Ministry for the Environment
Manatū Mō Te Taiao

New Zealand Government

Application for a project to be referred to an expert consenting panel

(Pursuant to Section 20 of the COVID-19 Recovery (Fast-track Consenting) Act 2020)

For office use only:

Project name: Tauhei Farm Solar Project
Application number: PJ-0000768
Date received: 05/10/2021

This form must be used by applicants making a request to the responsible Minister(s) for a project to be referred to an expert consenting panel under the COVID-19 Recovery (Fast-track Consenting) Act 2020.

All legislative references relate to the COVID-19 Recovery (Fast-track Consenting) Act 2020 (the Act), unless stated otherwise.

The information requirements for making an application are described in Section 20(3) of the Act. Your application must be made in this approved form and contain all of the required information. If these requirements are not met, the Minister(s) may decline your application due to insufficient information.

Section 20(2)(b) of the Act specifies that the application needs only to provide a general level of detail, sufficient to inform the Minister's decision on the application, as opposed to the level of detail provided to an expert consenting panel deciding applications for resource consents or notices of requirement for designations.

We recommend you discuss your application and the information requirements with the Ministry for the Environment (the Ministry) before the request is lodged. Please contact the Ministry via email: fasttrackconsenting@mfe.govt.nz

The Ministry has also prepared Fast-track guidance to help applicants prepare applications for projects to be referred.

Part I: Applicant

Applicant details

Person or entity making the request: Harmony Energy

Contact person: Pete Grogan

Job title: Managing Director - Harmony Energy NZ

s 9(2)(a)

s 9(2)(a)

Postal address:

Conyngham Hall Business Centre

Bond End

Knaresborough

HG5 9AY

Address for service (if different from above)

Organisation: 4Sight Consulting Limited

Contact person: Christina Walker

Job title: Senior Planning and Policy Consultant

s 9(2)(a)

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s 9(2)(a)

Postal address:

PO BOX 911 310

Victoria Street West

Auckland 1142

(Please note the system would not accept this address on the first page of this form - however, this is the correct postal address)

Part II: Project location

The application: does not relate to the coastal marine area

If the application relates to the coastal marine area wholly or in part, references to the Minister in this form should be read as the Minister for the Environment and Minister of Conservation.

Site address / location:

A cadastral map and/or aerial imagery to clearly show the project location will help.

(see attached location/boundary plan)

The site extends from Stanley Road South in the east across to O'Donoghue Road, then from O'Donoghue Road west to Mikkleson Road in Te Aroha West. A site map is attached and the various legal descriptions are included below. Section 15 Blk XI Aroha SD Matamata-Piako District, Lot 1 DP 30983 Matamata-Piako District, Lot 2 DP 30983 Matamata-Piako District, Part Lot 2 DP 12478 Matamata-Piako District, Part Lot 1 DP 10272 Matamata-Piako District, Lot 2 DP 346931

Legal description(s):

A current copy of the relevant Record(s) of Title will help.

See above

Registered legal land owner(s):

Tauhei Farms Limited

Detail the nature of the applicant's legal interest (if any) in the land on which the project will occur, including a statement of how that affects the applicant's ability to undertake the work that is required for the project:

Lease agreement with owner

Part III: Project details

Description

Project name: Tauhei Farm Solar Project

Project summary:

Please provide a brief summary (no more than 2-3 lines) of the proposed project.

Establish an approximately 185MWp (Megawatt peak) solar farm located at Tauhei Farm, Te Aroha West. The activity is a significant scale renewable energy project and would be connected directly to the national electricity grid. The grid connection is to be located at the junction of Mikkelsen and McCabe Road. The overall site is split in two by O'Donoghue Road.

Project details:

Please provide details of the proposed project, its purpose, objectives and the activities it involves, noting that Section 20(2)(b) of the Act specifies that the application needs only to provide a general level of detail.

The preliminary design includes the following elements:

1. The installation of 329,004 monocrystalline solar panels with a total capacity of 185.887 MWp. The panels are 2.256m x 1.113m x 35mm. Panels will be mounted on a total of 6,086 full length arrays (being 29.44m long) and 482 half length (being 14.97m long) arrays on pole driven mounting structures. Each row of panel arrays will be a minimum of 3m from the back edge of the row in front (i.e. to the north). The panels will be mounted 800mm to 1m above ground level at the lower end and 2.5 to 2.7m at the higher end, with a mounting angle of 20 degrees. Cables will be mounted on the rear of the panels. The inclusion of ancillary infrastructure to convert electricity generated into a format compatible with Transpower's transmission system including: - Two substation buildings that resemble containers mounted on compacted soil and flagstone stone. The substation buildings will have dimensions of approximately 12m x 4.2m and a height of 3.95m above ground level.- One MV (medium voltage) power station with dimensions of approximately 6m x 2.4m and a height above ground level of 3.5m.- 49 container-like structures, being approximately 2.4m wide, 2.7m high and 6m long housing electrical equipment (inverter, transformer, switchgear).- 1 container-like structure, being 2.4m wide, 2.7m high and 6m long, housing spare parts.- Deer-type fencing around the perimeter of the solar farm.- Infra-red cameras located around the perimeter of the site.3. An underground connection to the national grid, which will require underground cabling within the road reserve of Mikkelsen Road, linking to the existing substation (approximately 2km).4. An underground cable under O'Donoghue Road linking the two parts of the solar farm site.5. Provision for ongoing farming of the land, specifically, sheep grazing.6. The restoration / creation of approximately 7.2ha of wetland area, with boardwalks for educational purposes.7. The restoration of approximately 1.8ha of riparian areas8. Biodiversity corridors and boundary planting over an area of approximately 12ha.9. To facilitate development of the site, some trenching (earthworks) for cabling will be required. The exact extent of this is not yet known but will be confirmed through detailed design. Site levelling will not be required as poles are driven and can be height adjusted.10. Occasional educational visits to the site from school children/students and community groups to learn about solar energy and biodiversity through tours of the site and wetland areas.

