Sections 104, 104A-D and 108 Resource Management Act 1991

Report recommending whether or not an application for resource consent should be:

- Granted or declined, and if granted, the conditions of the consent

Author: Jesse Aimer

Position: Consultant Planner

Resource Consent Number: RC225180

APPLICANT:	KeaX Limited
PROPOSAL:	To establish and operate a 258ha solar array with a generating capacity of 160 MW on completion.
LOCATION:	115 and 150 Buckleys Road, 821 and 883 Hanmer Road, Leeston 7682
LEGAL DESCRIPTION:	Lot 1 DP 7545 being 20.7857 hectares in area more or less, as contained in Record of Title CB751/93 Rural Section 9855 being 20.2343 hectares in area more or less, as contained in Record of Title CB512/201 Lot 2 DP 387576 being 58.5830 hectares in area more or less, as contained in Record of Title 352257 Rural Section 3658 being 40.4685 hectares in area more or less, as contained in Record of Title CB24F/97 Rural Section 5565 and Part Rural Section 9500 being 75.3273 hectares in area more or less, as contained in Record of Title CB16B/639 Lot 1 DP 54392 and Lot 1 DP 46472 being 73.9641ha in area more or less as contained in Record of Title CB32F/402
ZONING:	The site is zoned Rural Outer Plains in the Operative District Plan (Rural) Volume.
STATUS:	Discretionary Activity
HEARING DATE	23 February 2023

Preamble

1. This report reviews the application for resource consent and addresses the relevant information and issues raised in submissions and the relevant matters that are required to be assessment under Resource Management Act 1991 (the 'Act' or 'RMA'). The recommendation made in this report is not binding on the Selwyn District Council (the 'Council') and it should not be assumed that the Hearings Commissioner will reach the same conclusion having considered all the evidence brought before the hearing by the applicant and remaining submitter.

Report Author

2. I am a Planner with Harrison Grierson Consultants Limited. I hold a Bachelor of Laws (Honours) and a Bachelor of Science (Geography) from the University of Otago. I have four years' experience in the resource management field, three as a practicing resource management lawyer at Wynn Williams and one as a resource management planner.

3. My involvement in the processing of this application commenced on 12 October 2022.

4. I have read and agree to comply with the Environment Court's Code of Conduct for Expert Witnesses contained in the Practice Note 2014. I confirm that the issues addressed in this report are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Introduction

5. The applicant proposes to construct and operate a solar array (solar farm) on a 258ha site with a generating capacity of 160 MW on completion ('the proposal'). A detailed description of the proposal is contained in Section 4.0 (Proposal) of the application, which is considered accurate and is adopted for this report. An excerpt of the Site Layout plan from the application document is included as **Appendix 1** to this report. The key elements of the proposal are set out below.

6. An Application for Resource Consent and Assessment of Environmental Effects was prepared by Boffa Miskell Limited (the 'AEE'). Appended to that AEE are the following reports (including reports commissioned following requests for further information):

    1. A Landscape and Visual Amenity Assessment prepared by Amanda Anthony at Boffa Miskell dated 9 March 2022.
    2. An Ecology Assessment prepared by Dr Jaz Morris at Boffa Miskell dated 14 December 2021
    3. A Geotechnical Assessment prepared by Henry Winter at Tonkin + Taylor dated 3 November 2021.
    4. A Solar Photovoltaic Glint and Glare Study prepared by Aaron Williams at PagerPower dated August 2022.
    5. An Assessment of Environmental Noise Effects prepared by James Boland at Acoustic Engineering Services dated 12 August 2022.
    6. An assessment of the electric and magnetic fields around the Kea Energy Wairau Valley solar farm dated 23 January 2023.

7. The application was peer reviewed by the following discipline experts:

    1. Landscape Architect Graham Densem of Graham Densem Landscape Architect, for a landscape and visual assessment, dated 8 July 2022.
    2. Andrew Spanton, Senior Biodiversity Officer at Selwyn District Council, for an ecology review, dated 4 April 2022.
    3. Helen Pullar, Transport Engineer, for a transportation review (various correspondence, September – October 2022).
    4. Rudi Van der Velden of Velden Aviation Consulting Ltd for a solar glare report review, date 23 September 2022.
    5. Gary Walton, Senior Consultant at Marshall Day Acoustics Limited, and John Farren, Principal at Marshall Day Acoustics Limited for an acoustic assessment, dated 19 July 2022 and 20 September 2022 respectively.

8. A request for further information was issued on 28 April 2022 in relation to a number of matters.[1] A response was received on 10 May 2022.

9. A second request for information was issue on 25 July 2022 in relation to a number of matters, and included a request to provide the acoustic and glint and glare assessments referred to above.[2] A response, which included several of the aforementioned reports, was received on 12 August 2022.

10. Written approvals have been received from the following owners/occupiers:

Paul Ward, Jennifer Ward	105 Buckleys Road
Priscilla Ward, Matthew Ward	150 Buckleys Road
Pitcairn Farm Limited (written approval from all four directors)	115 and 150 Buckleys Road, 10 Stewarts Road
Angela Ward	187 Buckleys Road
Pitcairn Trustees Limited	187 Buckleys Road
Darren Osbourne, Danica Williams	115 Buckleys Road
Paisley Price Farms Ltd (written approval from all four directors)	821 and 883 Hanmer Road
David Duncan, Raye Packer	883 Hanmer Road

11. Six submissions were received during the limited notification submission period. All submissions oppose the granting of consent.

Procedural matters

National Policy Statement for Highly Productive Land

12. As was addressed in the notification decision, and is addressed in this report, it is considered that the site is 'highly productive land' that is subject to the National Policy Statement for Highly Productive Land 2022 (NPS-HPL).

13. The NPS-HPL came into force on 17 October 2022, a number of months after the lodgement of the application and the applicant's responses to requests for information and four days for the notification decision. I consider the NPS-HPL to be a directive instrument in its aim to protect highly productive land for current and future generations, and that this direction is not fully captured within the Operative or Proposed Selwyn District Plans or Canterbury Regional Policy Statement at present. I also consider the relationship between the NPS-HPL and the National Policy Statement for Renewable Energy Generation 2011 (NPS-REG) to be complex. Accordingly, the applicant (and potentially submitters) have not had a chance to address the NPS-HPL and provide an assessment on how that policy statement impacts the proposed solar farm.

14. I have undertaken a preliminary assessment of how I consider the NPS-HPL applies to the application in the below report. However, I consider that further comment/ evidence from the applicant is required from both a technical and natural justice perspective before a conclusion can be reached on whether the NPS-HPL operates as a barrier to the grant of consent. In particular:

[1] Including the National Environmental Standard for Assessing and Managing Contaminants in Soil 2011, the flood management overlay, noise, staging timeframes, vehicle crossings, vehicle movements, battery storage, maintenance of pasture under panels, reverse sensitivity, glare/ reflectivity and landscaping.
[2] Including noise, glint and glare, a site plan, fencing and gates, landscaping, signage and restoration.

1. Whether the proposed solar array has an operational need to locate at the site, given there are other locations within the Selwyn District that are not currently considered highly productive land;
2. The ability for pasture to survive under the panels throughout the life of the solar farm;
3. How the provisions of the NPS-HPL otherwise bear on the application;
4. If there is any conflict between the NPS-HPL and NPS-REG and, if so, whether that conflict can be resolved;
5. The appropriateness of the recommended 35 year duration.

15. The applicant has stated in their application that the project has an operational need to locate at the site. If this is able to be established, and the NPS-HPL otherwise does not form a barrier to the grant of resource consent, I consider that the application can be granted, and have attached as **Appendix 1** the conditions that I recommend be incorporated as part of any resource consent. However, I consider it appropriate to hear from the applicant and submitters on the effect of the NPS-HPL before making a final recommendation on this application.

Limited notification

16. Several submitters formed the view that the application was limited notified when it should in fact have been publicly notified. Given SDC has issued a limited notification decision, the process is live until it is formally challenged, such as through judicial review, and until informed otherwise by a body of competent jurisdiction.

17. Section 104(3)(d) provides that a consent authority must not grant a resource consent if the application should have been notified and was not. However, consideration of the substantive decision does not generally require a detailed assessment of the notification decision.

Description of the proposal

18. The solar array will comprise of a total (on completion) of 5,844 tables of panels (referred to as 'frames') and 26 'inverters' (technology which converts the electrical current generated by the panels into a form that can be fed into the national grid). Each table comprises 26 pairs of modules (i.e. 52 panels per table - 26 on the top row and 26 on the bottom row of the table).[3] The applicant proposes to feed the electricity into the network via Orion's Brookside Substation located in the north-western corner of the site.[4] The proposed layout of the site is shown in **Appendix 4** of the application and is reproduced below

[3] AEE at 4.0.
[4] AEE at 4.2.

Figure 1: Site layout. Source: AEE, Figure 6.

19. The property is owned by the Ward and Price families and are currently utilised for dairy farming. The owners of the site have entered into a lease agreement with KeaX to construct and operate the solar array for 35 years. However, no limit on the duration of consent has been sought as part of the application.[5]

20. Each table of panels will be set to a maximum height of 3.02m above ground level, with the lowest point of the table being 0.7m above ground level. The proposal is designed to allow sufficient space for vehicle access through the site. Sheep grazing will occur underneath the panels to manage grass growth.[6]

21. The solar array is proposed to be constructed in three stages over approximately 3 years. The staging is proposed as follows:[7]

    1. Stage 1 (22 ha at the north-western corner of the site): starting September 2023;
    2. Stage 2 (89 ha in northern and central parts of the site): starting September 2024; and
    3. Stage 3 (128 ha in the eastern and southern parts of the site): starting September 2025

    with the proposal taking approximately 12 months total (split over three four-month periods beginning in September) to complete.

22. Other ancillary infrastructure and equipment includes:[8]

    1. A Single Skid Inverter – 10.2m long, 2.1m wide, and 2.25m high, covering an area of approximately 21.42m².
    2. 13 Twin Skid Inverters (1 for Stage 1, 5 for Stage 2 and 7 for Stage 3) 9.2m long, 5.4m wide, and 2.35m high, covering an area of approximately 25m².
    3. Site office as shown in the plans in Appendix 8. This will be a relocatable building 12m in length and 4.198m in width, covering an area of approximately 50.4m²
    4. Storage buildings for retaining equipment and materials on site. These will comprise two 40ft shipping containers approximately 29.7m² each (12.19m long, 2.44m wide, and 2.59m high).

[5] Noting that the period for which a land consent is granted is unlimited, unless otherwise specified in the consent: RMA, s123(b).
[6] AEE at 4.0.
[7] Noting that these are not exact dates at this stage. These dates have been updated following the lodgement of the resource consent.
[8] AEE, section 4.5.

5. 13 future battery sites (1 for Stage 1, 5 for Stage 2 and 7 for Stage 3). The batteries are not within the scope of this application, but may be installed in the future to manage power fluctuations and store excess energy.

23. Landscaping is proposed around the perimeter of the application site with all existing shelterbelts and landscaping, for the most part, being retained. The details of the proposed landscaping, along with a landscape plan, are provided within the Landscape and Visual Effects Assessment completed by Boffa Miskell submitted with the application.[9] In summary:

    1. All existing site boundary shelterbelts will be retained, except for the boundary with 180 Grahams Road.
    2. Along the boundary with 180 Grahams Road, the existing exotic shelterbelt plantings will be removed and replaced with a 3m wide native buffer planting.
    3. Additional planting around the remainder of the site is proposed where there are gaps in the plantings around the permitter of the site or where planting is minimal. This will consist of either a 3m wide native landscape buffer or a double-staggered row of exotic shelterbelt species. Once mature, the existing and proposed plantings will be maintained to a height of 4m. This is approximately 1m higher than the solar farm structures.
    4. The applicant proposes to source indigenous species in the corresponding order:[10]
        - firstly, where practicably obtainable from within the Low Plains Ecological District; and
        - second, from the wider Canterbury Plains Ecological Region.

    Following a recommendation from the landscape planner, the applicant proposes to use harakeke, lowland ribbowood, mikimiki (coprosma propinqua), kanuka, narrow-leaved houhere, kohuhu and tarata.[11]

24. A 2.1 metre-high 'deer-type' security fence is proposed along the road boundaries and each side of the driveways for the dwellings located at 821 and 889 Hanmer Road. The fence will contain standard fencing wire on top, and be supported by fence posts up to 3m in height. The fencing will be located behind the existing and proposed planting. The entrances to the site will be secured by 2.1m high gates.[12]

25. No external lighting is proposed for the site.[13]

26. 16,125m^3 of earthworks will be required to:[14]

    1. Drive piles up to 1.8m in depth to support the solar panel frames. The piling will be carried out using a pile-driving machine, meaning excavation is not required.
    2. Trench up to 1m in depth to lay cables.
    3. Disturb topsoil to prepare areas for the relocatable buildings, inverters and future battery sites.
    4. Spread gravel to form internal tracks.

27. Vehicle access to the Site both during construction and operation will be via existing vehicle access points on Buckleys Road and Hanmer Road. During construction of each stage, there will be approximately five staff vehicles entering and leaving the site each day, equating to 10 equivalent car movements (ecm). Delivery of materials (including aggregate for tracks, inverters and containers, and the construction materials for the solar arrays) will be made using heavy goods vehicles. Other equipment will be required at times, such as pile driving machinery. The numbers and scale of vehicles will range

[9] Landscape and Visual Effects Assessment, Appendix 2 Figure 3.
[10] Subject to practical difficulties in achieving this.
[11] AEE at 4.1.1.
[12] AEE at 4.0.
[13] AEE at 4.0.
[14] AEE at 4.4.

depending on the deliveries and will require up to 4 trucks to enter and exit the site per day during the construction period, equating to 24 ecm.[15] Informal car parking will be provided within the site.[16]

28. Up to twelve staff would be on site during the peak construction period.[17] During the operational phase, staff will not be required on a permanent basis, with staff occasionally visiting (approximately 1 to 2 per month) to check site operations and carry out maintenance as required.[18] Construction at the site will be restricted to weekdays from 8am to 6pm.[19]

29. The existing dairy farm operations at the site will be phased out as construction moves across the site. Small animals, such as sheep, will continue to graze on the site following construction of the panels.[20]

30. The site contains a Wāhi Taonga Management Site – C59, understood to be a midden.[21] Existing fencing around the Wāhi Taonga Management Site – C59 will remain in place, with a 50m buffer proposed between the site and any earthworks and solar panels.

31. The proposal also requires resource consent from Environment Canterbury. It is understood that these resource consents have been granted (CRC223908 relates to the undertaking of earthworks over aquifers and CRC223909 relates to the discharge of operational stormwater to land).

Description of the Existing Environment

32. The site is located on the Canterbury Plains, approximately 6km north of Leeston, and comprises two adjoining dairy farms held in 7 parcels.[22] The area within the solar farm security fence will include approximately 258ha of land.

33. I visited the site on 20 October 2022.

34. The site currently contains irrigation infrastructure, several dwellings (which will remain), farm buildings, shelter belts, and a group of trees adjacent to the southwestern boundary. The shelter belt plantings surrounding the site are well established with generally mature plants, with the exception of juvenile plants along the western boundary with Branch Drain Road. However, there are gaps in the shelter belt planting, either where there are smaller shelter belt plants, very young plantings, or no shelter belt planting at all.[23]

35. The site is flat and consists primarily of pasture. A combination of exotic species including eucalyptus, pine trees and native trees are used for shelter belts and road boundary plantings. Drains run adjacent to the roads surrounding the site. These drains provide a habitat for the Canterbury mudfish.[24] As addressed above, there is a Wāhi Taonga Management Site located near the centre of the site.

36. There are currently 2 access points / vehicle crossings to the site – one off Buckleys road ("vehicle access point 1") and one off Hanmer Road ("vehicle access point 2").[25] Vehicle access 1 will be used to access Stages 1 and 2, while Stage 3 will be accessed from vehicle access point 2.

37. The wider area surrounding the site is also used for dairy farming and other agricultural activities, with some semi-rural lifestyle blocks. A substation (designated: Brookside Substation) owned by Orion New

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[15] There will be total of 34 ecm during the construction phase of the project.
[16] AEE at 4.6.2.
[17] AEE at 4.0.
[18] AEE at 4.7.
[19] AEE at 4.0.
[20] AEE at 4.7.
[21] As noted on the Operative Selwyn District Plan. This site is not noted in the Proposed Selwyn District Plan.
[22] Lot 1 DP 7545 being 20.7857 hectares in area more or less, as contained in Record of Title CB751/93
Rural Section 9855 being 20.2343 hectares in area more or less, as contained in Record of Title CB512/201
Lot 2 DP 387576 being 58.5830 hectares in area more or less, as contained in Record of Title 352257
Rural Section 3658 being 40.4685 hectares in area more or less, as contained in Record of Title CB24F/97
Rural Section 5565 and Part Rural Section 9500 being 75.3273 hectares in area more or less, as contained in Record of Title CB16B/639
Lot 1 DP 54392 and Lot 1 DP 46472 being 73.9641ha in area more or less as contained in Record of Title CB32F/402
[23] Notably, this includes an approximately 100m stretch visible from Buckleys Road, most of the approximately 840m stretch along Branch Drain Road, and stretches of the approximately 1km boundary along Hanmer and Caldwell Roads.
[24] The site is located within the EIB Mudfish Habitat Overlay under the Proposed Selwyn District Plan.
[25] Refer to Appendix 4 of the Application.

Zealand Limited (Orion) is located at the junction of Buckleys Road and Branch Drain Road, adjacent to the north-western corner of the Site.

38. The broader landscape context is addressed in section 4.1 of the LVEA (Appendix 13 of the AEE). The site is located within the 'Low Altitude Plains Landscape Character Area', which is characterised by open and expansive plains that have been highly modified to accommodate large 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 11km south-east of the Site.

39. The land surrounding the site is characterised as 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.

Operative Selwyn District Plan

40. The Selwyn District Plan ('the District Plan') was made operative on 3 May 2016. Under the District Plan the application site is zoned Outer Plains.

RULE	TOPIC	COMPLIANCE
1.2	Earthworks and Contaminated Land	N/A
1.3	Earthworks and Sites of Significance to Tangata Whenua	Complies
1.4	Earthworks and Natural Hazards – Flood Areas	N/A
1.7	Earthworks- Setbacks and Volume	**Does not comply**
2.1	Shelterbelts and amenity planting	**Does not comply**
3.6	Buildings and sites of significant to Tangata Whenua	Complies
3.9	Buildings and access and parking	Complies
3.10	Buildings and residential density	N/A
3.11	Buildings and site coverage	Complies
3.12	Buildings and Building Height	Complies
3.13	Buildings and Building Position	**Does not comply**
3.15	Relocated Buildings	**Does not comply**

4.5	Vehicle Accessways and Vehicle Crossings	**Does not comply**
4.6	Vehicle parking and cycle parking	Complies
5.1.2	Utilities – Activities	**Does not comply**
5.2	Height and Setbacks – Utility Buildings	Complies
5.9	Natural Hazards - Utility Structures	N/A
5.11	Utility Buildings and sites of significance to Tangata Whenua	Complies
5.13	Waterbody setbacks- utility structures and utility buildings	Complies
9.2	Activities – Listed Actvities	N/A
9.4	Scale of Non-Residential and Non-Rural Activities	N/A
9.12	Activities and Carparking, Vehicle Crossings, Access and Egress	**Does not comply**
9.13	Activities and Vehicle Movements	Complies
9.16	Activities and Noise	Complies
9.19	Activities and Dust	Complies

Table 1 – District Plan compliance

41. Rule 1.7.1.2 limits the volume of earthworks to 5000m³ per project. The applicant has estimated that the proposal would involve earthworks of approximately 16,125m³. In accordance with Rule 1.7 the earthworks associated with the proposal are therefore required to be assessed as a **Discretionary Activity**.

