Boffa Miskell

Brookside Solar Farm

Landscape and Visual Effects Assessment
Prepared for KeaX Limited

9 March 2022

Document Quality Assurance

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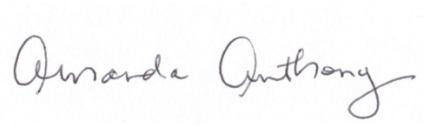
Prepared by:	Amanda Anthony Senior Landscape Architect Boffa Miskell Limited	
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Cover photograph: [View from Branch Drain Road overlooking the Site in an easterly direction, © BML 2021]

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Appendices

1.0 Introduction

1.1 Scope of the report

Boffa Miskell Limited (BML) has been engaged by KeaX Limited ("Kea Energy") to undertake a Landscape and Visual Effects Assessment (LVA) for a proposed 258 hectare (ha) solar farm located at 150 Buckleys Road, Brookside in Canterbury (otherwise referred to as 'The Site' in this report). The Site is approximately 10 kms north of Leeston and spans across five parcels of land. The solar farm is proposed to be constructed in three stages over three years.

This assessment has considered the proposal in the context of the existing environment, landscape values that relate to the Site, the statutory context and the potential effects of the proposal on the surrounding landscape. The Site is zoned Outer Plains under the Operative Selwyn District Plan (ODP) and has a Wāhi Taonga Management Area overlay (site C59 relating to Ovens/Midden). Under the Proposed Selwyn District Plan (PDP), the Site is zoned General Rural Zone. The proposal has been assessed as a Discretionary activity under the ODP A full planning assessment is contained in the Assessment of Environment Effects (AEE) prepared by BML.

2.0 Assessment Process

2.1 Methodology – Guidance

This assessment follows the concepts and principles outlined in *Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*[1]. A full methodology is outlined in **Appendix 1** of this report. In summary, the effects ratings are based upon a seven-point scale which ranges from very low to very high.

2.2 Assessment Process

The assessment involved the following tasks:

- Familiarisation of the project proposal and background documents.
- Review of technical drawings and reports relating to the Site:
    - Ecological Assessment prepared by BML, dated December 2021.
    - Cultural Assessment prepared by BML, dated December 2021.
    - Drawings of the proposed solar farm prepared by Kea Energy, dated October 2021.

[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]'

- Desktop analysis of the existing environment and landscape values. Including review of relevant information relating to landscape, and visual aspects of the Site and surrounding landscape such as:
    - Selwyn District Landscape Study, BML, 2018.
    - Selwyn District Rural Character Assessment, BML, 2017.
- Site visit: Amanda Anthony and Hannah Wilson of BML visited the Site on 17th November 2021 during sunny weather conditions to understand the Site, its context, and nature of available views. During the Site visit, photographs were taken from neighbouring roads to understand the potential viewing catchment and audiences. Representative public viewpoints (from public roads) were visited, and Site photos are included in **Appendix 2: Graphic Supplement**.
- Review of statutory provisions such as:
    - The Resource Management Act 1991 ("**RMA**")
    - Canterbury Regional Policy Statement ("**CRPS**")
    - Selwyn District Plan ("**SDP**") – Operative and Proposed
- Assessment of landscape and visual effects of the proposal.
- Recommended mitigation measures to avoid, remedy, and mitigate potential adverse effects and to promote positive effects.

3.0 The Proposal

Kea Energy proposes to construct a 258ha solar farm on the Site in three stages over three years. The Site is located directly south of an existing Orion substation that will facilitate connections into the local lines network. The overall capacity of the solar farm will be able to generate energy for approximately 22,000 homes in Canterbury annually, equating to 160 MW on completion. Refer to **Image 1** below for an example of solar farm structures.

***Image 1**: Example of solar farm structures west of the Site.*

Each stage will approximately take between 3-4 months to construct. There will be two vehicle entrances into the Site: one from Buckleys Road, north of the Site that will be used for Stage 1 and 2 and the other from Caldwells Road, east of the Site that will be used for Stage 3. Access roads will also be located throughout the Site for construction and maintenance purposes. It is proposed that sheep will graze underneath the panels to maintain the grassy land cover. During construction it is expected there will be a series of Site preparation works, earthworks, and the construction of buildings within the Site. These are outlined below.

Site preparation works: To prepare the Site for the installation of the panels, internal fencing and structures will be removed, including shelter belt plantings. The existing dwellings at 821 and 883 Hanmer Road will be retained and remain occupied by the landowners.

Earthworks: Kea Energy will complete the piling required to install each module/panel, with a piling machine, to avoid excavation. 62.5m³/ha[2] of earthworks is estimated to be required to install the cable trenches, which will be backfilled once the cables are in place. Trenches will also be dug to install the inverter cables in order to connect to the Orion network (via the Brookside Substation).

Buildings: The number and nature of permanent buildings proposed on the Site are outlined below:

- Installation of (26) inverters;
- Construction of (2) 40 feet container-style buildings to be used as a Site office and lunch room (refer to **Image 2** below);
- Construction of (4) 40 feet containers to be used as storage on-site.

[2] Based on 2,500m of trenching at 1m deep and 0.5m wide, per 20ha (1,250m³).

***Image 2**: Indicative container style building to be used as a Site office, Kea Energy.*

Future battery storage: Below is an indicative layout for the Inverter (Twin Skid) Future Battery areas. These will be located on a concrete pad. The container will be 2.6m high.