Preliminary layout plans, elevations and ecological enhancement plans are attached to this application.

Where applicable, describe the staging of the project, including the nature and timing of the staging:
N/A

Consents / approvals required

Relevant local authorities: Matamata-Piako District Council

Resource consent(s) / designation required:

Land-use consent

Relevant zoning, overlays and other features:

Please provide details of the zoning, overlays and other features identified in the relevant plan(s) that relate to the project location.

Legal description(s)	Relevant plan	Zone	Overlays	Other features
Entire Site	Matamata-Piako District Plan	Rural Zone	N/A	Heritage building located outside the site, to the south-east (old dairy factory)

Rule(s) consent is required under and activity status:

Please provide details of all rules consent is required under. Please note that Section 18(3)(a) of the Act details that the project **must not include** an activity that is described as a prohibited activity in the Resource Management Act 1991, regulations made under that Act (including a national environmental standard), or a plan or proposed plan.

Relevant plan / standard	Relevant rule / regulation	Reason for consent	Activity status	Location of proposed activity
Waikato Regional Plan	4.2.18.1 – Discretionary Activity Rule – Maintaining Access for Maintenance Purposes	Any planting or fencing within 15m of an artificial water course [i.e., drain] that is administered by WRC is a Discretionary Activity. The proposal provides for riparian planting alongside drains administered by Waikato Regional Council. Preliminary discussions with Council have indicated that they would be supportive of planting of drains in a manner that still allows for maintenance.	Discretionary	Adjacent to Waikato Regional Council administered drains
Matamata-Piako District Plan	8.3.1.5 – other renewable energy generating facilities	Renewable Energy Generating Facilities that are not otherwise	Discretionary	Entire site

		provided for are a Discretionary Activity.		
Matamata-Piako District Plan	8.2.1.1 - Underground electrical cables and ancillary electrical equipment	There will be underground cabling associated with the proposal.	Permitted	Entire site and external grid connection cable
Matamata-Piako District Plan	8.2.1.8 - Single transformers and associated switching gear and ancillary electrical equipment conveying electricity at a voltage of up to and including 11kV not exceeding a gross floor area of 4m2 and a height of 2m.	There is likely to be some transformers, switching gear and ancillary electrical equipment that falls within this rule. This will be confirmed at the time of detailed design.	Permitted	Entire site
Matamata-Piako District Plan	8.2.1.9 – New and extensions to existing transformers, substations, and switching stations conveying electricity at a voltage up to and including 66kV and ancillary buildings (not otherwise provided for in Activity Table 8.2.1	There is likely to be some transformers, switching gear and ancillary electrical equipment that falls within this rule. This will be confirmed at the time of detailed design.	Discretionary	Entire site
Matamata-Piako District Plan	8.2.1.10 New and extensions to existing substations and switching stations conveying electricity at a voltage including and in excess of 110kV and ancillary buildings.	There is likely to be some transformers, switching gear and ancillary electrical equipment that falls within this rule. This will be confirmed at the time of detailed design.	Discretionary	Entire site
Matamata-Piako District Plan	9.1.2(3)(3.2) An existing vehicle crossing that changes in character, scale, or intensity of use, meeting the performance standards in 9.1.2(iv)(a)(i)–(iv).	Compliance is anticipated for Tauhei Solar	Permitted	Vehicle Entrance
Matamata-Piako District Plan	Educational Facilities	Educational Facilities are defined as “land or buildings used to provide regular instruction or training …” Although educational trips are anticipated to be occasional rather than ‘regular’ this rule is conservatively applied.	Discretionary	Entire Site

Resource consent applications already made, or notices of requirement already lodged, on the same or a similar project:

Please provide details of the applications and notices, and any decisions made on them. Schedule 6 clause 28(3) of the COVID-19 Recovery (Fast-track Consenting) Act 2020 details that a person who has lodged an application for a resource consent or a notice of requirement under the Resource Management Act 1991, in relation to a listed project or a referred project, must withdraw that application or notice of requirement before lodging a consent application or notice of requirement with an expert consenting panel under this Act for the same, or substantially the same, activity.

There are no current or previous resource consents or notices of requirements for this proposal.

Resource consent(s) / Designation required for the project by someone other than the applicant, including details on whether these have been obtained:

There are no designations on the Site.

Other legal authorisations (other than contractual) required to begin the project (eg, authorities under the Heritage New Zealand Pouhere Taonga Act 2014 or concessions under the Conservation Act 1987), including details on whether these have been obtained:

N/A

Construction readiness

If the resource consent(s) are granted, and/or notice of requirement is confirmed, detail when you anticipate construction activities will begin, and be completed:

Please provide a high-level timeline outlining key milestones, e.g. detailed design, procurement, funding, site works commencement and completion.

The proposal has funding in place and will proceed as soon as consents are obtained.

