Landscape & Visual Effects Assessment.

SKYSOLAR | Ongaonga Solar Farm

April 2022

SKY SOLAR
It's your roof... your free solar energy

WAYFINDER
Landscape Planning & Strategy

Landscape and Visual Effects Assessment
Prepared for Sky Solar Ltd

Prepared by:	Shannon Bray
Reviewed by:	James Oliver
Revision:	3
Date:	22 April 2022
Cover Photograph:	Proposed Site, Ongaonga

Introduction

Skysolar is seeking resource consent to undertake a solar farm development of an existing rural, farmland property located near Ongaonga, Central Hawke's Bay. The solar farm will provide a new renewable source of electricity generation to supply both the local market and the National Grid. At full operation, the solar farm will have an operational capacity of 160 Gigawatt hours per year, being enough to power 18,000 houses.

This report provides an assessment of the potential landscape and visual effects of the proposal. It is to be read in conjunction with the graphical attachment, which provide various plans and visualisations of the proposal, alongside photographs of the site and locality.

This report outlines that although the solar farm will be visible and become a somewhat notable feature of the local landscape, there are several mitigating factors that diminish the level of effects. Overall, it is concluded that the potential landscape and visual effects of the proposal will be ***minor***.

Methodology

Prior to preparing this report, Wayfinder was involved with the development of the proposed Detailed Concept Plan, based on a preliminary solar layout that was provided by the applicant's engineering team.

The primary purpose for developing the concept plan was to consider:

- Where the developable envelope of the solar farm could be on the site;
- How best to mitigate potential visual effects of the proposed solar farm from surrounding private and public viewpoints;
- How best to maintain the farmland around and underneath the panels;
- How to provide for potential public interest in the solar farm; and
- How to achieve other positive environmental outcomes for the site, including restoration of the wetland and stream.

Once the concept plan was finalised, the site was re-visited to check that it achieved the required outcomes. At this time additional photography was taken, and then four visualisations of the proposal

were prepared – two each from two locations, showing morning and midday arrangements of the solar panels.

In addition, various desktop digital tools have been used to inform the assessment, including Google Maps, LINZ Data, TopoOnline, HBRC Geodata, and various information held by Central Hawke's Bay District Council in regard to the site and the District Plan.

As outlined, a graphical attachment supports this evidence, containing photographs of the site together with concept plans and example images. The slides in this attachment are referred to throughout the text of this report. Photographs were taken using a Panasonic G85 4/3 camera, meaning that the lens focal length shown in the images is half a typical 35mm camera. The 35mm camera equivalent focal length is shown in brackets on each slide.

Scale of Effects

The New Zealand Institute of Landscape Architects has recently ratified technical guidelines for landscape assessment[1] which has informed the preparation of this document. This includes the use of a 7-point assessment rating scale which has been adopted for this report, as follows:

This Assessment	Very-Low	Low	Low-Moderate	Moderate	Moderate-High	High	Very-High
RMA	Less than Minor	Minor		More than Minor		Significant	

The scale deliberately avoids the use of more traditional RMA terminology, such as minor or less than minor, and (as the NZILA guidelines set out) caution is needed in directly translating the 7-point scale of each identified effects into an RMA terminology. Rather, the degree of individual effects are to be assessed first, and then – following that – an overall professional judgement can be made on the overall significance of effects in the context of relevant RMA or policy tests. Nevertheless, a broad scale translation of effects is provided for reference.

Interpreting this scale in regard to landscape effects of a solar farm, a very-high rating would represent a situation where a proposal would result in direct, extensive change to landform or land-cover (such as extensive land modification to create platforms for the panels), particularly within a landscape that has limited existing modifications. In addition, a very-high rating would be applied if the proposal fundamentally changed the underlying character of a place – for example introducing a

[1] Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', [Final Draft subject to final editing, graphic design, illustrations, approved by Tuia Pito Ora/NZILA 5 May 2021]

strongly industrial or urban character to a rural landscape. A very-low rating would represent a situation where a proposal would have only a small impact on landform or land-cover, was situated in a landscape that was already highly modified and relates to works that are generally in character with the existing landscape.