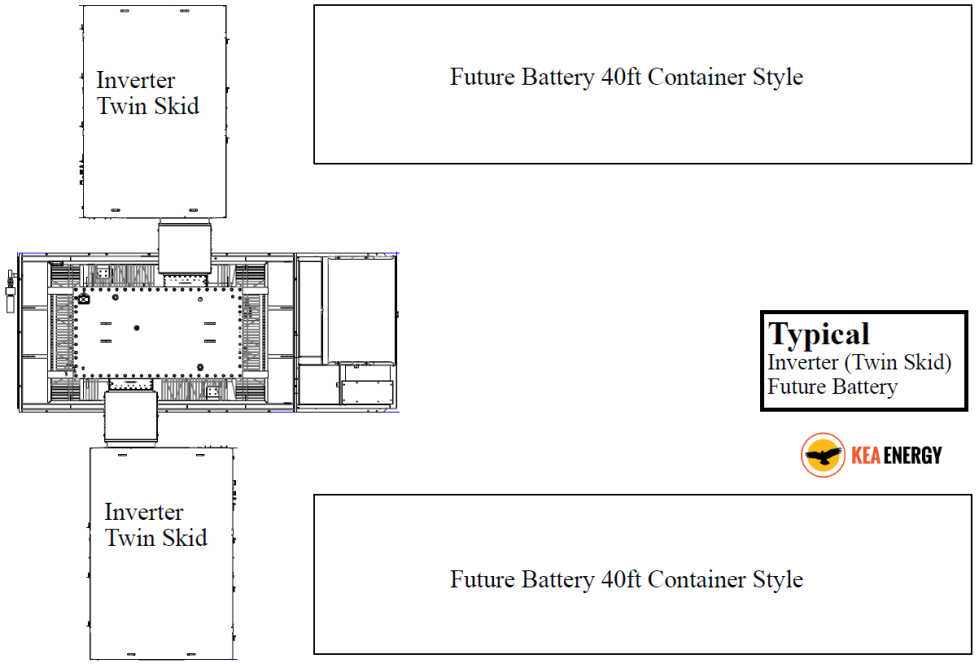

***Image 3**: Typical Inverter (Twin Skid) Future Battery, Kea Energy.*

Existing and proposed boundary planting: All existing Site boundary shelterbelts and landscaping will be retained, except for the shared boundary with 180 Grahams Road. Along this boundary, the existing exotic shelterbelt plantings will be removed and replaced with a 3m wide native buffer planting. For the remainder of the Site boundaries, where there are gaps or the boundary planting is minimal, a 3m wide native landscape buffer or a double staggered row of exotic shelterbelt species will be planted to provide sufficient screening of the proposal. All proposed boundary planting will be undertaken as part of Stage 1. This will allow at least a year of growth prior to the construction Stage 2 and at least two years of growth prior to the construction of Stage 3. Refer to **Figure 3** in the Graphic Supplement. Locally sourced, indigenous plants are proposed and will include a mix of shrubs and trees. The palette will be rich in texture, form and diversity to provide visual mitigation whilst improving habitat biodiversity to this pocket of the Canterbury landscape. Refer to Section 7 for further details on the recommended plant species.

Security Fencing: A security fence will surround the Site and measure 1.8m high. It is proposed the security fence will be located internally within the Site and any existing vegetation to screen from views outside of the Site.

Stage 1 Proposed Works

Stage 1 is located in the north-west corner of the Site and is approximately 22ha in area. The Brookside Substation is located to the north-west of the Stage 1. Stage 2 is located to the east. Refer to **Image 4** for the proposed layout plan.

Stage 1 includes the following:

- Construction of shingle internal roading;
- Installation of 489 solar frames producing 13.7MW of power;
- Installation of (1) single skid inverter;
- Installation of (1) twin skid inverter with space for future battery storage;
- Site office; and
- Proposed mitigation planting to be implemented as shown in **Figure 3**.

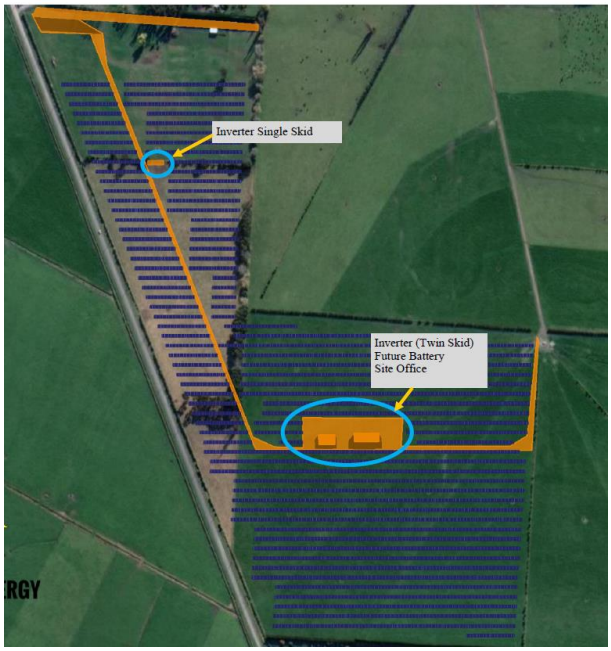

***Image 4**: Proposed plan of Stage 1, Kea Energy.*

Stage 2 Proposed Works

Stage 2 is located centrally in the Site and is approximately 89 ha in area. Stage 1 is located to the west and Stage 3 is located to the east. Refer to **Image 5** for the indicative layout plan.

Stage 2 includes the following:

- Construction of shingle internal roading;
- Installation of 1,921 solar frames producing 53.9 MW of power;
- Installation of (5) twin skid inverters each with future battery storage sites.

***Image 5**: Proposed plan of Stage 2, Kea Energy.*

Stage 3 Proposed Works

Stage 3 is located in the south-east corner of the Site and is approximately 128 ha in area. Stage 2 is located to the west. Refer to **Image 6** for the indicative layout plan.

Stage 3 includes the following:

- Construction of shingle internal roading;
- Installation of 2,708 solar frames producing 76MW of power;
- Installation of (7) twin skid inverters each with future battery storage sites.

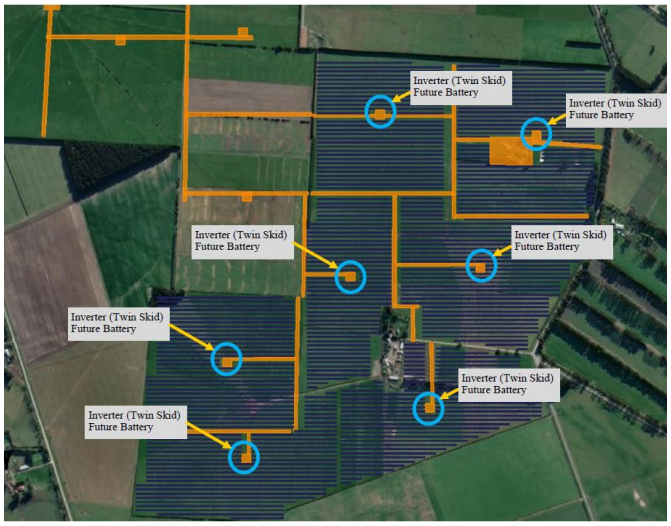

***Image 6**: Proposed plan of Stage 3, Kea Energy.*

4.0 Existing Environment

4.1 Broader Landscape Context

The Site is located within the Low Altitude Plains Landscape Character Area as identified in the Selwyn District Landscape Study[3]. The Low Altitude Plains are contained by two large, braided rivers, the Waimakariri River to the north and Rakaia to the south. The broader landscape is characterised by open and expansive plains which have been highly modified to accommodate large scale agricultural farming and small rural towns. The broader landscape surrounding the Site is within a river floodplain relating to the Waikirikiri/Selwyn River and its tributaries. The nearby Selwyn and Irwell Rivers flow into Te Waihora/Lake Ellesmere, approximately 11kms south-east of the Site.

Agricultural patterns of shelterbelts, fenced paddocks and pivot irrigators create a distinctive patchwork pattern on the land. There is a distinct lack of native vegetation present on the plains as much of the vegetation has been cleared, cultivated and converted into dairy farms within the last decade.

There is a clear land use pattern apparent throughout the Low Altitude Plains which is predominantly intensive agriculture. Dairy farming is the dominant agricultural use in the southern parts of the Selwyn rural landscape, with sheep and beef farming and areas of cropping/arable farming common as well. The majority of land south of the Selwyn River has been converted into irrigated dairy farming and has a 'spacious' appearance by views gained across the flat plains.

The broader landscape context surrounding the Site shares a similar character to the wider Low Altitude Plains. A rural landscape that is relatively flat with little topographical relief and established shelter belts that delineate agricultural land uses. Single storey dwellings are scattered across the landscape and near the small rural township of Leeston.

