

10 May 2024

Adam Vincent
Planning Officer - Consents
Central Otago District Council
1 Dunorling Street
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Dear Adam,

Land use consent application RC240065- Helios Mānīatoto Plain Solar Farm - Section 92 Response

Please find our response to the section 92 request for further information below.

Additionally please also find an updated Appendix 4 - Mānīatoto Solar Farm Landscape Effects Assessment, the only changes within this report relate to Appendix B of the Glint and Glare assessment where the modelling detail is now provided (Page 109 onwards).

Request 1

A description of what farm infrastructure is proposed to be removed and what is proposed to remain. The removal of farm infrastructure has implications for the ability of the underlying land to continue to be used productively if infrastructure necessary to support that productive use will be removed.

The land within the proposed solar farm boundary is currently utilised for sheep grazing at low stock levels (given the dry grassland nature of the land). Existing farm infrastructure within the solar farm boundaries is limited to the following:

- Fencing
- Water supply (troughs)
- Sheep yards

Fencing

The existing fence lines will be removed and replaced. Two-metre-high deer fencing will be constructed around the perimeter of the site. The perimeter fence will be setback from external property boundaries to allow sufficient space for planting. Internally within the solar site new reconfigured fencing will be installed (both permanent and temporary) to accommodate rotational grazing of sheep across different areas of the solar farm site. The new internal fencing configuration will be developed in collaboration with the landowners responsible for grazing the site as part of detailed design to ensure fencing is appropriate for ongoing efficient sheep grazing.

Water supply

Existing water supply (water troughs and reticulated water) will remain but where required will

be moved/reconfigured in accordance with new rotational grazing strategy.

Sheep yards

There is one set of sheep yards within the solar farm site which will be removed. These yards are currently surplus to requirements, as the landowners currently utilise sheep yards, woolsheds and barns on their other nearby land holdings to manage the sheep operation on the solar farm site. This will continue following the introduction of a solar farm onto the site, there will be no material changes to the current pastoral farming operations.

As outlined above, the proposal does not require the removal of farm infrastructure that will have implications on the ability of the underlying land to continue to be used productively. Ongoing grazing, to commence once the site is operational and pasture has reestablished, will be governed by a comprehensive grazing license entered into between Helios and our landowner partners and/or agreed third party grazing contractors - the core principles of which are already agreed as part of the land documentation in place with each landowner.

Request 2

A description of what works, if known, will be required within the Naseby Substation to connect the proposed facility to the wider transmission network.

The works within the Naseby Substation are in principle agreed with Transpower, however the detailed design is not yet completed. In summary, the works will include an extension to the existing 220 kV bus and installation of a new 220 kV bay to receive Helios' new transmission cable. All works will be within the existing Transpower Naseby Substation designation and will be constructed, owned and operated by Transpower.

The specific design, configuration and location of these assets within the Transpower designation is ongoing - these are developed during the 'connection investigation' phase of the Transpower connection process. Designs and studies are carried out by Helios and Transpower alongside expert engineering consultants Beca and Omexom. Transpower is responsible for obtaining any consents required for the scope of work within the substation.

Request 3

Approximately what area of earthworks are proposed to be undertaken at any given time? The amount of land exposed at a given time will impact on the measures needed for erosion, sediment and dust control.

Earthworks will be required for the installation of cables, internal access tracks, establishing a flat surface for foundations for certain specific solar equipment (but not piles supporting panels) and small areas of cut and fill. The area of exposed earthworks will vary as works will be completed in stages and it is difficult to provide a realistic area of earthworks at this stage prior to detailed design. A detailed breakdown of earthworks and timing can be provided prior to construction once an Engineering, Procurement and Construction contractor is engaged and detailed design and works programming is completed. Further commentary is provided below based on previous solar projects.

Roading: The primary access track is likely to be installed up to 1km at a time. As the earth is scraped the roading crew will be following behind laying an all-weather metallised surface. Each section of access track would likely take 2-3 days.

Trenching: Aside from roading, trenching is the main earthworks through the site to install the AC and DC cables. It is likely the site will be divided into zones and trenching completed in each zone with the cables laid and infilled with thermal sand then topsoil.

Foundations, areas of cut and fill: Minimal earthworks will be required given the flat topography of the site. Where cut and fill is required, it will be completed within 1-2 days of commencement. Earthworks for foundations will include removing topsoil and leveling the site followed straight after by installation of foundations ready for the prefabricated components.

Helios has proposed conditions of consent¹ requiring a Construction Management Plan (CMP) and Erosion and Sediment Control Plan (ESCP) to be submitted to the Central Otago District Council eight weeks prior to construction commencing. The CMP and ESCP would include specific detailed measures to control dust, erosion and sediment.

