity to the substation is required to connect the renewable electricity generation activity to the national grid.'*
>
> *[8.3] The solar yield at the site is high but unremarkable compared to a number of other locations in New Zealand. Refer the following "www.stuff.co.nz/environment/130937437/taranaki-clinches-new-zealands-sunniest-region-crown-for-another-year In La Nina years as we have just had 2021-2023 sunshine hours in the Eastern Bay of Plenty are well behind other areas with a dominance of cloudy northeasterly weather. I note that solar developments are underway in a number of locations including Waikato (Harmony Energy at Tauhei) and the Napier Taupo Road where Todd Generation subsidiary Nova Energy are consenting a 400 MW (900,000 panel) solar power station over 1,000 Ha. I suggest that the solar exposure is immaterial to the consideration of the 176 McLeans road site. In reality the only conclusion that can be drawn in regard to solar exposure is that the return to the investors will be slightly greater in some years.*
>
> *[8.4] Proximity to the Hydro Road substation is advanced as a justification for the selected site. Proximity is an economic and business matter for the Applicant. The proximity argument in specific regards to the McLean Road property is immaterial. In the absence of detailed costing and financial information on the project, independently assessed, the only conclusion that can be drawn in regard to proximity is that the return to the investors will be better the less they have to spend on transmission infrastructure. Hence they will seek to secure a site as close as possible to the connection point and downplay the other potential uses of the land.*
>
> *[8.5] In my experience from several major landfill siting studies, as a greenfields development I would have expected the proposal to be subject of a comprehensive MCA (Multi Criteria Analysis). Multi-Criteria Analysis is used for the evaluation of quantitative and qualitive criteria in infrastructure designs, including aspects such as cost, resilience, amenity and alignment with best practice. An MCA considers all of the factors relevant to siting of a development, both positive and negative. A robust MCA process helps to*

ensure that a development is optimally located and will often identify opportunities to improve upon the initial perceptions around a project.

[8.6] The site has minimal strategic significance for the national grid. The Eastern Bay of Penty is a nett exporter of power, with contribution from two hydro schemes, geothermal power at Kawerau and already consented solar installations in Edgecumbe (Lodestone and Far North Solar totalling 152,400 panels) plus further east at Waiotahe. Further power from the Helios site will generally shift westwards to the Waikato and Auckland. The Helios investment in my opinion should be made closer to major centres of use to minimise transmission losses. It could equally be placed on low quality pumice soils of the Central Plateau with no detriment to the functionality of the project or diminishment of its contribution to the nation's energy supply. I reference again the Todd Energy development off the Napier Taupo road (SH5). As a new project in a sub optimal location for its purpose it clearly fails criteria (J) of 3.9(2) of the NPS-HPL (refer # 11 below)".

[275] Mr Schlichting for the Applicant explained the Site selection factors and methodology at Section 5 of his evidence, which reads as follows:

*"**5. SITE SELECTION***

5.1 Helios identified Edgecumbe as one of the most favourable locations for large-scale solar in the country in early 2020. Helios has undertaken a comprehensive assessment of land parcels to identify the Site, which comprises the key attributes of a strong solar farm site, which are outlined below.

Solar resources

5.2 The area around Edgecumbe has one of the strongest solar resources in New Zealand, meaning more renewable electricity can be generated from each solar panel than in most other parts of the country. The Site has an expected annual average global horizontal irradiance (GHI) of 1558 kWh/m².[21] The GHI across New Zealand typically ranges from 1,200-1,550kWh/m².

Feasible grid connection

5.3 Helios identified 115MW of capacity at the Edgecumbe substation on the existing 33kV switchboard. Helios signed a Works Agreement with Transpower for the grid connection in May 2022, the first Works Agreement in New Zealand with an independent solar developer.[22] Transpower General Manager, Customer and Strategy, Chantelle Bramley said that:

> *The signing of our first grid connection agreement with a solar developer is a positive milestone for New Zealand's energy future. We congratulate Helios and we look forward to working with them as the project comes to fruition.*

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[21] The measure of solar irradiation is commonly expressed as GHI (global horizontal irradiation), relating to the annual average power available (in Watts) per square metre (W/m²). Irradiation Analysis of the Edgecumbe project site was undertaken by RINA 9 August 2023.

[22] Helios "Helios Energy solar development update" (media release, 29 August 2022).

5.4 Further, Ms Bramley commented that there were a large range of connection enquiries and that Transpower expected there to be more connection agreements in the future as New Zealand moves to decarbonise its economy.

Adequate flat land

5.5 The Site is flat and does not require extensive earthworks. An efficient solar farm works best on land with a slope of less than five degrees, which is why large flat sites that are often associated with traditional farming activities are ideal.

Land availability

5.6 Helios leases land for solar projects. Discussions were held with local landowners for over a year, and the Site is to be leased from two local landowners for whom hosting a solar farm is a rational strategic and economic diversification of their existing farming operations.

Suitable geology

5.7 *Desktop geotechnical studies were undertaken in February 2022, well in advance of resource consent preparation. Solar sites require geology suitable for assuring stability of the steel piles upon which the solar panels are installed. Further geotechnical studies were carried out onsite between 20 and 24 February 2023 by ENGEO Limited which confirmed the Site is suitable for a solar farm. These further geotechnical tests were completed to confirm the validity of the desktop work that had been undertaken to date. Testing included bore holes, test pits, cone penetration tests, shear vane test and earth resistivity tests.*

Mapped constraints

5.8 The Site does not contain any ecological, heritage or cultural overlays or constraints as assessed against the Operative Whakatāne District Plan Maps. In relation to Highly Productive Land ('HPL') it is noted there is no developable land (meeting the above criteria for solar farms) within the Rangitaiki Plains which is LUC 4 to LUC 8, and therefore not classified as HPL".

[276] Mr Askey's experience with landfills may have exposed him to MCA methods because designation powers were exercised. In the case of designating powers, other people's land is affected, and therefore, there are requirements to assess the reasonable necessity of the activity and its location. That is commonly assessed by employing a multi-criteria analysis. However, the purpose of that exercise is not to identify optimal locations but simply to ensure that the Proposal is reasonably necessary.

[277] Mr Askey's alternative assessments were not based on any detailed examination of the viability of those alternatives. For example, he referred to

locating solar farms on buildings or on dune lands or hill country. None of these are practical given the scale proposed for this farm (which is appropriate considering NPS-REG) and the technology that is employed.

[278] RMA, s 6(1) states:

> *"**6 Information required in assessment of environmental effects***
>
> *(1) An assessment of the activity's effects on the environment must include the following information:*
>
> *(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:"*

[279] It is notable that provision just requires a description of alternatives. It does not require a multi-criteria analysis. Helios concluded there are no other viable alternative locations currently available, and the Site is appropriate. That is a way of answering the requirement of clause 6 of Schedule 4.

[280] The Panel recognises the need for market forces to solve social, cultural and economic needs. One must assume that any company operating in a competitive environment makes rational choices associated with resource scarcity. We consider it a reasonable conclusion that Helios has made decisions that reflect those constraints. The NPS-REG does require us to recognise the operating limitations in which market participants in the electricity generation field operate. The site selection criteria that Mr Schlichting referred to are the type of constraints that the NPS-REG requires us to acknowledge.