Interpreting this scale in terms of visual effects, a very-high rating would represent a situation where the proposed solar farm would become the key, dominating element in the primary view from a particular viewpoint, likely in the foreground, making the appreciation of other aspects of the view difficult to achieve (that is, a viewer would find themselves always looking towards the solar farm and having to consciously look away). A very-low rating would represent a situation where the proposed solar farm might be partially visible from a particular viewpoint, but it would be subservient to other aspects of the view and likely partially (or largely) obscured by foreground elements (or could be obscured using vegetation on the site).

It's important to recognise that visual effects need to be considered in terms of the whole view – during an assessment process it is easy to focus solely on the proposed site only, and not consider views in other directions which may be more interesting or captivating.

Landscape Context

The proposed site is located in the rural area of Ongaonga (Slide 1, attached). The township of Ongaonga is located approximately 1km west of the site on Ongaonga Road, just off SH50 which runs generally north-to-south.

The surrounding landform is generally flat, part of the extensive Ruataniwha Plains that extend between the Ruahine Ranges and the lower rolling foothill country known as the Ruakawa Ranges, immediately west of the townships of Waipawa and Waipukurau. The site is located between two braided rivers, the Waipawa River to the North, and larger Tukituki River to the south. Numerous smaller waterways cross over the plains, in a generally west to east alignment, all feeding into these two rivers (and the Waipawa River eventually joins the Tukituki River to the east of Waipawa).

The Ruataniwha Plains would once have been covered in various lowland native forest, although this was likely cleared, in part, by Māori, and then more extensively by early settlers. The plains contain relatively fertile soils, but the warm, dry climate means that the predominant activity is sheep and cattle farming. Some cropping is undertaken, in particular maize, this activity having been intensified in places due to irrigation. There are also a few dairy farms in the wider area, however these are governed mainly by the availability of water supply.

The flat open character of the plains means that that the sky is a prominent feature in this landscape. Visitors and locals alike talk about the "big sky", often emphasised by cloudless days. The sun, along

with the wind, means this is naturally a dry, somewhat dusty landscape – although across many farms the presence of large-scale irrigation schemes is modifying this natural state.

Housing density across the plains is generally low and consists of farming related dwellings. Historically larger farming stations would have dominated across the plains, although over time these have been slowly subdivided into smaller lots, and as such housing has slowly been increasing. However, there are also many land blocks that are leased, and as such do not have dwellings. Housing density at the 2018 census was 500 dwellings across a survey area of 766km^2.

Smaller settlements such as Ongaonga (and Tikokino to the north) would have historically been supply towns to the farming community. Today, these towns provide a mix of worker accommodation and lifestyle residential (such as retired farmers or town-workers who prefer to live in the country). Ongaonga has a population of 168 people, with the sole commercial activity being the General Store.

It is understood that consent has been lodged in the vicinity for a 300-lot rural-residential development on SH50, however resource consent had not been granted at the time of preparing this report.

There are relatively few shelterbelts across the wider landscape, and as such views tend to be extensive across more than one property. The experience of driving through the landscape, and past the site, is dominated by openness defined by the Ranges to the west and the lower hill country to the east. In this regard, activity within the landscape is generally on-show – farm buildings, irrigators, tractor and stock movements, cropping are all visible and contribute to the area being an active, rural landscape. In this regard, the landscape is also relatively transient in nature, paddocks change with the seasons, crops grow and are harvested.

Proposal Site

The proposed site sits across two titles that have a combined size of just over 150ha (Slide 1). It is bordered by Wakarara Road to the North, Plantation Road to the East, Ongaonga road to the South, and neighbouring farmland to the West.

The main activity on the site is leased cattle-grazing (Slide 2), with the site forming part of a larger collection of properties that share rotation of stock. In summer months some paddocks have been used for growing maize.