The following measures are proposed to manage sediment and erosion control during the construction period:

- Any exposed earth will be backfilled or otherwise stabilised as soon as practicable.
- The trenching will be completed in stages to minimise the area of exposed earth at any one time.
- All excavated soil will be kept on site to be reused or backfilled. If any excess soil is unable to be reused on site it will be transported to an appropriate facility for disposal.
- The contractor will ensure appropriate measures to manage any dust within the boundaries of the site. Appropriate measures may include deploying water carts (or alternative dust suppression mechanism).

Request 4

The hazardous substances assessment assumes dimethyl carbonate is a Class 3B liquid in terms of Schedule 19.4 (Flash point between 23-61°C). Dimethyl carbonate has a flash point closer to 18°C

(https://www.ilo.org/dyn/icsc/showcard.display?p_card_id=1080&p_version=2&p_lang=en#:~:text=Flash%20point%3A%2018%C2%B0C%20o.c.) or 16°C

¹ Please refer to Appendix 3, Proposed Consent Conditions 3-6 and Condition 8

(<https://www.epa.govt.nz/database-search/chemical-classification-and-information-database-ccid/view/09BA67CC-2134-47DE-9372-112809D185B0>, Sigma-Aldrich Safety Data Sheet attached as Appendix C), making it Class 3A under the Schedule. Please provide an updated hazardous substances assessment factoring in this higher risk classification and lower permitted volumes for on-site storage.

Section 5 of the submitted Hazardous Substance Assessment prepared by Beca notes the classification of HSNO substances outlined in Schedule 19.14 of the Central Otago District Plan is inconsistent with the operative national HSNO classification.

The Environmental Protection Agency adopted the seventh revised edition of the Globally Harmonised System (GHS 7) on 30 April 2021. This replaces the previous HSNO classification system in New Zealand.² The Rural Resources Area Chapter of the Central Otago District Plan 4.7.4 (ii) page 57 notes *'The hazardous substances listed in Schedule 19.14 generally follow those identified in the Explosives Act, Dangerous Goods Act, Pesticides Act and the Hazardous Substances and New Organisms Act 1996 and are listed for information purposes'...* *'It is also acknowledged that industry developed design standards are also in existence to manage effects on the environment and that codes of practice and guidelines recognised by industry may be relevant to the consideration of applications.'*

It is acknowledged the flash point is below 23°C, however applying the HSNO standards (which supersede those in the CODC District Plan) is most appropriate as an industry standard given consistency with the substances proposed (refer to page 6 of the Beca report discussion regarding classifications and corrosives). As dimethyl carbonate is a category 2 liquid it is applicable to the Class 3B category.

It is noted that, irrespective of class categorisation, the risks and controls as outlined in the Hazardous Substance Assessment are applicable to identify and appropriately manage the dimethyl carbonate.

Request 5

Page 4 of the glint and glare report indicates that "international best practice" indicates that local roads do not usually require mitigation of glare. Please provide copies of or links to the

² <https://www.epa.govt.nz/hazardous-substances/classification/hsno-classification-codes-and-moving-to-ghs-7/#:~:text=We%20adopted%20the%20seventh%20revised,the%20previous%20HSNO%20classification%20system.>

best practice referred to in this statement, noting that the ITP Glint and Glare assessment indicates that there will likely be notable instances of glare for users of nearby roads.

As outlined in the responses below to Requests 7 and 8, Helios is proposing mitigation to remove all glare from local roads.

For completeness, a copy of Solar Photovoltaic Glint and Glare Guidance produced by Pager Power and referenced by ITP is provided as **Attachment 1**, local roads are discussed in clauses 7.6- 7.13 on pages 61 and 62. Key points are summarised below, however as outlined above further discussion regarding local roads is limited given Helios will mitigate all glare.

- Road users will typically only receive fleeting glare due to the speed of travel. Hence, the duration of glare is less important than the origin of the reflection, length of road affected, and traffic volume (i.e., is it within driver field of view, how long will the “fleeting” view be).
- Section 3.2 of the Abley Transport Assessment states that Ranfurly- Naseby Road and Ranfurly Back Road are considered low volume roads which is in keeping with the local road classification in the Page Power Guidelines.
- Glare should be considered within the 50 degrees either side of the direction of travel (The ForgeSolar model utilised by ITP accounts for this based on similar FAA guidance).

Request 6

Please outline the differences between “Maintained exotic shelter belt planting” and “exotic shelter belt planting” at Pages 230-231 of the application (Graphic Supplement Figures 5C and 5D), including where one will be used over the other as part of landscape mitigation. The Landscape Mitigation Plan (Graphic Supplement Figure 5A) only shows the latter being used.