[281] Ultimately, we are driven to the conclusion that Mr Askey had other views about the options that should be pursued to deliver renewable energy in Aotearoa | New Zealand. That became most evident when he talked about Whakatāne as a net energy exporter as a factor that should inform his proposed MCA system. In putting forward that factor, Mr Askey did not identify that the NPS-HPL recognises that all regions must, appropriate to their circumstances, contribute to the development of new renewable energy generation. That is the only way to achieve renewable energy goals for Aotearoa | New Zealand. Many regions are making a net contribution at the expense of local community resources. The net exporter concept is irrelevant.

16.0 Monitoring/Decommissioning and Bond

Monitoring

[282] Mr Askey sought comprehensive monitoring. This requirement was seen as essential because there would be no onsite manager so the activity would be managed remotely.

[283] Concerning noise monitoring, Mr Askey stated that 11.14 of his SOE the following:

> *"Live monitoring is a modern, very low cost and entirely appropriate manner in which to manage noise compliance for this installation. The noise will be distinct in tone and frequency, continuous and match the solar profile. Therefore it will be easily distinguishable from other more general rural noise. Live monitoring protects all parties, the neighbours, the consent holder from vexatious complaints and makes the enforcement role of WDC simple. I will include an example in the proposed conditions".*

[284] Mr Cottle did not consider that continuous noise monitoring was required. Ms Arthur-Young, in opening submissions, proposed noise monitoring emissions after the renewable energy solar facility became operational for a period sufficient to establish compliance with measurements undertaken at the notional boundary of the three closest dwellings and neighbouring properties.

[285] In the reply memorandum on conditions, Ms Arthur-Young also referred to additional post-operational noise monitoring when the Battery Energy Storage System becomes operational, which may occur sometime after the main facility is operational. Ms Arthur-Young also proposed on behalf of Helios a new condition allowing the Council to recover its actual and reasonable costs of monitoring under the consent.

[286] The Panel considers that the conditions contained in Attachment 3 are sufficient to ensure any risks are appropriately managed, and any risks on the boundary arising from the interface between the Proposal and existing noise sensitivity activities are adequately managed by the consent conditions in Attachment 3.

[287] We have not identified any other material additional risks that require monitoring. Once the facility is operational, its operational parameters are relatively static, so there is no need for continuous monitoring in those circumstances.

Decommissioning and Bond

[288] The consent conditions require the plant's decommissioning at the consent's expiry.

[289] At [14.1] of his SOE Mr Askey stated:

> *"End of Life Panels. The site will consist of some 220,000 individual solar panels (Application). Unfortunately the panels only have a design life of some 20 years as stated in the Application. 440,000 waste solar panels is a huge pile of glass, plastic and aluminium. The Application is silent on exactly how these will be disposed of or recycled. In my view, it is not sufficient for the Applicant to just assure that the waste panels will be recycled. This is likely to be at some considerable cost to the consent holder at the time. Unless this matter is conditioned through an end of life bond, as is standard practice on landfill closures and mines, then the community can have no confidence that the end of life panels will be properly managed. Without a condition and bond then the used panels may simply be left on site by Helios or some future owner. I do not believe WDC can rely upon the lease agreement with the landowner to enforce clean-up of the site. Only a bond provides surety to the community".*

[290] Ms Paddison also proposed a condition requiring a bond but did not provide detailed submissions or a draft condition.

[291] There is no evidence before us about the cost of decommissioning to use to measure an appropriate bond.

[292] Mr Askey indicated about 46 kilometres of cabling had to be removed at the end of the term. Mr Schlichting estimated it was closer to 21 kilometres.

[293] The cabling arrangement is much like a mammal's vascular system with varying-sized capillaries and vessels, each at varying depths. Therefore, the total length of cabling is a poor indication of the total depth and range of reinstatement required.

[294] There are strict limits on the power to impose bonds, and these are set out in RMA, s 108A as follows:

> *"(1) A bond required under section 108(2)(b) may be given for the performance of any 1 or more conditions the consent authority considers appropriate and may continue after the expiry of the resource consent to secure the ongoing performance of conditions relating to long-term effects, including—*
>
> *(a) a condition relating to the alteration or removal of structures:*
>
> *(b) a condition relating to remedial, restoration, or maintenance work:*

(c) a condition providing for ongoing monitoring of long-term effects.

(2) A condition describing the terms of the bond to be entered into under section 108(2)(b) may—

(a) require that the bond be given before the resource consent is exercised or at any other time:

(b) require that section 109(1) apply to the bond:

(c) provide that the liability of the holder of the resource consent be not limited to the amount of the bond:

(d) require the bond to be given to secure performance of conditions of the consent including conditions relating to any adverse effects on the environment that become apparent during or after the expiry of the consent:

(e) require the holder of the resource consent to provide such security as the consent authority thinks fit for the performance of any condition of the bond:

(f) require the holder of the resource consent to provide a guarantor (acceptable to the consent authority) to bind itself to pay for the carrying out of a condition in the event of a default by the holder or the occurrence of an adverse environmental effect requiring remedy:

(g) provide that the bond may be varied or cancelled, or renewed at any time by agreement between the holder and the consent authority.

(3) If a consent authority considers that an adverse effect may continue or arise at any time after the expiration of a resource consent granted by it, the consent authority may require that a bond continue for a specified period that the consent authority thinks fit".

[295] Typically, bonds are required to address the effects of activities likely to cause long-term externalities. A bond ensures that the community is not bearing the cost of failure to restore the site to its original condition. In this case, the bond is justified to address the long-term production capability of the land, which, while having a socially good dimension, is principally an attribute of the Site that the landowner will be incentivised to secure.

[296] The Panel considers that there is no need to impose a bond and that the contractual arrangements with landowners are the appropriate mechanism to ensure that the consent holder complies with the reinstatement conditions.

Concluding Assessment and Conditions

Other matters under RMA, s 104

[297] RMA, s 104(1)(c) obliges us to consider what other materials are relevant and reasonably necessary to determine the application. As set out in our consideration of NPS-REG, we have considered the CCRA and the relevant energy context that provides essential context for evaluating NPS-REG policies.

Part 2

[298] The Panel considered that it had sufficient guidance from the relevant national direction and WDP to make a well-structured decision within an appropriate policy context. Therefore, considering *Davidson,* we do not require what limited assistance the general purpose and principles of Part 2 may provide.

[299] We note that while soils are finite resources to be protected, Part 2 expressly requires consideration of the effects of climate change and the benefits of renewable energy. That supports the environmental programme for renewable energy development as a national priority, recognising the energy context outlined above.

[300] Several arguments for the submitters turned on the importance of dairy farming for foreign exchange and the relatively poor profitability of sheep farming. The economics of this Proposal do not rely on sheep farming, which is ancillary to the leading enterprise of renewable energy generation. The WDP does not require farmers to choose the most productive rural use. RMA, s 7(b) directs us to have particular regard to *the efficient use and development of natural and physical resources*. Efficiency in this context allows the operation of market forces within appropriate environmental limits.