The site is split in two by the Kahahakuri Stream (Slide 3), starting from a wetland on the neighbouring property on the southwestern corner and weaving across the site to the corner of Wakarara and Plantation Roads. The stream has a formed bed but has been heavily modified due to sustained

[2] Statistics New Zealand, 2018 Census

grazing over a long period of time. Some poor-quality exotic vegetation flanks the stream in the north-eastern corner of the site. In this area is also a stand of mainly Eucalypt species between the river and Wakarara Road. A stand of large, mature oak trees, intermixed with some conifer species, is located about halfway along the southern boundary of the site. Other than the oaks and eucalypts, the site is devoid of any vegetation.

A gravel access track runs east-west through the centre of the site, crossing the Kahahakuri Stream with a triple-culvert concrete ford (low water flows through the culverts, flood water flows over the top).

An existing Transpower transformer sits on a separate title within the confines of the site in the South-eastern corner (Slide 4), access to which is from Ongaonga Road. There is also one residential dwelling on a separate title near the Southwestern corner of the site, access to which is from Ongaonga Road, and it is understood that two further dwellings are in the process of being designed between this existing dwelling and the southwestern corner (these are not part of the application).

Policy Context

The site is zoned Rural Production Zone ("RPROZ") under the Central Hawke's Bay District Plan ("the Plan"). The RPROZ encompasses the contiguous, flat to undulating terrain within the district that collectively supports regionally (and nationally) significant primary production and associated secondary services. "Primary Production" is defined as any aquaculture, agricultural, pastoral, horticultural, mining, quarrying or forestry activities, and associated initial processing.

Various assessment matters within the RPROZ section of the Plan outline objectives to maintain the character and amenity of the surrounding area, including low-density built form with open space and few structures; a predominance of rural and land-based primary production activities; a landscape within which the natural environment (including farming and forest landscapes) predominates over the built one; and an environmental contrast and clear distinction between town and country (including a general lack of urban infrastructure). Adverse effects of activities are to be managed to maintain rural character and amenity.

Amenity is defined as having the same meaning as within s2 of the Resource Management Act.

Section RE of the Plan outlines general support for renewable energy projects, including solar. It sets out matters over which discretion is restricted for resource consent applications, including:

- *The extent to which the amenity of adjacent properties will be adversely affected and the ability to mitigate any adverse effects.*

It notes that the renewable energy generation activities must not be located within an Outstanding Natural Feature or Landscape, or a High Natural Character Area. The site has none of these landscape or natural character overlays.

The Plan also notes the requirement to consider the positive outcomes that can be derived from renewable energy activities, including local, regional, and national benefits. Further details of these benefits are outlined in the AEE.

Under the RE section of the Plan, the proposal is identified as a *Discretionary* activity. A full assessment of how this status is obtained is detailed within the AEE.

Proposal

The solar farm will provide a new renewable source of electricity generation to supply both the local market and the National Grid. Given that Central Hawke's Bay receives approximately 1,700 hours of bright sunshine each year (one of the highest regions in the country for sunshine), the proposed Ongaonga solar farm has been selected to utilise the solar resource as a source of renewable energy on a year-round basis. The site has also been chosen due to being conveniently located adjacent to existing electricity transmission infrastructure, which is critical to enable the electricity generated at the solar farm to be distributed into either the local or national transmission grid. At full operation, the solar farm will have an operational capacity of 160 Gigawatt hours per year, being enough to power 18,000 houses.

The proposal involves the installation of rows of sun tracking - tilting photovoltaic solar panels (Slides 5 & 6) across a developable area of approximately 144ha. The area around and beneath the solar panels is to be grass which is to be grazed by sheep (Slide 7). The grazing provides a solution to maintenance as well as allowing the fertile ground to still be utilized for productive purposes.

Each of the solar panels measures 2.394m long by 1.096m wide (2.623m^2 in area) and are arranged in a double arrangement (total 4.788m wide) in long rows, mounted on a motorised trestle (Slide 6). As the sun tracks across the sky, the panels tilt from approximately 55˚ from vertical facing east, to horizontal around midday, to approximately 55˚ vertical facing west. To achieve this, the panels are mounted at a height of just under 3m, and therefore have a total height of approximately 5m at sun-up and sun-down.