42. Rule 2.1 of the District Plan does not permit shelterbelts and amenity plantings if they shade any part of the road carriageway between 1000 and 1400 hours (inclusive) on the shortest day of the calendar year or any property under different ownership between 1000 and 1400 hours on the shortest day of any calendar year. The applicant has provided shading diagrams which confirm shading of Branch Drain Road, Hanmer Road, and Buckleys Road will occur, meaning the proposal will not comply with Rule 2.1.1.5(a). While no shading diagrams have been provided in relation to adjoining properties under different ownership, given the 4m height the perimeter plantings would be grown and maintained to, I consider it likely that shading of two adjoining properties would also occur and, as such, the proposal would not comply with Rule 2.1.1.5(b). In accordance with Rule 2.1.6 this aspect of the proposal is therefore required to be assessed as a **Restricted Discretionary** activity.

43. Rule 4.5.1 requires the formation of any vehicle crossing to comply with the requirements of Rule 4.5.1, Appendix 10. I note that the proposal results in the following breaches of this rule:

    a. Vehicle Crossing 1' and 'Vehicle Crossing 2' does not meet satisfy the design requirements of listed in Appendix E10.2.2 Table E10.3 (Distances of vehicle crossings from road intersections) which requires a minimum setback of 60m for local roads. Vehicle Crossing 1 is located approximately 53m from a five-way intersection between Buckleys, Branch Drain, Irwell Rakaia, Dunsandel and Brookside, and Stewarts Roads. 'Vehicle Crossing 2' is located adjacent to the Hanmer and Caldwells Road intersection

b. ‘Vehicle Crossing 1’ and ‘Vehicle Crossing 2’ do not comply with the formation requirements of E10.2.4.2, Diagram E10.D (Commercial or heavy vehicle access).

Overall, given the non-compliances with Rules 4.5.1.2 and 4.5.1.3, the proposal is required to be assessed as a **Discretionary Activity**.

44. The solar array and inverters are considered to fall within the definition of a ‘utility’[26] under the District Plan. The table supporting the solar array is considered a ‘utility structure’[27], while the site office and storage containers are captured under the ‘utility building’[28].

45. In determining the applicable rules applying to utilities, it is important to note the following, which is taken from the introductory ‘notes’ of Chapter 5 Rural Rules- Utilities:

The undergrounding or ducting of any utility is permitted subject to compliance with Rule 1-Earthworks, except where the provisions of Rule 1.6 (Earthworks and Protected Trees) apply.

The Rules in the Rural Volume of this Plan are applicable to activities generally, including utilities. However, the rules under Rule 3 Buildings, Rule 4 Roading and Rule 9.4 Scale of Non-Residential and Non-Rural Activities do not apply to utilities, except the following;

Rule 3 Buildings:

- *Rule 3.15.1 Relocated Buildings*
- *Rule 3.9.1.1 Access and Parking*
- *Rule 3.13.1.2 Line of sight – railway crossings*

Rule 4 Roading:

- *Rules 4.5.1.2 – 4.5.1.5 Roads, Accessways and Vehicular Crossings.*
- *Rules 4.6 Parking*
- *Rule 4.1.1 Outstanding Landscapes*

46. In accordance with the above, the buildings and associated infrastructure on the site is required to be assessed under the utilities chapter (C5- Utilities). Rules 3, 4 and 9 .4 are not appliable to utilities, except for those rules listed above.

47. Rule 5.1 of the District Plan (Utilities an Activities) permits utilities if they meet the requirements of Rule 5.1.1 to 5.1.2. As the solar array would generate electricity that would not be used on the Site, the proposal does not comply with Rule 5.1.2.4. In accordance with Rule 5.1.3 this aspect of the proposal is therefore required to be assessed as a **Discretionary Activity**.

48. Buildings are proposed to be relocated onto and will remain permanently on the Site. This requires assessment as a **Controlled Activity** under Rule 3.15.2.

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[26] ‘includes the use of any structure, building or land for any of the following purposes:
(a) The generation, transformation and/or transmission of energy, …

[27] ‘includes any device, equipment or other facility which is used principally to house or support a utility including any antenna, mast, pole or pylon; or any structure housing a utility which is less than 10m2 in gross floor area, or less than 2.5m in height.’

[28] includes any building or part of any building which is a utility or which is used principally to house or support a utility; and that building is 10m^2 or more in gross floor area and 2.5m or greater in height’.
Note that ‘Building’ has the following definition:
“means any structure or part of any structure whether permanent, moveable or immoveable, but does not include any of the following:
Any fence or wall of up to 2m in height.
…
Any structure which is less than 10m2 in area and 2m in height.
Any vehicle, trailer, tent, caravan or boat which is moveable and is not used as a place of storage, permanent accommodation or business (other than the business of hiring the facility for its intended use).
Any utility structure.
Note:
A utility structure is excluded from the definition of ‘building’ under this District Plan. However, such a structure is subject to the requirements of the Building Act and may require a Building Permit under that Act.
A utility building falls under the definition of a building if it does not constitute one of the structures listed under ‘Building’”

49. Rule 9.16.6.3 provides that the noise limits contained in Rule 9.16.1 do not apply to any temporary activity which operates between the hours of 7.00am and 9.00pm. The ODP defines *"temporary activity" as including (relevantly) "Buildings, structures and activities ancillary to a construction period of up to 12 months or the duration of the construction project, whichever is the lesser*". Given the applicant proposes to complete the construction of the project across three four-month periods, I consider that the noise limits in the ODP do not apply to this application.

50. Rule 3.13.1 permits buildings that meet specified boundary setbacks. Table C3.2 requires accessory buildings (which include fences greater than 2m in height) to be setback 5m from the property boundary and 10m from roads. It is understood that the fences will be set back 10 metres the road boundaries, but will be within 5m of neighbouring properties. The Plan requires that a resource consent be obtained for this activity, but does not classify the status of the activity. In accordance with section 87B(1)(b) of the RMA, this requires assessment as a **Discretionary Activity**.

51. Overall, the proposal is a **Discretionary Activity** under the Operative District Plan.

Proposed Selwyn District Plan (Notified 05 October 2020)

52. No decisions have yet been made on the Proposed Plan (PDP). The site is located within the General Rural Zone in the PDP, and is located within the EIB Mudfish Habitat and EIB Management overlays.

53. There are no rules with immediate legal effect that apply to this proposal.

National Environmental Standards

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

3. The NES manages activities which involve the disturbance of land which may be contaminated. This is determined by whether activities have or are likely to have occurred on the site, which are listed in the Hazardous Activities and Industries List (HAIL).
4. Historical images show that there is an old farm shed and homestead that coincides with the location of one of the inverters. Based on advice received from Environment Canterbury,[29] it is likely that the site has been host to activities listed in the HAIL (being the storage of bulk hazardous substances 'A').
5. As the site has been used to store bulk hazardous substances, the NES applies to activities on the site.

54. The applicant has established that the proposal complies with Regulation 8(3),[30] as is a Permitted Activity under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (the 'NES-CS').Notification

55. A decision to limited notify the application pursuant to sections 95A-E was made by Council's Planning Manager under delegated authority. Notice was served on the following parties:

NAME	ADDRESS
Clark James Casey, Independent Trustees (Canterbury) Limited	180 Grahams Road, Leeston
David John Kewish, Donna Jayne Kewish, Ann Williams	324 Branch Drain Road, Leeston
Robyn Lynnette Anne Casey	265 Branch Drain Road, Leeston
Glenmore Farming Company Limited	313 Branch Drain Road, Leeston

[29] Email from Madeline Sinha to Charlotte Scotchbrook dated 16 May 2022.
[30] This has been confirmed by the applicant (Form 1 PLG dated 22 May 2022).

56. The submission period closed on 30 November 2022.

Submissions

57. Six Submissions were received from the following persons:

    1. Clark Casey
    2. Robyn Casey
    3. Donna and David Kewish and Ann Williams (2 submissions)
    4. Glenmore Farming Company Limited

58. A joint submission was also received from Clark Casey, Liz Casey, Robyn Casey, Donna and David Kewish, and Ann Williams ('Joint Submission'). The joint submission includes a petition against the proposed solar array signed by a number of members of the community.

59. The location of the submitter's properties (outlined in blue) are illustrated in **Figure 2 below.**

60. The submissions oppose the granting of consent.

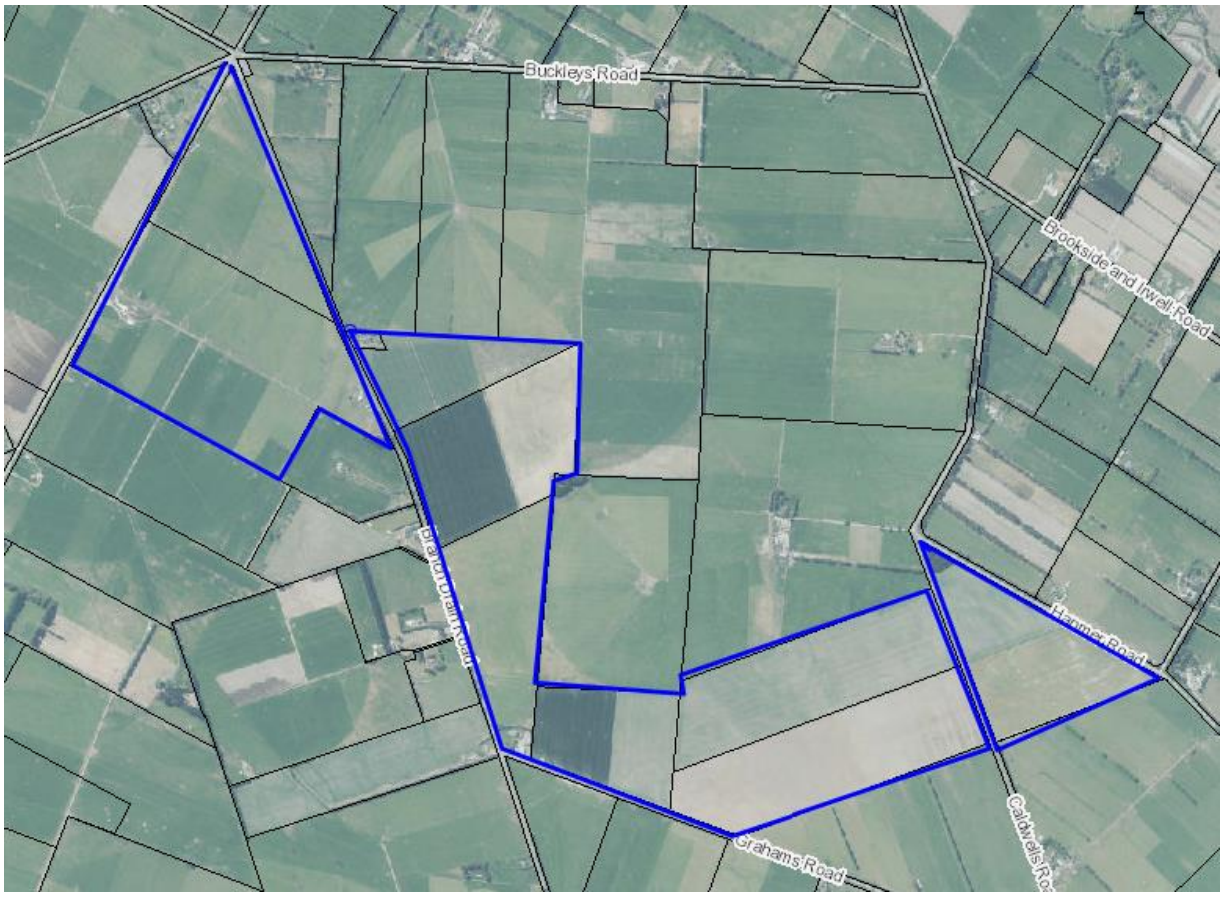

Figure 2: Outline of properties owned and occupied by submitters

61. The submissions raise a number of concerns regarding the proposal. These matters include:

    1. Changes to the character of the area;
    2. Adverse visual and noise effects on neighbouring properties;
    3. A loss of agricultural production land;
    4. Reverse sensitivity effects on neighbouring land uses;
    5. Impact of the proposal on birds;
    6. Health and safety effects, including fire and chemical leachates;

7. Electro-magnetic radiation;
8. Loss of future development potential;
9. Process concerns regarding the limited notification of the application and inadequate consultation with tangata whenua;
10. Lack of economic justification for the proposal, and concerns regarding a loss of capital to foreign banks;
11. Practicalities regarding the operation of the solar farm, including weed maintenance;
12. Adverse impacts on property values.

62. The matters raised in the submissions are addressed in the following assessment of effects.

Matters to be Considered

63. Section 104(1) of the Resource Management Act 1991 sets out the matters which must be considered by Selwyn District Council in considering an application for resource consent. In this case the relevant matters are:

- Any actual and potential effects of allowing the activity (s104(1)(a));
- The Canterbury Regional Policy Statement (s104(1)(b)); and
- Any Plan or Proposed Plan (s104(1)(b))
- The permitted baseline (section 104(2))

64. All matters listed in s104(1) are subject to Part 2 of the Act which contains its purposes and principles.

65. In addition, the following section(s) apply to the consideration of this consent.

Section 104B – Determination of applications for discretionary or non-complying activities

66. After consideration of an application for a discretionary or non-complying activity, a consent authority may grant or refuse the application and if granted, may impose conditions under section 108.

Assessment of Environmental Effects

Relevant Assessment Matters

67. As a discretionary activity, the Council's assessment is unrestricted and all actual and potential effects of this proposal on the environment must be considered. The matters for consideration in an assessment of effects on the environment are set out in the Fourth Schedule of the Resource Management Act 1991 (the 'RMA') and further direction is contained in the reasons for the rules as to the effects that require consideration. The matters which I consider to be relevant to this application are set out below:

- Rural character and visual amenity
- Glare and reflectivity
- Traffic
- Noise
- Reverse sensitivity
- Earthworks and dust
- Loss of productive soils
- Tangata Whenua/ cultural site
- Health and Safety
- Land contamination
- Shading
- Ecological effects
- Effects on property values

68. It is considered that the most contentious matters relate to:

1. Visual amenity;
2. Glare and reflectivity;
3. Noise;
4. Reverse sensitivity;
5. Location of the proposal on highly productive land.

69. The proposal also involves the discharge of stormwater to land, for which the appropriate resource consents have been granted by Canterbury Regional Council.

70. In accordance with section 104(3)(a)(ii), regard must not be made to any effect on a person who has given written approval to the application. Those persons are identified in the Introduction.

Permitted Baseline

71. Section 104(2) of the RMA directs that the consent authority may disregard an adverse effect of the activity on a person if a rule or national environmental standard permits an activity with that effect (a "permitted baseline"). The application of the permitted baseline is discretionary and case law has established that the permitted baseline test relates to the effects of non-fanciful hypothetical activities which could be carried out as of right under the District Plan, as well as any existing lawfully established activity on the site or any activity for which resource consent has been granted. I consider the following activities to be relevant to the permitted baseline:

- Any buildings can be constructed to a height of 8m, with any utility building permitted to a height of 12m.
- Any fence over 2m high bordering a road is permitted (provided there is a 10m setback to the road boundary).
- Any construction noise for a period of up to the lesser of 12 months or the completion of the project and operational noise which complies with the day-time noise limit[31] of 60 dBA L_{10} and a night-time noise limit[32] of 45 dBA L_{10}, assessed at the notional boundary of any dwelling.[33]
- The removal of shelterbelt vegetation at the site.

Landscape and visual effects / rural character and amenity effects

72. The AEE contains a visual amenity and landscape assessment in section 6.2, and is accompanied by a landscape and visual amenity assessment prepared by Boffa Miskell ('LVEA'). The Council engaged a registered landscape architect, Graham Densem, to review the Boffa Miskell landscape assessment ('Landscape Review').

73. The landscape and visual experts establish that the site is located within a highly modified rural landscape characterised by several forms of linearity, including shelterbelts and paddocks. It is not located within any landscape or character overlays[34] in the District Plan, but does possess a distinctive rural character that is sensitive to changes in character and land use. The Boffa Miskell landscape assessment assesses the following rural amenity values that they consider apply to the site:[35]

1. Expansive areas of open pasture which creates a sense of spaciousness and openness.
2. A general lack of structures and buildings.
3. A distinct linearity provided by established shelterbelts and fenced paddocks.

Mr Densem adds an additional value that I consider is relevant, being a sense of relative naturalness from the predominant green of the grass and trees.[36]

[31] Between 7.30am and 8.00pm.
[32] Between 8.01pm and 7.29am.
[33] The SDP also contains Lmax noise limits that must be complied with.
[34] Such as an outstanding natural landscape or visual amenity landscape.
[35] LVEA at 4.3.
[36] Landscape Review at [16].

74. Having reviewed the application materials and the expert landscape and visual assessments, I consider that the proposal will result in a significant change to the use of the site, with the site transitioning from a rural productive landscape consisting of a dairy farm to that of a landscape containing energy infrastructure.[37] With a total of approximately 258ha of solar panels proposed, the scale of the project is significant, being larger in area than the nearby township of Leeston.[38] While the solar panels would be spaced to accommodate internal roading and to allow for sheep to graze, the panels and supporting infrastructure will dominate the site. Other notable changes to the character of the site include the removal of internal shelterbelts (resulting in changes to the 'spatial compartmentalisation of the site)[39], and the erection of boundary fencing, security gates and the planting of indigenous species around the perimeter of the site.

75. During the construction phase there would be open views onto the application site of the panels and framing and the presence of the large-scale operation would be apparent. The applicant has proposed landscape treatments to mitigate the visual impact and change in rural character associated with the proposed activity. However, the vegetation planted at the boundary of the site[40] is estimated to take 4 years to fully establish, with the visibility of the structures gradually reducing over this period as the plants mature to a height of 4m[41] and become denser. Once fully established, the 3-metre-wide boundary vegetation will largely eliminate any visibility of the panels.[42] Some panels may remain visible through the two entrances, but any visibility will be relatively fleeting.

76. The addition of 2.1m high chain link security fencing around the perimeter of the site at the beginning of the site's development[43] which would include the placement of wiring along the top of the fencing and posts of up to 3m, will contribute to visual awareness of a non-rural activity operating from the site. However, this fence will be largely shielded by the proposed boundary planting as it establishes.

77. I consider that the adverse visual effects and change in rural character of the proposal will be primarily temporary in nature, reducing over the approximately 4 years as the new boundary planting establishes.[44] Once fully established, the boundary planting will largely eliminate any adverse visual effects of the proposal. Due to the flat topography of the area and the existing vegetation both at the site and at the surrounding properties, any adverse visual effects of the proposal will be localised in scale.

78. I agree with Mr Densem that the proposal will result in a relatively significant change to the inherent character of the site, irrespective of its visibility.[45]

79. While the proposal may result in a significant change to the character of the site, the significance of this change (and the degree to which it constitutes an adverse effect) is required to be made in the context of the District Plan, and as articulated by those that enjoy them. The District Plan anticipates that rural areas outside of outstanding natural or visual amenity landscapes are to maintain rural character and ensure that the rural area is a pleasant place to live and work in.[46] This is to be achieved (in part) by avoiding remedying or mitigating significant adverse effects of activities on the amenity values of the rural area.[47]

80. The proposed changes are of concern to the neighbours of the site, who in the Joint Submission noted their concern *"that essentially a quiet, rural district that has an aura of tranquillity and vistas of extensive pasture, livestock, and ornamental trees is being changed into an industrial site…"*.[48] Concern regarding the extent of change proposed were also made by the Glenmore Farming Company Ltd, who stated that the *"[t]his proposal would have to be the biggest shift away from farming as we know it"*, and asked that the proposal be *"handled with care and respect for the lives of the residents of the Brookside area"*.