[301] In this case, the farmers owning the land made an economic decision that renewable energy generation in combination with sheep farming is a better economic outcome than their current dairy farming operations. Electricity is essential to economic activity. There is no evidence of significant cumulative effects on the availability and capability of land resources that foreclose options for future generations. Therefore, efficient resource use is best achieved by acknowledging the market choices of the landowners and Helios. Equally, the Panel would have respected Mr Law's choice if he had sold land, as planned, and it formed part of the Proposal.

[302] The Panel considers that despite Mr Askey's views, there is no policy failure giving rise to justifiable concerns in this case. Still, it is possible that without proper attention, market failures could occur from excess loss in the availability of productive land. That reinforces the need for future ongoing attention to the tensions addressed at the start of this decision.

Conditions

[303] The development of the conditions suite was iterative. Following the hearing, the planners conferred with the Applicant, and a further condition set was prepared. Amendments to the hearing version from that process included the following according to Helios' memorandum:

(a) Amendment to the date of the updated Mitigation Planting Plan and Planting List (Condition 1).

(b) Reinsertion of a condition about the anticipated period for construction activities. Ms Maguire continues to seek a reference to 12 months for this period; however, Helios considers 15 months to be realistic and appropriate(Condition 8).

(c) Insertion of a condition requiring Helios to advise the Council and adjoining owners and occupiers following the Neighbour 2 3470-3389-4184 Engagement Management Plan ("NEMP") if the anticipated period for construction activities may be exceeded (Condition 9).

(d) Addition of an objective for the NEMP to address matters concerning the development, implementation and maintenance of the final Mitigation Planting Plan approved under the consent conditions (Condition 13).

(e) The amalgamation of the earlier proposed condition to notify adjoining neighbours two weeks before the commencement of construction activities to now sit within the NEMP condition (Condition 14).

(f) Insertion of a new condition reflecting Helios' intention to take all reasonably practicable steps to design and operate the solar farm to achieve the levels predicted in the Marshall Day Acoustics noise report dated 8 September 2023 (Condition 25).

(g) Addition of specific locations to monitor noise emissions from the solar farm once it is operational (Condition 26).

(h) Addition of a post-operational noise monitoring condition where the Battery Energy Storage System becomes operational after the wider solar farm is operational (Condition 34).

(i) Addition to the final Mitigation Planting Plan condition for this final plan to include a timeframe for planting that prioritises planting along boundaries closest to neighbouring dwellings (Condition 35).

(j) Insertion of a new condition for the Council to recover all actual and reasonable costs associated with monitoring the consent (Condition 47).

(k) Minor typographical amendments to reflect condition numbering and to amend references to "prior to" with "before".

[304] In addition, the Mitigation Planting Plan was further amended and is dated 7 November 2023 with the following notable amendments:

(a) The tall shelterbelt notation (i.e. orange line) on the Mitigation Planting Plan near 255 Putiki Road has been extended further northwest, considering both Mr and Mrs Langdon and Mr and Mrs Sutton's concerns.

(b) The Planting List for tall shelterbelt species has been amended to include a reference to a species of eucalyptus in consideration of Mr and Mrs Langdon's comments.

(c) An additional sentence has been included at the end of the low residential planting description in the Planting List to allow for certain taller residential screening species (i.e. harakeke, manuka and toe toe) to be selected within the low residential planting areas (i.e. purple lines on the Mitigation Planting Plan). This amendment has been proposed considering matters raised by Mr and Mrs Sutton.

[305] We agree with Helios that a 15-month implementation period for construction is appropriate. The other amendments above mostly implement suggestions through the hearing.

[306] The Panel's approved conditions are in **Attachment 3**. The Panel has also provided a tracked changes version for the parties in Word to demonstrate the changes. Many of these changes are stylistic.

[307] The conditions include an amendment made by the parties, as noted earlier, to ensure Helios tries and achieves, as far as practicable, the noise levels predicted at the boundaries of receptors as outlined by Mr Cottle, including for the Davies property, which, if achieved, will reduce ambient noise levels below existing levels.

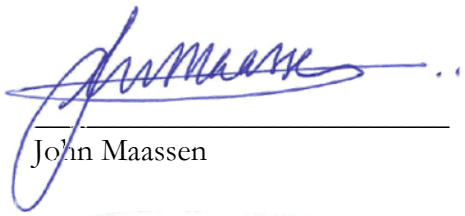
[308] Other changes include the following:

(a) Changing the word "shall" to "must" to reflect the modern drafting style.

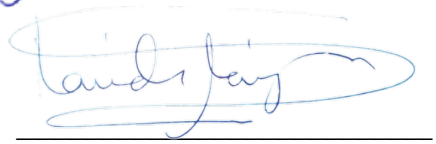
(b) Removing the pronoun "that" or similar at the start of some conditions and which is redundant.

(c) Simplifying the wording of conditions and ensuring plain English.

[309] We authorise any other minor corrections by the Council's Resource Consent Manager required to finalise and publish this consent.



John Maassen



Nándor Tánczos

Carolyn Hamill

Attachment 1 - Graphics Bundle

HELIOS BOP OP LP

EDGECUMBE SOLAR FARM

GRAPHICS BUNDLE

TAB	PLAN
1.	Whakatāne District Overview
2.	Rangitaiki Plains Overview
3.	Edgecumbe Site Layout Plan (11 October 2023)
4.	Mitigation Planting Plan (12 October 2023)
5.	Edgecumbe Submitter Properties

TAB 1

Legend:

- Site Boundary - EDG
- Whakatane District Area
- Rangitaiki Plains Extent
- Roads major 36

Transmission

- Substations

Moutohora Island

33
2
34
30
34
2
35
30A
30
30
5
38
1

0 2.5 5 7.5 10 km

N

TAB 2

Legend:

- Site Boundary - EDG
- Rangitaiki Plains Extent
- Roads major

Transmission

- Substations

Transpower Lines

- 110
- 220

Moutohora Island

Whakatane

Edgecumbe

Kawerau

2

34

30

0 2.5 5 7.5 10 km

N

TAB 3

Helios

PROJECT NUMBER:
NZ-2022-XXXX

SHEET TITLE:
SITE PLAN
NOT FOR CONSTRUCTION

HELIOS ENERGY (EDGECUMBE)
[SOLAR PROJECT]
EDGECUMBE, NEW ZEALAND

#	REVISION	DATE	ID
10	UPDATED DRAINAGE LINES AND TRACKER LAYOUT	1/26/2023	RE
11	UPDATED CONSTRAINTS, SKEWED TRACKER DESIGN, REMOVE FAULT LINES	5/24/2023	RE
12	UPDATED INVERTER PLACEMENT	10/11/2023	RE

LEGEND

- 1P TRACKER (75 MODS)
- 1P TRACKER (50 MODS)
- PERIMETER FENCE
- CENTRAL INVERTER SKID
- AC-COUPLED BATTERY STORAGE
- ACCESS ROADS
- WATER CHANNELS
- EXCLUSION AREA
- SUBSTATION
- DISTRIBUTION LINE
- TRANSMISSION LINE
- PIPELINE
- SECURITY CAMERA