Various electrical equipment allows the panels to connect to the internal grid, which then will feed directly into the adjacent Transpower station.

The main entry/exit to the site will be from Ongaonga Road near the Transpower site. In this location will be a small field office and a staging area and car park. This area will be formed in gravel and used for delivery and storage of materials required for the construction of the solar farm, and then will be

reduced in size to a small staff car park (2-3 vehicles) once the solar farm is fully operational. The remainder of the temporary area will be returned to grass, and then built over with solar panels.

A secondary entry/exit will be formed in the location of the existing site entry on Plantation Road. The secondary entrance will allow 40-foot container trucks to exit the site without having to turn around. After the last of the large trucks have delivered materials, the size of this entrance will be reduced to allow for small vehicle access only.

The gravel track through the centre of the site, including its crossing over the Kahahakuri Stream will be retained. Other informal vehicle tracks will also be formed to provide maintenance access around the farm, although most of the site will be retained as grass.

The proposal will be fenced around the perimeter using a typical rural deer fence. Although there are few deer fences in the wider landscape, the decision was made to use such fencing rather than more urban or industrial looking security fencing. The fencing will require some signage indicating the hazards of the electrical infrastructure.

The attached Concept Plan (Slides 8-14) outlines the inclusion of ecological and mitigation planting, as follows:

- Revegetation of the riparian margins of the Kahahakuri Stream, including the small portion of the wetland that is within the site.
- Vegetation screening at the north-eastern corner of the site, between the stream and Wakarara Road.
- Vegetation screening along 50m of the western boundary opposite the Mr Apple orchard entrance.
- Extension of the oak trees along Ongaonga Road.

In addition, it is proposed to provide a visitor viewing area in the north-eastern corner. This will consist of a wooden deck, elevated approximately 1m off the ground, together with some information signage. A car park is proposed to be developed in consultation with Council traffic engineers.

Potential Landscape effects

The proposal will result in a change in landscape character by introducing a large area of built forms. Whilst there are some very small, residential scale solar panels in the wider landscape, the solar farm will become a noticeable, eye-catching, and unique element of the wider landscape.

However, such a change is not necessarily considered adverse or inappropriate. As outlined earlier in this report, the wider landscape is a highly modified landscape that is extensively used for primary

production. It contains built forms such as sheds and houses, and electricity infrastructure in the form of the adjacent Transpower switchyard and various overhead lines.

At a conceptual level, the proposal represents an additional type of primary production activity that features built forms and electricity infrastructure. However, rather than using the land and soil for productive use, the proposal uses the sky and climate – a defining and integral element of this landscape – so, rather than farming food, the proposal farms energy.

And, much like surrounding activity, the solar farm specialises in its task. The grid-arrangement of the solar panels is not dissimilar to the managed rows of the adjacent apple orchard – both are optimised methods of achieving the best yield from the site. Even the existing fences within the site are arranged to achieve efficiency of irrigation to increase the productivity of the land in what is otherwise a dry, sunny climate. These are not natural patterns; they represent ways in which people have manipulated the landscape resource to maximise productivity. The solar farm is, as its name suggests, a method of farming a resource.

The difference, of course, is that the solar farm will diminish the undeveloped nature of the site, introducing extensive built form. Whilst the site will continue to be grazed with sheep, ultimately the pastural character will be impacted.

With this in mind, it is potentially tempting to consider screening the whole farm with boundary vegetation, hiding away the built forms. However, as identified, shelterbelt planting is not a significant feature of the wider landscape – boundary planting would effectively close down the more open views that are currently experienced across the site and hide the activities that are generally experienced when passing through the landscape. Allowing visibility into the site retains the honesty of this landscape – what the activities are and how they are undertaken. It will also allow visibility of the grazing activity, retaining the more direct connection to the wider rural activities currently being undertaken.

In addition, the panels are generally low in height. For most of the day they will be less than 3m in height, meaning that longer views across the site to the Ranges can be maintained. Therefore, the only planting proposed responds to specific visual effects, meaning most of the site will remain open.