Part IV: Consultation

Government ministries and departments

Detail all consultation undertaken with relevant government ministries and departments:

N/A

Local authorities

Detail all consultation undertaken with relevant local authorities:

- Matamata-Piako District Council (MPDC)
- Waikato Regional Council

Other persons/parties

Detail all other persons or parties you consider are likely to be affected by the project:

- Hauraki Collective
- Ngaati Whanaunga
- Ngāti Tai ki Tāmaki
- Ngāti Pūkenga
- Waikato Tainui
- Ngāti Tara Tokanui

- Ngāti Tamaterā
- Ngāti Hako
- Ngāti Hei
- Ngāti Rāhiri Tumutumu
- Ngāti Hauā
- Ngāti Raukawa
- Ngāti Paoa

Detail all consultation undertaken with the above persons or parties:

Matamata-Piako District Council (MPDC) - A pre-application meeting was held with MPDC (Nathan Sutherland, Team Leader – Resource Consents), the outcomes/matters of discussion as follows:Will require some consideration of construction traffic and where possible avoidance of local sensitivitiesWill require Landscape and Visual AssessmentNo specific rules within the District Plan that relate to solar projects on this scale, but can apply some of the assessment criteria that relate to wind farmsLikely to have little impact once establishedNeed to consider productivity of the land

Waikato Regional Council - Some preliminary discussions with Alicia Williams, Senior Environmental Officer – Ecology regarding planting along the drains. Discussions indicate that Waikato Regional Council are generally supportive of planting along drains as a means of improving water quality and reducing maintenance requirements. Additional discussions on this matter will be undertaken.

Iwi - Consultation has been undertaken in accordance with a consultation strategy, which included:Initial contact via email with follow up phone calls were no response received and/or phone numbers were known.Invitation to online meeting to introduce the projectSite meeting with interested iwi to introduce the project and provide an opportunity for iwi to share their values and aspirations for the areaDesign led approach to the proposal based on iwi input and technical adviceOnline meeting for presentation of initial design and ecology reportRequest for Cultural Values Assessments

Of the iwi contacted, four representatives attended the initial online meeting held on the 24/02/2021, being: Norm Hill (representing Ngāti Haua and Rāhiri Tumutumu), Mako Hikitāpua (representing Ngaati Whanaunga) and Maria (representing Ngāti Raukawa). Norm Hill and Mako Hikitāpua also attended the site meeting, the follow up online meeting and have agreed to provide Cultural Values Assessments. The feedback from both representatives, in relation to the design, was very positive, particularly as to the extent of ecological restoration proposed. A cultural values assessment from both parties (either combined or separate) will be included in any application to the EPA.

The following parties have declined the invitation to be involved in the project: Ngāti Pūkenga, Ngāti Raukawa, Ngāti Poa, Ngāti Hei, Hauraki Collective (deferred to other parties). No response or no conclusive response has been provided from the following parties: Ngāti tai ki Tāmaki, Waikato Tainui, Ngāti Tara Tokanui, Ngāti Tamaterā, Ngāti Hako.

A full copy of the consultation strategy and consultation summary can be made available on request.

Part V: Iwi authorities and Treaty settlements

For help with identifying relevant iwi authorities, you may wish to refer to Te Kāhui Māngai – Directory of Iwi and Māori Organisations.

Iwi authorities and Treaty settlement entities

Detail all consultation undertaken with Iwi authorities whose area of interest includes the area in which the project will occur:

Iwi authority	Consultation undertaken
Waikato Tainui	

Detail all consultation undertaken with Treaty settlement entities whose area of interest includes the area in which the project will occur:

Treaty settlement entity	Consultation undertaken

N/A	

Treaty settlements

Treaty settlements that apply to the geographical location of the project, and a summary of the relevant principles and provisions in those settlements, including any statutory acknowledgement areas:

Section 18(3)(b) of the Act details that the project **must not include** an activity that will occur on land returned under a Treaty settlement where that activity has not been agreed to in writing by the relevant land owner.

N/A

Part VI: Marine and Coastal Area (Takutai Moana) Act 2011

Customary marine title areas

Customary marine title areas under the Marine and Coastal Area (Takutai Moana) Act 2011 that apply to the location of the project:

Section 18(3)(c) of the Act details that the project **must not include** an activity that will occur in a customary marine title area where that activity has not been agreed to in writing by the holder of the relevant customary marine title order.

N/A

Protected customary rights areas

Protected customary rights areas under the Marine and Coastal Area (Takutai Moana) Act 2011 that apply to the location of the project:

Section 18(3)(d) of the Act details that the project **must not include** an activity that will occur in a protected customary rights area and have a more than minor adverse effect on the exercise of the protected customary right, where that activity has not been agreed to in writing by the holder of the relevant protected customary rights recognition order.

The site is not subject to any protected customary rights areas under the Marine and Coastal Area (Takutai Moana) Act 2011.

Part VII: Adverse effects

Description of the anticipated and known adverse effects of the project on the environment, including greenhouse gas emissions:

In considering whether a project will help to achieve the purpose of the Act, the Minister may have regard to, under Section 19(e) of the Act, whether there is potential for the project to have significant adverse environmental effects. Please provide details on both the nature and scale of the anticipated and known adverse effects, noting that Section 20(2)(b) of the Act specifies that the application need only provide a general level of detail.

Construction Effects: Traffic movements: Construction involves the transport of the mounting poles, and later panels and ancillary infrastructure, to the site in heavy vehicles. Such heavy vehicles are similar in size to that of dairy tankers and materials will be delivered to site incrementally (i.e. one to two truckloads at a time over a period of approximately 15-18 months). Likewise, some heavy machinery (e.g. post rammer) will delivered to site, but will remain there for the duration of works. Given the incremental nature of heavy vehicle movements it is not anticipated that the additional truck movements will result in any adverse effects on traffic safety or functionality of the surrounding road network.Noise and Vibration: During construction, posts are driven into the ground using a post rammer. Once the poles are in situ, the solar panels are screwed in place. Ancillary infrastructure will either be constructed on site or pre-fabricated and transported to the site. Cabling will then be installed, with trenching required. It is anticipated that noise and vibration associated with all construction activities will comply with the relevant New Zealand standards. Further, a condition of consent requiring a construction management plan is

anticipated, this will further reduce and manage effects.Overall: Given the rural nature of the site, the intermittent nature of heavy vehicle movements and anticipated compliance with noise and vibration standards, any adverse effects associated with construction are considered likely to be acceptable.

