Before the Independent Hearing Panel by
Selwyn District Council

Under	the Resource Management Act 1991
In the matter of	Resource Consent Application by Ra Tuatahi No.1 Limited
	80 Struie road, Hororata
Consent Application	RC 246059

Statement of Evidence by Christopher Raymond Glasson

14th May 2025

Qualifications and Experience

1 My full name is Christopher Raymond Glasson.

2 I hold the qualifications of a BA, Post graduate diploma in Landscape Architecture and I am a Fellow of the New Zealand Institute of Landscape Architects (NZILA). I have been a registered member of NZILA for 42 years.

3 Previously I was Managing Director of Glasson Huxtable Limited and Chris Glasson Landscape Architects Limited for 35 years, and prior to that I worked for Dept of Lands and Survey for 7 years.

4 My experience spanned the continuum of landscape planning, design and management throughout New Zealand and overseas.

5 For relevant industrial and infrastructure activity, my experience has included projects within transportation routes, sewage schemes, landfill operations, energy generation, wastewater treatment and extractive landuse activities.

6 I have not had any direct experience before with solar farms, but I have viewed them on trips through Europe where they are a very common element in the landscape.

7 My role

I have become involved with this solar farm at 80 Struie Road in the last few weeks. My involvement has been to provide advice in relation to landscape and visual effects to the Selwyn District Council (SDC).

8 This has included:

- Visiting the site at 80 Struie Rd, Hororata on 7 May 2025 in clear and bright conditions.
- Understanding the landscape character, visual amenity and potential landscape and visual effects arising from the application.
- Evaluating the applicant's response to the landscape and visual effects.

9 Documents considered:

- "Visual Effects Assessment for the Solar Panel Farm", January 2025 and the Graphic Supplement, February 2025, by Anne Wilkins for the applicant.
- Andrew Craig's Peer Review for SDC, 5 February 2025.

- Submissions relevant to my area of expertise.
- The solar farm layout.
- Planning provisions relevant to my area of expertise.

10 **Code of Conduct for Expert Witnesses**

While this is not a hearing before the Environment Court, I can confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than that, when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the options that I express.

Scope of Evidence

11 I have prepared evidence in relation to:

a) The key findings of the Landscape and Visual Assessment and Peer Review.

b) The applicable statutory provisions relevant to my area of expertise, including the purpose of the rural zone.

c) Matters raised by submitters to the application.

d) The existing environment of the application site as it relates to landscape matters, with a specific focus on landscape character, rural amenity, glint and glare, temporary effects during construction and the effectiveness of proposed landscape mitigation measures.

e) The proposed Conditions of Consent.

12 My evidence also refers to an annexure with supporting graphics and photographs from the applicant, February 2025.

13 Generally, my views are well aligned with the applicant's Landscape Architect, Ms Anne Wilkins. Her assessment (accompanying the original application) reads logically and provides a fair and justified assessment of the effects of the proposal. Where views differ between us, this is a result of the temporary

effects of the proposed landscape mitigation measures, and the effect on residents of specific properties.

Executive Summary

14 In my statement of evidence that follows, I have sought to understand the landscape effects of the proposed solar farm application to ensure that adverse effects on the environment are able to be sufficiently managed. I have also considered whether the application is consistent with the applicable statutory provisions.

15 Broadly, the Selwyn District Plan seeks to ensure that the existing character and amenity of the rural zone is appropriately managed and not unacceptably altered by new non-agricultural activity. Other aspects which must be considered include:

a) The importance of agriculture, pastoral farming and horticulture continuing to be the predominant land use in the rural zone.

b) The loss and degradation of landscape and amenity values.

c) The loss of any rural character.

d) Maintaining and enhancing environmental qualities.

16 According to the Selwyn District Plan, the rural area is valued for its paddocks, trees, and agricultural, pastoral or horticultural activities. Also appreciated is the rural outlook, minimum site areas and setbacks, privacy and openness, clean air, quietness, and standards for noise, glare and signage.

17 The Partially Operative Selwyn District Plan encourages renewable energy generation but seeks to ensure development will minimise adverse effects on the amenity values of the surrounding environment.