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[37] LVEA at 6.1.2.
[38] As at 2015, based on the area of the township stated in the Ellesmere Area Plan.
[39] Landscape Review at [64].
[40] This is to be set back 10m from the boundary: Response to request for information dated 12 August 2022 at 5(c).
[41] Response to request for information dated 12 August 2022 at 5(c).
[42] LVEA at 6.1.1.
[43] But behind the existing and proposed boundary planting: AEE at 4.0.
[44] These temporary effects are addressed in further detail below.
[45] Landscape review at [62].
[46] ODP, Rural Volume, B3 Health and Safety Values, Objective B3.4.1 and B3.4.2.
[47] ODP, Rural Volume, B3 Health and Safety Values Policy B3.4.3.
[48] Joint Submission at page 3.

81. In light of the above, I consider that the proposal will result in adverse landscape and rural character effects, but that these effects will be mitigated over time through the establishment of the boundary vegetation, to the extent that any adverse effects will be largely experienced within the site. Within the site, I consider that these adverse effects are mitigated to a degree by:

    1. The use of sheep to graze the site which retains the rural productive use of the site and ground cover that characterises the Rural Outer Plains Zone.[49]
    2. A requirement that the solar array be returned to pastoral uses at the end of the solar array's operational life.

82. I move on to address the particulars of the planting, staging and extent of temporary effects. A more detailed assessment of the effects on each individual property is addressed in the section 95E assessment of the notification report.

83. As addressed in the AEE, each stage is expected to take between 3 to 4 months to construct, and it is during this time is when the highest level of adverse effect is expected due to the apparent change in character.[50] 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.[51]

84. During the construction phase of Stage 1, views of the Site from Branch Drain Road (including properties within the vicinity) will be partially screened by the existing shelterbelt along the road corridor. However, it is noted that there are large gaps in the existing planting, and neither the existing or proposed planting will entirely screen views to the solar array. The LVEA concludes that temporary adverse effects will be moderate-low prior to the boundary plantings reaching full maturity. In their submission, Donna and David Kewish and Ann Williams raised concerns that the solar panels will be directly visible from their house at 324 Branch Drain Road, noting that the hedge on the northern boundary of their property will not entirely block out views of the site, and that the applicants have not proposed any additional planting to screen these views.

85. The establishment of Stage 2 will be visible primarily from Buckleys Road (including properties in the vicinity), with more distant glimpses possible from Branch Drain Road and Hanmer Road (including properties in the vicinity). At the time of construction, existing shelterbelts along the southern boundary with 324 Branch Drain Road and along the northern boundary with neighbouring properties along Buckleys Road, along with the mix of existing and gap-filled planting (which will be one year old) along the remaining boundaries, will reduce, but not eliminate, views of the solar panels. Donna and David Kewish and Ann Williams note in their submission that Stage 2 of the solar farm will be visible along eastern boundary of their property until the proposed boundary plantings grow to a reasonable height.

86. Stage 3 of the solar farm development will primarily affect properties to the south and east of the site. An exotic shelterbelt, planted in double-staggered rows, is proposed along the boundary with Lot 1 DP 37121 (Caldwells/Grahams Road), with native planting proposed along the boundary with 180 Grahams Road and RS 9933 (Grahams Road and Branch Drain Road) and along the Hanmer and Caldwells Road boundaries. The LVEA concludes that glimpses into the site will be possible at the time of construction, but that the existing and proposed planting will provide a partial landscape buffer at this time. Due to the buffering provided, temporary effects are estimated to be low-moderate at first, reducing over time to very low.

87. To resolve their concerns regarding the temporary adverse visual effects of the proposal, the Joint Submission seeks that construction of the solar farm be put on hold prior to all proposed vegetation reaches over 2 metres in height, satisfactorily screens the solar array, and that measures are put in place to ensure the long-term maintenance of all boundary vegetation.[52] I move now to provide a recommendation as to how the concerns of the submitters are best addressed.

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[49] The submitters have raised doubts regarding the practicability of this. The Applicant has stated that the grazing of sheep at the site following the establishment of the solar farm is possible, and I accept this statement. I recommend that the requirement to graze sheep at the site form be incorporated within the conditions of consent.
[50] LVEA at [6.1].
[51] LVEA at [6.1].
[52] Joint Submission at page 4.

88. As addressed above, the ODP notes the importance of maintaining rural character and amenity. But it is clear that maintaining these features is not absolute in most rural areas.[53] The District Plan also recognises the importance of providing utilities,[54] and anticipates that utilities in rural areas where they are operationally appropriate,[55] subject to controls over scale and appearance. In addition, the National Policy Statement for Renewable Energy Generation 2011 ('NPSREG') requires decision-makers to have particular regard to the logistical and technical practicalities associated with enabling renewable energy generation activities.[56]

89. No evidence from the applicant as to the adverse consequences of delaying construction of the solar farm by including the conditions that sought by the submitters to avoid, remedy or mitigate the temporary adverse visual effects during the establishment phase of the project. However, subject to further information from the application in relation to the costs of such a requirement, I consider that construction of the solar farm should not begin until the proposed plantings shield the solar farm. I consider the exact details of this can be addressed as part of a landscape plan required to be authorised as part of the consent conditions, noting that the applicant can either elect to plant mature or fast-growing species, or delay construction until planting reaches a certain level of maturity.

Glint and glare

90. The applicant has provided a solar photovoltaic glint and glare report prepared by Pager Power to assess potential glint and glare effects. The Pager Power Report has been peer reviewed by Rudi Van der Velden. Both assessments were undertaken on the basis of there being no mitigation (in the form of vegetation or other actions to reduce the glare). There is no New Zealand-based methodology for assessing glint and glare effects. However, Pager Power have developed a methodology for assessing glint and glare effects that has been used to undertake over 900 glint and glare assessments world-wide,[57] including for a proposed solar farm in the Waikato that was recently approved under the COVID-19 Recovery (Fast-Track Consenting) Act 2020.[58]

91. The Pager Power assessment concludes that the proposed solar array will have:

    a. No significant impact on aviation activity associated with Christchurch Airport, due to the size of the proposal, distance of the proposal from the airport and level reflectivity of the panels[59].[60] Mr Van der Velden is in strong agreement with this assessment.[61]

    b. No significant impacts upon road users, due to the low movement on the local roads in the vicinity of the site.[62] Mr Van der Velden does not agree with the Power Pager conclusion that the traffic movements of the roads means that no mitigation is required, and considers that a glare analysis is required regardless of the traffic density of the road.[63] I agree with Mr Van der Velden's reasoning and address this matter further below.

    c. No adverse effects on nearby dwellings in practice, due to existing and proposed planting.[64] Mr Van der Velden is in general agreement with this assessment.[65]

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[53] An exception to this is contained in Rural Volume, B2 Physical Resources Policy B.2.2.5(a), which requires that utility structures or buildings be sited on hilltops in the margins of lakes or rivers or in areas identified as outstanding natural features and landscapes, sites with special cultural values, unless operational necessity makes this impractical. The site is not located in any of the locations subject to that policy.
[54] Rural Volume, B2 Physical Resources Objective B2.2.2.1.
[55] For example, Township Volume, Policy B3.4.16 encourages utilities which emit electromagnetic radiation to be located in rural zones. See also the reference to operational requirements for utilities in Rural Volume, B2 Physical Resources Objective B2.2.2.
[56] NPSREG, Policy C1(b).
[57] Power Pager Report at 3.
[58] Decision of the Expert Hearing Panel on an application by Harmony Energy Limited to the Environmental Energy Agency under the COVID-19 Recovery (Fast-Track Consenting) Act 2020 to establish and operate the Tauhei Solar Farm in Te Aroha West, Waikato Region at [7.64]-[7.65].
[59] Which the Pager Power Report notes is less than or equal to other reflective surfaces common in the natural and built environment, including water: at [4.1]. See also Appendices 1 and 2 to the Pager Power Report.
[60] Power Pager Report at [3.3].
[61] Glare Report Review at [4.1].
[62] Power Pager Report at [5.2].
[63] Glare Report Review at [4.3]. A comment of similar effect is also made in the Joint Submission at page 3.
[64] Power Pager Report at [8.2].
[65] Glare Report Review at page 17.

92. In relation to Christchurch Airport, I accept the report's findings that there will not be any impact on the operation of the Air Traffic Control tower, nor on runway thresholds 02, 02G, 11 and 29. The solar array will be within the pilots main field of view for the approach to runway thresholds 20 and 20G, but the experts agree that, in a worst-case scenario, any reflections would have a 'low potential for temporary after image'. The Impact Significance definition in Appendix D describes 'low' as meaning: *"A solar reflection is geometrically possible however any impact is considered to be small such that mitigation is not required e.g. intervening screening will limit the view of the reflecting solar panels."* In light of this finding, and given the distance of the proposal from the airport, it is accepted that glare resulting from proposal will not have adverse effects on Christchurch Airport and its operations.

93. In relation to effects of the proposal on the surrounding roading network, Mr Van der Velden found that glare conditions on Dunsandel and Brookside Road (in the morning) and Buckleys Road (significant glare conditions through the day) could be expected where there are insufficient obstructions such as vegetation to shield glare effects from the photovoltaic rays, and this could pose a health and safety risk – notably at the intersection of these two roads.[66] However, Mr Van der Velden notes that most of any potential glare is expected to be obstructed by the existing shelterbelts and vegetation. It is expected that the glare will be fully mitigated once the landscaping has matured to a height of at least 2 metres.

94. Given the extent of existing planting on the northern boundary of the site, the timing of the stages and the proposed planting, I consider that there is a risk that the health and safety of road users on Dunsandel and Brookside Road and Buckleys Road will be adversely affected by the establishment of stages 1 and 2 of the solar prior to the proposed vegetation reaching 2 metres in height. To mitigate this risk, I recommend a condition of consent requiring that no construction of the solar panels begin until the planting on the northern boundary reaches 2 metres in height, and that this be planted in accordance with a landscape plan approved by SDC prior to construction beginning. As addressed above, the applicant can choose to either source more mature plants from the outset, or obtain more juvenile plantings and delay construction until these are more established.

95. Potential glare effects on neighbouring properties is comprehensively assessed in the Pager Power Report and in Mr Van der Velden's review, and is addressed in the notification report. Concern regarding the effects of glare is noted in the Joint Submission. To address these concerns, the Joint Submission seeks the solar arrays be put on-hold until all boundary vegetation reaches 2 metres tall.

96. Mr Van der Velden states that the existing vegetation is likely to be sufficient to block a majority of any potential glare at the neighbouring, but notes that the mitigating effect of the existing vegetation (and hence the temporary glint and glare effects) is difficult to quantify. He states that the degree of effect will depend on that person's tolerance to glare.

97. The dwellings that will be most affected by glare the properties located to the north of the proposal.[67] As addressed in the notification decision, there is a large amount of existing planting that is likely to sufficiently screen the dwellings on these properties from any glare from the solar panels prior to the proposed landscape buffering becoming fully established. For these properties, I do not consider that any further mitigation is required, but I note that any residual glare effects would likely be addressed in any event through the imposition of conditions regarding the planting along Buckley's Road.

98. Based on the glare assessments, the dwellings in the vicinity of Branch Drain Road and Hanmer Road will be primarily affected by glare from Stage 3 of the development. I consider that the combination of existing vegetation between those dwellings and the subject site, the proposed landscaping (which will be established by Stage 3 of the development) and duration of the glare means that the effects of the glare will be satisfactorily addressed on those properties through the staging and planting proposed.

Noise and vibration

99. Potential noise effects associated with the construction and operation of the solar array have been provided in the Assessment of Environmental Noise Effects report by Acoustic Engineering Services, ('AES') ('Acoustic Assessment'), which has been peer reviewed by Marshall Day ('Acoustic Review').

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[66] Glare Report Review at [4.3].
[67] Such as those properties located on Buckleys Road, Stewarts Road, Smythes Road, Irwell Rakaia Road and Dunsandel and Brookside Road.

Construction noise

100. The Acoustic Assessment establishes that the key sources of noise generated during the construction of each staging would be associated with piling, civil works, panel construction and tree clearing. The applicant proposes to limit the hours of construction from 8am to 6pm Monday to Friday. Although construction activity would move around the site, AES have modelled noise associated with piling, civil works, panel construction, and tree clearing at the closest distance to each adjoining receiver (dwelling) to capture a worst-case situation. The Acoustic Assessment concludes that noise from the construction experienced at houses external to the site means that effects are likely to be reasonable, and that all construction noise should be managed in accordance a noise management plan drafted in accordance with NZS6803:1999.[68] In addition, the proposed construction noise is a permitted activity under the District Plan, is accordingly part of the permitted baseline.

101. However, the Acoustic Assessment notes that noise limits are likely to be exceeded when piling takes place within 50 metres of the dwelling at 324 Branch Drain Road.[69] The assessment recommends a package of special measures be developed to reduce the effects of piling at this property, including communication with the residents of this property, and potentially the erection of temporary noise barriers[70]. The Acoustic Peer Review considers that adverse noise and vibration effects can be mitigated, although not eliminated, through the provision of a noise and vibration management plan.[71]

102. The Acoustic Peer Review estimates existing daytime (residual) noise levels in the area are in the range of 40 to 50 dB L_{Aeq}. The Peer Review is in large agreement with the Acoustic Assessment in terms of the extent of construction noise effects, finding that some construction activities have the potential to exceed the appropriate limits. It recommends that potentially adverse construction noise effects be managed in accordance with New Zealand Standard *NZS 6803: 1999 Acoustics – Construction Noise*, and that doing so will acceptable construction noise effects. A day-time noise limit of 50 dB L_{Aeq} and night-time noise limit of 40 dB L_{Aeq}, both measured at the notional boundary of the nearest dwelling, to be appropriate.

103. Marshall Day concludes that any construction vibration effects can be effectively managed through an appropriate noise management plan.

Operational noise assessment

104. During the operational phase, it is understood that the key sources of noise will be the inverters, batteries, and transformers. These are distributed across the site. Noise would also be generated at times from staff or maintenance workers visiting the site. The applicant proposes to operate the noise-emitting items of the solar farm between 7.30am to 8.00pm, seven days per week.[72]

105. AES has undertaken modelling to assess the expected nose emission from the solar farm in operation. AES states that the modelling incorporates a cumulative noise emission from the solar array fixed plant items in all three stages operating concurrently.[73] AES has taken the sound power level for each item based on data provided by the manufacturer. AES has applied a +5 dB penalty to transformer noise levels to address the potential special audible characteristics for transformer noise, but not to the inverter or battery sources.[74]

106. AES predicts that the highest level of noise at the operational stage is 48 dB L_{Aeq} at 324 Branch Drain Road and 47 dB L_{Aeq} at 870 Hanmer Road.[75] The Acoustic Assessment concludes that the operation of the proposal will be clearly audible at times in the areas outside those dwellings, depending on other sources of environmental noise.[76] A number of other dwellings in the vicinity will receive noise of between 39 to 45 dB L_{Aeq}.[77]

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[68] Acoustic Assessment at [5.2].
[69] Acoustic Assessment at [5.2.1]. The assessment estimates that the noise exceedance at this property is estimated to last several days.
[70] Noting there may be practical difficulties in implementing this due to the height of the piling head.
[71] Acoustic Peer Review at [12].
[72] Rural Volume, C9 Activities, 9.16 Activities and Noise, Rule 9.16.1 Table C9.3.
[73] Acoustic Assessment at [3.1].
[74] Acoustic Assessment at [3.1].
[75] These noise limits are measured at the notional boundary of the dwelling at the property: Acoustic Assessment at [2.1.1] and [2.4].
[76] Acoustic Assessment at [5.1].
[77] Acoustic Assessment at Appendix B.

107. The Acoustic Peer Review notes that the applicant has not completed any ambient noise monitoring. Without ambient noise monitoring information, Marshall Day state that it cannot be concluded how audible the activity would be when considered cumulatively with ambient noise in the surrounding environment.[78] Marshall Day estimates existing daytime (residual) noise levels in the area are in the range of 40 to 50 dB L_{Aeq}. Presumably these levels are materially lower at night, but no evidence has been provided as to what night-time ambient noise levels are.

108. The Acoustic Peer Review notes that, while the applicant has provided assumed noise source levels and predicted levels at nearest dwellings, neither the location of the noise sources nor the calculation methodology has been provided in their report.[79] However, Marshall Day state that the source sound power levels are reasonably conservative, and that assuming AES has used the "skid" locations set out in the AEE, the predicted levels are plausible.[80]

109. Several submitters have raised concerns regarding the effects of noise at their properties. The Joint Submission notes that, *"in a rural environment country people can expect to live in peace and tranquillity"*, and the consistent hum of inverters, transformers and batteries contrasts with the short-lived noises (such as tractors, livestock and chainsaws) common in a rural environment.[81] Particular concerns are raised regarding:

    1. the cumulative effect of all batteries and inverters operating in unison;
    2. potential variations in environmental factors resulting in noise figures that contrast from those contained within the acoustic assessments;
    3. concerns regarding residents who wish sleep with their windows open; and
    4. the 'human factor' in the experience of adverse noise effects, noting that a number of different factors impact noise tolerance. It states that the approval of the application will inevitably affect the mental and physical wellbeing of some people in the Brookside area.[82]

110. In essence, the submitters raise two issues with the noise effects of the proposal; being concerns as to the accuracy of the predictions of what the noise will be, and whether the estimated noise emissions are reasonable taking into account the context of the surrounding environment[83]. These issues are addressed separately below.

111. In relation the submitters' concerns regarding the accuracy of the noise assessment:

    1. The Acoustic Assessment included modelling that includes the cumulative effect of all batteries, inverters and transformers operating in unison. As addressed above, while the location of the noise sources nor the calculation methodology has been provided in the Acoustic Assessment, Marshall Day concludes that the predicted noise levels are plausible.
    2. The Acoustic Assessment notes that the noise received at neighbouring locations may vary due to environmental factors, including natural factors such as bird and animal noise, and human-induced factors such as traffic or farming activities.[84] It is not clear whether the noise limits contained in the Acoustic Assessment allow for environmental factors. However, after acknowledging the potential variance caused by environmental factors, the AES conclude that, *"[o]verall, we expect even for [324 Branch Drain Road and 870 Hanmer Road (the properties most affected)], the noise will not interfere with typical domestic activities and the noise effects will be minimal*".[85] As above, while noting that there are uncertainties in relation to acoustic effects of the proposal, Marshall Day have noted that the predicted noise levels are plausible.

[78] Acoustic Peer Review at [9].
[79] Acoustic Peer Review at [7].
[80] Acoustic Peer Review at [7].
[81] Joint Submission at page 5.
[82] Joint Submission at page 6.
[83] Which, relevant to the submission, includes people and communities.
[84] Acoustic Assessment at [5.1].
[85] Acoustic Assessment at [5.1].

3. In relation to concerns regarding sleep, the Acoustic Assessment estimates that the noise levels inside dwellings would be approximately 10 to 17 dB lower (with windows open) than the external levels, depending on the aspect of the internal spaces.[86]

112. The submitters have not provided any expert acoustic evidence which challenges any aspect of the acoustic assessment.

113. In relation to the reasonableness of the potential operational noise effects, it is well established that noise or unwanted sound at unreasonable levels can adversely impact on people's health and amenity. However, while the Joint Submission speaks to the peace and tranquillity of the rural environment in Brookside, this expression of belief needs to be seen in the context of this environment.