Glint and Glare: *A Solar Photovoltaic Glint and Glare Study* has been provided by Pagerpower and can be provided on request. The report outlines geometric reflection calculations to model where glint and glare effects will occur and then considers how screening will limit effects on receptors. For the purposes of the report, glint is defined as *a momentary flash of bright light typically received by moving receptors or from moving reflectors and glare is defined as a continuous source of bright light typically received by static receptors or from large reflective surfaces'.*The report primarily considers effects on road users, particularly on users of Stanley Road, Alexandra Road, and O'Donoghue Road and on dwelling receptors within 1km of the site. In regard to road users, the report includes modelling of 25 receptor points at a height of 1.5m above ground level, representing the typical eye height for road users. The modelling points have been located over 2.48km of Stanley Road and Alexandra Road which are the two-lane roads around the site. The modelling indicates that at locations 1, 2, 6-8 and 17-24 there is existing vegetation/screening that would remove all views of solar panel reflections. At road location 25, no reflection is geometrically possible and at locations 3-5 and 9-15 intermittent views of solar reflection is conservatively predicted. These reflections would occur outside the road user's field of vision (50 degrees either side of straight ahead) and the resulting impact is considered low with no mitigation required. Despite this finding, the proposed boundary planting will provide mitigation, thereby reducing the potential for impacts even further.For dwellings within 1km of the site, a height of 1.8m above ground level is used to simulate the typical viewing height of a ground floor window. A total of 46 representative dwelling receptor locations were identified for assessment, with the findings as follows:- At 13 of the dwelling receptors, solar reflections may be partially visible at a minimum distance of 270m. Based on the desk top analysis, the significance of these reflections is considered moderate, and mitigation is considered appropriate.- At all remaining dwellings, solar reflections will be screened by existing buildings and vegetation.In considering the proposed planting plan the report finds that screening will be sufficient to remove the reflecting solar panel area from view of all dwellings once planting is established (3-5 years years). In the interim, the report recommends that temporary screening (an opaque fence) be included. This will be considered in the final application to the EPA. In summary it is considered that adverse effects associated with glint and glare can be managed so as to avoid any significant effects on road users or dwellings within the vicinity of the site.

Ecology Effects

An ecological assessment has been prepared for Tauhei Solar Farm and can be provided on request. A summary of that report is included below. The report relates to the construction, operation and maintenance of the solar farm. It details the findings of an ecological assessment undertaken of the vegetation and habitats within the site, including an assessment of the potential effects of the proposal. The report also includes a discussion of the proposed restoration and enhancement measures at the site. Restoration and amenity planting measures were considered in collaboration with local Iwi who have provided valuable information on the restoration planting approach. The findings of the ecological assessment are addressed in greater detail within the sections below.

Ecological Values:

Ecological significance: Following the site visit and associated fauna surveys, the site has been assessed as 'Locally Significant'. While threatened species have been recorded at the site, the site is not of considerable importance for pekapeka (bats). And while a small area of an under-represented ecosystem is present on site, this wetland area is highly degraded and not a representative example within the Waikato Region.

Representativeness: The vegetation and habitat of indigenous fauna onsite is considered to have a 'Negligible' value regarding ecological representativeness. Rarity/Distinctiveness: The species, habitat, vegetation and ecosystems on site has a 'Low' value regarding ecological rarity and/or distinctiveness.

Diversity and Pattern: Very little natural diversity is present within this site with low biodiversity value. Due to the modified, exotic nature of the site, it is considered to have a 'Negligible' value with respect to ecological diversity and pattern.Ecological

Context: the habitat is of 'Negligible' value regarding ecological context.

Overall Value: Ecological values present on site have been assessed as 'Low' based on the highly modified nature of the site comprising predominantly grazed pasture presenting predominantly exotic species.

Magnitude of Effects:

Sediment discharges associated with development: earthworks associated with the proposed solar farm construction are expected to be limited in extent. Provided that appropriate sediment and erosion control measures are adhered to during the construction phase and earthworks are undertaken during the earthworks season, the low gradient nature of the surrounding catchment and the scale of the works will mean the scale and temporal effects of these risks to receiving environments are expected to be **'Low'.**Stormwater runoff from access tracks and impervious surfaces: As

the solar panels themselves are built on steel frames, rainwater will flow off the panels and therefore still reach the ground. Therefore, impermeable surfaces will be restricted the areas containing ancillary equipment buildings/containers and the poles themselves. The remainder of the site remains in pasture suitable for sheep grazing. Assuming adherence to best practice stormwater management, incorporated via conditions of consent, the effects of increased stormwater runoff are considered to be '**Low'.**

Lighting associated with on-site structures: No visible lights are generally present on a solar farm (Harmony Energy 2021), though some security lighting may be required around associated infrastructure at the site. To minimise any adverse effects on threatened pekapeka (bats) utilising the site for foraging, the following matters can be addressed as conditions of consent for lighting design:- lighting limited to specific purposes (security lighting for infrastructure buildings);- use of shielding to avoid upward light spill;- limit of 0.3 lux at the infrastructure perimeter at any height;- light temperature of no more than 2700K;- use of non-reflective, dark surfaces; and- use of adaptive controls such as motion sensors where feasible.It is expected that, taking these matters into account, the potential adverse effects on pekapeka and other nocturnal fauna is considered to be 'Low'.