4.2 The Site

The Site is located at 150 Buckleys Road, Brookside, and is approximately 258ha in area, comprising five parcels of land. The small rural town of Leeston is approximately 4kms south of the Site and Dunsandel (situated on State Highway 1) is approximately 9kms west. The Site is bound to the north by Buckleys Road, residential dwellings and agricultural paddocks. The eastern Site boundary extends to Hanmer/Caldwells Road and the southern Site boundary is bordered by agricultural paddocks. The western Site boundary borders agricultural paddocks and Branch Drain Road. Refer to **Figure 1** in the Graphic Supplement.

The Site is largely flat in nature and situated between 30 and 40 meters above sea level (masl). The land cover of the Site includes mostly grassed paddocks framed by macrocarpa shelter belts (or similar) and patches of exotic forest. The paddocks are delimited by shelter belts and post and wire fencing.

The Site is currently used as a dairy farm and features pivot irrigators, shelter belts and stock. There are two residential houses, 821 and 883 Hanmer Road, each with associated sheds and additional structures. Neighbouring the Site are several residential properties on lifestyle or farm blocks. Many of these properties are surrounded by large shelter belts or other intervening

[3] Selwyn District Landscape Study, prepared by BML, dated 2018.

vegetation and have ancillary structures associated with the main dwelling. The Site also has several access points, namely from Buckleys Road, Branch Drain Road, and Hanmer Road.

Overall, the Site is located within a highly modified, flat rural landscape currently used for dairy farming.

4.3 Landscape Values

The Site is located within a highly modified rural landscape and is characterised by several forms of linearity including shelterbelts and paddocks. The Site is not located in an Outstanding Natural Landscape (ONL) or in a Visual Amenity Landscape (VAL) in either the District or Regional Plans. However, the Site does possess a distinctive rural character which is sensitive to changes in character and land use. The rural amenity values that relate to the Site include the following:

- Expansive areas of open pasture which creates a sense of spaciousness and openness;
- There is a general lack of structures and buildings, aside from the pivot irrigators and two dwellings; and
- A distinct linearity, provided by established shelter belts and fenced paddocks.

The Site has identified mana whenua values with the Wāhi Taonga overlay. Based on this, the proposed activities that occur in and around the Site are relevant and will potentially affect iwi cultural values. Initial engagement with Mahaanui Kurataiao Ltd has taken place by BML to better understand the location, extent and character of the C59 Wāhi Taonga Site.

4.4 Visual Catchment

In addition to the Site visit, to determine the visual catchment and viewing audience of the proposal, a study of aerial photography including land use, landform and vegetation patterns was undertaken. Private properties which are likely to be affected have been visually surveyed from nearby publicly accessible locations where possible, with further reference to aerial imagery to understand the nature of these potential viewing audiences.

Due to the flat topography of this landscape, the visual catchment of the Site is limited to the immediate surrounding area. The viewing audience includes private properties neighbouring the Site boundary and road users of Buckleys, Hanmer, Caldwells, Grahams and Branch Drain Roads. Overall, the Site has limited visibility in the broader landscape, due in part to the flat nature of Site and intervening vegetation.

A series of **Site Context Photographs** have been taken to illustrate the Site's existing visibility. These photographs are contained within **Figure 4** of the accompanying Graphic Supplement in Appendix 2 and their locations are shown on **Figure 2**.

Views from the north-eastern corner of the Site are screened by intervening shelter belts or established trees as demonstrated in **Site Context Photograph 1**. As shown from this viewpoint, the nearby house is situated near the road corridor and surrounded by grassy paddocks containing stock, established trees and extensive shelter planting. Between the road corridor and neighbouring paddock is a water race which extends along the northern boundary of the Site and Buckleys Road.

Further west along Buckleys Road there are partial views of the Site due to intermittent vegetation located on the fence line. This includes established pittosporum hedges and exotic

deciduous trees including silver birch, as demonstrated in **Site Context Photograph 2**. Existing views through to the Site include grassed paddocks, shelter belts, and glimpsed views into existing houses. These are set back from the road and largely screened from view.

As residential properties become sparse on Buckleys Road, views into the Site become more evident and open. As demonstrated in **Site Context Photograph 3** the landscape still retains its linear and open pastoral character including fence lines, shelter belts, and pivot irrigators. Established shrubs are sporadically planted on the fence line and include species such as pittosporum and muehlenbeckia, although largely overgrown in weed species. These species have also been planted throughout the Site as well as low hedgerows.

From the intersection of Branch Drain Road and Buckleys Road, the character of the Site changes slightly from an open and linear paddock to an area which contains rural livestock and large established trees. As demonstrated in **Site Context Photograph 4** partial views are available into this area of the Site. To the left of the image is Brookside Substation which connects to the wider grid and is located at the north-western corner of the Site.

Moving south-east along Branch Drain Road the character of the Site appears more open and expansive as shown in **Site Context Photographs 5 and 6**. On the western Site boundary shrubs have been planted sporadically, namely species such as pittosporum and macrocarpa. Within the paddocks there are clusters of larger tree species including poplar and eucalyptus. This area of the Site is a working rural landscape which includes pump sheds, pivot irrigators, farm tracks and shelter belts. Stock are also present in these paddocks.

From the south of the Site there are open views from Grahams Road of existing paddocks used for growing baleage and crops, and for stock as demonstrated in **Site Context Photograph 7**. The Site boundary in the distance is marked by an existing established shelter belt which extends along the southern boundary.

To the east, there are open views of the Site from Caldwells Road. A portion of the eastern Site boundary is lined with a low gorse hedge providing uninterrupted views into the Site. **Site Context Photographs 8 and 9** demonstrate the view near the south-eastern corner of the Site. From this viewpoint, an existing eucalyptus shelter belt and existing dwelling associated with 821 Hanmer Road are visible. The property contains a house and ancillary structures associated with the farm.

The north-eastern corner of the Site (Hanmer Road) offers open views of irrigated paddocks and 883 Hanmer Road. As demonstrated in **Site Context Photograph 10** the neighbouring water race has been planted in riparian vegetation including species such as harakeke and tussocks. Typical of a landscape used for agricultural purposes, structures such as farm sheds, fences, water tanks, and pivot irrigators are part of the character of this area of the Site. Shelter belts are also common linear features from this viewpoint and established trees are found near the existing dwelling.

Overall, the Site is characteristic of the Low Altitude Plains landscape character area as identified in the Selwyn Landscape Study. It has an open and flat rural character with linear features such as shelter belts, fence lines, and pivot irrigators. The primary land use is for agricultural purposes and contains several structures associated with this including farm sheds, pump sheds, power lines, fences and residential dwellings.

5.0 Statutory Provisions

The following is a review of the statutory provisions relevant to the assessment. The purpose of such a review is to help frame the landscape assessment rather than to undertake a comprehensive appraisal of the provisions or a planning assessment of the proposal against the provisions. There are a number of planning provisions that are relevant to this proposal, and these are discussed below.

5.1 Resource Management Act (RMA)

The RMA provisions relevant to landscape and visual effects addressed in this report are in respect of:

- Section 7(c) – the maintenance and enhancement of amenity values.
- Section 7(f) – the maintenance and enhancement of the quality of the environment.

5.2 Canterbury Regional Policy Statement (CRPS)

The key objectives, and policies in the Canterbury Regional Policy Statement that relate to the proposal include the following:

12.2.2 Identification and management of other landscapes

The identification and management of other important landscapes that are not outstanding natural landscapes. Other important landscapes may include:

1. natural character
2. amenity
3. historic and cultural heritage

Policy 13.3.3 Historic cultural and historic heritage landscapes

Significant historic cultural and historic heritage landscapes are to be protected from inappropriate subdivision, use and development.