114. Rural environments are generally far from quiet in the sense of there being no sound and there is an expectation in the District Plan that noise will be generated through rural productive land uses and activities. Although the applicant has not modelled ambient noise levels, Marshall Day have estimated that existing daytime (residual) noise levels in the area are in the range of 40 to 50 dB L_{Aeq}. Changes to noise levels in the existing environment are permitted as long as they comply with the District Plan and are not unreasonable.[87]

115. What level of noise can be reasonably expected in an environment is typically outlined in the District Plan minimum noise standards. The Plan sets a day-time noise limit[88] of 60 dBA L_{10} and a night-time noise limit[89] of 45 dBA L_{10}, assessed at the notional boundary of any dwelling.[90] This rule is a key method to implement the outcomes of Policy B3.4.13 which states:

> *Recognise temporary noise associated with short-term, seasonal activities as part of the rural environment, but ensure continuous or regular noise is at a level which does not disturb people indoors on adjoining properties.*

116. For completeness, I note that the Proposed District Plan contains a day-time noise limit of 55 dB L_{Aeq} and a night-time noise limit of 40 dB L_{Aeq}, measured at the boundary of any noise sensitive activity.[91] This rule seeks to implement Policy Noise P-1, which seeks to, *"[m]anage noise effects by setting… maximum noise limits to reflect the character and amenity of each zone…".*[92]

117. Both AES and Marshall Day acknowledge that the reasonableness of noise is not solely a function of the noise limit in the District Plan, and have provided their expert opinion on an appropriate level of noise received this environment. AES conclude that a day-time noise limit of 55 dB L_{Aeq}[93] is appropriate, while Marshall Day consider a day-time noise limit of 50 dB L_{Aeq} and a night-time noise limit of 40 dB L_{Aeq} to be appropriate.[94] Both reports are in agreement that, with the provision of appropriate conditions of consent, the noise and vibration effects during the operation phase will be able to meet the 50 dB L_{Aeq} limit recommended by Marshall Day.

118. Assuming that the noise is able to comply with the limits proposed by Marshall Day (which are below the District Plan noise limits), there is nothing in the plan or the acoustic reports to indicate that stricter limits are required. However, I briefly address the 'human factor' matters raised by the submitters, and their concerns that the noise from the proposal will impact the mental and physical health of nearby residents.

119. The RMA acknowledges people as part of the environment[95] and it is understood that psychological effects or the emotional responses of people to developments will constitute a valid resource management concern. However, it is my understanding that fears for health concerns should only be given weight if they are reasonably based on real risk.

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[86] Acoustic Assessment at [5.1].
[87] The RMA recognises this in s16 by requiring every occupier of land to adopt the best practicable option to ensure that the emission of noise from that land does not exceed a reasonable level.
[88] Between 7.30am and 8.00pm.
[89] Between 8.01pm and 7.29am.
[90] The SDP also contains Lmax noise limits that must be complied with.
[91] NOISE-REQ1, NOISE-TABLE 5 – Zone Noise Limits.
[92] I note that no decisions on submissions has been issued for these provisions yet.
[93] Measured at the notional boundary of the nearest dwelling.
[94] At this level, Marshall Day consider that adverse noise effects on receiving persons will be 'less than minor': at [10].
[95] Resource Management Act 1991, s 2: definition of environment includes "people and communities".

120. No expert evidence has been provided in the indirect health effects that may arise from the solar farm, such as sleep disturbance and annoyance by the noise and presence of the windfarm. The Joint Submission refers to World Health Organisation Guidelines (WHO) on noise and health. It is unclear which WHO guidelines is being referred to, but I am aware of two potentially relevant reports, namely the Guidelines for Community Noise (WHO April 1999) and the Night Noise Guidelines for Europe (WHO 2009).[96] To avoid negative effects on sleep, the WHO April 1999 recommends an indoor guideline for bedrooms of 30dB L_{Aeq} for continuous noise, and 45dB LA_{max} for single sound events. The recommendation assumes that the bedroom windows are open and the noise reduction from outside to inside is 15dB. The WHO 2009 assessment concludes that, to avoid negative effects on sleep the equivalent sound pressure level should not exceed 30dBA indoors for continuous effects. Assuming that a 40 dB night-time noise limit at the notional boundary of the nearest dwellings can be met, and taking into account the 10 to 17 dB noise attenuation estimate from outside to inside a dwelling provided as part of the AES assessment, it appears to me that the night-time noise limits contained in the WHO guidance can be met by the proposal for neighbouring dwellings.

121. The submitters have not provided any expert evidence to demonstrate how the potential noise effects of the proposal will impact their mental and physical health. In the absence of such evidence, and in light of the assessment of noise effects provided by AES and Marshall Day, I do not consider that the operational noise of the solar array will have a materially adverse effect on the mental health of neighbouring residents, provided that the noise limits stated in the Marshall Day peer review can be adhered to.

Recommendations

122. In light of the findings of the acoustic reports, it is considered that construction and operational noise effects can be effectively managed in accordance with appropriate noise measures.

Reverse sensitivity

123. The Joint Submission has raised several concerns regarding reverse sensitivity effects of the proposal on their farming operation. Particular concerns include:

1. The proposed planting will attract additional birds (estimated to be a multitude of five to ten times higher than at present) that will damage crops, resulting in crop damage in the vicinity of 20% per yield.
2. Electromagnetic radiation impacting the ability of bees to pollinate crops.
3. Shading from crops limiting crop yields.
4. Increased planting extracting soil moisture and nutrients that could otherwise be up taken by crops.

Assessment of these potential effects

124. At the outset, I note that the submitters have not provided any expert evidence to support the above concerns. I note that, in theory, these risks can be taken into account under section 3(f) of the RMA.[97] However, I consider that, to fall within section 3(f) of the RMA as an effect of low probability and high potential impact must not be simply a hypothesis – there must be some evidence supporting the hypothesis.[98] For the reasons addressed below, I do not consider that the reverse sensitivity effects raised by the submitters reach this threshold.

Attraction of birds

125. The ecological report notes that it is possible that common and widespread forest bird species may breed in the shelterbelts contained within the site. However, the submitters have not provided any evidence from a qualified expert to substantiate their concern that the proposal would generate a significant increase in the additional bird population at the site, nor the crop damage that may occur in neighbouring sites. Without such evidence, I consider that little weight can be placed on these concerns. It is noted

[96] It is understood that these guidelines have been referred to in other resource management contexts, including windfarms: see for example Re Meridian [2013] NZEnvC 59.
[97] Which includes within the definition of effects 'any potential effect of low probability which has a high potential impact'.
[98] *Shirley Primary School v Christchurch City Council*, C136/98, 4 December 1998 (EnvC) at [147].

that shelterbelts are common in this landscape, and that shelterbelts are proposed to be removed from the internal boundaries of the site.

Electromagnetic radiation impacting pollination

126. Electro Magnetic Radiation (EMR) on the ability of bees to pollinate. It is not known whether the findings of the EMR report in relation to the risk to people apply to other species, and whether EMR will impact the ability of bees to pollinate crops. Without any evidence, I do not consider that any weight can be placed on EMR as grounds to require conditions or to decline consent.

Reduction in soil moisture and nutrients for crops

127. As with the above, no evidence has been produced regarding the impact of the proposed plantings on the soil moisture and nutrients of neighbouring properties. Without any evidence, I do not consider that any weight can be placed on this alleged effect.

Shading of neighbouring properties

128. As addressed above, while no shading diagrams have been provided in relation to adjoining properties under different ownership, given the 4m height the perimeter plantings would be grown and maintained to, I consider it likely shading of the properties bordering to the south will occur between the hours of 1000 and 1400 on the shortest day of the year, and accordingly will not comply with Rule 2.1.1.5(b).[99]

129. I note that this a relatively small area, and the planting would provide amenity and ecological benefits. However, given the strong direction in the district planning documents and National Policy Statement for Highly Productive Land to avoid adverse effects on the productive potential of neighbouring land, I consider that the shelterbelt bordering the properties to the south should be setback a small distance into the site to reduce shading effects.

Dust

130. In addition, the notification decision contains an assessment of the risk of dust generated from ploughing, harvesting or fertilising processes at these sites could settle on the panels and reducing their ability to absorb light and generate energy. As addressed in that decision, the issue of reverse sensitivity has been raised with the applicant, who stated that it *"is not viewed as a major concern… as Canterbury rain is sufficient to keep the panels clean and the proposed planting will also provide some dust mitigation from adjoining primary production activities."*[100] In addition, the proposed vegetation would assist to reduce, but not eliminate, any dust entering the site. Any cultivation or soil disturbance occurring on adjoining properties is likely to be seasonal, further reducing the window whereby the panels may be compromised by dust that could contribute to complaints. Cultivation and soil disturbance is also provided for as a permitted activity in the District Plan, which protects the ability of adjoining properties to continue to undertake legitimate farming practices.

131. This particular issue has not been raised by submitters as a matter of concern.

Loss of productive soils

132. The Joint Submission has raised concerns regarding the loss of the productive potential of the land at the site. Based on mapping information available to Council, the application site contains Land Use Capability (LUC) Class 2 soils in the north and Class 3 in the south.

133. The proposal would result in the conversion of a site used for rural production purposes to one covered in solar panel infrastructure that has sheep grazing underneath and in between the panels. Whilst the grazing of sheep would still be supporting primary production, the productive potential of the land would be reduced.

134. The applicant has proposed to incorporate the following condition on the resource consent:[101]

> *The Consent Holder shall, within 12 months of the solar array reaching the end of its economic or operational life (not including periods when the solar array may not operate because of technical issues or*

[99] Rural Volume, C2 Tree Planting, 2.1 Shelterbelts and Amenity Planting, Rule 2.1.1.5(b).

[100]

[101] A slightly modified version of this condition has been recommended.

maintenance/improvement works including the replacement of panels and other infrastructure), clear the site of all panels, buildings/structures and cabling, and the land shall be returned to pastoral uses.

135. It is considered that such a condition would mitigate the duration of any loss of productive soils through the requirement to return the land to pastoral uses following the solar farm reaching the end of its life. However, given the applicant has sought an unlimited duration of consent, unless a duration is imposed on the consent, there is no certainty that the site will return to productive uses.

136. The significance of the impact of the proposal on highly productive land is addressed in more detail in the assessment of the National Policy Statement for Highly Productive Land provisions below. In the event that the NPS-HPL does not prevent a barrier to consent, conditions has been proposed to mitigate any effects of the proposal on the loss of productive soils.

Shading of adjoining properties (amenity)

137. A total of 506m of new exotic plants, and 437m of new native plants, are proposed along the southern boundary of the site. Once fully established and matured, the mitigation plantings have the potential to shade adjoining properties along the southern boundary of the site between the hours of 1000 to 1400 (inclusive) on the shortest day of the year. Planting is also proposed along the eastern and western boundaries of the site. However, do not consider that this planting will have any minor or more than minor adverse effects on any person, given that there will be limited shading between 1000 to 1400 (inclusive) on the shortest day of the year.

138. The applicant has not provided any shading diagrams to demonstrate the effects of shading from the proposed landscaping on adjacent properties.

139. There are three properties located along the southern boundary of the site: 324 Branch Drain Road, 180 Grahams Road and Caldwells Road. In relation to these properties:

    a. The dwelling at 324 Branch Drain Road is the closest to the existing and proposed shelterbelt. However, no changes are proposed to the existing shelterbelt.

    b. The dwelling at 180 Grahams Road is located approximately 150m to the southwest of the proposed southern boundary, and is therefore unlikely to experience any shading (and particularly so between 1000 to 1400). As such, any shading effects will be limited to the paddocks directly adjacent to the subject site.[102] Given the landscaping will be maintained to a height of 4m, I consider that any adverse effects of the shading are likely to be less than minor.

140. Overall, I consider that any effects relating to the shading of neighbouring properties will be less than minor.

Effect of fencing on adjoining properties

141. The proposed fence will be established within 5 metres from the boundary of the site with several neighbouring properties. I note that the height of this fence will be 0.1m above the 2m height permitted under the ODP – meaning that the assessment of effects is limited to the additional 0.1m height above the 2m permitted limit. The fence will be situated behind the proposed landscaping, meaning that it will largely be set back from the site boundaries and shielded from view once the landscaping has been established. There are existing shelterbelts between the site and a number of the dwellings bordering the site, meaning that the fence it will be difficult to see even prior to the establishment of the proposed landscaping. For these reasons, I do not consider that the establishment of the deer fences surrounding the site will have an adverse effect on the owners and occupants of adjacent properties.

Traffic safety and vehicle movements s

142. Vehicle access to the site during both construction and operation will be through existing vehicle access points on Buckleys and Hanmer Roads. During the construction phase, vehicles will access the site from the vehicle access on Buckleys Road, with Stage 3 being accessed through the existing vehicle crossing on Hanmer Road. Both Buckleys Road and Hanmer Road are formed and sealed local roads under the

[102] The effects of the proposed planting on the agricultural productivity of these paddocks are assessed in the assessment of reverse sensitivity effects' section.

District Plan and, as such, 60 equivalent car movements are permitted per day (averaged over a one-week period) for the activity.[103]

143. The AEE provides that, during the construction period, there will be five staff vehicles (equating to 10 ecm) and four heavy goods vehicles (equating to 24 ecm) entering and exiting the site each day. Overall, it is therefore estimated that there will be 34 ecm per day. Once all three stages of the solar array are complete, its ongoing maintenance and operation will be a largely passive activity, with approximately four vehicle trips per month.[104]

144. Car parking and manoeuvring for all light and heavy vehicles will be provided within the site, away from site boundaries.

145. In relation to the vehicle crossings, the applicant has agreed to upgrade the Buckleys Road crossing to comply with Appendix E10.C1, as requested by the Council's Transportation Department. However, the crossing is located only 53m from the nearest intersection, which is less than the 60m distance required by the District Plan. The Hanmer Road vehicle crossing is also less than the required 60m distance from the intersection of Hanmer and Caldwells Roads, and it would not be formed to the required commercial and heavy vehicle standard of Appendix 10 E10.D of the District Plan. Despite the above, the Council's Transportation Department have reviewed the application and the only upgrade they consider necessary is for the vehicle crossing to be sealed to at least the property boundary or a distance of 10m, whichever is the lesser of the two.

146. Following comments from the Council's Transportation Department, I consider that the standard to which the vehicle crossings would be formed will be sufficient to cater for the volume of traffic generated during the construction and throughout the operational phase of the solar array. During the construction phase, as vehicle movements to and from the site would be spread out across the day this would minimise the potential for conflict to occur at the vehicle entranceways to the site. The adjoining roading network also caters for relatively low levels of traffic and other road users should have sufficient visibility of vehicles entering and exiting the vehicle crossings to the site from the vehicle crossings.

147. Overall, for the reasons discussed above, subject to appropriate conditions I consider that that the proposal will satisfactorily manage adverse traffic safety effects.

Traffic amenity

148. In relation to noise nuisance effects associated with vehicles entering and exiting the site, I consider that noise and vibration associated with trucks slowing down and speeding up during construction would likely have the greatest impact on adjoining and adjacent property owners and occupiers. It is considered that traffic amenity effects can be appropriately managed as part of a construction noise management plan.

149. Overall, I consider that any effects relating to traffic safety can be mitigated through consent conditions to the extent that they will have a less than minor on the environment.

Earthworks and dust

Construction period

150. Earthworks are proposed to drive piles to support the solar panel frames, trench to lay cables connecting the frames of the solar panels together, disturb topsoil to prepare areas for the locatable buildings, contains, inverters and future battery sites, and spread gravel for form internal tracks. The application states that there is no requirement for large stockpiles and that if any stockpiles are proposed they would be located away from adjoining property boundaries. The internal tracks/accessways would be informal and no soil scraping is proposed to establish these.

151. The AEE notes that earthworks can have adverse effects on the quality of water in aquifers and surface waterbodies where contaminants may enter water.[105] There is also a potential for dust to be generated due to the exposure of bare soil and movement of construction machinery. The earthworks associated with each stage would be visible from a number of adjoining properties and the road to varying degrees. Views of the earthworks would diminish across the site and once the installation of the panel framing and

[103] Rural Volume, C9 Activities, 9.13 Activities and Noise, Rule 9.13.1.2.
[104] AEE at [4.7].
[105] AEE at [6.5.1].

panels commence the infrastructure would likely dominate the site to a greater extent than the earthworks.

152. To minimise potential dust nuisance effects on adjoining and adjacent landowners and occupiers and to minimise the migration of sediment offsite during construction, the applicant proposes to manage earthworks through the use of a Sediment Control Plan (SCP) that will incorporate a Dust Management Plan.[106] The AEE concludes that the implementation of such plans, along with construction approach, staging and management plans will ensure that any adverse earthworks and dust effects will be avoided or managed appropriately. Compliance with the proposed landscape management plan would reduce the adverse visual effects of the earthworks.

Operation

153. To minimise the potential for dust nuisance effects to arise throughout the operational period grass cover would be maintained on the site and if required the internal tracks would be gravelled to manage potential dust and sediment effects. The application states that no stockpiling of material is proposed.

154. The submitters have raised concerns regarding the maintenance of grass under the panels over the lifetime of the solar array. Clarification was sought from the applicant as to whether the maintenance of grass under the solar panels would be achievable, with the applicant confirming that it would be although it may overtime become patchy in parts.[107]

155. For the above reasons, I consider that ongoing dust nuisance effects is unlikely to present an issue and can be managed through appropriate consent conditions to the extent that any effects will be less than minor. Due to the proposal being located within a rural environment, I note that a small amount of dust is anticipated by the District Plan within the Rural Outer Plains Zone.

Cultural effects

156. The application site contains a site of significance to Tangata Whenua within Stage 2, being Wāhi Taonga Management Area C59 (Ovens/Midden) located on Lot 2 DP 387576 (formally RS 5974). In accordance with Rule 1.3 of the District Plan, earthworks within this Wāhi Taonga Management Area are limited to the disturbance of soil over areas and depths where that soil has previously been disturbed by cultivation, plantings (trees, pasture or crops), buildings or earthworks. These restrictions are in place to minimise the risk of any artefacts or remnants associated with past settlement or occupation by Tāngata Whenua from being removed, damaged, or destroyed.

157. The applicant has consulted with the Tangata Whenua Advisory Service (TWAS) and Mahaanui Kurataiao Ltd (MKT) in relation to the proposal so that the location of C59 could be accurately defined and excluded from any earthworks associated with the development of the site. Through this consultation process,[108] the applicant has agreed to place a 50m fenced exclusion buffer around the C59 within which no earthworks would be undertaken or solar panels constructed.[109] This 50m exclusion zone has been identified on the site plan dated August 2022.

158. The TWAS advice provides that the Rūnanga do not consider themselves to be an affected party, and that the existing fencing and proposed 50m setback from earthworks would be sufficient to protect the site.[110] Clarification from Mahaanui Kurataiao Ltd was sought as to whether this extends to the Selwyn District Council application, who confirmed that the proposal was considered holistically, rather than only relation to the ECan application.[111] In line with the TWAS advice, the applicant has proposed an accidental discovery protocol, a 10-metre setback from the water races and drains surrounding the site, to implement an erosion and sediment control plan, and has undertaken to not undertake indigenous planting on the wāhi taonga site.[112]

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[106] AEE at [6.5]. It is noted that an Erosion and Sediment Control Plan is also required to be prepared under CRC223908.
[107] Response to RFI dated 10 May 2022 at [8]. This is supported by photographs of an existing area of the application site that has solar panels erected on it
[108] Refer to email from Kenya Calder to Charlotte Scotchbrook dated 21 June 2022.
[109] AEE at 6.5.
[110] Tangata Whenua Advisory Services response completed by Fraser Doake dated 5 April 2022.
[111] Email from Kenya Calder to Charlotte Scotchbrook dated 21 June 2022.
[112] Email from Claire Kelly to Charlotte Scotchbrook and Cherie-Lynn Lewis dated 21 April 2022.

159. Persons who hold mana whenua are best placed to identify impacts of the proposal on the physical and cultural environment valued by them. Given that mana whenua do not consider themselves to be affected by the proposal, and the measures the applicant is proposing to put in place to address any effects on Ngāi Tahu values, I consider that the adverse effects on tāngata whenua/cultural values of the site are appropriately addressed.

Ecological Effects

160. The application includes an Ecological Impact Assessment Memo completed by Ecologist, Dr Jaz Morris of Boffa Miskell. The application and assessment has been reviewed by the Council's Senior Biodiversity Advisor, Mr Andrew Spanton.[113]

161. In relation to terrestrial vegetation, the assessment acknowledges that the proposal would result in the loss of existing vegetation on the site or modification of existing vegetation. However, it is understood that the site does not contain any indigenous vegetation. From an ecological perspective, the assessment concludes that the development of the site would have a very low level of ecological effect.