18 Having considered the application, I am of the opinion that the solar farm will:

a) Be an industrial activity in a rural environment.

b) Depart from the expected landuse pattern of the rural zone.

c) Be unlike any other activity within the vicinity.

d) Have intensive site coverage, albeit allowing for grazing underneath.

e) Change the rural outlook and sense of openness for some residents and road users.

f) Bring about a loss of rural character and amenity values (most apparent whilst landscape mitigation is establishing).

Overall, with appropriate planting as I have proposed, then the landscape and visual effects will be of a low to moderate (minor) value initially and with maturation of the perimeter planting the effect will be of a low (less than minor) value.

19 In the short term (first five years) there will be localised adverse effects on the users of Struie Road, and some of the residents of neighbouring properties. The site will go from largely open pasture to one with a high coverage of solar panels and associated infrastructure. With the increase in intensification, it will be difficult to maintain the rural character of the site.

20 The change will be very obvious from 'day 1' being different to anything else in the local environment. In the initial years, new planting along the site boundaries will offer little in terms of visual mitigation.

21 Eventually, as the boundary planting establishes, some of the new structures will start to become partially screened from view, becoming visible only in between gaps and overtop of the planting. Once planting matures and visual screening occurs, effects will greatly reduce.

22 In the longer term, it is believed that the rural character will be adequately maintained, reliant on the ability of the solar farm to be screened from view. At this point, the solar farm will also have some characteristics associated with rural character including low noise levels, clean air, limited signage and low volume of activity on site. In addition, generation of renewable energy may be perceived by some as positive.

23 **Proposed Activity**

The applicant, Ra Tuatahi No.1 Ltd wishes to establish and operate a solar farm across a 10.214ha rural site at 80 Struie Road, Hororata.The proposed solar farm activity includes:

- 12,012 solar panels covering 3.7ha.
- The panels will have a maximum height of 2.6m at maximum tilt and would be 0.5m off the ground.

- Frames are supported by piles and the rows are at 5.0m centres.
- Two MV stations are proposed(6.0m x 2.8m x 2.5m).
- All connections to the grid will be underground.
- The boundary fence will be chain link with a 2.1m height.
- Three 20ft shipping containers will be on the site for storage.
- Two weather stations, 3.6m tall.
- Three boundaries will have 3.0m wide strips with plants reaching 3-3.5m in height.
- The site will be grazed or mowed.
- 18 month construction period.

The Site and Existing Environment

24 It is important to understand the landscape character and quality of the site in order to understand the effects of the application:

- The site is of a rectangular shape located approximately 1km northwest of Bealey Road and 500m west of the Selwyn River. It is a rear site and currently in pastoral grassland.
- It is an open and flat site bounded on the east side near the Selwyn River with a conifer woodlot.
- There are no dwellings on the site, but the locality within 1km of the site has numerous ones, often surrounded by shelter belts or copses of trees.
- Overall, it is a rural landscape (grazing, farm buildings, animal feed, pivots) with a road network, woodlots, shelterbelts and scrubby vegetation in the Selwyn River bed, and a predominance of pastoral grassland landcover.

25 Struie Road does have several lifestyle blocks with houses located close to the road, a lodge and short sinuous driveways. There is a house on the rear allotment of no. 134, otherwise the rear allotments are currently open and rural in appearance. Struie Road connects to Bealey Road, which is a busy road connecting Christchurch with Hororata and beyond.

Matters Raised by Submitters

26 Three submissions were received from neighbouring residents as part of the notification process and landscape and amenity matters raised included:

- Visual effects of the storage containers on the southern boundary.
- Temporal effects of the visual effects - concern that the planned planting will not have the desirable screening effect for considerable time.
- The flammability of akeake plants.
- The fire risk to the forest woodlot due to a lack of buffer zone and flammable firebreak.
- These matters are addressed in the landscape and visual effects and mitigation matters sections of this evidence.

Statutory Framework

27 The application has given consideration to both the operative and proposed Selwyn District Plans. There has been a satisfactory coverage of relevant matters from the Plans in the landscape visual assessment by the applicant.

28 I have no further comment to make on this topic.

Assessment of Landscape and Visual Effects

Introduction

29 Landscape and visual effects result from natural or induced change in the components, character, or quality of the landscape. Usually, these are the result of landform or vegetation modification or the introduction of new structures, infrastructure, activities, or facilities into the landscape.