In this regard, how the ground plane will be managed under the panels was a key consideration. Ideally limestone would be placed below the panels, allowing reflectivity to the back of the panels resulting in increased electricity generation. However, the limestone rows would likely require significant ongoing maintenance and would begin to industrialise the landscape. Retaining grass underneath the panels reduces the efficiency of the solar farm, but allows some retention of the pastoral character, strengthened by the retention of grazing sheep to maintain the grass. In addition, it allows the farm to be more readily removed from the landscape at the end of its life (50+ years).

Further, although the farm itself appears to be large, it sits within a very expansive landscape, located in an area that is not heavily populated or widely traversed. The low height of the panels means that it is only likely to be visible from the road corridors and properties opposite or immediately adjacent. For the casual traveller along Ongaonga Road, at a speed of 100kph, this represents a small portion – less than a minute – of a wider journey across the landscape that takes in other productive rural land-uses and outward views.

The site office and other ancillary buildings will be relatively insignificant to the whole development, and in character with both the wider rural character and the new activity of the site such as not to draw specific attention.

The perimeter deer fencing will have a distinctly rural character. Although deer fencing is not common in the surrounding landscape, it does exist, and the construction of deer fencing is a permitted activity. Electrical hazard signage will, unfortunately, detract from the more open views but it is understood that this is required. The actual design, including size and colour, of the signage will be confirmed through detailed design to meet Health and Safety requirements.

The opportunity to enhance the Kahahakuri Stream is a positive landscape outcome. This will be fully fenced to prevent stock access to the waterway, with low-level riparian planting providing shade cover and habitat (tall trees can't be used as these will impact the efficiency of the solar panels).

In addition, the uniqueness of the proposal, and its renewable energy credentials, will likely help people more readily accept its presence. It is anticipated that people will take an interest in the farm, and it was with this in mind that a viewing area was added to the proposal, with educational signage providing an overview of the activity.

Therefore, overall, it is considered that the landscape effects will be ***Low-Moderate***, which can be translated to ***minor***. The farm represents a change in the activity and character of the site and will certainly be perceived as different and unique. It contains built form that will diminish the pastoral character of the site. However, it is located in an expansive, flat rural landscape that has been highly modified to achieve optimised production. At its core, it is no different to other farming activity, utilising the environmental resource as efficiently as possible, with the exception of the retention of grass under the panels to help retain a pastoral connection. The proposal also contains various positive landscape outcomes, including stream restoration.

Potential Visual Effects

Despite the wider landscape having a generally open landscape character, views of the site itself are relatively restricted. Views are possible from the immediately surrounding roads, and from properties that are either directly adjacent or are on the opposite side of the road. There may also be some

snapshots of the site in wider, more expansive views – such as looking east from SH50 across to the low hill country.

The following section provides an assessment of specific views within this viewing catchment. It refers to two visualisations that have been prepared (Slides 15-21) and a series of photographs from around the site. Two locations were selected for the visualisations – these being publicly accessible locations to the east of the proposal, one in the northern corner and one in the southern corner. For each location, two visualisations have been prepared, showing the panels earlier in the morning when they will be tilted, and at midday when the panels will be flat. The visualisations are intended to be a tool for understanding the overall visual character of the proposal and should be read in conjunction with the commentary below.

Private Residential Dwellings

The table below provides an overview of the potential visual effects from residential properties that will be able to see the proposal (also refer to Slide 22 which provides an outline of the locations of surrounding properties and dwellings):