162. In relation to avifauna, the assessment found that:

    a. With regards to habitat loss, although there would be a permanent loss of habitat due to the construction of buildings and clearance of shelterbelts, this would only affect a small portion of the site and in general only offers very low quality and largely occasional or temporary feeding habitat for a limited range of indigenous and exotic bird species. Permanent habitat modification will occur largely across the site with the solar panels reducing habitat availability for those birds that use pastured areas of the site. For birds that use the site transiently, the panels may make the site less attractive for landing or flocking, although it is considered likely that the indigenous birds that currently use the site would continue to do so. Overall, the assessment concludes the habitat loss would have a very low level of effect on avifauna.

    b. Construction would also have a very low level of effect on avifauna, as the birds present on site during the construction would likely disperse readily into surrounding habitats. The assessment recommend that the clearance of shelterbelts and construction of the solar arrays occurs outside of the main breeding season, and the applicant has agreed to this.

    c. During the operational period, there is a potential risk of bird strike due to birds potentially mistaking light reflecting off the panels as water. Although there are no ponds within the vicinity of the site, Te Waihora / Lake Ellesmere is c.7 km away and supports a wide range of water bird species. The assessment found that a combination of the irregular shape of the site, distance from rivers (which form a key flight path for birds), orientation of the panels away from Te Waihora / Lake Ellesmere, the lack of visibility of the panels to birds flying at low to moderate elevations means that site is less likely to be seen and, if seen, less likely to be perceived as a waterbody by birds. The assessment concludes that that the threat of bird strike, while possible, is negligible, and constitutes a very low to low level of effect.

163. The reflection of polarised light from solar panels has been speculated to have potential adverse effects to some emerged (adult) freshwater invertebrate taxa (particularly mayflies, stoneflies, and dipterans) that are naturally attracted to the similar light refraction properties of water (ponds). Invertebrates may therefore lay eggs on solar panels, thinking it to be ordinary pond habitat, leading to breeding failure. In the context of this proposal, the Boffa Miskell assessment notes that this possible effect is considered unlikely to be of any ecological concern, as it is unlikely that any important populations of indigenous invertebrates are present at the site. It is particularly unlikely that the site supports important populations of particularly vulnerable taxa such as indigenous mayflies or stoneflies due to their general habitat requirements for fast flowing clean waterways. I accept this assessment.

164. The water race along the southern side of Buckleys Road and the western side of Hanmer Road is identified as a mudfish habitat. Given the works will be located within the existing farmed area, and setback 10m from the waterways surrounding the site, it is not considered that the proposal will have any effects on surrounding waterways that support the Canterbury mudfish.

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[113] Email from Andrew Spanton to Charlotte Scotchbrook dated 4 April 2022.

165. The application has also been reviewed by the Council's Senior Biodiversity Advisor, Mr Andrew Spanton, and no concerns have been raised with regards to the proposal from a biodiversity perspective if certain measures are implemented and adhered to. This includes the recommendations noted in Ecological Impact Assessment Memo. In particular, the construction of the solar panels occurring outside of the main bird breeding season, being September to January and notifying the Council's Biodiversity Officers, prior to any works, if an upgrade to the vehicle crossing on Buckleys Road is to be undertaken. The applicant does not have issues with this approach.

166. It is noted that the applicant's currently propose to undertake the construction work beginning in September of each year, running for up to four months. This would appear to fall squarely within the main breeding season of the birds. Given the practicalities of construction, an alternative condition that would allow construction to take place following an inspection of the site by a qualified ecological expert and, if any birds found, the preparation of an ecological management plan, has been recommended, in line with the alternative recommendation of Dr Morris.

167. The Joint Submission has raised concerns that the impacts of the solar farm on wildlife, invertebrates and aquatic organisms have not been correctly described.[114] However, no specific concerns regarding the ecological assessment have been raised and no expert opinion has been provided. Without such information, I consider that little weight can be placed on these concerns.

168. For the reasons discussed above, I consider that the ecological effects of the proposal can be appropriately managed with conditions.

Water quality effects

169. Matters in relation to water quality have been addressed in the resource consents granted by the Canterbury Regional Council. In any event, I consider that any water quality effects can be appropriately managed by appropriate conditions.

Natural hazard effects

170. The AEE contains an assessment of the risk of natural hazards impacting the proposal, or the proposal exacerbating flooding on other properties, in section 7.6.4 of the AEE. This assessment is adopted. For the reasons addressed in the AEE, it is considered that the proposal adequately mitigates any risks of natural hazards to people, property and infrastructure.

Contaminated land

171. As addressed in the notification report, it is considered that a HAIL activity occurred at the shed on 821 Hanmer Road. The Applicant has confirmed their compliance with Regulation 8.3 of the NES. To further reduce any adverse effects, the applicant has agreed to the following conditions to ensure that any potential adverse effects are managed:

    a. Any disturbed soil in the vicinity of the shed on 821 Hanmer Road is retained to that area and stabilised to an erosion resistant state within one month.

    b. That soil disturbed during earthworks in the shed area on 821 Hanmer Road should not be deposited elsewhere on the wider site.

172. I consider that the proposal can effectively manage any effects associated with any potentially contaminated soils at the site.

Health and Safety Effects

173. The Joint Submission raises a number of potential health and safety risks of concern, including:

    1. Low-level chronic electro-magnetic radiation.

    2. Chemical leachate discharges resulting from both the operation of the solar array and discharges to land, and in the dismantling and the disposal of the solar panels following the closure of the solar farm.

[114] Joint Submission at page 19.

3. The risk of the batteries at the solar array catching fire, and any toxic chemicals released during any fire.

These matters are addressed in turn below.

Electromagnetic radiation

174. The submitters have raised concerns that the application contains no assessment of the long-term 'chronic' health effects of electromagnetic radiation from solar farm operations over a 35-year period.[115]

175. Following the submitter's concerns, the applicant has provided a report from EMR Services, which provides the results of measurements of low frequency electric and magnetic fields ('EMR') around another Kea Energy solar farm in the Wairau Valley. The report notes that there are two main sources of EMRs at solar farms: [116]

1. the combiner boxes that combine the outputs from a number of solar panels to send a direct current to the inverter; and
2. the inverter and transformers on the inverter skid.

176. EMR measurement results in the report are expressed as a percentage of the exposure limits recommended for the public by the International Commission on Non-Ionising Radiation Protection (ICNIRP).[117] The ICNIRP is referred to in the National Policy Statement on Electricity Transmission 2008 as the basis for provisions dealing with electric and magnetic fields associated with the electricity transmission network.[118] Appendix 2 of the EMR report contains further details on the ICNIRP exposure limits.

177. The EMR report concludes that:

1. EMF values in respect of both the combiner box and inverter skid are low with respect to ICNIRP limits. The report found that the *"solar panels themselves, and the combiner boxes mounted beneath each string of panels, only produce very weak fields. Beyond the security fence the solar farm would make an indiscernible difference to electric and magnetic field exposures"*, and concludes that *"electric and magnetic fields from the solar farm would have no effect on the health of people around it"*.[119]
2. DC electric fields would be low, and would rapidly decrease with distance.[120]
3. Where a combiner box is handing more panels, the magnetic field could increase proportionally. However, the EMF's near the combiner be well below ICNIRP 1998 and 2010 public limits, and make a negligible difference to fields a few tens of metres from the box.[121]
4. Taking a conservative approach and assuming that the scale of EMR increases in proportion to the power generated by the inverter on the inverter skid, magnetic fields would comply the ICNIRP 2010 public limit, and with the ICNIRP 1998 limit for occupational exposures, when the current system is at maximum capacity. Even with the larger inverter skids, there would be indiscernible changes to fields outside a security fence around such an installation.[122]
5. There will be no electrical fields detectable from any cable installed to feed into the local distribution network.[123]

178. I consider that, on the basis of the EMR report's findings, that the EMR is unlikely to have any adverse health effects on the health of the people living within the vicinity of the solar farm.

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[115] Joint Submission at pages 6-7.
[116] EMR report at [2].
[117] EMR report at [1].
[118] National Policy Statement on Electricity Transmission 2008, Policy 9.
[119] EMR report at [3.1].
[120] EMR report at [3.2].
[121] EMR report at [3.3.1].
[122] EMR report at [3.3.2].
[123] EMR report at [3.3.3].

Fire

179. The Joint Submission has raised concerns regarding the batteries at the site catching fire, and the difficulty of extinguishing any such fire. The submitters do not consider that the risk of long grass at the site will add to this risk, and that the use of sheep to keep the grass low will not be effective in practice.[124]

180. Similar concerns were raised in the first request for further information, and were addressed by the applicant in their response.[125] In short, the applicant notes that a Health and Safety Management Plan and a Fire Emergency Plan are required to be provided under the Health and Safety at Work Act 2015 and Fire and Emergency New Zealand Act 2017 respectively. The Applicant also notes that it is required to comply with several electrical standards, codes of practice and regulations made under the Electricity Act 1992 and Electricity Industry Act 2010.[126] Any resource consent granted does not excuse compliance with these requirements, which provide a relatively comprehensive approach to the management of any fire risks associated with the proposal.

Chemical leachates

181. The Joint Submission has also raised concerns regarding the leaching of toxic chemicals from damaged solar panels, and the consequential risks of land contamination from any discharges.

182. It is noted that any discharges of contaminants are regulated by the Canterbury Regional Council in accordance with section 15 of the RMA. As addressed above, the applicant has obtained a resource consent from CRC223909 authorising the discharge of operational stormwater to land. This resource consent authorises the discharge of stormwater generated from solar array panels.[127] The consent also contains maintenance and inspection requirements, along with requirements to avoid any spillage of hazardous substances at the site.[128]

183. In relation to the storage and disposal of batteries of other hazardous substances, the Resource Legislation Amendment Act 2017 removed territorial authorities' jurisdiction to control any effects of the use of land for the purposes of preventing or mitigating any adverse effects of the storage, use, disposal, or transportation of hazardous substances.[129] It is understood that the storage of any hazardous substances at the site (including any substances contained within the solar panels and batteries) are managed under other legislative regimes, including the Hazardous Substances and New Organisms Act 1996 and Health and Safety at Work Act 2015, however the applicant has not provided any further details in relation to this. In any event, it is considered that any risks can be appropriately managed through conditions requiring that the solar panels be maintained, monitoring, and closure of the solar farm.

Shading of the road

184. The proposal would involve the planting of native and exotic plant species around the permitter of the site for screening purposes. In some cases, this would involve infill planting but would also include the plantings of new species along boundaries of the application site where plantings may not currently exist. Once established, the mitigation plantings as shown on the 'Site Plan' dated August 2022 would be retained to a minimum height of 4m.

185. Boffa Miskell have provided shading diagrams which confirm that shading of the Hanmer Road and Branch Drain Road carriageways would occur between the hours of 1000 to 1400 (inclusive) on the shortest day of the year which therefore has the potential to generate adverse traffic safety effects by increasing the likelihood and duration that the carriageways may become iced over. Having reviewed the shading diagrams:

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[124] Joint Submission at page 10.
[125] Response to request for further information dated 10 May 2022 at [7].
[126] As stated by the applicant in the Response to request for further information dated 10 May 2022 at [7], these include standards relating to lightning, substations and high voltage installations, inverter requirements, wiring rules, the safety of battery systems for use with power conversion equipment.
[127] CRC223909, condition 1.
[128] CRC223909, conditions 6 – 10.
[129] Which was previously contained in section 31(1)(b)(ii) of the RMA, but was repealed by section 13(2) of the Resource Legislation Amendment Act 2017.

1. In relation to Hanmer Road, shading will be minimal, with shading largely occurring in the afternoon. The shading diagrams illustrate that at 10am no shading of the road carriageway would occur which would assist with reducing ice, if formed.
2. With regards to Branch Drain Road, the shading diagrams also showed that a substantial amount of shading would occur along the northern end at 10am. However, in response to concerns raised by Council's Transport Department, the applicant amended the landscaping so that it would be setback 10m from the road boundary. As a result, only minimal shading of the Branch Drain Road carriageway is anticipated, being approximately 3.25m at 10am and reducing throughout the day.

186. In relation to traffic safety effects, following comments received from the Council's Transport Department, I consider any adverse effects of the shading of the roads surrounding the site are acceptable.

Effect on property values/ saleability of property

187. Donna and David Kewish and Ann Williams are concerned that the proposal will have an impact on the value and saleability of their property. It is well established that a potential reduction in property value is not relevant as a stand-alone effect, but rather serves as a proxy for the adverse effects of a proposal on amenity values and the like. In any event, the market can be an imperfect measure of the environmental effects of an activity. Therefore, I do not consider that any potential impact of the proposal on the value or desirability of neighbouring properties is a relevant effect.

Community opposition to the proposal

188. The Joint Submission states that the rural community around Brookside is opposed to the proposed solar farm, and that decision-making on this resource consent application should represent the 'will of the people'.[130]

189. The RMA also establishes clear duties and responsibilities for decision-making. It is consent authorities that have been given statutory responsibility to promote sustainable management. To simply make decisions based on the alleged majority view of submitters or the broader community would not be consistent with those responsibilities. Sustainable management of a resource is more complex than simply ascertaining community preferences in lieu of the matters contained in Part 2 of the Act.

190. Ultimately, it is the role of the Commissioner in this case to evaluate the submissions and evidence before them against the relevant provisions of the RMA to make a decision on this application.

Future power pole lines and the upgrade of the Brookside Substation/ future solar farms

191. The Joint Submission raises a concern regarding future works and upgrades to the Brookside substation, local transmission lines in the area, and the possible expansion of the area under solar panels. The AEE notes that upgrade work will be required at the Brookside substation when the load increases. It states that Orion has agreed to undertake this work, but that this work is outside the scope of this application.

192. The future state of the environment is relevant only as it might be modified by the operation of permitted activities and those conducted under lawful consents, provided it appears those consents will be implemented. As such, future activities that require resource consent are not relevant to decision-making on resource consent applications. I consider that the effects of any future upgrades to the substation or transmission lines, or any future expansion of the solar array[131], can be considered at the point in time that those works take place – noting that such activities are likely to be regulated under the utilities chapters of the ODP and PDP.

193. Mr Densem comments on the potential cumulative effect were multiple solar farms to establish within the vicinity of the site. This is a potential cumulative potential effect which cannot be considered until an application is lodged for consideration in the future.

Economic viability

194. The Joint Submission goes into some detail regarding the economic costs of the application, and its concern that the proposal is not financially viable. Although the economic effects of an application can be relevant, the financial viability of a proposed activity is not an economic effect. Consent authorities

[130] Joint Submission at page 16.
[131] There is no evidence that the solar array will be expanding.

are not called on to judge the business viability of proposals that are the subject of resource consent applications. The RMA does not require the Council to determine the 'need' for an activity – this is rather a matter of commercial judgment for the applicant.

Consideration of alternative locations

195. The Joint Submission notes that there a number of alternative locations for the solar array not located on productive land that have not been considered by the applicant.

196. Clause 6(1)(a) of Schedule 4 of the Act provides that a description of any possible alternative locations or methods of undertaking the activity is required if it is likely that the activity will result in any significant adverse effects on the environment. The requirement to consider alternative sites is also guided by Policy 5.3.9 of the Canterbury Regional Policy Statement, which provides that:

> *when determining any proposal within a sensitive environment (including any environment the subject of section 6 of the RMA), requiring that alternative sites, routes, methods and design of all components and associated structures are considered so that the proposal satisfies sections 5(2)(a) – (c) as fully as is practicable.*

197. For the reasons addressed above, I do not consider that the proposal will result in any significant effects on the environment. I also do not consider that the site constitutes a 'sensitive environment' for the purpose of Policy 5.3.9.

198. However, as is addressed in the NPS-HPL assessment below, I consider that further information from the applicant is required to establish whether there is an operational need for the proposal to occur at this site, and that information may include whether there are other suitable locations for the proposal that are not located on highly productive land.

Positive effects

199. The AEE outlines a number of positive effects that it alleges will be provided by the application. These include a prediction that the proposal will be sufficient to supply electricity to 22,000 homes in Canterbury annually.[132] In doing so, the proposal will assist in meeting national targets in increasing electricity generation from an available and renewable resource, and will assist in reducing greenhouse gas emissions by reducing reliance on fossil fuels.

200. The proposal will also reduce adverse environmental effects associated with dairy farming, with a reduction in nitrogen discharges to freshwater and in water used for irrigation. The mitigation planting may also assist in creating additional habitat and a high amenity boundary interface with the adjoining rural activities.

Summary – Assessment of Environmental Effects

201. Overall, subject to the recommended conditions of consent, I consider that the effects of the proposal on the environment can be appropriately avoided, mitigated and managed.

Policy Statements, Plans and Regulations

202. There are a number of statutory document that are relevant to the assessment of this application. These documents include the:

1. Operative District Plan ('ODP');
2. Proposed District Plan ('PDP');
3. Canterbury Regional Policy Statement ('CRPS');
4. National Policy Statement for Renewable Energy Generation
5. National Policy Statement for Highly Productive Land.

[132] AEE at [6.8].

203. The applicant has provided an assessment of the proposal against the provisions of these documents in section 7 of the AEE. A full list of the provisions the applicant considers to be relevant are contained in Appendix 11 of the AEE.

Operative District Plan Objectives and Policies

204. The Rural Volume of the ODP contains a number of provisions relevant to the proposal. The Rural Volume Objectives and Policies are structured into four groupings:

1. B1 Natural Resources
2. B2 Physical Resources LURP
3. B3 Health and Safety Values
4. B4 Growth Rural

Natural resources

205. The Natural Resources Chapter contains relevant provisions addressing soils, vegetation and ecosystems and waterbodies.

Soils

206. The provisions I consider to be relevant for soils are set out below:

> *Objective B1.1.1: Adverse effects of activities on the District's land and soil resources are avoided, remedied or mitigated.*
>
> *Objective B1.1.2: People and their property are not affected by contaminated soil or unstable land and any adverse effects on the environment are avoided, remedied or mitigated.*
>
> *Objective B1.1.3: Promote the sustainable management of the soil resources of the District*
>
> *Policy B1.1.2: Avoid adverse effects on people through exposure to contaminated land and mitigate or remedy any adverse effects on the environment.*
>
> *Policy B1.1.3: Encourage the management of contaminated sites so that effects on peoples' health or on the environment are avoided.*
>
> *Policy B1.1.7: Avoid removing large quantities of topsoil from sites unless:*
>
> - *The site will be covered in hardstanding; or*
> - *The topsoil will be replaced and the site replanted, when the activity ceases.*

207. The Applicants have provided an assessment of the proposal against these provisions in section 7.5.1, which I adopt. In addition to comments noted in that section, I consider that:

1. The applicant has agreed to measures regarding the HAIL site at 821 Hanmer Road. I consider these measures are consistent with the direction in Objective B1.1.2 and Policy B1.1.3.
2. I consider that the risk of chemical leachate contaminating the soils is sufficiently managed under separate legislation and through the regional council's functions such that the proposal is consistent with Objective B1.1.2 and Policy B1.1.3.
3. Resource consent CRC223908 and the proposed ESCP will ensure that the earthworks are managed appropriately to avoid or mitigate adverse effects on the land or soil resource.
4. The panels that have been established since 2015 demonstrate that vegetation under the panels is able to recover, and that there is no evidence from those panels of resulting rills or channels caused by runoff.