Noise: Solar panels are considered noise-free with only the electrical inverters producing a slight hum (Harmony Energy 2021). The effect of potential noise associated with the solar farm on local fauna is considered to be 'Negligible'.

Reflection and glare off solar panels: Solar panels are designed to absorb light and not to reflect it, therefore they pose little risk of glint or glare (Harmony Energy 2021). Effects on local manu (birds) are expected to be '**Negligible**'.

Positive effects: On site enhancement and restoration measures are proposed that will provide positive outcomes associated with the proposed solar farm. These measures include planting the low-lying seepage area towards the west of the property with wetland species that historically would have existed. There will also be riparian planting along the wetted drain west of the seepage area, to increase shading of the watercourse to benefit aquatic biota. Additionally, replacing the exotic hedgerows throughout the site with indigenous species will enhance connectivity and indigenous biodiversity throughout the site. All plantings will be undertaken in collaboration with local iwi to not only enhance local biodiversity, but also cultural values to iwi. Finally, replacing cattle stock with lower-intensity sheep grazing is expected to reduce the pressure on the land and impacts on downstream aquatic ecosystems and water quality through reduced losses of contaminants such as nutrients.

Ecological Enhancement Measures:

Restoration Planting: Proposed restoration areas include wetlands, riparian margins along the wetted drain and corridor replacement planting within existing hedgerows. Plant species recommended for enhancement and restoration are species that would have historically existed in this area. Besides retaining the natural integrity of the site, habitat is created for local fauna. Biodiversity corridors create connectivity to the landscape and fauna habitat.

Existing trees: Several trees within the site are recommended to be retained including a row of tall poplars. These trees have the potential to provide potential roosting habitat for pekapeka.

Weed control: The priority for pest plant (weed) control is to remove those species that have the potential to alter or disturb natural processes in established native vegetation, or to prevent reestablishment of native vegetation. Following initial weed removal, ongoing monitoring would be required.

Pest animal control: Establishing a regular, ongoing animal pest control programme would be beneficial to the long-term recovery of indigenous flora and fauna at the site. Restoration areas should be subject to pest animal control for a minimum timeframe of five years, targeting key animal pest species such as possums, rabbits, rats, and mustelids (ferrets / weasels / stoats). All enhancement areas should be appropriately fenced to prevent grazing stock access.

Conclusion:

The ecological values on this site were assessed as 'Low' based on the highly modified nature of the site comprising predominantly grazed pasture presenting predominantly exotic species. Potential adverse ecological effects associated with the proposed solar farm include effects from construction works, stormwater run-off from newly created structures and impervious surfaces, reflection and glare off solar panels, and lighting and noise associated with on-site infrastructure. The magnitude of effects was assessed as 'Low'. The overall level of effects following the EIANZ EcIA guidelines was identified as 'Very Low'. If some or all of the enhancement opportunities outlined in the EEAR are completed, then the overall ecological impact would result in a 'Net Gain'.

Landscape Effects

A preliminary landscape assessment has been undertaken by Rachel Annan, 4Sight Consulting. A copy of that assessment can be provided on request. The landscape assessment is informed by a site visit and discussions with mana whenua. The assessment notes that a design led approach has been undertaken to the layout of the site, based on the characteristics of the receiving environment. When considering the visual and landscape effects associated with the proposal, the assessment found that:- When viewed from ground level, there will be no one location where the entirety of the solar farm is visible.- When viewed from elevated locations (including walking trails on the Kaimai-

Mamaku Ranges), views will be constrained by vegetation and will occur within the context of a broad landscape vista and at a scale which will also include larger built forms. The solar panels will also be dark in colour and compartmentalised by the internal planting framework. Overall, the assessment finds that the project will not result in any significant adverse landscape effects due to the proposed design approach and will effectively integrate within the landscape setting.

Effects on Productive Land

The solar panels will be pole driven into the ground, leaving the pasture underneath in place. Pasture is naturally retained as water runs off the panels and drains into the soil, and sunlight reaching ground level remains available due to the separation of the panels. This ensures that even while the solar panels are in-situ, the site can continue to be utilised for pastoral farming. Further, the design provides for several large setbacks, where pastoral farming will continue to dominate. However, to avoid damage to the panels that can be caused by cattle, the site will no longer be utilised for the farming of dairy cattle. Rather, the current milking shed and associated infrastructure will be converted for the purposes of dairy sheep farming. The landowner will continue to farm the land for this purpose. At the end of life of the solar panels (approximately 25-35 years), the panels can either be unscrewed and replaced, with the poles remaining in-situ, or the poles can be removed, and the land can be returned solely to pastoral farming. Consequently, any adverse effects on the productive potential of the land are considered to be negligible.

Operational Effects

The operational effects of the proposed solar farm are very limited. Maintenance requirements are minimal as equipment can primarily be monitored remotely. It is anticipated that a technician will visit the site approximately once a week to carry out a physical check of the infrastructure. In the initial stages, additional visits to the site will be required for plant maintenance, including weed control, but restoration areas will be designed so that they become self-sustaining. Additional traffic will also be generated because of ongoing pest control, unless this is carried out by the landowner. Occasionally a bus load of school children or a community group may visit the site to undertake an educational tour of the facility.Overall, it is highly unlikely that an average of more than 10 movements a week will be generated as a result of the solar farm (not including normal farming movements). these movements will be readily absorbed into the surrounding roading network without giving rise to adverse effects.

Noise: The panels themselves do not produce any noise, however there will be an 'electrical hum' from inverters. The noise level produced will be well below the permitted standards and given the nature of the noise (continuous and low level) it is not anticipated that this will result in any discernible effects for neighbouring property owners/occupiers.In addition, the occasional educational site visits may result in a low level of noise, however this is also anticipated to be well below permitted levels and unlikely to result in any adverse effects.