Property Location	Assessment of Visual Effects	Rating
1483 Ongaonga Road	This property contains a dwelling that is set back from the road, approximately 350m away and diagonally opposite the southwestern corner of the site. The dwelling is located within relatively dense amenity and shelter vegetation, and there is an additional shelterbelt on the property directly opposite. Based on this vegetation, and what appears to be a generally western orientation of the dwelling, it is considered unlikely that any direct views of the proposal will be possible.	***Very-Low***
593 Ongaonga-Waipukurau Road	There are no residential dwellings on this property.	N/A
1396 Ongaonga Road (Slide 23)	The owners of this property have provided written approval for the proposal and as such the visual effects have not been assessed. A visual mitigation package is being developed in collaboration with the owners.	N/A
1343 Ongaonga Road (Slide 24)	Based on CHB GIS data, this property spreads across four titles, with a residential dwelling located on its own title in approximately the centre of the wider property. The dwelling is a small, single storey cottage which is orientated directly towards the solar farm site, at a distance of approximately 180m. The existing stand of oak trees is located slightly to the east of the direct view, and it is proposed to extend the oak tree planting along the boundary past the driveway of this property. It will not extend the whole length of the boundary, meaning that some views of the proposal will be possible on a more acute angle to the west. In addition, the oak tree planting will take some time to establish – possibly 4-5 years – before full screening of the proposal will be possible. Therefore, the view from this property will change in the shorter term, from an open grazed paddock (which is occasionally planted with maize), to the more built form character of the solar	***Low-Moderate*** reducing to ***Low*** once the mitigation planting is established.

Property Location	Assessment of Visual Effects	Rating
	farm. The north-south arrangement of the panels means that it will likely be possible to see pasture down the rows of panels. However, the panels will only be a maximum height of 4m, seen on their edge rather than full facing. Views from the dwelling across the wider landscape, including to the Ruahine Ranges, will remain possible. There are also wide-open views across rural farmland available on all other sides of the dwelling.	
22 Fairfield Road	This property is located diagonally opposite the south-eastern corner of the site, on the corner of Plantation and Ongaonga Roads. There are no residential dwellings on this property that will have views of the proposal.	N/A
75 Wakarara Road	This triangle portion of land is sandwiched between Ongaonga, Plantation and Wakarara Roads. There are no residential dwellings on the property.	N/A
1072 Ongaonga Road	This property contains a log storage area and is located between the Kahahakuri Stream an Wakarara Road. There are no residential dwellings on the property.	N/A
220 Plantation Road (Slide 25)	This property contains a single storey dwelling that has a second storey "observation room" with panoramic windows. It is located diagonally opposite the north-eastern corner of the site on the corner of Wakarara and Plantation Roads. There are relatively open views, across the intersection and Kahahakuri Stream to the site, and from the upstairs room in particular it will be possible to see most of the solar farm. It is noted that both this property and the site are located approximately 1m below Plantation Road, which slowly rises up past the boundary of the property to a bridge crossing the Kahahakuri Stream – this road providing some level of screening. However, the panels will be visible from the property particularly in the mornings and afternoons when they are tilted to the most extent. However, the panels will not reach high into the sky, meaning distant views to vegetation and the Ruahine Ranges will be retained (noting that more direct views to the Ranges are not possible due to existing vegetation on the site and also on the apple orchard opposite the site). The observation area may also be visible, along with people visiting it, however this is located some 350m away and therefore will be relatively distant, further separated by planting. Views of the open rural landscape will remain possible to the north and east of the property. It is proposed to undertake riparian and ecological restoration planting in this corner of the site, which will also provide some visual screening, although the solar farm will likely be visible until this is established (3-5 years). This planting will also diminish the outward view from the property in the direction of the site, however such planting is a permitted activity and is being actively promoted by the Regional Council around rural waterways.	***Low-Moderate*** reducing to ***Low*** once the mitigation planting is established.
288 Plantation Road	This property is located on the opposite side of Kahahakuri Stream, with the dwelling located some 800m from the site. There is limited visibility of the panels from this location due to screening created by the apple orchard, and the raised bridge over the stream. Mitigation planting will also diminish any potential views.	***Very-Low***
230 & 260 Wakarara Road (Slide 26)	This property consists of two titles and is located opposite the northern boundary of the site. Currently the property is managed as an apple orchard by Mr Apple. Towards the western end of the property is located a collection	***Low*** reducing to ***Very-Low*** once the