5. The applicant has confirmed that sheep will be able to graze under the paddocks. Based on the information provided in the application, the proposed solar array will not prevent the land and soil being used for productive purposes following the closure of the solar array.[133]

Vegetation and ecosystems

208. The provisions I consider to be relevant for vegetation and ecosystems are set out below:

> *Objectives B1.2.1: Significant areas of indigenous vegetation and habitats of indigenous fauna are recognised and protected and enhancing areas of indigenous vegetation is encouraged.*
>
> *Objective B1.2.4: The potential adverse effects from activities on areas of indigenous vegetation, habitats of indigenous fauna, and indigenous biodiversity and functioning are avoided, remedied or mitigated.*
>
> *Policy B1.2.5: Encourage the retention of existing indigenous vegetation on the margins of lakes, rivers, wetlands and streams and the enhancement of these areas through management practices which allow for the re-establishment of vegetation of the margins of lakes, rivers, wetlands and streams in areas where it has been depleted.*
>
> *Policy B1.2.6: Adverse effects on indigenous ecosystems, vegetation and habitat should be avoided, remedied or mitigated where these areas are important for maintaining the indigenous biodiversity and ecosystem functions and natural character of the District.*

209. The Applicants have provided an assessment of the proposal against these provisions in section 7.5.1, which I adopt. Overall, for the reasons addressed in the AEE and Applicant's ecological assessment, the level of effect of the construction and operation of the proposed solar farm on indigenous biodiversity is expected to be low.

Waterbodies

210. The provisions I consider to be relevant for waterbodies are set out below:

> *Policy B1.2.5: Encourage the retention of existing indigenous vegetation on the margins of lakes, rivers, wetlands and streams and the enhancement of these areas through management practices which allow for the re-establishment of vegetation of the margins of lakes, rivers, wetlands and streams in areas where it has been depleted.*
>
> *Objective B1.3.1: Contamination of ground water or surface water is avoided and/or mitigated and water quality improved in degraded waterbodies through changes in land management practices and controls on land uses likely to cause waterbody contamination.*
>
> *Objective B1.3.2: To protect and enhance the vegetation, habitat values, ecosystem processes and amenity values of waterbodies and their riparian margins, their role in maintaining water quality and their significant landscape values.*
>
> *Objective B1.3.3: Protect and enhance the amenity values along waterbodies.*
>
> *Objective B1.3.6: Land use activities, and particularly earthworks, forestry, vegetation clearance and modification, and agricultural activities, are managed within catchments and riparian areas to protect water quantity and quality, aquatic habitat, and natural character.*
>
> *Policy B1.3.2: Recognise and provide for the special interest of Tāngata whenua in resource management issues relating to water.*
>
> *Policy B1.3.4: Manage land to protect water resources and avoid, remedy, or mitigate adverse effects on surface water quality and quantity, and aquatic habitat from activities and development, including:*
>
> - *Activities locating close to waterbodies; or*
> - *Activities which may result in surface run-off of contaminants, or leaching of contaminants into groundwater*

[133] Issues regarding the appropriateness of using productive land for a solar array are addressed under the NPS-HPL assessment below.

Policy B1.3.5: Retain vegetation, in particular indigenous vegetation, along the riparian margins of the coast, rivers, lakes and wetlands. Where large quantities of indigenous vegetation are removed, ensure they are replaced with the same or similar species.

Policy B1.3.6: Encourage large scale earthworks, structures or tree planting to be setback from lakes or rivers, unless the activity must be located in the riparian margin.

Policy B1.3.8: Ensure any earthworks, flood protection works, structures or trees that must be located in riparian margins, or access by stock to riparian margins:

- *Allow legal public access along the waterbody where appropriate if such access exists, or is desirable for recreation or Mahinga Kai; and*
- *Take precautions to prevent the introduction of weeds into areas where they are not already present; and*
- *Mitigate any adverse effects on the natural character of the waterbody; and*
- *Avoid adverse effects on trout and salmon habitats.*

211. The Applicant has provided an assessment of the proposal against these provisions in section 7.5.1, which I adopt. I consider that the proposed conditions of consent will effectively manage the effects of the construction and operation phases of the solar farm in a manner consistent with the outcomes of the identified objectives and policies.

212. In relation to Policy B1.3.2, tāngata whenua have been consulted in respect of the proposal, and have commented that:[134]

1. The environmental footprint of the solar farm is anticipated to be an improvement compared with current farming land use. On this basis, it is not anticipated the stormwater discharges to land will result in adverse effects on cultural values.
2. The 10m setback from potential kōwaro habitat is viewed as sufficient, in conjunction with robust erosion and sediment controls.

213. I therefore consider that the proposal is consistent with the outcomes of Policy B1.3.2.

Physical resources

214. The Physical Resources Chapter contains relevant provisions relating to transport and utilities.

Transport

215. The relevant transport provisions are set out below:

Objective B2.1.1: An integrated approach to land use and transport planning to ensure the safe and efficient operation of the District's roads, pathways, railway lines and airfields is not compromised by adverse effects from activities on surrounding land or by residential growth.

Policy B2.1.2: Manage effects of activities on the safe and efficient operation of the District's existing and planned road network, considering the classification and function of each road in the hierarchy.

Policy B2.1.4(a): Ensure all sites, allotments or properties have legal access to a legal road which is formed to the standard necessary to meet the needs of the activity considering:

• the number and type of vehicle movements generated by the activity;

• the road classification and function; and

• any pedestrian, cycle, public transport or other access required by the activity.

Policy B2.1.9: Ensure buildings are set back a sufficient distance from road boundaries to maintain good visibility for pedestrians and motorists, to allow safe access and egress.

Policy B2.1.10: Ensure vehicle crossings, intersections, pathways, roadside signs and noticeboards are designed and positioned to ensure good visibility for all road users, and to allow safe passage, access and egress.

[134] Tangata Whenua Advisory Services response, page 8.

Policy B2.1.13: Avoid planting trees or hedges in positions or allow them to grow to heights where they will shade roads for prolonged periods during winter.

216. The applicant's assessment of these provisions in section 7.5.2 is adopted, with the following comments:

1. The applicant has agreed to upgrade the Buckleys Road crossing to comply with Appendix E10.C1, as requested by the Council's Transportation Department. On this basis, I consider the proposal is consistent with Policy B2.1.4(a).
2. the applicant has amended the landscaping so that it would be setback 10m from the Branch Drain Road boundary. On this basis, I consider the proposal is consistent with Policy B2.1.13.

Utilities

217. The relevant utilities provisions are set out below:

Objective B2.2.1: Utilities are recognised as essential tools for people's economic and social well-being, and to mitigate effects of other activities, on the environment.

Objective B2.2.2: The provision of utilities where any adverse effects on the environment and on people's health, safety and wellbeing is managed having regard to the scale, appearance, location and operational requirements of utilities.

Policy B2.2.5(a): Avoid siting utility structures or buildings on hilltops in the margins of lakes or rivers or in areas identified as outstanding natural features and landscapes, sites with special cultural values (Silent File Areas, Wāhi Taonga Sites and Management Areas or Mahinga Kai Sites) or Heritage Sites in the Plan, unless operational necessity makes this impractical.

Policy B2.2.6: Require utility structures to be made of low reflective materials

Policy B2.2.10: Enable the provision of utility networks that serve extensive areas to be located in rural areas commensurate with operational requirements

218. The applicant's assessment of these provisions in section 7.5.2 largely accepted, but with the following comments/exceptions:

1. While the solar panels are made of a reflective material, the finding in the applicant's Glare Report that the panels will be no more reflective than water and other elements of the natural environment is accepted. Despite this, I do not consider that the solar panels to be made of 'low reflective' materials. Accordingly, I do not consider the proposal to be consistent with Policy B2.2.6.
2. As addressed in the environmental assessment above, it is considered that the key adverse effects on the environment and people's health, safety and well-being are the visual and acoustic effects. Provided the activity is managed in accordance with the proposed conditions, it is considered that the activity is consistent with Objective B2.2.2.

People's health and safety

219. The People's Health, Safety and Values Chapter contains relevant provisions relating to cultural and historic heritage, quality of the environment, noise and vibration and dust.

Cultural and historic heritage

220. Relevant provisions include:

Objective B3.3.1: Sites of Wāhi Tapu, Wāhi Taonga, Mahinga kai and other importance to Tāngata Whenua are protected in partnership with local Rūnanga and landholders.

Policy B3.3.2: Recognise and protect sites of cultural importance to local Rūnanga through fostering a partnership between landholders and local Rūnanga.

Policy B3.3.4: Protect areas identified in the Plan as Wāhi Taonga Sites, Wāhi Taonga Management Areas and Mahinga Kai sites, from inappropriate damage or destruction.

221. These matters are addressed in section 7.5.3 of the AEE and is adopted for this assessment. For those reasons, and those addressed in the assessment of the effects above, the proposal is consistent with these provisions.

Quality of the Environment

222. Relevant provisions include:

Objective B3.4.1: The District's rural area is a pleasant place to live and work in.

Objective B3.4.2: A variety of activities are provided for in the rural area, while maintaining rural character and avoiding reverse sensitivity effects.

Policy B3.4.1: Recognise the Rural zone as an area where a variety of activities occur and maintain environmental standards that allows for primary production and other business activities to operate.

Policy B3.4.3: Avoid, remedy or mitigate significant adverse effects of activities on the amenity values of the rural area.

Policy B3.4.6: Maintain low levels of building density in the Rural zone and the predominance of vegetation cover.

Policy B3.4.7: Avoid high rise buildings or highly reflective utility structures.

Policy B3.4.18: Ensure buildings are setback a sufficient distance from property boundaries to:
(a) Enable boundary trees and hedges to be maintained;

(b) Maintain privacy and outlook for houses on small allotments; and

(c) Encourage a sense of distance between buildings and between buildings and road boundaries where practical.

223. These matters are addressed in section 7.5.3 of the AEE. I generally agree with the matters raised in that section, but make the following additional comments:

1. The proposal will result in a relatively significant change in the character of the area. However, for the reasons addressed in the effects assessment above, I consider that the effects of these changes can be mitigated through consent conditions to ensure they do not reach the threshold of 'significant adverse effects of activities on the amenity values of the rural area' in Policy B3.4.3.
2. For reasons previously addressed, I do not consider that the solar panels are 'highly reflective' such as to trigger the 'avoidance' direction in Policy P3.4.7.
3. Provided that appropriate conditions are imposed, and for the reasons addressed in the assessment of effects above, I consider that the application can be consistent with Objective B3.4.1, Objective B3.4.2 and Policy B3.4.1.
4. Provided that appropriate conditions regarding landscaping are imposed, the proposal is consistent with Policy B3.4.18.

Noise and vibration

224. Relevant provisions include:

Policy B3.4.13: Recognise temporary noise associated with short-term, seasonal activities as part of the rural environment, but ensure continuous or regular noise is at a level which does not disturb people indoors on adjoining properties.

225. The assessment in section 7.5.1 relating to noise is accepted, but with the additional comments:

1. Construction-phase noise is managed in accordance with appropriate management plans based on *NZS 6803: 1999 Acoustics – Construction Noise.*
2. Operational noise is managed in accordance with appropriate management plans, incorporating monitoring, a daytime noise limit of 50 dB LAeq and a night-time noise limit of 40 dB LAeq (measured at the notional boundary of the nearest dwelling).
3. For the reasons addressed in the assessment of effects above, it is considered that the continuous noise from the solar array will operate at a level which does not disturb neighbouring persons indoors.

Dust

226. Relevant provisions include:

Policy B3.4.16: Mitigate nuisance effects on adjoining dwellings caused by dust from earthworks, or stockpiled material.

227. As addressed in the AEE, earthworks will be managed in accordance with an ESCP to minimise the risk of dust causing nuisance effects on neighbouring properties. As addressed in the response to the RFI dated 10 May 2022, it is considered that vegetation can be maintained under the panels to mitigate dust effects on adjoining dwellings.

Conclusion regarding Operative District Plan

228. For the reasons addressed above, it is considered that the proposal is largely[135] consistent with the provisions of the Operative District Plan.

Proposed District Plan Objectives and Policies

229. The Council is currently in the process of preparing its Proposed District Plan ('PDP'). Submissions have closed and hearings have been held on a number of topics. However, it is understood that no decisions on submissions have yet been issued.

Strategic Directions

230. Relevant provisions include:

SD-DI-O1: Selwyn is an attractive and pleasant place to live, work, and visit, where development:

- *takes into account the character of individual communities;*
- *is well-connected, safe, accessible, and resilient; and*
- *enhances environmental, economic, cultural and social outcomes for the benefit of the entire District.*

SD-DI-O2: Selwyn's prosperous economy is supported through the efficient use of land, resources, and infrastructure, while ensuring existing activities are protected from incompatible activities.

SD-DI-O3: Land and water resources are managed through an integrated approach, which recognises both the importance of ki uta ki tai to Ngāi Tahu, and the inter-relationship between ecosystems and natural processes.

SD-DI-O4: Places, landscapes, and features which are significant to Selwyn's character, cultural heritage, or are of spiritual importance to Ngāi Tahu, are identified, recognised for their values, and protected for future generations.

SD-IR-O1: The important infrastructure needs of the community are fulfilled, and their operation is protected.

SD-IR-O2 The development, upgrade, maintenance, and operation of all important infrastructure is enabled in a way that minimises adverse effects, while having regard to the practical constraints and the logistical and technical practicalities associated with important infrastructure.

SD-IR-O3 The risk from natural hazards, including the effects of climate change, to people, property, and important infrastructure is not increased, other than where necessary to provide for important infrastructure that has no reasonable alternative.

SD-MWV-O1 Strengthen the partnership between the Council and Ngāi Tahu by recognising the cultural significance of Selwyn to Ngāi Tahu and Te Taumutu and Ngāi Tūāhuriri Rūnanga by:

1. Promoting active and meaningful participation by those who hold mana whenua in the resource management decision-making process;

2. Recognising that only those who hold mana whenua can identify their relationship with their culture, traditions, ancestral lands, waterbodies, wāhi tapu and other taonga;

3. Enabling the exercise of kaitiakitanga by those who hold mana whenua over Selwyn;

[135] With the exception of Policy B2.2.6.

4. Providing for the contemporary connections, cultural and spiritual values held by tāngata whenua; and

5. Continuing to enable tāngata whenua to protect, develop and use Māori Land in a way which is consistent with their culture, traditions and aspirations.

231. The assessment provided by the applicant in section 7.6.1 and 7.6.4[136] of the AEE is largely accepted, with the following additional comments:

1. Although a change to the character of Brookside, it is considered that any visual and character effects can be mitigated through appropriate conditions such that, over time, any adverse effects are contained within the site.
2. Subject to appropriate traffic management and vehicle crossing upgrades, the proposal is considered to be well-connected, and resilient.
3. The proposal will enhance environmental, economic, cultural[137] and social outcomes of the District, and assist in fulfilling the infrastructure needs of the community, through the generation of renewable energy.
4. It is considered that appropriate management plans can be put in place to manage the safety of persons working at the solar farm, and the broader community.
5. Consultation with mana whenua has taken place, and measures have been put in place to protect the area of the site containing Ngāi Tahu cultural heritage. It is considered that the consultation was active and meaningful in the context of this proposal.
6. The proposal has been designed to manage land and water resource at the site appropriately.

232. Overall, I consider that the proposal is consistent with the outcomes in the listed objectives and the corresponding policies.

Energy and Infrastructure

233. Relevant provisions include:

EI-O4: An increased renewable electricity generation output for national, regional, and local use while mitigating adverse effects on the environment and sensitive activities.

EI-O5: To have greater small and community-scale renewable electricity generation, with generation surplus supplied to the national electricity distribution network.

EI-P2: Minimise the adverse effects of important infrastructure, and renewable electricity generation on the physical and natural environment by:

- *encouraging the co-location of structures and facilities where efficient and practicable.*
- *locating, designing and operating development while minimising the effects on, the amenity values of the surrounding environment, public access and the health and safety of people.*
- *limiting the presence and effects of development within Outstanding Natural Landscapes, Visual Amenity Landscapes, areas of significant indigenous vegetation and habitats of indigenous fauna, sites of historic heritage and site and areas of significance to Māori to those which:*
    - *are recognised as important infrastructure; and*
    - *can demonstrate an operational or functional requirement for the location; and*
    - *can demonstrate through site, route or method selection the minimisation of effects on the environment; and*
    - *integrate design measures and management methods to mitigate adverse effects.*

[136] In relation to natural hazards. This includes the applicant's assessment of NH-O1, NH-O2, NH-P3 and NH-P12.
[137] Noting that Te Taumutu Rūnanga have noted their support of the solar farm proposal, as this use of the land is consistent with their aspirations for renewable energy generation and emissions reductions (Tangata Whenua Advisory Service response dated 5 April 2022).

- *requiring restoration of indigenous biodiversity and habitat following construction in areas of areas of significant indigenous vegetation and habitats of indigenous fauna, and the on-going monitoring of that restoration.*
- *considering biodiversity off-setting or compensation where the loss of significant indigenous vegetation cannot be restored and significant habitats of indigenous fauna or wetlands cannot be fully mitigated where the adverse effects cannot be avoided or remedied.*
- *Using the substantial upgrade of important infrastructure and renewable electricity generation as an opportunity to reduce existing adverse effects.*

EI-P4: Manage the adverse effects from the construction and operation of important infrastructure, and renewable electricity generation including noise, and vibration by requiring compliance with standards and regulations.

EI-P5: Avoid radio, electric, and magnetic emissions that do not meet the recognised standards or guidelines.

EI-P7: Enable renewable electricity generation investigations provided that adverse effects on areas of Outstanding Natural Landscapes, Visual Amenity Landscapes, areas of significant indigenous vegetation and habitats of indigenous fauna, sites of historic heritage and site and areas of significance to Māori are mitigated.

EI-P9: Provide for renewable electricity generation and renewable electricity generation activities across the District, while having particular regard to:

- *The potential benefits of the proposed activity, particularly contributions to national energy objectives or renewable electricity generation targets;*
- *The technical and operational requirements of renewable electricity generation and renewable electricity generation activities;*
- *The availability of renewable electricity generation sources;*
- *The location and efficient use of existing electricity generation and distribution infrastructure;*
- *The potential to provide an affordable, self-sufficient source of electricity to individuals and small communities.*

234. The applicant's assessment of the proposal against these provisions at section 7.6.2 of the AEE is agreed with and adopted.

Transport

235. Relevant transport provisions include:

TRAN-O2 Land transport corridors and land transport infrastructure are protected from incompatible land use activities and subdivision development.

TRAN-P4 Manage the adverse effects of activities within the General Rural Zone that exceed the maximum number of vehicle movements for each site.

TRAN-P11 Manage vehicle access, vehicle crossings and manoeuvring areas to maintain the safe and efficient operation of land transport corridors and land transport infrastructure by:

1. Requiring all sites to have access to a road and to ensure that this access is constructed to the appropriate formation standards and is compatible with the network road classification;

2. Avoiding the need to reverse vehicles onto the strategic transport network;

3. Avoiding the establishment of new accessways and vehicle crossings to roads that require access across a rail line; and

4. Minimising the need to reverse onto Collector and Local Roads through the provision of appropriate on-site manoeuvring areas.

5. Managing the effects of land transport infrastructure and corridors.

236. For the reasons addressed in the assessment of effects above and in the AEE, it is considered that transport effects can be suitably managed such that the proposal is consistent with the above transport provisions.

Contaminated Land and Hazardous Substances

237. Relevant provisions include:

> *CL-O1: Human health and the environment are not compromised by the use of contaminated land.*
>
> *CL-P1: Require any proposal for subdivision, development, or use of contaminated land or potentially contaminated land to apply a best practice approach to investigate the risks, and either remediate the contamination or manage activities on contaminated land to protect people and the environment.*
>
> *HAZS-O1: The benefits associated with activities involving the use, storage, disposal, and transportation of hazardous substances are recognised, while ensuring that risks to the environment and human health are minimised to acceptable levels.*

238. For the reasons addressed in the assessment of effects above, it is considered that the proposal is consistent with these provisions.