Cultural Effects

As is outlined in the cultural consultation summary, a site meeting was held with iwi early in the project's conceptual phase. Iwi representatives who attended, shared with the project team their values and aspirations for the project. These values have guided the design of the project as is apparent through the extensive ecological enhancement proposed, which provides for:- Riparian planting to improve the quality of the wai;- A large area of wetland to be retired and returned to a state as close as possible to what would have existed prior to human occupation, and extensive planting across the site to provide native habitat;- A design which retains potential bat roosting trees and provides additional roosting habitat;- Restoration planting that provides a network of connected areas both across the site and to adjoining properties;- The use of drive poles that minimise earthworks and the project's lasting footprint on the land; and- Ongoing pest control to improve outcomes for native flora and fauna.

The design approach outlined above has been well received by the iwi representatives who verbally expressed their appreciation for the extent of ecological restoration provided. Cultural Impact/Values Assessments are expected from the two iwi engaged in the project, and the applicant is committed to continued relationship building and engagement. On that basis, any adverse cultural effects arising from the proposal are considered to be less than minor.

Overall Assessment

Overall, the project will result in a very low level of adverse effects, all of which can be readily managed. Conversely, the positive effects arising from the project, including those associated with the proposed ecological restoration, are considered to be significant.

Part VIII: National policy statements and national environmental standards

General assessment of the project in relation to any relevant national policy statement (including the New Zealand Coastal Policy Statement) and national environmental standard:

National Policy Statement for Renewable Electricity Generation 2011

A discussion of the key objectives and policies of the National Policy Statement for Renewable Electricity Generation 2011 is included below:

Objective To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand's electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government's national target for renewable electricity generation.

A. Recognizing the benefits of renewable electricity generation activities

Policy A sets out to ensure decision makers recognise the benefits of renewable electricity generation activities. These benefits include:

1. maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions;
2. maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation;
3. using renewable natural resources rather than finite resources;
4. the reversibility of the adverse effects on the environment of some renewable electricity generation technologies;
5. avoiding reliance on imported fuels for the purposes of generating electricity.

Solar is a natural and inexhaustible source of energy that avoids reliance on imported fuels and reduces greenhouse gas emissions. Solar farms do not currently form part of New Zealand's energy mix on a commercial scale (although it is understood there are several consented / under construction). However, solar farms offer many advantages over other forms of energy generation and their development is a sector that is expected to grow. The proposal will contribute to the diversification of electricity generation in New Zealand and increase the security and capacity of supply. Further, at the completion of the life of the solar farm, all components can be removed and recycled, and the land returned to its current state with no lasting impacts.Overall, the proposal is consistent with the direction provided by the above NPS objective and policy.

B. Acknowledging the practical implications of achieving New Zealand's target for electricity generation from renewable resources

Policy B specifically notes that "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". The proposal provides for a significant electricity generation activity that will generate enough power to meet the electricity requirements for approximately 30,000 Kiwi homes each year. This will be the largest solar farm in New Zealand by a substantial margin and will significantly contribute to the national target for renewable energy (being 90% by 2025). As such, the proposal is consistent with the direction of this policy.

C. Acknowledging the practical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities

Policy C1 states decision makers shall have particular regard to the following matters:

1. a) the need to locate the renewable electricity generation activity where the renewable energy resource is available;
2. b) logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity;
3. 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;

4. d) designing measures which allow operational requirements to complement and provide for mitigation opportunities; and
5. e) adaptive management measures.

Policy C2 highlights that when considering any residual environmental effects of renewable electricity generation activities that cannot be avoided, remedied or mitigated, decision makers shall have regard to offsetting measures or environmental compensation – including measures or compensation which benefit the local environment and community affected. Through a process of site investigation in various areas of the country, Harmony Energy found that Tauhei Farm is an ideal site for solar electricity generation due to its proximity to a nearby grid connection, its flat topography and annual irradiance (the amount of light energy received). The proposal will result in very low levels of adverse effects, all of which can be adequately managed. Nonetheless, the Applicant is proposing significant ecological restoration of the site. As such, the proposal is consistent with the direction of this objective.

Overall Assessment:

The proposal is considered to be consistent with the objectives of the National Policy Statement for Renewable Electricity Generation 2011.

Part IX: Purpose of the Act

Your application must be supported by an explanation how the project will help achieve the purpose of the Act, that is to "urgently promote employment to support New Zealand's recovery from the economic and social impacts of COVID-19 and to support the certainty of ongoing investment across New Zealand, while continuing to promote the sustainable management of natural and physical resources".

In considering whether the project will help to achieve the purpose of the Act, the Minister may have regard to the specific matters referred to below, and any other matter that the Minister considers relevant.

Project's economic benefits and costs for people or industries affected by COVID-19:

Details of the proposal's job creation are set out in the 'Tauhei Farm Solar Project Work Phases and Job Creation' report prepared by GreenEnco Limited. The report provided details and figures for a 100MW project (as was the scope of the proposal at the time, the current proposal provides for a 185 MW project and as such, the figures are very conservative and can likely be multiplied by atleast 1.5. A copy of this report can be provided on request, however, a summary of the details of this report along with additional comments regarding Covid-19 impacts are outlined below.

Phase 1: Engineering, procurement, and constructionThis phase is estimated to take between 15-18 months and will result in the labour hours outlined below.