PROJECT DETAILS

LATITUDE	-37.964303
LONGITUDE	176.867767
INTERCON. VOLTAGE	33KV
LEASED AREA	TBD
FENCED AREA	197.1 HECTARES
FENCE LENGTH	8,953 METERS
WIND LOAD	TBD
SNOW LOAD	TBD
DC CAPACITY	127,813.0 KW
AC CAPACITY	115,000.0 KW
DC:AC RATIO	1.111
STRUCTURE	NEXTRACKER (1P)
TRACKER ROWS	(2,274 X 75); (712 X 50)
AZIMUTH	0 / 180 DEGREES
GCR	40.0%
MODULE	JAM78D40 620/GB
MODULE CAPACITY	620W
MODULE QUANTITY	206,150
STRING SIZE	25
INVERTER	PE FS4200 HEMK
INVERTER CAPACITY	4.20 MVA (@40C)
INVERTER QUANTITY	30

TAB 4

Work with landowners to determine final location of approximately 70m linear length of advanced grade planting

ID1
361 McLean Rd
(Henderson)

Property boundary

REIDS CENTRAL CANAL

MCLEAN RD

ID9
42 Orini Rd
(Law)

ID8
41 Orini Rd
(Law)

ID7
11 Orini Rd
(Law)

ORINI RD

WESTERN DRAIN RD

181B Putiki Rd
(Askey)

Staggered row of planting to ensure a 6m drain set back is retained and access to panels as required

Collector substation all contained within a building

Low residential planting heights as agreed with the residents at 181A Putiki Road

ID23
181A Putiki Rd
(Sutton)

ID24
181 Putiki Rd
(Davies)

PUTIKI RD

ID21
163 Putiki Rd
(Askey)

ID22
151A Putiki Rd
(Askey)

PUTIKI RD

ID20
241 Putiki Rd
(Langdon)

ID19
255 Putiki Rd
(Langdon)

KEY:

- RESIDENTIAL SCREEN
- ROAD SCREEN
- TALL SHELTERBELT
- AUGMENTED HEDGE
- LOW RESIDENTIAL PLANTING
- RESIDENTIAL SCREEN - ADVANCED GRADE
- FENCE LINE
- PROPERTY LINE
- PROPERTY ID REFERENCE IN APPLICATION LVEA TABLE 5.1
  VISUAL EFFECTS FROM PRIVATE LOCATIONS

Boffa Miskell

www.boffamiskell.co.nz

0 300m

1:10,000 @ A3

MCLEAN ROAD SOLAR FARM

Mitigation Planting Plan

Date: 12 October 2023 Revision: H

Plan prepared for Helios Energy by Boffa Miskell Limited

Project Manager: Bec.Ramsay@boffamiskell.co.nz | Drawn: SFo | Checked: BRa

Figure 8

TAB 5

Legend:

- Site Boundary - EDG

Submitter Properties

- Karen Dorothy Henderson
- Oriini Farms Limited
- Oriini Dairies Limitied
- Donald Walker, Katherine Walker, Wynard Wood Trustee Services (K&D Walker) Limited
- Odell Sutton, Trevor Sutton
- Peter Askey, Robyn Askey
- Suzanne Davies