Please refer to **Attachment 2**, Memorandum from Boffa Miskell providing further information in response to request 6.

Request 7

Please confirm whether the applicant intends to implement changes to the rest angle of the proposed arrays based on the assessment in section 3.4.2 of the ITP Glint and Glare assessment.

Helios commits to remove all yellow glare from the local road network. As outlined in section 3.4.2, this will initially be achieved by implementing a rest angle of 10 degrees which eliminates all yellow glare. The screening mitigation outlined in section 3.4.3 will also be implemented, once plants reach a sufficient height to screen the panels the rest angle of 10 degrees will no longer be required. Helios will continue to monitor the site through operation and would accept a condition on the consent requiring mitigation to remove all yellow glare as outlined in the ITP Glint and Glare assessment, suggested wording for a condition of consent to ensure a measurable outcome is outlined below:

Backtracking rest angle mitigation draft condition:

A rest angle of 10 degrees is required for the backtracking panels, unless landscape mitigation has been certified by a suitably qualified professional that landscape screening mitigation is sufficiently established so that no yellow glare will be experienced from the local road network and the owners and occupiers of 366 Ranfurly Back Road.

Request 8

Not all of the landscaping proposed to mitigate glare shown in Figure 13 is proposed on other landscaping plans (For example Graphic Supplement Figure 5A). Please provide either an updated assessment of glare effects to factor in this vegetation that does not appear to be being proposed or an updated landscaping plan showing all recommended screen plantings.

Please refer to **Attachment 2**, Memorandum from Boffa Miskell providing further information in response to request 8.

Request 9

Council intends to bundle all parts of the proposal, including the proposed 220kV transmission line between the facility and the Naseby Substation. The construction of a new transmission line would not occur without the proposed solar farm, so their effects are intrinsically connected. The applicant has sought to unbundle the transmission line from the proposal. The applicant is invited to update their assessments as they see fit to consider the effects of the proposed new 220kV transmission line.

The original application is considered fit for purpose with the bundling of the proposed 220Kv transmission line, with the addition the following supplementary assessment:

The proposed transmission line will be entirely underground, running north through the site from the onsite substation, crossing Ranfurly-Naseby Road and running north within the verge of Fennessey Road until the Transpower substation. An indicative route is shown in Figure 1 of the submitted AEE (green dashed line). Figure 1 is reproduced below for completeness.



Figure 1: Aerial photograph of the Site (yellow outline)

Source: *The Property Group Application for Resource Consent, page 7.*

Permitted Activities

The applicant is comfortable with the Council's proposal to treat the application in a holistic way, and it is the applicant's intention to manage the activities and construction in the same way. The applicant has described the activity with as much detail as possible noting that further detail will be available once detailed engineering design has occurred.

In relation to Council's question above, all underground or inground network utilities are permitted activities, pursuant to Rule 13.7.9 of the District Plan, provided that relevant standards are adhered to. It is proposed to adhere to the standards listed in 13.7.15. It should be expected that any or all of the permitted activities that are listed in Chapter 13 that are relevant to the operation of a power generation facility could or would occur on the site.

The district plan states at 13.4.3: Explanation Utilities and minor road realignment works assist in the efficient functioning of the district while some works are important for public safety. Where these activities are designed to avoid, remedy or mitigate adverse effects on the environment, they have been permitted as of right. This is a clear signal of the plan that these activities are anticipated within the district.

Adherence to the standards stipulated in 13.7.15 will ensure that any adverse effects will be mitigated.

Ecological effects

It is acknowledged that the ecology assessment does exclude the offsite underground transmission line from the scoping of the EIA. At the time it was not deemed necessary to include the off-site underground transmission lines within the scope, given the permitted status within the District Plan. Both on and off-site transmission lines were discussed at length with experts, and effects were considered to be the same as the onsite works, if not less given the context of the road reserve. Overall, the existing assessment is considered to be fit for purpose for this extended element with the addition of the below:

The earthworks for installation of the underground transmission line within the solar site is considered within the Ecology Assessment. The underground line crosses modified pastoral land. It does not disturb any mapped native vegetation and is not in proximity to any wetlands identified in Appendix 5: Vegetation Map and Wetland Plot Location Map. From the solar farm boundary to the Naseby Substation the transmission line will be installed in the road corridor and does not cross any sensitive environments.