30 *"A landscape effect is a consequence of changes in a landscape's physical attributes on that landscape's values. Change is not an effect: landscapes change constantly. It is the implications of change on landscape values that is relevant."* (Quote from 'Te Tangi a te Manu: Aotearoa New Zealand

Landscape Assessment Guidelines', Final Draft, approved by Tuia Pito Ora / NZILA 5th May 2021, Page 61).

31 The construction process and/or activities associated with the development of the land, also carry with them their own landscape and associated visual effects, as distinct from those generated by a completed development.

32 The landscape and visual effects generated by any particular proposal can be perceived as:

- Positive (beneficial) contributing to the visual character and quality of the environment.
- Negative (adverse), detracting from existing character and quality of the environment.
- Neutral (benign), with essentially no effect on existing character or quality of the environment.

33 The degree to which landscape and associated visual effects are generated by a development depends on several factors, which includes:

- The degree to which the proposal contrasts, or is consistent, with the qualities of surrounding landscape.
- The predictable and likely known future of the locality.
- The quality of the resultant landscape, its aesthetic values and contribution to the wider landscape character of the area.
- The proportion of the proposal that is visible, determined by the observer's position relative to the objects viewed.
- The distance and foreground context within which the proposal is viewed.
- The area or extent of visual catchment from which the proposal is visible.
- The number of viewers, their location and situation (static or moving) in relation to the view.
- The backdrop and context within which the proposal is viewed.

34 Change in a landscape does not necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic and transformational ways, and

these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use.

35 In areas of anticipated landscape change, such as the case for this project, the prospect of a change to the character of this landscape with a renewable energy project has been signalled in the Partially Operative Selwyn District Plan as being of a discretionary activity, with any adverse effects being considered.

36 With respect to this project it is not so much the change in the landscape from rural to an industrial activity that should be assessed, but how well the proposed development responds to and delivers on the expectation for this development, as set out in the District Plan.

Assessment of Landscape Effects

37 There will be a permanent transformation from an open pastoral landscape to an industrial landuse activity. The only natural characteristics that will remain for the entirety of the activity will be a grassland cover and a proposed thin band of native vegetation.

38 The scale of the change will generate low to moderate, adverse landscape effects for an initial period due to:

- An industrial activity in a very natural landscape.
- Departs from the expected landuse pattern of the rural zone (the proposed activity is not agriculture, pastoral farming or horticulture).
- Will be unlike any other activity within the vicinity.
- Will have intensive site coverage, albeit allowing for grazing underneath.

39 However, with the advent of time, from 4-5 years duration where the plants will be at an approximate height of 1.5m to 2.0m, there will be a more natural effect created (see mitigation measures), and any adverse landscape effect will be reduced to a low one. I am allowing for a growth rate of 0.5m per year for Leyland cypress trees.

40 For landscape effects I agree with the applicant that for the macro scale of the locality natural rural characteristics do dominate (para 20) i.e. pastoral grassland, woodlots and shelter trees.

However, I disagree with applicants assessment for the site context where they state that the panels will not *"impact amenity value, are appropriately located within the rural environment* (I would like to know why?) *and when considering the biophysical value of the inclusion of the proposed 3044m^2 of on-site mitigation landscaping (a thin veneer of planting will take time to mature),the overall landscape effects will be low-very low."*

41 There will be a gradation with landscape effects from the initial low-moderate effects to low effects after say, 4 - 5 years. This gradation has not been discussed by the applicant, but has been recognised by Mr Arnold, a submitter from 106 Struie Road who refers to "temporal effects" i.e., the effects over time from the project's inception. This is discussed in "mitigation measures" of my evidence.

Assessment of Visual Effects

42 In terms of the visual effects of this solar farm, I make the following comments:

- The size of the solar farm is a modest one.
- The solar panels at full tilt are relatively low, at 2.6m in height.
- The solar farm is well set back from Struie Road at 400m.
- The solar farm will not be visible from the Selwyn River due to the relatively mature conifer woodlot.
- Struie Road is an infrequently used gravel rural road.
- The site will be visible from parts of the properties at 44,66,90,106,132 and 134 Struie Road. i.e., the curtilage of the houses.
- The orientation of most houses is to the north. Therefore, only three houses are oriented towards the solar farm i.e., houses on lots 44,66 and 90.
- The majority of the solar panels will generally be of a recessive colour, i.e., black.
- Solar panels are designed to absorb sunlight rather than reflect it, contributing to their low reflective value, similar to the water of the adjacent Selwyn River. Having said that, there could be a glint or glare while the screen planting is in its formative years. However, I am not an expert in reflectivity.