Property Location	Assessment of Visual Effects	Rating
	of buildings, including some orchard-related buildings, at least two dwellings and some seasonal-worker accommodation. One of the dwellings sits on its own title, but it is clear from its position, orientation and vehicle tracks that it is part of the wider orchard property. All the dwellings are located behind a tall, mature conifer shelterbelt, and various vegetation and equipment on the property. However, there will be intermittent views of the site from the dwellings and accommodation. From this location, it will be possible to see the grass rows between the solar panels, and the panels will be seen on their edge. However, the proposal will be in the background of the view, with activity on the property itself being the most dominant elements of the view. In addition, it is proposed to plant some low-height vegetation along the northern boundary of the site which will, after 3-5 years, reduce the direct visibility of the site from this location.	mitigation planting is established.
266 Wakarara Road	This property doglegs towards Wakarara Road, and contains a dwelling that is orientated to the north, away from the site, behind a shelterbelt on the southern side. It is therefore not possible to see this dwelling from the road. Any oblique views of the proposal around the shelterbelt are blocked by the neighbouring apple orchard. Therefore, it is considered there will be limited, if any, views of the proposal from this dwelling.	***Very-Low***
313 Wakarara Road	This property contains a relatively new dwelling that is located approximately 600m from the western boundary of the site. The dwelling was not easily visible from the road at the time of assessment due to maize growth, however it is apparent from aerial photographs that it has limited vegetation around it. Views would be directly east to the site, across a neighbouring paddock. It is noted that this paddock is used in a cropping rotation, and so views will be dependent on the current crop. It is also apparent that the orientation of the dwelling is away from the site, with living spaces on the north and west sides.	***Low***
19 Ngaruru Road	This property is located along the western boundary of the site, and extends from Ngaruru Road in Ongaonga village across to Wakarara Road. There are no dwellings on this property in the vicinity of the proposed site and it is understood the owner of this land has given approval for the project.	N/A
Future Properties	It is understood that there are three future properties proposed on the southern boundary of the site, adjacent to 1396 Ongaonga Road. The owner of these properties has provided written approval for the proposal.	N/A

Potentially it will be possible to see the site from the Ruakawa Ranges separating the Plains from Waipawa, this being the only elevated location in the wider area. However, both a ground and aerial photograph assessment was undertaken with no dwellings being found such that they would have a direct view of the proposal – most are screened by intervening topography. Also, in this location such dwellings would be nearly 10km from the site. Therefore, it is concluded that there will be ***very-low***, if any, visual effects from elevated properties.

Views from Farmland

There will be various open views of the proposal from the productive open landscape around the site, particularly on neighbouring properties identified above. However, it is likely that people within such properties will be working, focussed on their own activities more than the surrounding view. Therefore, visual effects from such locations are considered to derive directly from the landscape effects outlined above – relating to a change in landscape character and activity. In this regard, a separate assessment of visual effects from farmland has not been undertaken.

Public Views

The key public views of the proposal will be from the immediately surrounding road network. This includes:

- Approximately 2km along Wakarara Road;
- Approximately 1km along Plantation Road;
- Approximately 2km along Ongaonga Road; and
- Brief glimpses from SH50 (Slide 27).

All of these roads have a speed limit of 100kph, meaning that most vehicles would take around 35-45 seconds to travel 1km. Although there will likely be some shorter trips, generally most people travelling through this landscape would likely be covering some distance – it's a 12-15 minute drive from Ongaonga to Waipawa or Waipukurau. Therefore, for most vehicle trips, the solar farm will be small part of an extended experience through the wider landscape.

There are also no particular locations where the whole extent of the solar farm would be apparent. From road level, as the visualisations show, only the first few rows of panels are visible. During the middle part of the day, even in close proximity, the wider pastoral landscape and extended views to the Ranges will still be visible.

However, whilst the length of time and extent of farm that are visible are both relatively low, for local people who travel the surrounding roads regularly the solar farm is likely to become somewhat of a localised landmark. Particularly in the early stages of its development, it will likely draw specific attention away from other aspects in the landscape that might have ordinarily been the viewer's focus. In this regard, the farm will have a visual effect – it will alter how people view, and therefore appreciate the immediately surrounding landscape.