5.3 Selwyn Operative District Plan (OPD)

Under the Operative District Plan, the Site is zoned Outer Plains and includes Wāhi Taonga Site C29 relating to Ovens/Middens. The proposal is defined as a 'utility' in the ODP and has been assessed as a Discretionary activity.

5.4 Selwyn Proposed District Plan (PDP)

Under the PDP, the Site is zoned General Rural Zone and has been assessed as a Discretionary activity. The key objectives and policies in the PDP that relate to the proposal include the following:

GRUZ-O1 Subdivision, use, and development in rural areas that:

1. supports, maintains, or enhances the function and form, character, and amenity value of rural areas;
2. prioritises primary production, over other activities to recognise its importance to the economy and wellbeing of the district;
3. allows primary production to operate without being compromised by reverse sensitivity; and
4. retains a contrast in character to urban areas.

GRUZ-P1 Maintain or enhance rural character and amenity values of rural areas by:

1. retaining a low overall building density, and predominance of vegetation cover;
2. enabling primary production while managing adverse effects of intensive primary production, and mineral extractive industries;
3. managing the density and location of residential development; and
4. retaining a clear delineation and contrast between the district's rural areas and urban areas, including Christchurch City.

6.0 Assessment of Effects

A landscape effect is a consequence of changes in a landscape's physical attributes on that landscape's values. Change is not an effect: landscapes change constantly. It is the implications of change on landscape values that is relevant. While an effect arises from changes to physical attributes, the consequences on landscape values relate to all a landscape's physical, associative, and perceptual dimensions. Landscape effects can be adverse, neutral, and positive.

Effects are considered against the existing and potential landscape values, and the outcomes sought in the statutory provisions. Such provisions often anticipate change and on achieving certain landscape values. Whether effects on landscape values are appropriate will therefore depend both on the nature and magnitude of effect on the existing landscape values and what the provisions anticipate.

The assessment of potential effects is based on a combination of the landscape's sensitivity together with the nature and scale of the development proposal. The landscape and visual effects have been determined using a seven-point scale ranging from very low to very high as set out in **Appendix 1** of the assessment methodology.

Particular effects considered relate to the following:

- Rural character effects and
- Visual amenity effects from public and private locations.

The principal elements of the proposal that will give rise to landscape and visual effects are:

- A change in landscape character from a rural landscape to a more industrialised landscape with multiple structures; and
- Potential loss in visual amenity from surrounding residential dwellings that overlook the Site.

6.1 Landscape Effects

6.1.1 Physical Landscape Effects

The assessment of physical effects considers the nature and significance of modifications to the landform of the Site and existing vegetation.

The flat topography across the Site will remain unchanged as no large bulk earthworks will be required as part of the proposal. There will be minor disturbance to the soil associated with the construction of the solar panels, inverters, buildings, cable trenching and security fencing around the Site. The foundations to support the solar panel frames will be pile driven into the ground to minimise the overall earthworks required on Site.

Existing Site boundary vegetation will be retained, however all existing trees and shelterbelts within the wider Site will be removed to make way for the proposal. Internal vegetation will be removed on a stage-by-stage basis. However, following installation of each Stage, the Site will remain grassed and be utilised for grazing. As described in the proposed works for Stage 1, the proposed mitigation planting will be implemented along the full extent of the Site boundary where there is no existing boundary planting or where it needs to be increased. Locally sourced, indigenous plants are proposed and will include a mix of shrubs and trees. The palette will be rich in texture, form and diversity to provide visual mitigation whilst improving habitat biodiversity to this pocket of the Canterbury landscape. Species chosen will be appropriate and hardy to the Site conditions, giving the planting the best opportunity to thrive and achieve meaningful visual screening. Planting will assist with reducing the visibility of the solar farm structures when viewed from the immediate context, improve biodiversity and provide a more cohesive framework to the planting on Site.

The removal of all internal Site vegetation that relates to the Sites' character will have a temporary adverse effect of **low**. As the landscape buffer planting establishes along the open Site boundaries, the effect will essentially be **neutral**.

6.1.2 Rural Character Effects

Landscape character is derived from the distinct and recognisable pattern of elements that occur consistently in a particular landscape. It reflects particular combinations of geology, landform, soils, vegetation, land use and features of human settlement. It creates the unique sense of place defining different areas of the landscape.

The proposed solar farm will introduce numerous delineating structures over three years into the rural landscape which currently possesses an open and expansive character. The solar panel structures along with the additional infrastructure required to operate the solar farm will inevitably change the Sites' character and adversely affect its rural amenity prior to mitigation. The Sites' open, rural character will be infilled will solar panel modules between shelter belts that border the Site's boundary.

The Site will transition from a rural productive landscape to that of a landscape containing energy infrastructure. The large expanse of open space will be reduced to areas between solar panels. Grazing animals, such as sheep, will continue to manage the pasture underneath the panels and frames. The presence of grazing animals maintains a sense of the rural character of the Site. Overall, the general form and pattern of the Site will be retained, thereby maintaining a key characteristic of the rural landscape.

The proposed solar panels will have a low profile in the context of the flat topography and the surrounding vegetation. Due to this, the solar farm is not expected to be a prominent feature in the landscape when viewed from beyond the immediate context of the Site. Any anticipated effects on the landscape character would be very localised.

The 3m wide landscape buffer planting proposed (along Site boundaries that do not have planting) will assist in integrating the proposal into the landscape, softening the infrastructure and providing a vegetative backdrop. Refer to **Figure 3** in the Graphic Supplement. With the proposed planting being indigenous, there would also be opportunities to enhance biodiversity values in this area. The proposed landscape buffer will provide screening from the neighbouring private properties and public roads. This landscape buffer will also provide mitigation and visually contain the proposal within the Site.

As each stage is constructed, a temporary (very localised) **moderate-low** adverse effect is anticipated on the rural character values and amenity of the Site. This relates to the removal of internal vegetation, introduction of solar panel structures and associated infrastructure. Each stage is expected to take between 3 to 4 months to construct, during this time is when the highest level of adverse effect is expected due to the apparent change in character. However, as the proposed mitigation planting grows and establishes along the Site boundary, the effects will lessen over time. As proposed, all mitigation planting will be undertaken as part of the Stage 1 works which will allow at least one year of plant growth for Stage 2 and two years of plant growth prior to Stage 3 being constructed. As the proposed mitigation planting establishes along the Site boundary to a height of approximately 4m the adverse effects on the landscape are expected to reduce over time to **very low** (adverse).

6.2 Visual Effects

Visual amenity effects are influenced by a number of factors including the nature of the proposal, the landscape absorption capability and the character of the site and the surrounding area. Visual amenity effects are also dependent on distance between the viewer and the proposal, the complexity of the intervening landscape and the nature of the view.

Due to the flat topography of this landscape, the visual catchment of the Site is limited to the immediate surrounding area. The viewing audience includes private properties neighbouring the Site boundary and road users of Buckleys, Hanmer, Caldwells, Grahams and Branch Drain Roads. The potential viewing audience has been identified in **Table 2** below. Refer to Graphic Supplement **Site Context Photographs 1-10** and **Figure 2**.