Site 1

Site 2

EAST BANK ROAD

Reids Central Canal

MCLEAN ROAD

ORINI ROAD

PUTIKI ROAD

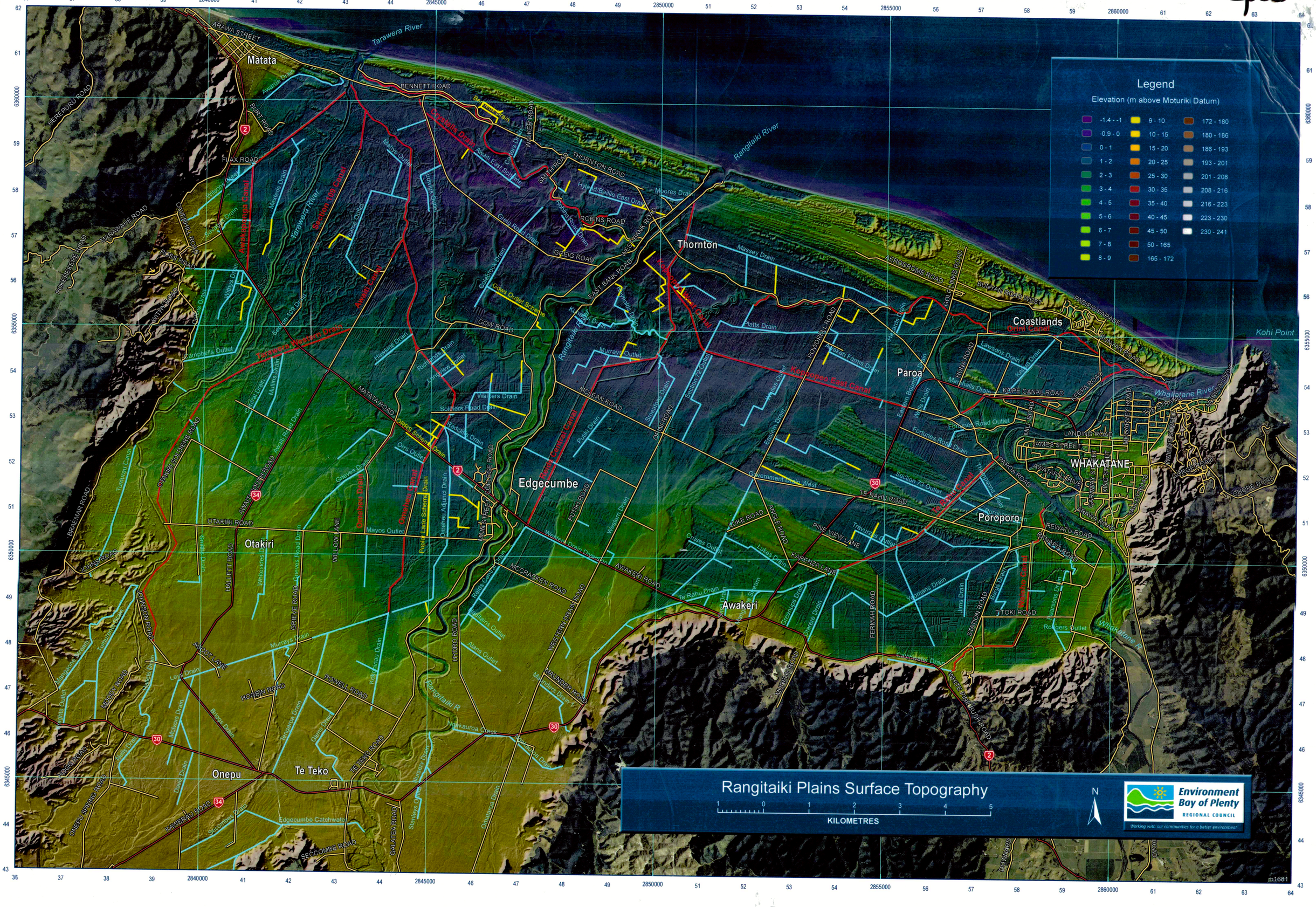
WESTERN DRAIN ROAD

0 250 500 750 1,000 m

N

Attachment 2 - BOPRC Surface Topography Plan

Rangitaiki Plains Surface Topography



Attachment 3 - Panel's Approved Conditions

PANEL'S APPROVED CONDITIONS

1. The activity authorised by this consent must be carried out following these conditions and otherwise in a manner that follows the application received on 22 February 2023 completed by Property Group Limited titled 'Application for Resource Consent, McLean Road Solar Farm, 176 and 351 McLean Road, Edgecumbe, Helios Energy Ltd', dated February 2023, except where modified by these conditions, and:
    a. The Site Plan, project number NZ-2022-XXXX, dated 11 October 2023.
    b. The building layout plan for the substation drawn by Beca, dated October 2022.
    c. The acoustic report completed by Marshall Day Acoustics Limited titled 'McLean Road, Edgecumbe Solar Farm Revised Assessment of Noise Effects', dated 8 September 2023.
    d. The transportation assessment completed by Gray Matter, titled 'Proposed McLean Road Solar Farm, Transport Assessment', dated 21 February 2023 and the supplementary letter dated 17 April 2023.
    e. The following responses to the further information requests from the applicant:
        (i) 20 April 2023, 11 June 2023
        (ii) 13 September 2023 and 20 September 2023
    f. The Landscape and Visual Effects Assessment ('LVA') completed by Boffa Miskell dated 14 June 2023 (Version 2) and the following supplementary documents:
        (i) McLean Road Solar Farm Graphic Supplement, dated February 2023 (noting that this does not reflect the relocation of the buildings within the site or the reorientation of the panels)
        (ii) Updated Mitigation Planting Plan and Planting List dated 7 November 2023.
    g. The Glint and glare study completed by Pager Power dated December 2022.
    h. The Glint and Glare Assessment completed by Boffa Miskell dated 11 October 2023
    i. The Edgecumbe Access Track Plan by Helios dated 11 October 2023.

2. The consent holder must construct, operate, and maintain the Solar Farm in general accordance with all management plans submitted to and certified by the Manager Resource Consents, Whakatāne District Council, to fulfil the conditions of this resource consent.

Construction Conditions

3. A minimum of 8 weeks before the the activity commences (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing), the consent holder must submit to the Whakatāne District Council a Construction Management Plan (CMP) for certification by the Manager Resource Consents sufficient to meet this and related conditions about the CMP.

    Advice Note:

    - Certification (or withholding certification) of the CMP is based on whether the CMP meets the requirements of the conditions of this resource consent, explicitly focusing on the matters outlined in condition 4.
    - Where the Council is unable to certify the CMP on the basis that it does not address the matters contained within condition 4, the Council will advise the Consent Holder in writing, outlining the reasons why technical certification has been refused within ten (10) working days of receipt.

4. The objective of the CMP is to develop measures and processes to manage and minimise the effects of noise, dust and vibration caused by the construction of the Solar Farm and to assist neighbours in planning for construction. For that purpose, the CMP must include:
    a. A final construction methodology plan, including stages, duration, and project timeline, the construction methodology plan must include a detailed description of each stage and work involved throughout the construction process. The plan must also include a drawing of the site outlining the areas of work and the timeline for each area.
    b. A Construction Noise and Vibration Management Plan (CNVMP) prepared by a suitably qualified acoustic consultant following the requirements of the acoustic assessment referred to in condition 1(c) and must ensure that –
        (i) Piling activities must only occur for up to four weeks within 120m of any dwelling.
        (ii) Piling must only occur between 8 am and 5 pm, Monday to Friday (i.e., no weekend days, including public holidays).
    c. The contact details of the construction site manager.
    d. A methodology of dust and stockpile management.
    e. A Construction Traffic Management Plan (CTMP) including, as a minimum,:
        (i) The heavy traffic routes to and from State Highway 2 as agreed between the consent holder and Council's Engineer Transportation.
        (ii) An outline how traffic will be directed onto the site and where parking and laydown areas will be located.
        (iii) Any temporary traffic management
    f. A signed copy of the Ngāti Awa Discovery Protocol.

5. The CMP may be amended or updated without the need for certification where:
    a. The amendment is an administrative change, including nominated personnel and
    b. The revised CMP is provided to the Manager Resource Consents, Whakatāne District Council and within five (5) working days of receiving the revised CMP, the Manager Resource Consents has not advised in writing that the amendment does not meet the requirements of condition 5(a).

6. All construction works must be undertaken following the approved CMP (including staged timing and duration), and a copy of the CMP must be kept on-site for the time of the construction period.

7. The construction activities may only occur between Monday and Saturday, 7.30 am to 6 pm (excluding public holidays).

8. The consent holder must take all reasonably practicable steps to complete the construction activities (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing) associated with the activity authorised by this consent within 15 months.

9. If the period in condition 8 is exceeded, the consent holder must, as soon as practicable, notify the Manager Resource Consents, Whakatāne District Council, in writing and must inform the adjoining owners/occupiers following the Neighbour Engagement Management Plan approved under condition 13 with a satisfactory explanation why additional time is required.

10. All buildings and internal accessways must be constructed with compliant stormwater controls required under Rule 13.2.28 of the District Plan.

11. The earthworks and construction activities authorised by this consent must be staged, and that worked land must be progressively rehabilitated. The approach must be identified on the plan identified in condition 1(a).

12. The signed Ngāti Awa Discovery Protocols dated 27 June 2023 must be implemented in the event of discovery of sites, koiwi tangata and taonga tuturu during land disturbance activities.

Neighbour Engagement Management Plan

13. A minimum of 8 weeks before the commencement of the activity authorised by this consent (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing), the consent holder must submit to the Whakatāne District Council a Neighbour Engagement Management Plan (NEMP) for certification by the Manager Resource Consents sufficient to meet this and related conditions about the NEMP. The objectives of the NEMP are to:
    a. inform adjoining neighbours of the progress of the Project;
    b. provide early information on key Project milestones;
    c. respond to queries and complaints;
    d. confirm a programme of internal drain maintenance and management, and
    e. address matters concerning the development, implementation and maintenance of the final Mitigation Planting Plan approved under condition 35.

14. The NEMP referred to in condition 13 above must include the following:
    a. Communication and complaints procedures for adjoining property owners/occupiers during the construction, operational and decommissioning periods.
    b. Provision for written notice to be provided to all adjoining neighbours two weeks before construction activities, including a copy of the intended project timeline and a project construction map indicating the planned location and sequence of construction stages and mitigation planting.
    c. The contact details of the community liaison person for the consent holder who will be responsible for coordinating a response from the relevant technical personnel and communicating back to the applicable property owners/occupiers.
    d. Provision for a Complaints Register to record any complaints during the construction, operational and decommissioning periods. The complaints register must be available to staff and authorised agents of the Whakatāne District Council at all reasonable times upon request. The register must record the following:
        (i) The date, time and duration of the incident that resulted in the complaint;
        (ii) The location of the complainant when the incident was detected;
        (iii) The possible cause of the incident; and
        (iv) Any corrective action taken by the consent holder in response to the complaint, including the timing of the corrective action.
    e. An internal drain maintenance programme during and after construction.