The extent of change is again, outlined in the landscape effects section of this assessment, as it relates to the change in landscape character and the introduction of built form. However, as for landscape effects, the decision was made that accepting this change and not screening the proposal was the right approach. It will allow people to become accustomed to the proposal more quickly, such

that over time it will become part of the wider productive landscape. Also, the addition of the visitor viewing area will help people understand what they are seeing.

It is therefore considered that from a public viewing experience, visual effects will be ***low***. The proposal is not located in any significant views or viewshafts and will be generally seen as part of a wider transient experience across the landscape.

Overall Assessment of Visual Effects

Combining the above commentary into an overall assessment, it is concluded that the visual effects of the proposal will generally be ***low-moderate***. Principally, there are no particularly special or noteworthy views of the landscape in the vicinity of the project, and none which the project would screen. Views will still be possible across the wider landscape in directions looking away from the proposal.

Once the initial novelty of the solar farm has passed, the proposal is likely to become just another element in the view.

There will be some residential dwellings who experience views directly toward the solar farm, and in the shorter term it is likely residents in these properties will experience visual effects. Over time, however, mitigation planting will establish to help reduce and buffer views.

It is therefore concluded that the visual effects of the proposal will be, at most, ***low-moderate*** – which can be considered in terms of assessing the application as ***minor***.

Assessment Against District Plan Objectives

As outlined earlier in this report, the Plan essentially focusses on the retention of amenity values across the rural landscape. In particular there is a focus on managing the effects of renewable energy plants, such as that proposed, on the amenity of adjacent neighbours.

This report has traversed how amenity will be impacted by the proposal. Largely this comes about through the introduction of built form on an otherwise open, pastoral site. However, any renewable energy plant would have such an effect. Large scale wind turbines would be significantly more prominent, towering above surrounding vegetation, and potentially causing shadow flicker and blade glint issues. The solar farm, by contrast, sits incredibly low in the landscape, and with its dark relatively non-reflective colouring, it is somewhat benign.

Most importantly, the proposal represents (at least at a conceptual level) a type of primary production. It utilises the natural resource of the extensive sky and sun at this location, farming energy. The proposal sits in a landscape that has been modified for productive use and for efficiency. Whilst there are natural components and processes, everything within the landscape is managed

toward increasing efficiency and yield – and in this regard the proposal is no different. It will also provide increased environmental outcomes in terms of making improvements to Kahahakuri Stream.

The solar farm is also not urban. Although it contains built forms, these are not buildings, roads or footpaths. The pastoral landscape will remain beneath the panels, sheep will still graze the paddock. It is also relatively small in comparison to the expansive Plains landscape, such that it does not erode the contrast between rural and urban.

As noted, the proposal is not located in any Outstanding Natural Landscapes or Features, or any Significant Areas of Natural Character.

Overall, it is therefore considered that from a landscape character and amenity perspective, the proposal achieves an appropriate balance of the Plan objectives and policies.

Conclusions

This report, together with the design input provided by Wayfinder in regard to landscape mitigation and restoration, has considered the potential landscape and visual effects of the proposed solar farm near Ongaonga.

It is recognised that the solar farm will result in a change in the character of the site, introducing built form and diminishing the pastoral character. However, the decision was made not to screen the proposal by planting the entire boundary, and as such the openness of the landscape (including views across the site to the Ranges) can be retained. This will also allow viewers to become accustomed to seeing the solar farm, which in essence is being established in this area to benefit from the expansive sky and high sunlight hours.

Overall, it is considered that the potential landscape and visual effects of the proposal will be ***minor***. There will be some residential dwellings in close proximity to the solar farm that will see it, but mitigation planting is proposed to help buffer and screen these particular views.

Planting is also proposed along the length of the Kahahakuri Stream.

It is recommended that conditions of consent be included that require the implementation of the Development Concept Plan (including Landscape Mitigation) included on Slide 8 of the Graphical Attachment, prepared by Wayfinder 20 April 2022.

Shannon Bray
Registered Landscape Architect