6.2.1 Visual Effects from public locations

From the surrounding roads that border the Site, (Buckleys, Hanmer, Caldwells, Grahams and Branch Drain Roads), the views vary from open to no view of the Site due to no vegetation or established, mature shelterbelts along the Site's boundaries. The surrounding road corridors provide transient views for road users.

6.2.1.1 Buckleys Road

Image 7: *Open view of the Site from the shared boundary with Buckleys Road. Located near the entrance to the proposal for Stage 1 and 2.*

The Site borders Buckleys Road for approximately 615m along its northern boundary. Road users have open views of the Site for approximately 100m due to no existing vegetation along this stretch of Buckleys Road. Refer to **Image 7** above. The remaining length of Buckleys Road, there are no views of the Site due to established shelterbelt plantings that surround the Site or are located on neighbouring properties.

During Stage 1, additional native plant species will be planted along the open stretch of Buckleys Road and where there are gaps in the existing vegetation, native plants will be used to infill in order to provide a full visual screen over time. However, the proposed native plantings will only have approximately one year of growth prior to the construction of Stage 2 which fronts Buckleys Road. Initially, Stage 2 will be partially visible along a 100m stretch on Buckleys Road (temporarily) due to a gap in the existing vegetation along the road corridor, however as the landscape buffer establishes, views of the Site will be fully screened – apart from the entrance into the Site.

Based on the above, a temporary, very localised **moderate – low** adverse visual effect is anticipated during the construction phase of Stage 2 (approximately 3-4 months), which will reduce to **very low** over time as the boundary planting grows and establishes to an approximate height of 4m along the 100m 'open' stretch of Buckleys Road.

6.2.1.2 Branch Drain Road

Image 8*: View from Branch Drain Road, from the Site boundary where there is a 'gap' in existing boundary planting.*

The Site borders Branch Drain Road for approximately 840m along its western boundary. There is existing vegetation along the shared road boundary. However, it still allows glimpses into the Site by road users due to gaps in between plants and the vegetation hasn't reached its maximum height yet. During the construction phase of Stage 1, views of the Site from Branch Drain Road will be partially screened by the existing shelterbelt along the road corridor. Where there are gaps in the planting, additional native planting is proposed along this boundary to provide another layer of screening and visual mitigation for Stages 1 and 2.

Where the Site retreats inland from Branch Drain Road gaps in the existing shelterbelts will be filled with exotic shelterbelt species and planted in double staggered rows to provide screening for Stage 2. Refer to **Image 8** above. As previously described, during the Stage 1 works, the supplementary planting will be established in between the gaps to provide full screening of the Site over time.

Based on the above a temporary (very localised) **moderate-low** adverse visual effect is anticipated during the construction phase of Stage 1 (approximately 3-4 months), which will reduce to **very low** over time as the boundary planting grows, fills out and establishes to approximately 4m high.

6.2.1.3 Grahams Road

***Image 9**: View from Grahams Road, the Site boundary is at the distant shelterbelt.*

The Site is setback approximately 225m (at its closest point) from Grahams Road. From here the Site is partially screened from Grahams Road due to an established shelterbelt along the Site's southern boundary, however there are gaps beneath the trees that allow views into the Site. Refer to **Image 9** above. Road users would have glimpses into the Site along this stretch of road. It is recommended exotic shelterbelt species are planted in double staggered rows to provide screening for Stage 3 and planted during Stage 1 to ensure, the Site is fully screened prior to the construction of Stage 3.

Based on the above a temporary **low** adverse visual effect is anticipated during the construction phase of Stage 3, which will reduce to **very low** over time as the boundary planting grows and establishes to an approximately height 4m.

6.2.1.4 Hanmer/Caldwells Road

***Image 10**: Open view of the Site from Hanmer/Caldwells Road.*

The Site borders Hanmer/Caldwells Road for 1km along its eastern boundary. Along this stretch of shared boundary, there are open views of the Site from road users. Refer to **Image 10** above. Stage 3 will be partially visible from Hanmner/Caldwells Roads during the construction phase as there is currently limited to no vegetation along the road corridor to provide screening. However, as proposed the 3m wide landscape buffer will be planted during the Stage 1 works to get a head start on establishing the planting prior to construction of Stage 3. This will enable the landscape buffer to partially screen Stage 3 by year three.

Based on the above, a temporary **moderate** adverse visual effect is anticipated during the construction phases of Stage 2 and 3 (each will approximately be 3-4 months in duration) **without mitigation**. However, the proposed boundary planting will have approximately 1-2 years of growth prior to the construction of Stage 2-3, therefore the level of visual effect will reduce to **low-moderate** (adverse). As the proposed boundary planting continues to grow and screens views into the Site, the adverse effects will reduce over time to **very low** (adverse) after approximately 4 years of growth.

6.2.2 Visual Effects from private locations

A desktop assessment of the visual effects of the proposal from a number of houses that abut or are within close proximity to the Site was undertaken using Google Earth, and photos taken during the Site visit. Each of the dwellings are numbered on **Figure 2** in the Graphic Supplement. Individual dwellings were not visited as part of the Site visit. This assessment is tabulated in **Table 2** below**.**

This assessment assigned a degree of effect[4], based on the following: visibility and proximity to the Site (in particular to the nearest boundary of the Site); the apparent orientation of the house and the nature of the view, including any existing or proposed vegetation that might provide full or partial screening of views.

[4] Based on a seven-point scale: Very Low (VL); Low (L) Moderate-Low (ML); Moderate (M); Moderate-High (MH); High (H); Very High (VH).

The level of effect has been assessed during the construction phase (temporary localised effect without mitigation) and 5 years following the mitigation planting along the Site boundary. Refer to **Figure 3** in the Graphic Supplement.

Table 2: Visual Effects from Private Locations
*Refer to **Figure 2** in the Graphic Supplement for the Site Appraisal Plan*

ID	Address/ Viewing Audience	Distance[5], Nature of View[6], Orientation of Views[7] and Proportion of Development Visible[8]	Visual Effect[9] and Nature of Effect[10]		Description of Potential Visual Effects *Note: private dwellings were not visited, however assumptions of potential visibility have been made from private locations based on the Site visit and aerial imagery sourced from Google Earth.*
			Without Mitigation	With Mitigation	
1	150 Buckleys Road, Leeston	45m Partial Rear/ Oblique Small Amount	Low (adverse)	Very Low (adverse)	Single storey dwelling. During construction there are likely to be partial views of increased vehicle movements, piling, and construction of the solar panels. Following construction, views of the Site will be screened by the proposed mitigation planting on the northern boundary of the Site.
2	115 Buckleys Road, Leeston	27m Open – Partial Rear/ Oblique Partial	Moderate-Low (adverse)	Very Low (adverse)	Single storey dwelling. During construction there are likely to be views of increased vehicle movements, piling, and installation of the solar panels due to the close proximity to the Site and intermittent boundary planting. Following completion of construction and establishment of the mitigation planting, views of the Site will be screened within approximately 5 years (subject to the landscape buffer planting reaching a height of 4m).
3	105 Buckleys Road, Leeston	85m Partial to No view Oblique Small Amount	Low (adverse)	Very Low (adverse)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.

[5] Measured from the edge of the dwelling to the closest Site boundary.