Transportation

15. Before the commencement of the activity authorised by this consent (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing), the consent holder must undertake a visual inspection of the local road network route approved through the CTMP (condition 4(f). A second inspection

must be conducted after the completion of construction activities. Both inspections shall be made by the consent holder's contractor and Whakatāne District Council Asset Engineer Transportation.

16. The consent holder must ensure that damage to the local road network is repaired and reinstated to the original condition as recorded by the visual inspections required by condition 15 within three (3) months of the completion of construction activities at the cost of the consent holder.

17. The vehicle crossing to 297 McLean Road (referred to as 'A' in Appendix D to the Gray Matter letter, dated 17 April 2023) must be upgraded as shown on the Gray Matter Plan "Rural Heavy Commercial Tanker Entrances Concept Plan – McLean Road" (Drawing 267_01_100_P R0) to meet Council's Standard Drawing R 30.

18. The existing vehicle crossing to 351 McLean Road must be removed with the roadside berm reinstated to the satisfaction of the Whakatāne District Council Manager Resource Consents.

19. The main internal accessways identified on the Edgecumbe Access Track Plan in condition 1(i) must be formed and constructed to a 4m width with an all-weather metalled surface.

    Advice Note: All other internal accessways can remain unformed, providing that they do not result in any airborne or deposited dust beyond the site's property boundary determined by the relevant regulatory authority to be noxious or dangerous, offensive or objectionable. If any airborne or deposited dust beyond the property boundary is noxious, dangerous, offensive or objectionable, then the remaining internal accessways must be formed to an all-weather metalled surface.

20. The vehicle crossing to 176 McLean Road (referred to as 'D' in Appendix D to the Gray Matter letter, dated 17 April 2023) must be sealed.

    Advice Note: The consent holder must contact the Council's Transportation Team to arrange for an inspection to be carried out before sealing the vehicle crossings required by conditions 17 and 20 so that stormwater control measures can be checked. They will require 48 hours' notice to perform the inspection.

21. The consent holder must submit a corridor access request (CAR) and a traffic management plan (TMP) through www.submitica.com at least 10 working days before any work must be carried out on the public road.

22. A minimum of 8 weeks before the commencement of the activity authorised by this consent (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing), the consent holder must submit to the Whakatāne District Council an onsite parking and manoeuvring plan to service the site office at 235 McLean Road for certification by the Manager Resource Consents.

23. The onsite parking and manoeuvring plan approved under condition 22 must be formed and constructed to an all-weather metalled surface.

Noise Conditions

24. The rating noise level from all solar farm operations shall meet the following District Plan noise limits at the notional boundary of dwellings existing at the time of consent on another site in the Rural zone:
    a. 50 dB LAeq from 7:00 am to 10:00 pm
    b. 40 dB LAeq and 70 dB LAFmax from 10:00 pm to 7:00 am

Advice Note: Noise levels shall be measured and assessed following NZS 6801:2008 Acoustics – Measurement of Environmental Sound and NZS 6802:2008 Acoustics – Environmental Noise (or any subsequent replacement standard).

25. The consent holder shall take all reasonably practicable steps to design and operate the solar farm to achieve the levels predicted in the Marshall Day Acoustics report referred to in condition 1(c), with particular attention to the levels predicted at 181 and 181A Putiki Road, recognising that the site must comply with the limits provided in condition 24.

26. Within the first summer (October to March) following the solar farm's operation, the consent holder must monitor noise emissions from the site to assess compliance under condition 24. A suitably qualified acoustic consultant must undertake monitoring under this condition 26. Compliance measurements must occur for a continuous monitoring period of no less than one (1) month. The measurements must be performed at the notional boundary of the dwellings on the following neighbouring properties or, if access cannot be arranged to those properties, a proxy position representative of the notional boundary of the dwellings:
    a. 361 McLean Road;
    b. 181A Putiki Road; and
    c. 42 Orini Road.

    Advice Note: 'Operational' is defined as the operation of the solar farm where electricity is being generated and provided to the national grid at the rated capacity of the site.

27. A report detailing the monitoring outcome under condition 26 must be provided to the Whakatāne District Council within twenty (20) working days.

28. If the noise limits of condition 24 are exceeded at the compliance locations in condition 26, the consent holder must implement additional attenuation options and repeat the monitoring and reporting required under conditions 26 and 27, where practicable, within the same summer period (being October to March) but no later than the following summer period (being October to March).

29. That noise from construction activities must not, as far as practicable, exceed the limits recommended in, and be measured and assessed under, New Zealand Standard NZS 6803: 1999 "Acoustics – Construction Noise". However, where piling noise may meet the construction noise limit, the piling locations where exceedances may occur must be identified, and the duration of works in these areas must be determined. Piling works in these areas must be managed through the CNVMP required by condition 4(b).

30. Vibration from construction activities must at all times comply with the vibration limits set out in German Standard DIN 4150:2016 Vibrations in buildings – Part 3: Effects on structures.

31. If a Battery Energy Storage System (BESS) system will be installed onsite, written notice must be provided to the Whakatāne District Council Manager Resource Consents demonstrating that condition 32(i) has been met or conditions 32(ii) and 33 have been satisfied.

32. If a BESS system will be installed on-site, then the detailed design of the BESS system must the following requirements must be met before installation:

a. BESS inverters must be non-tonal when assessed objectively under *NZS 6802:2008 Acoustics – Environmental Noise*. This must be confirmed through an acoustic design report from the manufacturer showing noise emissions in 1/3 octaves when operating at a high inverter load. All non-tonal BESS inverters must have their highest noise ends facing east.

OR

b. If non-tonal inverters are not practicable to select/use, the detailed BESS design must include a noise mitigation attenuation design review. This design review must consider selection, orientation, acoustic screening (through barriers), enclosure, ventilation noise mitigation or other measures as appropriate. The attenuation design must minimise or eliminate tonality (as defined and measured by NZS 6802:2008) from the BESS inverters where it is practicable. The noise mitigation measures must comply with condition 24 above and aim to meet the noise levels set out for "Scenario 3" of the Marshall Day Acoustics report referred to in condition 1(c) where practicable. The attenuation design may require commissioning works on-site during construction to suitably refine and improve the attenuation design.

33. A suitably qualified acoustic consultant must complete the BESS detailed design review to ensure that condition 32(ii) above is met. This must be peer-reviewed by an independent, suitably qualified acoustic consultant recognised by the Whakatāne District Council. Documentation from both parties showing how condition 32(ii) will be met must be provided for approval by the Manager of Resource Consents.