- System design and engineering- 2,720 labour hours
- Construction project personnel - 35,520 labour hours
- Installation - 880,000 labour hours
- Testing, commissioning and technical - 2,160 labour hours

Phase 2: Operation, Maintenance and Asset ManagementThis phase will last the lifetime of the project and will result in the labour hours outlined below.

- Operation, maintenance and asset management - 14,320 labour hours per year for 34 years (excluding sheep farming)

The operations, maintenance and asset management phase relates to preventative, predictive and corrective maintenance works for asset optimisation for the life of the Project, which is estimated to be approximately 34 years.

Restoration Planting and MaintenanceNot include in the above-mentioned report, is the economic benefits associated with ecological restoration (planting) and maintenance. Based on the figures outlined in the Waikato and Waipa River Restoration Strategy (Waikato Regional Council Technical Report 2018/08) the following figures can be generally applied to restoration planting and initial maintenance (approximately 5 release events), pest control and boardwalks:

- Environment: Wetland. s 9(2)(b)(ii) Approx. units: 7.2 ha s 9(2)(b)(ii)
- Environment: Riparian. s 9(2)(b)(ii) Approx. units: 1.8ha. s 9(2)(b)(ii)
- Environment: Biodiversity Corridors and Boundary Planting. s 9(2)(b)(ii) Approx. units: 12ha. s 9(2)(b)(ii)
- Environment: Wetland boardwalks. s 9(2)(b)(ii) Approx. units: 30 m. s 9(2)(b)(ii)

- Environment: Pest Control. s 9(2)(b)(ii) (per year). Approx. units: 182ha (fenced area). Approx. Cost: s 9(2)(b)(ii) ; s 9(2)(b)(ii) (34 years).

These figures are approximate, but clearly indicate that there will be substantial economic benefits associated with the ecological restoration and ongoing pest control activities.

Project's effects on the social and cultural wellbeing of current and future generations:

The economic benefits of the employment opportunities outlined above will contribute to the overall wellbeing of the wider area, assisting in reducing the rates of poverty.

Currently New Zealand is experiencing increased electricity scarcity and costs, which disproportionately impacts lower socio-economic communities. The project will assist in addressing this issue through an increase in both electricity supply and security.

In regard to cultural wellbeing, the applicant has been actively engaging with iwi to ensure their values and aspirations are reflected in the proposal. It is understood that the proposed ecological restoration of the site will have positive cultural effects as it restores mana to the whenua.

Lastly, there are ancillary social benefits that will arise by opening the site to schools and community groups for educational purposes.

Whether the project would be likely to progress faster by using the processes provided by the Act than would otherwise be the case:

The proposal represents the largest solar farm within New Zealand to date. For this reason, there is the potential for public notification of the proposal under 'special circumstances', which would result in delays to the project. In addition, given the relative 'newness' of large scale solar technology in New Zealand there is a risk that a lack of expertise and experience both within local government and the community could result in unnecessary delays through the traditional consenting pathways.

Consequently, it is considered likely that the project will progress faster under the Fast Track process than the traditional RMA consenting pathway.

Whether the project may result in a 'public benefit':

Examples of a public benefit as included in Section 19(d) of the Act are included below as prompts only.

Employment/job creation:

As noted above, GreenEnco considers that the total duration for engineering, procurement and construction will be in the range of 15 – 18 months. The labour hours listed for the operation, maintenance and asset management are long term (rather than construction jobs) and are required for the design life of the Project (34 years).

Housing supply:

The proposal will have no direct impact on the supply of housing in the area. However, the positive economic impact is considered likely to stimulate additional housing development in the wider area.

Contributing to well-functioning urban environments:

Currently, New Zealand has an energy shortage and is importing coal to generate energy. A stable and secure supply of energy is necessary for well-functioning urban environments and to support commerce.

Urban environments rely on successful commercial ecosystems that create a demand for housing and consumer products.

As noted elsewhere, the proposal will provide the following benefits:

- Increase economic activity
- Diversify the productive potential of the area
- Increase the electricity security for the area

As such, the proposal is considered to have both direct and indirect benefits on the wellbeing and function of the nearby urban environments.

Providing infrastructure to improve economic, employment, and environmental outcomes, and increase productivity:

A secure supply of electricity sufficient to meet the demands of the population is essential to ensuring economic success and productivity. New Zealand's energy demand has been growing steadily and growth is forecast to continue. Demand growth is currently outstripping the growth in supply, exacerbating the risk of outages and an increasing reliance on imported coal.

As such, the proposed solar farm (and others like it) is crucial to the efficient delivery of clean energy over the next 30 years. Further, the proposal will contribute to the strategic target that 90 per cent of electricity generated in New Zealand should be derived from renewable energy sources by 2025.

Improving environmental outcomes for coastal or freshwater quality, air quality, or indigenous biodiversity:

Solar farms frequently provide an opportunity to enhance and increase biodiversity across the farm and within the immediate surrounding landscape. By utilising the core design values, an opportunity arises to enhance and increase biodiversity across the farm and within the immediate surrounding landscape.

Minimising waste:

N/A

Contributing to New Zealand's efforts to mitigate climate change and transition more quickly to a low-emissions economy (in terms of reducing New Zealand's net emissions of greenhouse gases):

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.

Solar farming has the lowest emissions of CO2 per kilowatt of energy generated, with only 6 grams of CO2 produced per kilowatt of energy. By comparison, onshore wind produces 10 grams, hydro power 97 grams, and coal 109 grams (2017. Arvesen, Humpenoder, Pepp et.al). Further, the components used in the manufacture of solar energy (e.g. steel, glass, copper, cobalt) can all be recycled at the end of life.

As such, an increase in solar energy infrastructure and resulting decrease in reliance on coal or new hydro will directly result in the lowering of New Zealand's carbon emissions relative to kilowatts of energy produced.