Ecosystems and Indigenous Biodiversity

239. Relevant ecosystems and indigenous biodiversity provisions are as follows:

> *ECO-O1: Indigenous biodiversity within the district is managed through the exercise of kaitiakitanga and stewardship, in order that:*
>
> - *Areas of significant indigenous vegetation and significant habitats of indigenous fauna are protected to ensure no net loss of indigenous biodiversity, and*
> - *Other indigenous biodiversity values are maintained and enhanced, and*
> - *The restoration and enhancement of areas of indigenous biodiversity is encouraged and supported.*
>
> *ECO-O2: The relationship of Ngāi Tahu whānui, and their customs and traditions, with indigenous biodiversity is recognised and provided for, including through:*
>
> - *Facilitation and support for the exercise of kaitiakitanga in relation to indigenous species and habitats; and*
> - *Maintenance, enhancement, and restoration of habitats that sustain mahinga kai; and*
> - *Enabling customary use of taonga species.*
>
> *ECO-P6: Protect the habitats of specified indigenous fauna that have been identified as being of ecological significance, by managing activities that would adversely affect those habitats.*
>
> *ECO-P10: Encourage and support Nga Rūnanga, landowners/land managers and the community to protect, create, and enhance indigenous biodiversity and mahinga kai values, through co-operation and a range of non-statutory options and protection mechanisms.*
>
> *ECO-P11: Avoid planting pest tree and plant species that would affect indigenous biodiversity values.*

240. The applicant's assessment in section 7.6.5 of the AEE is considered accurate and is adopted. For the reasons addressed in the effects assessment above and the AEE, the proposal is considered to be consistent with these provisions.

Natural character

241. Relevant provisions include:

> *NATC-O1: The natural character of surface water bodies and their margins is preserved.*
>
> *NATC-P1: Recognise the natural character qualities of surface water bodies and their margins described in NATC-SCHED4 and preserve and protect those qualities, and Ngāi Tahu cultural values, from inappropriate subdivision, use and development by:*
>
> - *ensuring that subdivision, earthworks, buildings, structures, vegetation planting and signs do not adversely affect taonga species, mahinga kai or Ngāi Tahu customary uses and other cultural values*
> - *ensuring that the location, intensity, scale and form of subdivision, earthworks, buildings, structures, vegetation planting and signs near surface water bodies and their margins*

recognises and preserves the natural character of the surface water body by requiring appropriate setbacks;

- *minimising, to the extent practicable, indigenous vegetation clearance and modification (including earthworks, disturbance and structures) near surface water bodies and their margins;*
- *enabling opportunities to restore and rehabilitate the natural character of surface water bodies and their margins, such as through the removal of plant and animal pests, and supporting initiatives for the regeneration of indigenous biodiversity values and cultural values*

242. It is considered that the proposal is consistent with these provisions as:

1. Adverse effects can be sufficiently managed through conditions to protect surrounding water races and species including the Canterbury mudfish.
2. The solar panels are setback from the waterbodies, and any adverse water quality effects will be managed through an erosion and sediment control plan.
3. The proposal will not adversely affect the natural character of surface water bodies and their margins.

Earthworks

243. Relevant provisions include:

EW-O1: Earthworks are undertaken in a manner that limits adverse effects on the surrounding environment.

EW-P1: Enable temporary, small-scale earthworks activities, while managing those with the potential to create adverse visual amenity, sediment, and nuisance effects beyond site boundaries.

EW-P3: Manage earthworks to limit erosion, inundation or siltation so that it does not impede the functioning of natural biological and physical processes.

EW-P4: Require that during and on completion of earthworks any visual impact, loss of privacy, dust nuisance, and shading from earthworks does not detract from the amenity values and quality of the environment.

244. The applicant's assessment in section 7.6.6 is considered accurate and is adopted.

Noise

245. Relevant provisions include:

NOISE-O1: The health and wellbeing of people and communities and their amenity values are protected from significant levels of noise.

NOISE-P1: Manage noise effects by setting:

- *Maximum noise limits to reflect the character and amenity of each zone;*
- *Limits on the location, frequency, and duration of specific activities that generate noise;*
- *A vibration standard.*

246. The applicant's assessment in section 7.6.6 is considered to be largely accurate, with one exception:

1. It is considered that compliance with the District Plan noise assessment does not, in of itself, necessarily equate to consistency with Policy NOISE-P1 – particularly when read in light of section 16 of the RMA and the General Rural Zone objectives and policies. However, it is considered that the proposal is consistent with this policy provided that the noise limits in the proposed consent conditions can be met.

General Rural Zone

247. Relevant provisions include:

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.

GRUZ-P4 Provide for the economic development potential of the rural area by enabling a range of activities that:

1. have a direct relationship with, or are dependent on, primary production;

2. have a functional need, or operational need to locate in the rural area;

3. represent an efficient use of natural and physical resources; and

4. maintain or enhance the character and amenity values of the surrounding area.

GRUZ-P7 Avoid reverse sensitivity effects on lawfully established primary production activities.

248. The AEE contains an assessment of the proposal against the General Rural Zone provisions at section 7.6.8. Overall, this assessment is considered accurate, subject to the following clarifications:

1. The proposal will arguably not result in a predominance of vegetation cover, noting that a large amount of the grass at the site will be covered by the solar panels (GRUZ-P1(1)). However, it is noted that the proposal will result in the grass cover being maintained, and the proposed planting will increase the range of vegetative cover surrounding the site.
2. The proposal also arguably will not maintain the rural character and amenity values of the site (GRUZ-O1(1)) and arguably does not have a direct relationship with, or is dependent on, primary production (GRUZ-P4(1)). However, it is acknowledged that retaining sheep at the site for grazing purposes will assist in retaining the site's ties with the rural character of the area. The proposed boundary planting will also ensure that the amenity and character effects are limited to the site.
3. As addressed above, the reverse sensitivity effects of the proposal on neighbouring primary production activities will largely be avoided. However, it is considered that the issue of shading of paddocks immediately adjacent to the south and any residual dust issues need to be addressed before the proposal could be said to be consistent with GRUZ-P7.
4. The AEE states that there is an operational need for the solar farm to locate in the rural area. The concept of 'operational need' is discussed in further detail in the National Policy Statement for Highly Productive Land below, but I accept the applicant's statement that the there is an operational need to locate the proposal in a rural area given the size and openness of land required to operate a solar array.

Summary

249. Overall, I consider that the proposal is consistent with the outcomes in the listed PDP objectives and policies.

Canterbury Regional Policy Statement

250. The Canterbury Regional Policy Statement ('CRPS') sets out the resource management issues for the Canterbury region and the objectives, policies, and methods to achieve integrated management of natural and physical resources.

251. Chapter 5 of the CRPS relates to the integrated management of land use and infrastructure. Relevant provisions of Chapter 5 of the CRPS include:

Objective 5.2.2 Integration of land-use and regionally significant infrastructure (Wider Region)

Policy 5.3.2 Development conditions (Wider Region)

Policy 5.3.9 Regionally significant infrastructure (Wider Region)

Policy 5.3.12 Rural production (Wider Region)

252. As noted in the AEE,[138] the proposal falls within the definition of *'regionally significant infrastructure'* in the CRPS. This is because:

1. The definition of 'regionally significant infrastructure' in the CRPS includes *"[n]ational, regional and local renewable energy generation activities of any scale".*
2. Renewable electricity generation is defined as *"[t]he generation of electricity from solar, wind, hydroelectricity, geothermal, biomass, tidal, wave, or ocean current energy sources."*
3. Renewable electricity generation activities are defined as, *"[t]he construction, operation and maintenance of structures associated with renewable electricity generation. This includes small and community-scale distributed generation activities, the system of electricity conveyance required to convey electricity to the distribution network and/or the national grid, and electricity storage technologies associated with renewable electricity."*

253. Overall, it is considered that the proposal is consistent with the direction of Chapter 5. It is considered that appropriate conditions can be drafted to avoid or mitigate conflicts between the proposed solar farm and neighbouring agricultural land uses.

254. Chapter 15 of the CRPS relates to controls over the use of land for the soil conservation and quality. The relevant provisions of Chapter 15 of the CRPS are:

Objective 15.2.1 Maintenance of soil quality

Policy 15.3.1 Avoid remedy or mitigate soil degradation

255. For the reasons addressed in the assessment of effects above, it is considered that any adverse effects of the proposal on soil quality can be appropriately mitigated.

256. Chapter 16 of the CRPS addresses resource management issues regarding energy within the region. Relevant provisions include:

Objective 16.2.2 Promote a diverse and secure supply of energy

Policy 16.3.2 Small and community scale distributed renewable electricity generation

Policy 16.3.3 Benefits of renewable energy generation facilities

Policy 16.3.5 Efficient, reliable and resilient electricity generation within Canterbury

257. The applicant's assessment of these provisions is considered accurate and is adopted accordingly.

258. Chapter 17 of the CRPS seeks to manage contaminated land. The relevant provisions of Chapter 17 are:

Objective 17.2.1 Protection from adverse effects of contaminated land

Policy 17.3.2 Development of, or discharge from contaminated land

Policy 17.3.3 Contaminants may remain in the land

Policy 17.3.4 Integrated management

259. It is considered that the proposal seeks to manage the HAIL site at 821 Hanmer Road in a manner consistent with these provisions.

260. Therefore, I consider that the proposal is consistent with the CRPS objectives and policies listed above.

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[138] At [7.3].

National Policy Statement for Renewable Energy Generation 2011

261. The National Policy Statement for Renewable Energy Generation 2011 ('NPS-REG) contains *"…objectives and policies to enable the sustainable management of renewable electricity generation under the Resource Management Act 1991."*

262. The generation of energy from solar sources falls within the definition of *"renewable electricity generation."* The proposal is required to be considered as a "renewable electricity generation activity" for the purposes of considering the objectives and policies of the NPS-REG.

263. The NPS-REG was recently considered by the EPA in the context of a solar farm in the Waikato.[139] I consider that the comments made in that decision are an accurate reflection of how the NPS-REG is intended to apply in the context of a solar farm.

264. Relevant provisions of the NPS-REG include the following:

1. Policy A, which requires decision-makers to recognise and provide for the national significance of renewable energy generation activities. Of particular relevance are the benefits of:
    - maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation;
    - using renewable natural resources rather than finite resources; and
    - the reversibility of the adverse effects on the environment of some renewable electricity generation technologies.
2. Policy B, which requires decision-makers to have particular regard to, relevantly, the matter that meeting or exceeding the New Zealand Government's national target for the generation of electricity from renewable resources will require the significant development of renewable electricity generation activities.
3. Policy C1, which requires decision-makers to have particular regard to:
    - the need to locate the renewable electricity generation activity where the renewable energy resource is available;
    - logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity;
    - the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities and the distribution network.

265. The AEE provides an assessment of the NPS-REG in 7.2. This assessment is considered accurate and is adopted accordingly.

266. For the above reasons, it is considered that the proposal is consistent with the NPS-REG.

National Policy Statement for Highly Productive Land 2022

267. The National Policy Statement for Highly Productive Land 2022 (NPS-HPL) came into force on 17 October 2022. Although the NPS-HPL came into force after the lodgement of this resource consent application, it is a relevant matter for determining this resource consent application.[140]

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[139] Decision of the Expert Hearing Panel on an application by Harmony Energy Limited to the Environmental Energy Agency under the COVID-19 Recovery (Fast-Track Consenting) Act 2020 to establish and operate the Tauhei Solar Farm in Te Aroha West, Waikato Region at [8.02] – [8.13].

[140] Clause 4.1 provides that "Every local authority must give effect to this National Policy Statement on and from the commencement date (noting that, until an operative regional policy statement contains the maps of highly productive land required by clause 3.5(1), highly productive land in the region must be taken to have the meaning in clause 3.5(7))."

268. Based on mapping information available to Council, the application site contains Land Use Capability Class ('LUC') 2 soils in the north and LUC 3 in the south. The site is accordingly 'highly productive land' in accordance with the NPS-HPL.[141]

269. Relevant provisions of the NPS-HPL include the following:

> *Objective: Highly productive land is protected for use in land-based primary production, both now and for future generations.*
>
> *Policy 1: Highly productive land is recognised as a resource with finite characteristics and long-term values for land-based primary production.*
>
> *Policy 4: The use of highly productive land for land-based primary production is prioritised and supported.*
>
> *Policy 8: Highly productive land is protected from inappropriate use and development*
>
> *Policy 9: Reverse sensitivity effects are managed so as not to constrain land-based primary production activities on highly productive land.*

270. The proposal would result in the conversion of a site used for rural production purposes to one that is covered in solar panel infrastructure that is supplemented by sheep grazing underneath and in between the panels. Whilst the grazing of sheep would still be supporting primary production, the productive potential of the land would be reduced. On the other hand, I note that the Policy does not create a 'baseline' of productive yields – a conversion from dairy to a lower-yielding productive use is itself not contrary to this policy. However, I consider that the proposal to use sheep for grazing contrasts to underneath solar panels is in contrast to the use of the land for sheep farming.[142] On balance, I consider that, as the proposal does not prioritise the use of the highly productive land for primary production, I consider that the proposal is inconsistent with Policy 4 of the NPS-HPL.

271. In context of Policy 8, I consider that determining whether a particular use and development is inappropriate should be assessed by what it is that is sought to be protected. When read in light of the NPS-HPL, I consider that what is sought to be protected is clearly stated in the sole Objective, being the use of highly productive land for land-based primary production, both now and for present generations. Further guidance is provided in clause 3.9, which provides as follows:

> *3.9 Protecting highly productive land from inappropriate use and development*
>
> *(1)Territorial authorities must avoid the inappropriate use or development of highly productive land that is not land-based primary production.*
>
> *(2) A use or development of highly productive land is inappropriate except where at least one of the following applies to the use or development, and the measures in subclause (3) are applied:*
> *…*
>
> *(f) it provides for the retirement of land from land-based primary production for the purpose of improving water quality*
>
> *(j) it is associated with one of the following, and there is a functional or operational need for the use or development to be on the highly productive land:*
>
> *- the maintenance, operation, upgrade, or expansion of specified infrastructure:*
>
> *(3)Territorial authorities must take measures to ensure that any use or development on highly productive land:*
>
> *(a) minimises or mitigates any actual loss or potential cumulative loss of the availability and productive capacity of highly productive land in their district; and*
>
> *(b) avoids if possible, or otherwise mitigates, any actual or potential reverse sensitivity effects on land-based primary production activities from the use or development.*

272. To fit under subclause 3.9(2)(j), the following two factors must be established:

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[141] NPS-HPL, clause 3.5(7).
[142] However, this is subject to evidence from the applicant regarding the number of sheep proposed to be grazed at the property, and the practicality of doing so given much of the pasture will be under cover.

1. The solar array is associated with 'specified infrastructure'; and
2. There is a functional or operational need for the solar array to be at the site.

273. In relation to the first, the NPS-HPL defines 'specified infrastructure' as including *"infrastructure that is recognised as regionally or nationally significant in a National Policy Statement, New Zealand Coastal Policy Statement, regional policy statement or regional plan"*. To this end, the NPS-REG recognises the need to develop, operate, maintain and operate renewable energy generation activities throughout New Zealand.[143] As addressed above, the proposed solar farm is a 'renewable energy generation activity'. The proposed solar farm is also recognised in the CRPS as regionally significant infrastructure.

274. In relation to the second, 'functional' and 'operational' needs are not defined in the NPS-HPL. These terms are defined in the National Planning Standards as follows:

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

275. I have not seen any evidence to suggest that the proposal has a functional need to locate at the site. However, the applicant states that the solar farm has an operational need to locate at the site, due to its size, flat and open setting and location close to a substation.[144] In determining whether the proposal has an operational need to locate at the site, I note the following:

1. The threshold for establishing an operational need is lower than a functional need. An activity could still be located in another location and yet have an operational need to locate at the particular location sought. However, this does not mean that there is a low bar for establishing such: it is a 'need', not a 'want', and that need must be based on technical, logistical or operational characteristics or constraints'.
2. There are a number of technical, logistical or operational characteristics or constraints that would necessitate locating on a rural location such as the proposed site. These include:
    - The size of the land required to operate a solar farm of the scale proposed to make it viable from an operational perspective. Such land is unlikely to be found within an urban area (and even if it were so, it may well conflict with relevant planning provisions such as the National Policy Statement on Urban Development) or on properties in proximity to the site that is not recognised as being highly productive land under the NPS-HPL.
    - Rural land that is not flat and productive rural land in many cases may be protected under the ODP and/or PDP – and in some cases for section 6 RMA values.
    - Technical and operational requirements require the land to be situated to receive sunlight. I accept the applicant's statement that flat and open land meets these technical and operational requirements.
    - The site is located adjacent to the Brookside substation. Given Orion has indicted that it will accept the electricity generated at the site at the substation, I accept the applicant's statement that it logistically advantageous to locate the solar farm adjacent to the substation.
3. However, I consider that further information from the applicant is required to determine the whether the operational advantages of establishing and operating the solar array at the site satisfy the operational *need* threshold. It is noted that there are a number of other alternative locations within the Selwyn District that are not considered to be highly productive.

276. Even if an operational need can be established, the consent authority is required to ensure that any development on highly productive land minimises or mitigates any actual or potential cumulative loss of highly productive land, and avoids any reverse sensitivity effects on neighbouring productive land.[145]

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[143] NPS-REG 'Matters of national significance' and 'Objective'.
[144] Application at 7.6.8.
[145] NPS-HPL, clause 3.9(3).

277. I consider that a requirement to continue using the land for sheep grazing through the life of the solar farm, and a requirement that the land return to productive uses following the end of life of the solar farm, assist in mitigating any loss of highly productive land. However, I note that the extent of this mitigation is relatively minor given that:

1. It is not clear whether the use of sheep for grazing purposes at the site would fall into the definition of 'land based primary production'.
2. The solar panels are also likely to significantly reduce the productive capacity of the land while the solar farm is in operation.
3. There is no certainty as to when the solar farm will reach its end of life, given the applicant has sought no limit on the duration of any consent granted.

278. In addition to the potential conflict with Policy 8 set out above, I consider that an unlimited consent duration sought by the applicants conflicts with both Policy 1 (which provides that '[h]ighly productive land is recognised as a resource with finite characteristics and long-term values for land-based primary production'), and the Objective ([h]ighly productive land is protected for use in land-based primary production, both now and for future generations'). Although the applicant states that a lease has been entered into for 35 years,[146] contractual processes (including any renewals or amendments) run to alongside, and separate from the RMA. I consider that a consent of unlimited duration risks 'locking up' productive land for future generations, and thus does not recognise the finite characteristics of HPL, or the potential for the site to be used for productive purposes following the end of life of the solar farm.

279. My preliminary view, subject to hearing from the applicant and submitters, is that a 35-year term would balance the economic and investment certainty required by the applicant (noting this is the same term as the lease) with the ability for the merits of the continued operation of the solar farm to be considered alongside the merits of returning the land to a productive capacity in the event that a new resource consent upon expiry. In my opinion, a 35-year term would, along with the other measures proposed, enable the application to be consistent with Policy 1 and, subject to a finding that there is an operational need for the proposal to locate at the site, Policy 8 and the Objective of the NPS-HPL. I also consider such a duration may allow for a balancing of the competing demands of the NPS-REG and NPS-HPL.

280. I consider that further comment/ evidence from the applicant is required from both a technical and natural justice perspective before a conclusion can be reached on whether the NPS-HPL operates as a barrier to the grant of consent. In particular:

1. Whether the proposed solar array has an operational need to locate at the site, given there are other locations within the Selwyn District that are not currently considered highly productive land;
2. How the provisions of the NPS-HPL otherwise bear on the application;
3. If there is any conflict between the NPS-HPL and NPS-REG and, if so, whether that conflict can be resolved;
4. The appropriateness of the recommended 35 year duration.

281. I note that clause 3.9(1) directs that territorial authorities must avoid the inappropriate use or development of highly productive land that is not land-based primary production. In the event that the applicant cannot provide sufficient evidence to establish that the proposed use is an 'appropriate' use of the site, I consider that the provisions of the NPS-HPL are clear that such use is to be avoided such as to protect highly productive land (i.e. not allowed), and consent would accordingly need to be declined.

National Policy Statement for Freshwater Management 2020

282. An assessment of the proposal against the National Policy Statement for Freshwater Management 2020 ('NPS-FM') was undertaken by the Canterbury Regional Council in the section 42A CRC223908 and CRC223909. For the reasons addressed in that report, I consider that the proposal is consistent with the NPS-FM.