[6] Nature of View: Open, Partial, Glimpse, No View

[7] Orientation of Views: Frontal, Oblique, Rear

[8] Proportion of Development Visible: Most, Partial, Small Amount, None

[9] Based on a seven-point scale: Very Low (VL); Low (L) Moderate-Low (ML); Moderate (M); Moderate-High (MH); High (H); Very High (VH).

[10] Nature of Effect: Adverse, Neutral, Beneficial

Table 2: Visual Effects from Private Locations *Refer to **Figure 2** in the Graphic Supplement for the Site Appraisal Plan*					
ID	**Address/ Viewing Audience**	**Distance[5], Nature of View[6], Orientation of Views[7] and Proportion of Development Visible[8]**	**Visual Effect[9] and Nature of Effect[10]**		**Description of Potential Visual Effects** **Note: private dwellings were not visited, however assumptions of potential visibility have been made from private locations based on the Site visit and aerial imagery sourced from Google Earth.*
			Without Mitigation	**With Mitigation**	
4	79 Buckleys Road, Leeston	120m No view Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
5	56 Buckleys Road, Leeston	265m No view Oblique / Rear None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
6	23 Buckleys Road, Leeston	445m No view Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
7	932 Hanmer Road, Leeston	200m No view Oblique/ Rear None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
8	870 Hanmer Road, Leeston	80m Partial Frontal / Oblique Partial	Low (adverse)	Very Low (neutral)	Single storey dwelling. During construction there are likely to be some partially screened views of increased vehicle movements, piling, and construction of the solar panels. On completion with mitigation, views of the Site will be screened by intervening mitigation planting.

Table 2: Visual Effects from Private Locations *Refer to **Figure 2** in the Graphic Supplement for the Site Appraisal Plan*					
ID	**Address/ Viewing Audience**	**Distance[5], Nature of View[6], Orientation of Views[7] and Proportion of Development Visible[8]**	**Visual Effect[9] and Nature of Effect[10]**		**Description of Potential Visual Effects** **Note: private dwellings were not visited, however assumptions of potential visibility have been made from private locations based on the Site visit and aerial imagery sourced from Google Earth.*
			Without Mitigation	**With Mitigation**	
9	180 Grahams Road, Leeston	155m Partial to No view Frontal/ Oblique Small Amount	Moderate-Low (adverse)	Very Low (adverse)	Two storey house, only view of the Site would be from the second level. During construction there are likely to be some views of increased vehicle movements, piling, and construction of the solar panels from the upper windows. Primary views from the dwelling face east/west, away from the Site. Following construction and establishment of the landscape buffer, views from the second floor may remain partially visible.
10	191 Branch Drain Road, Leeston	240m No view Frontal/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
11	229 Branch Drain Road, Leeston	315m No view Frontal/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
12	233 Branch Drain Road, Leeston	385m No view Frontal/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.

Table 2: Visual Effects from Private Locations *Refer to **Figure 2** in the Graphic Supplement for the Site Appraisal Plan*					
ID	**Address/ Viewing Audience**	**Distance[5], Nature of View[6], Orientation of Views[7] and Proportion of Development Visible[8]**	**Visual Effect[9] and Nature of Effect[10]**		**Description of Potential Visual Effects** **Note: private dwellings were not visited, however assumptions of potential visibility have been made from private locations based on the Site visit and aerial imagery sourced from Google Earth.*
			Without Mitigation	**With Mitigation**	
13	265 Branch Drain Road, Leeston	390m Partial to Glimpse Frontal/ Oblique Small Amount	Low (adverse)	Very Low (neutral)	Single storey dwelling. During construction there are likely to be partial views of piling installation of the solar panels due to a break in the existing shelterbelt. Following construction and establishment of the landscape buffer, views of the Site will be screened by mitigation planting.
14	277 Branch Drain Road, Leeston	700m No view Frontal/ Oblique None	Very Low (neutral)	Very Low (neutral)	Double storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
15	313 Branch Drain Road, Leeston	200m No view Frontal/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.
16	324 Branch Drain Road, Leeston	25m No view Frontal/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt along the shared property boundary with the Site, the private dwelling does not have any views of the Site.
17	10 Stewarts Road, Leeston	95m No view Rear/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to established vegetation between the private dwelling and the Site and the proposed landscape buffer coupled with the viewing distance from the Site, the proposal will be fully screened from view.

Table 2: Visual Effects from Private Locations *Refer to **Figure 2** in the Graphic Supplement for the Site Appraisal Plan*					
ID	**Address/ Viewing Audience**	**Distance[5], Nature of View[6], Orientation of Views[7] and Proportion of Development Visible[8]**	**Visual Effect[9] and Nature of Effect[10]**		**Description of Potential Visual Effects** **Note: private dwellings were not visited, however assumptions of potential visibility have been made from private locations based on the Site visit and aerial imagery sourced from Google Earth.*
			Without Mitigation	**With Mitigation**	
18	187 Buckleys Road, Leeston	20m No view Rear/ Oblique None	Very Low (neutral)	Very Low (neutral)	Single storey dwelling. Due to the established shelterbelt along the shared property boundary with the Site, the private dwelling does not have any views of the Site.

6.2.3 Summary of Visual Effects

From public locations, the adverse visual effects resulting from the proposal range from **moderate** (temporary and localised) during the construction phase (without mitigation) reducing to **very low** (with mitigation) from the surrounding road network. Public locations are considered to be the least affected by the proposal due to the transient nature of the road users.

From private locations, the adverse visual effects range from **moderate-low** to **very low** (during the construction phase, without mitigation) depending on the viewing distance to the Site, intervening vegetation and nature of the view. During the construction phase (3-4 months), the higher level of visual effects are considered to be temporary and localised. Following the construction phase and establishment of the landscape buffer to a height of approximately 4m, the adverse visual effects reduce over time to **very low** or **neutral** (with mitigation). The proposed planting outlined in **Figure 3** will assist with reducing the visibility of the solar farm structures when viewed from the immediate context and provide a more cohesive framework to the planting on Site. The visual effects will lessen over time as the boundary planting grows, fills out the gaps and establishes to fully screen the Site from both public and private locations.

6.3 Response to Statutory Provisions

As identified in the relevant statutory provisions, the policies and objectives seek to maintain and enhance rural character and amenity values in rural areas.

The Site will transition from a rural productive landscape to that of a landscape containing energy infrastructure. The large expanse of open space will be reduced to areas between solar panels. Grazing animals, such as sheep, will continue to manage the pasture underneath the panels and frames. The presence of grazing animals maintains a sense of the rural character of the Site. Overall, the general form and pattern of the Site will be retained, thereby maintaining a key characteristic of the rural landscape.