The proposed solar farm will address this second challenge by contributing to central government strategic target that 90 per cent of electricity generated in New Zealand should be derived from renewable energy sources by 2025.

Promoting the protection of historic heritage:

There is a historic dairy factory located near the site (Stanley Road South, legally described as Lot 8 DPS 33821 Block ZI Aroha SD). This is noted in the Matamata Piako District Plan as historic site '87'. The solar farm design has intentionally provided for a large setback from this site and for screening to ensure it is not visible from the historic site.

Strengthening environmental, economic, and social resilience, in terms of managing the risks from natural hazards and the effects of climate change:

Solar farms are resilient to climate effects as they are less dependent on weather conditions compared to other renewable energy alternatives such as wind and hydro (solar works on cloudy days and the sun comes up every day). Additionally, solar farms can be located away from high-risk areas (such as the coast). With solar panels sitting a approximately 800mm-1m from the ground (on the low edge) and all containers and ancillary equipment being mounted on compacted soil and flagstone, solar are also resilient to flood impacts. Solar farms provide resilience through diversification of land uses, as they allow for dual use of land. Sheep can be grazed, or crops grown without compromising the generation of clean electricity. Additionally, solar farms are not permanent and can be dismantled easily with very little impact on the land, therefore allowing for flexibility in the site for the future.

Other public benefit:

The project will generate enough power to meet electricity requirements of over 30,000 Kiwi homes each year and creates additional employment opportunities in the local area.

It will also provide opportunities for on-site education in relation to solar energy generation and biodiversity.

Whether there is potential for the project to have significant adverse environmental effects:

The proposal is not considered likely to result in any adverse effects that are significant. Rather the proposal will result in positive on-site ecological effects, though both the retirement of the land from intensive cattle dairy farming and the implementation of the extensive ecological restoration. This is discussed in detail in Part VI of this form.

Part X: Climate change and natural hazards

Description of whether and how the project would be affected by climate change and natural hazards:

It is recognised that with climate change, increases in heavy rainfall could be a threat, putting pressure on drainage and stormwater systems and increasing the risk of flooding. However, it is noted that flooding will likely only be a risk to ancillary equipment given that the solar panels sit well above ground level. The risk to ancillary equipment is mitigated through its placement on piles or a concrete footing, to provide clearance from the natural ground level.

Further, the entire footprint of the solar panels will cover approximately one third of the site and the land underneath the panels will remain as permeable farmland. It is intended that the solar farm infrastructure will be offset from existing farm drains, which are to be enhanced through riparian planting. Overall, the hydrology of the site will be improved through the retirement of land for restoration planting and the restoration of a wetland areas.

Lastly, it is noted that solar power is less susceptible to climate change than some other renewable energy alternatives. This is because it is less weather dependent than wind and hydro (solar works on cloudy days and the sun comes up every day) and can be located away from high risk areas (such as the coast).

Part XI: Track record

A summary of all compliance and/or enforcement actions taken against the applicant by a local authority under the Resource Management Act 1991, and the outcome of those actions:

Local authority	Compliance/Enforcement Action and Outcome
Matamata-Piako District Council	There have been no compliance or enforcement actions taken by local authorities in relation to this applicant

Part XII: Declaration

I acknowledge that a summary of this application will be made publicly available on the Ministry for the Environment website and that the full application will be released if requested.

By typing your name in the field below you are electronically signing this application form and certifying the information given in this application is true and correct.

Christina Walker	05/10/2021
Signature of person or entity making the request	**Date**

Important notes:

- Please note that this application form, including your name and contact details and all supporting documents, submitted to the Minister for the Environment and/or Minister of Conservation and the Ministry for the Environment, will be publicly released. Please clearly highlight any content on this

application form and in supporting documents that is commercially or otherwise sensitive in nature, and to which you specifically object to the release.

- Please ensure all sections, where relevant, of the application form are completed as failure to provide the required details may result in your application being declined.
- Further information may be requested at any time before a decision is made on the application.
- Please note that if the Minister for the Environment and/or Minister of Conservation accepts your application for referral to an expert consenting panel, you will then need to lodge a consent application and/or notice of requirement for a designation (or to alter a designation) in the approved form with the Environmental Protection Authority. The application will need to contain the information set out in Schedule 6, clauses 9-13 of the Act.
- Information presented to the Minister for the Environment and/or Minister of Conservation and shared with other Ministers, local authorities and the Environmental Protection Authority under the Act (including officials at government departments and agencies) is subject to disclosure under the Official Information Act 1982 (OIA) or the Local Government Official Information and Meetings Act 1987 (LGOIMA). Certain information may be withheld in accordance with the grounds for withholding information under the OIA and LGOIMA although the grounds for withholding must always be balanced against considerations of public interest that may justify release. Although the Ministry for the Environment does not give any guarantees as to whether information can be withheld under the OIA, it may be helpful to discuss OIA issues with the Ministry for the Environment in advance if information provided with an application is commercially sensitive or release would, for instance, disclose a trade secret or other confidential information. Further information on the OIA and LGOIMA is available at www.ombudsman.parliament.nz.

Checklist

Where relevant to your application, please provide a copy of the following information.

No	Correspondence from the registered legal land owner(s)
No	Correspondence from persons or parties you consider are likely to be affected by the project
No	Written agreement from the relevant landowner where the project includes an activity that will occur on land returned under a Treaty settlement.
No	Written agreement from the holder of the relevant customary marine title order where the project includes an activity that will occur in a customary marine title area.
No	Written agreement from the holder of the relevant protected customary marine rights recognition order where the project includes an activity that will occur in a protected customary rights area.