[146] And noting there may be other contractual arrangements in place.

Mahaanui Iwi Management Plan

283. The Mahaanui Iwi Management Plan 2013 (MIMP) is the manawhenua planning document reflecting the collective efforts of six Papatipu Rūnanga that represent the hapū who hold manawhenua rights over lands and waters within the takiwā from the Hurunui River to the Hakatere River and inland to Kā Tiritiri o Te Moana. The Site is within the Papatipu Rūnanga of Te Taumutu.

284. The AEE contains a detailed assessment of the MIMP in section 7.7 of the AEE. The TWAS advice also contains an assessment of the proposal against the MIMP. Although that assessment notes that elements of the proposal are neither consistent nor inconsistent with the MIMP, Te Taumutu are overall supportive of the application, provided that several mitigations take place to reduce any effects on avifauna species, kōwaro and the wāhi taonga site, and that an ESCP is in place and adhered to.

285. I do not consider that there is anything in the MIMP that would prevent this application from being granted.

Part 2 Resource Management Act 1991

286. The purpose of the Resource Management Act 1991 is to promote the sustainable management of natural and physical resources. In summary enabling people and communities to provide for their well-being, while sustaining resources and addressing any adverse effects.

287. Based on the assessment in this report, it is my opinion that, subject to the NPS-HPL matters set out above being addressed, the proposal is in accordance with the purpose and principles of the Resource Management Act 1991.

Summary

288. This application is to construct and operate a solar array (solar farm) on a 258ha site in the Rural Outer Plains zone at Brookside, with a generating capacity of 160 MW on completion.

289. In summary, it is recommended that, subject to the NPS-HPL matters set out above being addressed, the proposal the application should be approved subject to the conditions proposed to mitigate potential effects on the environment.

290. Subject to the NPS-HPL matters set out above being addressed, it is considered that resource consent application **225180** can be granted pursuant to sections 104 and 104B of the Resource Management Act 1991 subject to the following conditions imposed under section 108 of the Act. However, if the NPS-HPL matters cannot be established, it is considered that the resource consent application should be declined.

291. In the event the application is able to be granted, a draft set of conditions have been provided. A final set of recommended conditions can be tabled at the hearing, once the applicant and submitters have had an opportunity to consider the draft conditions below.

Draft conditions

Review

1. The SDC may, under sections 128 and 129 of the Resource Management Act 1991 (Act), initiate a review of any or all conditions of this resource consent on the first, second and third anniversary of the commencement of the consent and every three years after that, for the duration of the resource consents. Any such review of conditions shall be the for the purposes of:

   1.1. responding to any adverse effect on the environment which may arise from the exercise of the consent and which it is most appropriate to deal with at a later stage; or

   1.2. dealing with any unanticipated adverse effects on the environment which may arise from the exercise of the consent, which it is appropriate to deal with at a later stage; or

1.3. ensuring that the conditions are effective and appropriate in managing the effects of the activities authorised by these consents.

Management Plans

2. The Consent Holder shall prepare the following management plans for approval by SDC in a technical certifying capacity. The Consent Holder shall prepare the management plans in accordance with the requirements of the relevant conditions and in general accordance with the application documents:
   2.1. Construction Management Plan;
   2.2. Construction Traffic Management Plan;
   2.3. Construction Noise and Vibration Management Plan;
   2.4. Sediment Control Plan (which will incorporate Dust Management Plan);
   2.5. Landscaping Management Plan;
   2.6. Operational Management Plan;
   2.7. Health and Safety Management Plan;
   2.8. Fire Emergency Plan.
3. The Consent Holder shall ensure that all management plans are prepared by a suitably qualified and experienced person (SQEP).
4. The Consent Holder must comply with all certified management plans.

Management Plan Certification

5. The Consent Holder shall submit the above management plans to SDC in accordance with the timeframe specified in [TBC].
6. The certification process shall be limited to confirming that the management Pan has been prepared in accordance with the relevant conditions(s) and will achieve the objectives of the management plan.
7. If no response is received by SDC within 20 working days of lodgement of any management plan, the relevant management plan shall be deemed to be certified.
8. If the SDC response is that they are not able to certify the management plan, the Consent Holder shall consider any reasons or recommendations provided by SDC and resubmit an amended Management Plan for certification.
9. If the Consent Holder has not received a response from SDC within ten (10) working days of the date of resubmission under Condition X above, the management plan will be deemed to be certified.

Amendments to Management Plans

10. The Consent Holder may make amendments to the above Management Plans at least twenty working days before the relevant works (or relevant portion of works) are undertaken, in accordance with conditions X above, and subject to the certification of the amendment prior to works being undertaken. Any such amendment shall be consistent with the objectives and performance requirements of the management plan and relevant consent conditions.
11. If the SDC response is that they are not able to certify the Management Plan, the Consent Holder shall consider any reasons or recommendations provided by SDC and resubmit an amended Management Plan for certification.

Landscape Management

12. At least 30 working days prior to the commencement of construction, the Consent Holder shall submit to SDC for certification a Landscape Management Plan (LMP). The LMP shall include (but not be limited to):
    12.1. Identification of planting zones in accordance with the approved landscape plans and development plans in [TBC];
    12.2. For each planting zone, details of species, spacing, size and planting;
    12.3. Timeline for planting works;
    12.4. Details of site preparation and maintenance required for plant establishment;
    12.5. Requirements for fencing of the site;
    12.6. Requirements for ongoing maintenance and monitoring;
    12.7. Requirements, including methods and timing, or plant weed control;
    12.8. Monitoring to determine the success of management plan objectives.
13. All landscaping shall be in accordance with the plan [TBC] and as described in the AEE, as described in condition [TBC].
14. All landscaping shall be implemented and maintained in accordance with the certified management plan.
15. In the first planting season following the grant of this consent, and prior to the construction of Stage 1 of the proposed activity, the Consent Holder shall implement landscape planting as described in [plan], with the exception that an additional row of planting be established on the southern boundary of the site with 324 Branch Drain Road.
16. The planting along Branch Drain Road and Buckleys Road (the northern boundaries of Lot 2 DP 54392, Lot 1 DP 7545, RS 8955 and Lot 2 DP 387576) be 2 metres in height and 3 metres in width prior to the construction works beginning.
17. The planting along the boundary with Branch Drain Road, and along the boundary with Lot 1 DP 37121 and Lot 1 DP 21302, must be setback 10 metres and retained to a height of 4 metres.
18. The Consent Holder shall take all reasonable measures to ensure that existing heritage trees identified in AEE set out in Condition 1 as being recommended for retention, are protected from damage during construction.

Ecology

19. No internal shelterbelts at the site may be cleared between of 1 September and 31 January (inclusive) of each year.
20. Each year, prior to construction of each stage of the activity taking place, a pre-construction survey of the site must be carried out by a suitably qualified ecologist / ornithologist with over five years of experience conducting bird surveys (SQE), in order to:
    20.1. Determine whether the South Island pied oystercatcher ((or other bird species observed during the survey deemed of conservation concern by an SQE) are breeding within the solar farm footprint. Subsequently;
        20.1.1. If breeding SIPO (or other species of conservation concern in the opinion of the SQE) are absent, works could proceed within the breeding season; or

20.1.2. If breeding SIPO (or other species of conservation concern in the opinion of the SQE) are present within the solar farm footprint, works may only proceed subject to an Ecological Management Plan (EMP) prepared by a SQE.

21. Where an EMP is required in accordance with condition [TBC], prior to the commencement of construction, the Consent Holder shall submit the EMP for certification. Construction shall not begin until the EMP has been certified.

Erosion and Sediment Control

22. Prior to the commencement of construction, the Consent Holder shall submit to SDC for certification an Erosion and Sediment Control Plan (ESCP) for the construction works and operation of the activity.. The plan shall be prepared by a SQEP, taking into account Environment Canterbury's Erosion and Sediment Toolbox.

Construction Management Plan

23. Prior to the commencement of construction, the Consent Holder shall submit to the SDC for certification a Construction Management Plan. The plan shall include, but not be limited to:
    23.1. Confirmation of the construction works program, including staging of work, construction methodology;
    23.2. Identification of the key personnel and contact person(s);
    23.3. Methods and systems to inform and train all persons working on the site of potential environmental issues and how to avoid, remedy or mitigate potential adverse effects;
    23.4. Measures to ensure compliance with the protection of the wāhi taonga site in accordance with condition [TBC];
    23.5. Measures to ensure compliance with the noise requirements outlined in condition [TBC];
    23.6. Measures to control the generation of dust to ensure compliance with condition [TBC];
    23.7. Reference to, or inclusion of, the Construction Traffic Management Plan;
    23.8. Inclusion of the Accidental Discovery Protocols and a list of contact names and numbers relevant to accidental discovery.
24. Prior to the commencement of construction, the Consent Holder shall submit to the SDC for certification a Construction Traffic Management Plan. The plan shall include, but not be limited to:
    24.1. Roles, responsibilities and contact details, including for public enquiries.
    24.2. Construction staging and proposed activities;
    24.3. Expected number of vehicle movements, particularly heavy vehicle numbers during each phase of construction;
    24.4. Hours of work;
    24.5. Points of site access;
    24.6. Construction traffic routes;
    24.7. Nature and duration of any temporary traffic management proposed;
    24.8. Any vehicle crossing upgrades proposed.
    24.9. Location of on-site parking and loading areas for deliveries;

24.10. Measures to prevent, monitor and remedy tracking of debris onto public roads and dust onto sealed sections;

24.11. Measures for regulation communication with residents located within the vicinity of the site.

25. All construction work for each stage must occur for no longer than four months in each calendar year, and twelve months in total.

Vehicle crossing upgrade

26. The Consent Holder is to upgrade the existing vehicle crossing in the site at Buckley's Road (as shown on plan [TBC] to comply with Appendix E10.C1 to the Operative Selwyn District Plan.
27. Prior to the commencement of the vehicle upgrade described in condition [TBC] above, the Consent Holder must contact the SDC Biodiversity Officer.

Wāhi Taonga Management Site

28. No earthworks can take place within 50 metres of the Wāhi Taonga Management Site – C59, as identified on plan [TBC].

Noise

29. At least 20 working days prior to any construction occurring on site, a Construction Noise and Vibration Management Plan be prepared and submitted to SDC for certification that addresses, as a minimum, the measures identified in Annex E3 of NZS 6803: 1999 "Acoustics – Construction Noise". The report must specifically specify what measures it proposes to take to mitigate any adverse effects of construction activities on 324 Branch Drain Road during the construction of Stage 1 (as described in the AEE described in Condition 1),
30. The consent holder shall ensure that all activities on the site measured in accordance with NZS6801:2008 Acoustics - Measurement of environmental sound, and assessed in accordance with the provisions of NZS6802:2008 Acoustics - Environmental noise, shall not exceed the following noise limits at any point within the notional boundary of any residential dwelling, during the following timeframes:

    30.1. 0730 to 2000 hours: 50 dB L_{Aeq}

    30.2. 2000 to 0730 hours: 40 dB L_{Aeq} and 5 dB L_{Amax}

31. Within 6 weeks of commissioning of Stage 1 as described in the AEE described in Condition 1, a suitably qualified and experienced acoustic consultant shall perform measurements to confirm compliance with both the daytime and night-time noise limits in Condition [TBC] The assessment shall include an objective analysis of any special audible characteristics during the day and at night in accordance with Appendix B4 of NZS 6802:2008 Acoustics - Environmental Noise
32. Construction activities must be conducted in accordance with NZS 6803: 1999 "Acoustics – Construction Noise" and must comply with the "typical duration" noise limits contained within Table 2 of that Standard.
33. Within three months of the commencement of construction, noise shall be measured in accordance with the NZS6803:1999 Acoustics – Construction Noise and the results of that monitoring provided to SDC.
34. In the event that noise monitoring, completed under condition [TBC] above, demonstrates that the noise standard set out in condition [TBC] have not been complied with, the Consent Holder shall:

    34.1. Take all necessary steps to reduce noise or vibration and provide details of those steps to the SDC;

34.2. Carry out further monitoring in accordance with the requirements of condition [TBC].

The requirements of subclauses [TBC] and [TBC] above must be repeated as required until such time that compliance with the noise standards set out in condition [TBC] are complied with.

35. Prior to the operation of Stage 1, as described in the AEE referenced in condition 1, the applicant shall prepare a Noise Management Plan in accordance with NZS 6803 and provide it to SDC for certification.

Dust

36. The Consent Holder shall adopt all reasonable and practicable measures to prevent any dust caused by operations on the site from causing an effect that is noxious, dangerous, offensive or objectionable at or beyond the site.
37. All areas of the site must be re-vegetated following the completion of each stage.

Solar panels

38. Solar Panels shall be a maximum of 3000mm above finished ground level.
39. Solar Farm Infrastructure within the site (including, but not limited to panels; inverters; transformers and switchgear) shall only be cleaned with water or a biodegradable cleaner.

Operational Site Management

40. The Consent Holder shall submit to Council for certification an Operational Site Management Plan (OSPM). The purpose of the OSMP is to ensure that the solar farm is operated in a manner that avoids, remedies or mitigates adverse effects on the environment. This must include, but not be limited to:
    40.1. A Noise Management Plan containing the requirements set out in conditions [TBC]
    40.2. Measures to ensure that food scraps and rubbish are appropriately disposed of
    40.3. Measures for the management of health and safety;
    40.4. Measures for the scheduled maintenance and off-site monitoring of equipment;
    40.5. Measures for pest and weed control, including the use of sheep for such purposes.

Contaminated Land

41. The Consent Holder shall retain any disturbed soil in the vicinity of the shed on 821 Hanmer Road to that area and stabilised to an erosion resistant state within one month.
42. The Consent Holder shall ensure that soil disturbed during earthworks in the shed area on 821 Hanmer Road shall not be deposited elsewhere on the wider site.

End of life

43. The Consent Holder shall, within 12 months of the expiry of this resource consent or the solar array reaching the end of its economic or operational life (not including periods when the solar array may not operate because of technical issues or maintenance/improvement works including the replacement of panels and other infrastructure), clear the site of all panels, buildings/structures and cabling, and the land shall be returned to be used for land-based primary production.

Accidental discovery

44. If bone material is discovered that could potentially be of human origin, the following protocols shall be adopted:

44.1. Earthworks works should cease in the immediate vicinity while an Archaeologist establishes whether the bone is human

44.2. The site will be secured in a way that protects the kōiwi as far as possible from further damage

44.3. If it is not clear whether the bone is human, work shall cease in the immediate vicinity until a specialist can be consulted and a definite identification made

44.4. If bone is confirmed as human (kōiwi), the Archaeologist will immediately contact Iwi representatives (if not present), Heritage New Zealand Pouhere Taonga and the New Zealand Police.

44.5. Consultation will be undertaken with Iwi representatives from Te Taumutu Rūnanga, Ngāi Tahu, the Heritage New Zealand Pouhere Taonga Regional Archaeologist and the Consent Holder to determine and advise the most appropriate course of action. No further action will be taken until responses have been received from all parties, and the kōiwi will not be removed until advised by Heritage New Zealand Pouhere Taonga

44.6. The Iwi representatives will advise on appropriate tikanga and be given the opportunity to conduct any cultural ceremonies that are appropriate

44.7. If the Iwi representatives are in agreement and so request, the bones may be further analysed by a skilled bio-anthropological specialist prior to reburial, in line with the Heritage New Zealand Pouhere Taonga Guidelines Koiwi Tangata Human Remains(2014)

44.8. Activity in that place can recommence as soon the bones have been reinterred or removed and authorisation has been obtained from Heritage New Zealand Pouhere Taonga.

45. If taonga are discovered, the following protocols shall be adopted:

45.1. The area containing the taonga will be secured in a way that protects the taonga as far as possible from further damage

45.2. Consultation will be undertaken with Te Taumutu Rūnanga, who will advise on appropriate tikanga and be given the opportunities to conduct any cultural ceremonies that they consider to be appropriate

45.3. An archaeologist will examine the taonga and advise Heritage New Zealand Pouhere Taonga

45.4. These actions will be carried out within an agreed stand down period and work may resume at the end of this period or when otherwise advised by Heritage New Zealand Pouhere Taonga.

45.5. The Archaeologist will notify the Ministry for Culture and Heritage of the find within 28 days as required under the Protected Objects Act 1975.

45.6. The Ministry for Culture and Heritage, in consultation with Iwi representatives from Te Taumutu Rūnanga and Ngāi Tahu, will decide on custodianship of the taonga.

Complaints Mechanism

46. The Consent Holder shall maintain a register of any complaints received regarding the construction and operation activities authorised by these resource consents. As a minimum, the register shall include:

46.1. the name and contact details (if supplied) of the complainant;

46.2. the nature and details of the complaint

46.3. the location, date and time of the complaint and the alleged event giving rise to the complaint

46.4. weather conditions at the time of the complaint, where relevant to the complaint

46.5. other activities at the area that may have contributed to the complaint

46.6. the outcome of the Consent Holder's investigation into the complaint

46.7. a description of any measures taken to respond to the complaint

47. The consent holder shall notify the SDC of any complaint received that relates to the activities authorised by this resource consent as soon as reasonably practicable and no later than two working days after receiving the complaint.

48. The Consent Holder shall respond to any complainant as soon as reasonably practicable and, within seven working days, advise the SDC and the complainant of the outcome of the Consent Holder's investigation and any measures taken, or proposed to be taken, to respond to the complaint.

Attachments

Development Contributions (Land Use)

Development contributions are not conditions of this resource consent and there is no right of objection or appeal under the Resource Management Act 1991. Objections and applications for reconsideration can be made under the Local Government Act 2002.

No development contributions would be applicable for this application should resource consent be granted. This is on the basis that the carpark does not generate demand. The development contributions for transportation associated with the town centre that may use the proposed carparks will be charged at the time of building consent for the Town Centre Buildings are consented.

Notes to the Consent Holder

Lapse Period

a) Pursuant to section 125 of the Resource Management Act 1991, if not given effect to, this resource consent shall lapse five years after the date of this decision unless a longer period is specified by the Council upon application under section 125 of the Act.

Monitoring

b) In accordance with section 36 of the Resource Management Act 1991, the Council's standard monitoring fee has been charged.

c) If the conditions of this consent require any reports or information to be submitted to the Council, additional monitoring fees for the review and certification of reports or information will be charged on a time and cost basis. This may include consultant fees if the Council does not employ staff with the expertise to review the reports or information.

d) Where the conditions of this consent require any reports or information to be submitted to the Council, please forward to the Council's Compliance and Monitoring Team, compliance@selwyn.govt.nz

e) Any resource consent that requires additional monitoring due to non-compliance with the conditions of the resource consent will be charged additional monitoring fees on a time and cost basis.

Vehicle Crossings

f) Any new or upgraded vehicle crossing requires a vehicle crossing application from Council's Assets Department prior to installation. For any questions regarding this process please contact transportation@selwyn.govt.nz. You can use the following link for a vehicle crossing information pack and to apply online: http://www.selwyn.govt.nz/services/roading/application-to-form-a-vehicle-crossing-entranceway

Building Act

g) This consent is not an authority to build or to change the use of a building under the Building Act. Building consent will be required before construction begins or the use of the building changes.

Accessible Carparking Spaces

h) The District Plan and the Building Code have different requirements for accessible carparking. Therefore, the consent holder shall ensure that the accessible carpark dimensions also meet the requirements of NZ Building Code clause D1. Early engagement with the building consent team is recommended to ensure all requirements can be met.

Regional Consents

h) This activity may require resource consent from Environment Canterbury. It is the consent holder's responsibility to ensure that all necessary resource consents are obtained prior to the commencement of the activity.

Impact on Council Assets

i) Any damage to fixtures or features within the Council road reserve that is caused as a result of construction or demolition on the site shall be repaired or reinstated and the expense of the consent holder.

Reported and recommended by  **Jesse Aimer** Consultant Planner	**Date: 1 February 2022**