7.0 Recommendations

1. **Mitigation Planting**: As described throughout the assessment, where there are gaps in the existing vegetation along the Site boundary, this will be infilled with either native or exotic plant species as part of the Stage 1 works. Along boundaries that currently do not have any existing vegetation a 3m wide native landscape buffer or double staggered row of exotic shelterbelt species is proposed. Refer to **Figure 3** for details.

    a. **Existing Site boundary shelterbelts and vegetation** should all be retained to provide screening for the proposal, with the exception of the shared Site boundary with 180 Grahams Road, where the exotic shelterbelt will be removed and replaced with a 3m wide native buffer planting (as part of the Stage 1 works).

    b. **Proposed native planting**

        i. **Fill in the gaps**: where gaps are present between existing native boundary planting, a similar native plant species (kohuhu and tarata) should be used to 'fill the gap'.

        ii. **3m wide native landscape buffer planting**: a minimum 3m wide native landscape buffer should be established along all Site boundaries where indicated on **Figure 3**, prior to the construction of Stage 1, to screen the Site from the surrounding landscape. This landscape buffer should consist of native shrub and tree species that can reach heights of 3-4m. This will ensure all planting is established prior to the construction of Stages 2 and 3 and sufficient screening is provided.

            1. Planting shall utilise locally appropriate indigenous species that are sourced in corresponding order: firstly, where practicably obtainable from within the Low Plains Ecological District, and secondly from the wider Canterbury Plains Ecological Region.

            2. Recommended plant species include: harakeke, lowland ribbowood, mikimiki (coprosma propinqua), kanuka, narrow-leaved houhere, kohuhu and tarata.

        iii. **Proposed exotic shelterbelt planting:** as indicated on **Figure 3**, where there are gaps or a break in the existing vegetation located internally within the Site, a double staggered row of exotic shelterbelt species should be planted. Plant spacings are recommended to be 2-3m and 1.5-2m between the rows. Appropriate species should be evergreen and can include eucalypt and tagasaste (tree lucerne) as these should grow well on the Site and provide food for native species.

2. **Security Fencing**: The perimeter security fencing should be located internally and screened from outside views by the existing and proposed planting. This will ensure the fence does not create potential adverse visual effects on neighbouring properties. Locating the security fence internally will also protect the landscape buffer planting from grazing animals within the Site.

8.0 Conclusion

The proposal consists of the construction and operation of a 258ha solar farm at 150 Buckleys Road, Brookside near Leeston. The Site is zoned Outer Plains in the Operative Selwyn District Plan and has been assessed as a Discretionary activity. The Site has a flat topography and is currently used a dairy farm. Numerous shelterbelts and fences delineate the Site into paddocks, which is a typical characteristic of the rural Canterbury landscape.

The Site itself has been heavily modified through its past agricultural land use and is not located in an Outstanding Natural Landscape or Amenity Landscape overlay in either the District or Regional Plans. However, it still retains a rural character and amenity that is sensitive to changes in character/use due do its general lack of buildings and sense of openness. The Site also has a Wāhi Taonga Management Area overlay in relation to site C29.

Due to the flat topography of this landscape, the visual catchment of the Site is limited to the immediate surrounding area. The viewing audience includes private properties neighbouring the Site boundary and road users of Buckleys, Hanmer, Caldwells, Grahams and Branch Drain Roads. Overall, the Site has limited visibility in the broader landscape, due in part to the flat topographical nature of Site and intervening vegetation.

As each stage is constructed, a temporary (very localised) **moderate-low** adverse effect is anticipated on the rural character values and amenity of the Site. This relates to the removal of internal vegetation, introduction of solar panel structures and associated infrastructure. Each stage is expected to take between 3 to 4 months to construct, during this time is when the highest level of adverse effect is expected due to the apparent change in character. However, as the proposed mitigation planting grows and establishes along the Site boundary, the effects will lessen over time. As the proposed mitigation planting establishes along the Site boundary to a height of approximately 4m the adverse effects on the landscape are expected to reduce over time to **very low** (adverse).

From public locations, the adverse visual effects resulting from the proposal range from **moderate** (temporary and localised) during the construction phase (without mitigation) reducing to **moderate-low** (1-4 years after planting) and thereafter reducing further to **very low** (4 years plus after planting) from the surrounding road network. The construction phase for each stage will be approximately 3-4 months. Public locations are considered to be the least affected by the proposal due to the transient nature of the road users.

From private locations, the adverse visual effects range from **moderate-low** to **very low** (during the construction phase, without mitigation) depending on the viewing distance to the Site, intervening vegetation and nature of the view. During the construction phase (3-4 months), the higher level of visual effects are considered to be temporary and localised. Following the construction phase and establishment of the landscape buffer to a height of approximately 4m, the adverse visual effects reduce over time to **very low** or **neutral** (with mitigation). The visual effects will lessen over time as the boundary planting grows, fills out the gaps and establishes to fully screen the Site from both public and private locations.

The proposed native landscape buffer plant palette proposed along public roads will be rich in texture, form and diversity to provide visual mitigation whilst improving habitat biodiversity to this pocket of the Canterbury landscape. Planting will assist with reducing the visibility of the solar farm structures when viewed from the immediate context and provide a more cohesive framework to the planting on Site.

Appendix 1: Landscape and Visual Effects Assessment Methodology

APPENDIX 1: Landscape and Visual Effects Methodology

Introduction

The Landscape and Visual Effects Assessment (LVEA) process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, changes in the existing character or condition of the landscape and the associated experiences of such change. In addition, the landscape assessment method includes an iterative design development processes, which seeks to avoid, remedy or mitigate adverse effects (see **Figure 1**).

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the **Draft Te Tangi A Te Manu: Aotearoa New Zealand Landscape Assessment Guidelines** and its signposts to examples of best practice, which include the **Quality Planning Landscape Guidance Note**[1] and the **UK guidelines for landscape and visual impact assessment**[2]**.**

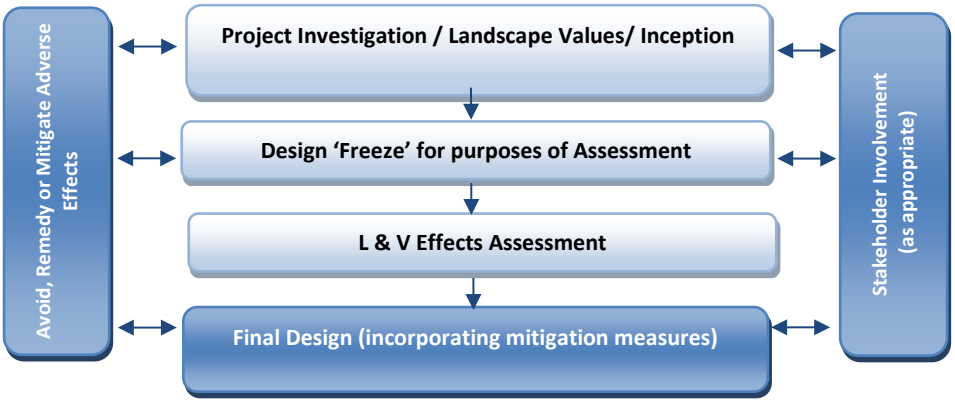

***Figure 1**: Design feedback loop*

When undertaking any landscape assessment, it is important that a **structured and consistent approach** is used to ensure that **findings are clear and objective**. Judgement should be based on skills and experience and be supported by explicit evidence and reasoned argument.

While landscape and visual effects assessments are closely related, they form separate procedures. The assessment of the potential effects on landscape considers effects on landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

Landscape effects: *Change in the physical landscape, which may affect its characteristics or values*

Visual effects: *Change to views which may affect the visual amenity experienced by people*

The policy context, existing landscape resource and locations from which a development or change is visible, all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the first step requires identification of the landscape's **character** and **values** including the **attributes** on which such values depend. This requires that the landscape is first **described**, including an understanding of relevant physical, sensory and associative landscape dimensions. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described together with, a judgement made on the value or importance of the potentially affected landscape.