- Long distance views from Bealey Road, west of Struie Road may occur. This distance would be greater than 1km.

- It is difficult to be absolute about plant growth rates, but for approximately 4 to 5 years the solar panels will be visible with a lessening visual effect occurring due to increasing growth of the perimeter planting.

43 The magnitude of effects has been assigned a rating to distinguish each of the effects from one another and assist with determining the need for landscape mitigation. (Refer to Appendix 1 for Landscape and Visual Effects Rating Table, which contains a qualitative measure using a seven-point criteria).

Effectiveness of the Proposed Mitigation Measures

44 This section seeks to address the effectiveness of the proposed landscape mitigation measures including plant establishment, growth and maintenance.

45 One submitter has raised a very relevant argument about the plant establishment phase and the landscape and visual effects that will occur during that phase until a level of maturity is reached.

46 The applicant's mitigation may look appropriate in the graphic supplement, but I question the choice of plant species.

47 Within the locality the majority of existing boundary or shelter planting pertains to conifer species, followed by eucalypts and there is occasionally native vegetation for low level shelter used.

48 The applicant has proposed one line of native plants in a 3.0m wide strip on three boundaries. They are relying on the woodlot of another property beyond the eastern boundary to give appropriate screening. The species to be used in the proposed planting includes lacebark, kohuhu, New Zealand broadleaf, and akeake with no irrigation. The peer review by Andrew Craig endorsed these mitigation measures.

49 However, given my 45 years' experience with planting on the Canterbury Plains I do question the effectiveness of the proposed planting to achieve the desired screening of the solar farm.

50 All boundary planting needs to be of two rows, like a shelter belt. Generally slower growing plants are located in the windward line and faster growing plants in the leeward line. Two rows allow for staggered planting so as to

gain complete visual and wind closure amongst the planting. One row of planting will not achieve the desired effect.

51 Plant two rows of Leyland cypress “Leighton Green”. These are hardy and fast-growing plants requiring no irrigation but will need to be trimmed to reduce shading of the solar panels.

52 The outer row will be 2.0m from all boundary fences with plants being 2.0m between rows and 1.5m between plants.

53 I would not use akeake because it is frost tender and New Zealand broadleaf because its growth rate will be too slow.

54 A maintenance operation needs to consist of spraying around the plants, fertilizer in the spring, rabbit. These measures will assist the plant growth.

55 Regardless of understanding these measures, growth rates can still be influenced by seasonal fluctuations, precipitation, exposure to winds and frost, and ground conditions. Typically, plants will sit at a lower growth rate for the first two years following planting.

56 After 5 years the planting will be considered established and able to provide consistent visual screening of the site.

57 The two matters that concern me with the mitigation measures to achieve effective screening are:

- The likelihood of inconsistent planting heights and gaps resulting from mortality of plants.
- Currently there is a constrained planting width, due to the location of the solar panels near not the boundaries. These will need to be moved away from the boundary planting.

Summary of Landscape and Visual Effects

58 I am of the opinion that there is a gradation of effects occurring i.e., low to moderate with a rating of minor for the first 5 years, reducing to low thereafter with a rating of less than minor. This is especially the case for the adjacent neighbours, at nos. 44,66 and 90 Struie Road.

59 As a result of this initial lag time for the growth of plants, a desirable result would be to use the faster growing species of Leyland cypress in two staggered rows.

Conclusion

60 In general, the applicant's landscape assessment is reasonable to understand the effects arising from the proposal, and how any adverse effects may be mitigated.

However, there are matters raised by the submitters and myself that could improve upon the localised effects, especially the mitigation measures to reduce the landscape and visual effects, I have outlined.

Having considered the application, I am of the opinion that while the solar farm is an intense industrial activity in a rural environment and will change the landuse pattern, it is of a small scale. Provided the proposed planting that I have advocated for takes place, it will only result in temporary low to moderate (minor) effects initially, then the permanent landscape and visual effects will be of a low (less than minor) value.

Chris Glasson
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