34. If the BESS is installed after the noise monitoring and compliance certification required under condition 26, the requirements of conditions 26 and 27 must be repeated during the summer season (from October to March) following the installation of the BESS. Condition 28 applies if the noise limits in condition 24 are exceeded following the installation of the BESS.

Landscaping Conditions

35. A minimum of 8 weeks before the commencement of the activity authorised by this consent (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing), the consent holder must submit to the Whakatāne District Council for approval by the Manager Resource Consents a final Mitigation Planting Plan following the Updated Mitigation Planting Plan and Planting List referred to in condition (1)(f)(ii) and sufficient to meet this and related conditions about the Mitigation Planting Plan. The final Mitigation Planting Plan must include the following:
    a. A timeframe for planting that achieves the timeframes in condition 36 and prioritises planting along boundaries closest to neighbouring dwellings;
    b. A maintenance plan must include watering, weed control, mulching and replacement planting of dead, diseased, and dying plants. All dead or diseased plants must be replaced in the next planting season with new plantings appropriate to the planting area;
    c. A plant species list which must consist of predominantly native locally sourced species and is in response to further inspection of site conditions to ensure the appropriate mix of species is used in each planting area (wet areas, for example);
    d. The source, grade, and size at the time of planting and the number of plants; and
    e. The plant spacing and how it will achieve screening as soon as practicable.

36. The final Mitigation Planting Plan approved under condition 35 must be commenced within the nearest planting season following the commencement of construction (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing) and completed before operation, noting that planting will be undertaken during the spring or autumn planting seasons.

37. The landscaping planting must be maintained following the final Mitigation Planting Plan approved under condition 35 for the duration of this consent.

38. Any buildings (excluding existing buildings, solar panel structures and the BESS) must have a maximum reflectivity value of 30%.

Site Decommissioning Conditions

39. That a minimum of four weeks before the commencement of the operation of the solar farm activity, the consent holder must submit to the Whakatāne District Council a draft Site Decommissioning Plan for approval by the Manager Resource Consents.

40. The draft Site Decommissioning Plan must be prepared by a suitably qualified and experienced person and meet the following objectives:
    a. Decommissioning of the solar panels and associated infrastructure in a manner that complies with all legislative requirements;
    b. Leaving the land in a condition that is safe and suitable for rural land use and
    c. Ensuring the components and infrastructure are disposed of to maximise re-use and recycling. For any parts that cannot be reused or recycled, ensuring that they are disposed of in an environmentally responsible way following industry best practices.

41. The draft Site Decommissioning Plan must include the following:
    a. Methodology of site decommissioning.
    b. Likely timeframe for decommissioning of the site.
    c. Management of effects arising from the decommissioning of the site, including providing notice to adjoining property owners.

42. A minimum of 8 weeks before the expiry of this consent, or before the cessation of the activity authorised by this consent, whichever is earlier, a final Site Decommissioning Plan must be submitted to the Whakatāne District Council for certification by the Manager Resource Consents, which fulfils the requirements of conditions 40 and 41.

43. The site decommission works must be completed in accordance with the Site Decommissioning Plan certified under condition 42.

44. The consent holder must notify the Manager Resource Consents, Whakatāne District Council, at least ten (10) working days before completion of the decommissioning to allow Council staff to conduct site inspections to determine compliance with the certified Site Decommissioning Plan.

Timeframe and Review

45. Under Sections 128 and 129 of the Resource Management Act 1991, the Whakatāne District Council may serve notice on the consent holder of its intention to review the conditions of this resource consent, to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage including any unexpected increase in stormwater generated by the activity causing increases in flooding of adjacent properties. The Council reserves the right to review the conditions of consent relating to rural character, landscape mitigation, amenity values, off-site externalities

and construction activities. The Council may initiate a review six months after the activity has commenced and annually after that.

46. This consent expires 37 years from the date of granting.

Monitoring/Administration

47. Under section 36(1)(c) of the Resource Management Act 1991, the Consent Holder must pay the Whakatāne District Council all actual and reasonable costs associated with monitoring this consent, including but not limited to costs associated with
    a. Site visits;
    b. Review and certification of management plans;
    c. Monitoring of works; and
    d. Administration.

Advice notes:

i. If you do not understand any conditions of this consent, please contact the Council's Planning Department for clarification before starting work.

ii. Under Section 125 of the RMA, this resource consent will lapse in five years, unless it is given effect to within that time.

iii. By Section 127(1) of the RMA, the consent holder may apply to the consent authority for a change or cancellation of any condition of this consent.

iv. It is the consent holder's responsibility to comply with any conditions imposed on this resource consents before and during (as applicable) exercising this resource consent.

v. Stormwater will need to be disposed of within the site unless the discharge is a permitted activity. The applicant should ensure they comply with Rule DW R20 (Discharge of Stormwater to Surface Water) and / or Rule DW R22 (Discharge of Stormwater to Land Soakage) of the RNRP (formerly Rules 30 and 31 respectively of the RWLP). Otherwise, resource consent from the BOPRC is required.

vi. Rule 18.2.3.2 of the District Plan requires minimum platform levels for habitable and commercial buildings to be constructed to achieve the 1% AEP flood level plus applicable freeboard as per NZS4404:2010.

vii. If, during earthworks, an archaeological find is made or koiwi uncovered, work must stop immediately, Ngati Awa must be advised and an appropriate course of action must be determined in accordance with the Heritage New Zealand Pouhere Taonga Act 2014 and the Ngati Awa Discovery Protocols.

viii. No work may be undertaken until the relevant regional consents and Bylaw approvals have been obtained. Before earthworks commence the following will need to be obtained from the Bay of Plenty Regional Council (BOPRC):

- A consent for earthworks under Rule LM R4 of the Bay of Plenty Regional Natural Resources Plan;
- a Flood Protection and Drainage Bylaws Authority for any infrastructure placed outside the reduced setbacks from the BOPRC-managed drains and assets (stopbanks) that have already been agreed with BOPRC.

Attachment 4 - 7 November 2023 Updated Planting Mitigation Planting Plan

Property boundary

ID1
361 McLean Rd
(Henderson)

REIDS CENTRAL CANAL

MCLEAN RD

Work with landowners to determine final location of approximately 70m linear length of advanced grade planting

ID9
42 Orini Rd
(Law)

ID8
41 Orini Rd
(Law)

ID7
11 Orini Rd
(Law)

ORINI RD

WESTERN DRAIN RD

181B Putiki Rd
(Askey)

Planting to ensure a 6m drain set back is retained and access to panels as required

Collector substation all contained within a building

Low residential planting heights as agreed with the residents at 181A Putiki Road

ID23
181A Putiki Rd
(Sutton)

ID24
181 Putiki Rd
(Davies)

PUTIKI RD

ID21
163 Putiki Rd
(Askey)

ID22
151A Putiki Rd
(Askey)

PUTIKI RD

ID20
241 Putiki Rd
(Langdon)

ID19
255 Putiki Rd
(Langdon)

KEY:

- RESIDENTIAL SCREEN
- ROAD SCREEN
- TALL SHELTERBELT
- AUGMENTED HEDGE
- LOW RESIDENTIAL PLANTING
- RESIDENTIAL SCREEN - ADVANCED GRADE
- FENCE LINE
- PROPERTY LINE
- PROPERTY ID REFERENCE IN APPLICATION LVEA TABLE 5.1 *VISUAL EFFECTS FROM PRIVATE LOCATIONS*

Boffa Miskell

www.boffamiskell.co.nz

0 300m

1:10,000 @ A3

MCLEAN ROAD SOLAR FARM

Mitigation Planting Plan

Date: 07 November 2023 Revision: J

Plan prepared for Helios Energy by Boffa Miskell Limited

Project Manager: Bec.Ramsay@boffamiskell.co.nz | Drawn: SFo | Checked: BRa

Figure 8

MCLEAN SOLAR FARM - PLANT LIST TO SCREEN SOLAR DEVELOPMENT							
Botanical Name	**Common name**	**Grade (L)**	**Height at 5 years (m)**	**Mature height (m)**	**Native/Exotic**	**Width (m)**	**Spacing (m)**
RESIDENTIAL SCREEN							
Austroderia fulvida	Toe toe	1.5	3	3.5	N	1.5	1.5
Cordyline australis	Ti kouka	1.5	4	10	N	2	6
Leptospermum scoparium	Manuka	1.5	2	4	N	3	2
Olearia traversii	Chatham Is. Akeake	1.5	3	5	N	2.5	2
Phormium tenax	Harakeke	1.5	2	3	N	2	2
Pittosporum tenuifolium	Kohuhu	1.5	3	6	N	3	3
ROAD SCREEN							
Austroderia fulvida	Toe toe	1.5	3	3.5	N	1.5	1.5
Cordyline australis	Ti kouka	1.5	4	10	N	2	6
Leptospermum scoparium	Manuka	1.5	2	4	N	3	2
Phormium tenax	Harakeke	1.5	2	3	N	2	2
Pittosporum tenuifolium	NZ pittosporum	1.5	3	6	N	2	1.8
Veronica stricta	Koromiko	1.5	2	2	N	1	1
TALL SHELTERBELT							
Alectryon excelsus	Titoki	1.5	3	6	N	4	4
Dodonaea viscosa	Green Ake Ake	1.5	4	7	N	2.5	3
Eucalyptus 'Baby Blue'	Blue Ornamental Eucalyptus	1.5	4	8	E	3	3
Kunzea ericoides	Kanuka	1.5	3	8	N	3	2.5
Melicytus chathamicus	Chatham Island Mahoe	1.5	3	6	N	3	3
Melicytus ramiflorus	Mahoe	1.5	3	8	N	2.5	3
Myrsine salicina	Toro	1.5	4	8	N	4	4
Pittosporum crassifolium	Karo	1.5	3	6	N	4	5
Pittosporum tenuifolium	Kohuhu	1.5	3	6	N	3	2.5
Schefflera digitata	Pate	1.5	5	8	N	4	3
LOW RESIDENTIAL PLANTING							
Anemanthele lessoniana	Gossamer Grass	1	1	1	N	1	1
Astelia banksii	Wharawhara	1	1	1	N	1	1
Astelia fragrans	Kakaha	1	1	1	N	1	1
Austroderia fulvida	Toe toe	1.5	3	1.5	N	1.5	3
Carex testacea	Sedge	1	0.6	0.6	N	0.6	0.6
Cyperus ustulatus	Giant Umbrella Sedge	1.5	1	1	N	1	1
Euphorbia glauca	Shore Spurge	1.5	1	1	N	2	2
Manuka spp. Low growing (bee friendly)	e.g. Manuka Crimson Glory	1	1	1	N	1	0.6
Hebe stricta	Koromiko	1	1.5	2	N	1	1
Phormium cookianum	Mountain Flax	1	1.5	1.5	N	1	1
RESIDENTIAL SCREEN - ADVANCED GRADE							
Choose species from the full plant list, to achieve 1.5m screening at time of planting as a mixed species hedge. Species mix to be confirmed with landowners. Some suggested species listed below.							
Species from residential screen mix above at standard planting grades to be used to complete the 5m wide mixed hedge screening.							
Botanical Name	**Common name**	**Grade (L)**	**Height at planting (m)**	**Mature height (m)**	**Native/Exotic**	**Width (m)**	**Spacing (m)**
Leptospermum scoparium	Manuka	45L +	1.5	4	N	3	2
Olearia traversii	Chatham Is. Akeake	45L +	1.5	5	N	2.5	2
Pittosporum tenuifolium	Kohuhu	45L +	1.5	6	N	3	3

PLANTING DESCRIPTIONS

Planting will be established in line with the setbacks agreed with Bay of Plenty Regional Council from Regional Council Managed Drains. For the avoidance of doubt the planting plan has been design to incorporate the following:

- At least a 6m setback from the seepage trenches on the landward toe of the Reids Central Canal
- 6m setback from Putiki Drain (both sides)
- 12m setback from Western Drain
- 6m setback along both sides of Section 72 Outlet
- 6m setback from Bishops Outlet

Trees taller than 8m were omitted from the list to reduce the shadows cast on the solar development. Planting to be a minimum of 5m wide, unless specified.

Plants are to be arranged in rows to fit the planting zone width but the rows should be staggered or offset from each other when planted to ensure there is an overlap. Mixed planting arranged randomly can also be accepted if a mixture of species is used.

Pest management, maintenance and irrigation would need to be considered.

Provide an opportunity for the landowners (361 McLean Rd, 181,181A, 181B and 255 Putiki Rd, 41 & 42 Orini Rd) to finalise species from the relevant planting type list provided. Plant choices will be subject to planting site walkover to ensure suitable plants are chosen for the ground conditions

Residential screen

5-6m high native planting to screen solar development but allow distant views from residences. The distance of the house from the screen will dictate how much of the distant views are maintained. A mix of species have been included to enhance biodiversity values where vegetation was removed as part of the development.

Road screen

Low species at the front with higher species at the back to create a graded screen to solar development. Cabbage trees (Ti kouka) are to be spaced out and not planted in groups of more than 3 to reduce shading when they grow to their mature height.

Tall shelterbelt

Shrubby tree species to fit in with the existing hedgerow character and rural amenity. Trees will only reach a mature height of 8m in optimal conditions so are more likely to be in the 6-8m height range. These could be trimmed to 6m in areas as required to reduce shading on the solar development. The same species out of the options can be chosen to create a consistent hedge which will fit within landscape character and rural amenity.

Low residential planting

Low shrub species with a mature height of no more than 1.5m planted in staggered rows to ensure views from residential properties are maintained over the solar development. Select taller species can be chosen from the residential screen list (being harakeke, manuka and toe toe.)

Augmented hedge

Match species to existing hedge on site, filling in the gaps. Species selection in agreement with the residential landowner required to provide adequate screening (subject to availability).

Residential screen - Advanced grade

Species mix subject to availability and confirmation with landowners from species list, to achieve a mixed hedge. Ground conditions to be inspected to ensure planting mix is suitable. Plants to be a minimum of 1.5m high at the time of planting to achieve instant screening. Mature plant height at a maximum of 6m tall.