[1] http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape

[2] Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

Landscape Effects

Assessing landscape effects requires an understanding of the landscape resource and the magnitude of change which results from a proposed activity to determine the overall level of landscape effects.

Landscape Resource

Assessing the sensitivity of the landscape resource considers the key characteristics and qualities. This involves an understanding of both the ability of an area of landscape to absorb change and the value of the landscape.

Ability of an area to absorb change

This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- The scope for mitigation, appropriate to the existing landscape.

The ability of an area of landscape to absorb change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

The value of the Landscape

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of Outstanding Natural Feature or Landscape (ONFL) (RMA s.6(b)) based on important physical, sensory and associative landscape attributes, which have potential to be affected by a proposed development. A landscape can have value even if it is not recognised as being an ONFL.

Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. **Table 1** below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing Factors		Higher	Lower
Landscape (sensitivity)	**Ability to absorb change**	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change resulting from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and shared and recognised attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or shared and recognised attributes. The landscape is of low or local importance.
Magnitude of Change	**Size or scale**	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	Geographical extent	Wider landscape scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

Visual Effects

To assess the visual effects of a proposed development on a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

The Sensitivity of the viewing audience

The sensitivity of the viewing audience is assessed in terms of assessing the likely response of the viewing audience to change and understanding the value attached to views.

Likely response of the viewing audience to change

Appraising the likely response of the viewing audience to change is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focussed on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and the reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focussed on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the wider landscape setting.

Value attached to views

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors. Important viewpoints are also likely to appear in guidebooks or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change, which may distinguish between temporary (often associated with construction) and permanent effects where relevant.

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. **Table 2** has been prepared to help guide this process:

Contributing Factors		Higher	Lower	Examples
The Viewing Audience (sensitivity)	**Ability to absorb change**	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.	Dwellings, places of work, transport corridors, public tracks
	Value attached to views	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers.	Acknowledged viewshafts, Lookouts
Magnitude of Change	**Size or scale**	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of views retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture. Glimpse / no view of the proposed development.	- Higher contrast/ Lower contrast. - Open views, Partial views, Glimpse views (or filtered); No views (or obscured)
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.	- Front or Oblique views. - Near distant, Middle distant and Long distant views
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).	- Permanent (fixed), Transitory (moving)

Table 2: Determining the level of visual effects

Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways; these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by **Table 3** set out below:

Nature of effect	Use and Definition
Adverse (negative):	The activity would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values
Neutral (benign):	The activity would be consistent with (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
Beneficial (positive):	The activity would enhance the landscape and / or visual amenity through removal or restoration of existing degraded landscape activities and / or addition of positive elements or features

Table 3: Determining the Nature of Effects

Cumulative Effects

This can include effects of the same type of development (e.g. bridges) or the combined effect of all past, present and approved future development[3] of varying types, taking account of both the permitted baseline and receiving environment. Cumulative effects can also be positive, negative or benign.

Cumulative Landscape Effects

Cumulative landscape effects can include additional or combined changes in components of the landscape and changes in the overall landscape character. The extent within which cumulative landscape effects are assessed can cover the entire landscape character area within which the proposal is located, or alternatively, the zone of visual influence from which the proposal can be observed.

Cumulative Visual Effects

Cumulative visual effects can occur in combination (seen together in the same view), in succession (where the observer needs to turn their head) or sequentially (with a time lapse between instances where proposals are visible when moving through a landscape). Further visualisations may be required to indicate the change in view compared with the appearance of the project on its own.

Determining the nature and level of cumulative landscape and visual effects should adopt the same approach as the project assessment in describing both the nature of the viewing audience and magnitude of change leading to a final judgement. Mitigation may require broader consideration which may extend beyond the geographical extent of the project being assessed.

Determining the Overall Level of Effects

The landscape and visual effects assessment conclude with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation. The process can be illustrated in **Figure 2**:

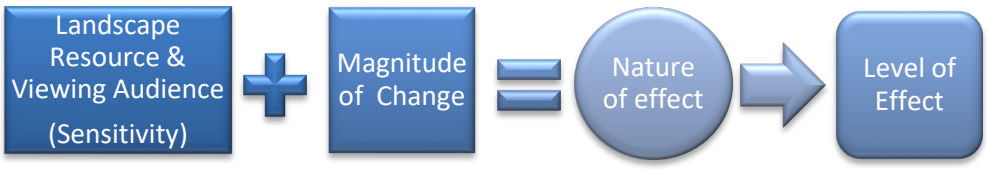

***Figure 2**: Assessment process*

[3] The life of the statutory planning document or unimplemented resource consents.

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in **Table 4** below. This table which can be used to guide the level of landscape and visual effects uses an adapted seven-point scale derived from Te Tangi A Te Manu.

Effect Rating	Use and Definition
Very High:	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character and in views.
High:	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains and a major change in views. *Concise Oxford English Dictionary Definition* *High: adjective- Great in amount, value, size, or intensity.*
Moderate- High:	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed and prominent in views.
Moderate:	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent in views but not necessarily uncharacteristic within the receiving landscape. *Concise Oxford English Dictionary Definition* *Moderate: adjective- average in amount, intensity, quality or degree*
Moderate - Low:	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent within views or uncharacteristic within the receiving landscape.
Low:	Little material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic or prominent in views and absorbed within the receiving landscape. *Concise Oxford English Dictionary Definition* *Low: adjective- **1.** Below average in amount, extent, or intensity.*
Very Low:	Negligible loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation and a negligible change in views.

Table 4: Determining the overall level of landscape and visual effects

Determination of "minor"

Decision makers determining whether a resource consent application should be notified must also assess whether the effect on a person is less than minor[4] or an adverse effect on the environment is no more than minor[5]. Likewise, when assessing a non-complying activity, consent can only be granted if the s104D 'gateway test' is satisfied. This test requires the decision maker to be assured that the adverse effects of the activity on the environment will be 'minor' or not be contrary to the objectives and policies of the relevant planning documents.

These assessments will generally involve a broader consideration of the effects of the activity, beyond the landscape and visual effects. Through this broader consideration, guidance may be sought on whether the likely effects on the landscape or effects on a person are considered in relation to 'minor'. It must also be stressed that more than minor effects on individual elements or viewpoints does not necessarily equate to more than minor landscape effects. In relation to this assessment, moderate-low level effects would generally equate to 'minor' (see **Table 5**).

The third row highlights the word 'significant' which has particular reference to the NZCPS and Policy 13 and Policy 15 and where on the effects-spectrum 'a significant' effect would be placed.

Less than Minor		**Minor**	**More than Minor**			
Very Low	**Low**	**Moderate – Low**	**Moderate**	**Moderate-High**	**High**	**Very High**
					Significant[6]	

Table 5: Determining adverse effects for notification determination, non-complying activities and significance

[4] RMA, Section 95E

[5] RMA Section 95D

[6] To be used only about Policy 13(1)(b) and Policy 15(b) of the New Zealand Coastal Policy Statement (NZCPS), where the test is 'to avoid significant adverse effects'.

Appendix 2: Graphic Supplement