Landscape

As above, it is acknowledged that the landscape assessment does exclude the offsite underground transmission line from the scoping of the assessment. At the time it was not deemed necessary to include the off-site underground transmission lines within the scope, given the permitted status within the District Plan. Both on and off-site transmission lines was discussed at length with experts, and effects were considered to be the same as the onsite works, if not less given the context of the road reserve. Overall, the existing assessment is considered to be fit for purpose for this extended element with the addition of the below:

The Landscape Assessment does not require further assessment as the transmission line will be underground. As outlined in the report all construction effects (including the installation of the line) are temporary.

Transport:

Helios met with CODC Infrastructure and Roding teams in December 2023 to discuss the installation of the transmission line within the Fennessey Road corridor.

A Corridor Access Request (and/or other applicable applications should Helios become an

'Electricity Operator' for the purposes of the Electricity Industry Participation Code) will be sought from CODC to obtain the rights to install, operate manage the underground line and will be provided to Council ahead of construction. Applications for new infrastructure within the road will also be progressed with the Roding Team.

This process will ensure that all proposed works will meet traffic safety requirements and importantly ensure that existing infrastructure will not be compromised from the proposed works. Overall provided activities within the road reserve are compliant, adverse effects on the transport network will be less than minor and importantly limited to the constriction phase.

Earthworks:

The proposed Earthworks will be required for the installation of the underground transmission line. Original ground will be reinstated as the transmission line works progresses. All sediment and erosional control measures proposed through the original application and recommended as a condition of consent, will also apply to this aspect of the proposal.

The area of exposed earthworks will vary as works will be completed in stages and it is difficult to provide a realistic area of earthworks at this stage prior to detailed design. A detailed breakdown of earthworks and timing can be provided prior to construction once an Engineering, Procurement and Construction contractor is engaged and detailed design and works programming is completed.

Overall, the proposed earthworks will be limited to the construction phase with original ground reinstated upon completion. Sediment and erosion control measures will be in place and adverse effects will be less than minor.

Health and Safety

No adverse risk to human health and safety has been identified with the construction and operation of the solar farm including the proposed underground transmission line. Works will not be undertaken without an approved Corridor Access Request along with any required approvals from the CODC Roding team. Health and safety effects are considered to be less than minor.

Objectives and policies:

The objective and policy assessment within the original AEE is considered fit for purpose with the addition of the underground transmission line, with the addition of the following:

Objective 13.3.3	Development of Energy Resources In the development of energy resources, to have particular regard to the use of natural and physical resources in a manner which avoids, remedies or mitigates significant adverse effects on the environment.
Objective 13.3.5	Landscape and Amenity Values To maintain and where practicable enhance rural amenity values created by the open space, landscape, natural character and built environment values of the district's rural

	environment.
Objective 13.3.6	Development of Energy Resources In the development of energy resources, to have particular regard to the use of natural and physical resources in a manner which avoids, remedies or mitigates significant adverse effects on the environment.
Comment:	The proposed transmission line will directly support the proposed power generation facility which will develop the energy resource of the district which will utilise the natural and physical resources of the district, specifically solar energy. The proposed transmission line will avoid significant adverse effects on the environment, noting adverse effects will be limited to the construction phase and co-located within the road reserve consolidating and mitigating any perceived adverse effects.
Policy 13.4.1	Positive Contribution of Infrastructure To recognise the essential and positive contribution that infrastructure and its ongoing development makes to the social, economic, and cultural wellbeing, and to the health and safety of the District's people and communities.
Policy 13.4.4	To ensure that the design, location and operation of utilities including the transmission network, having regard to specific locational and operational efficiency requirements, recognises and provides for the following matters, where relevant: <ul style="list-style-type: none"> a) The avoidance, remedying or mitigation of the adverse effects of noise, vibration, light spill and glare on the environment. b) The avoidance, remedying or mitigation of adverse effects on landscape values. c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna and statutorily managed sports fish and game, water bodies and their margins. d) The avoidance, remedying or mitigation of any significant increase in risk to the safety of the public. e) The maintenance of the efficient operation of other utilities and infrastructure. f) The protection of the integrity of significant heritage values. g) The protection of the integrity of sites of importance to Kai Tahu ki Otago.
Policy 13.4.5	Utility Corridors and Co-siting: To reduce the impact that utilities including the transmission network have on the landscape values of the district by promoting and encouraging the co-siting of utilities and the location of utilities in "corridors" where this is possible and practicable having regard to the operational and commercial efficiencies of the utility concerned.
Policy 13.4.6	High Voltage Transmission Lines: To encourage the location of high voltage transmission lines away from urban areas and by restricting the location of residential development near such lines.

<p>Comment</p>	<p>The proposed underground transmission line connecting the proposed solar farm to the Nasby Substation promotes the co-siting and corridor usage of the existing transport network. Noting that the proposal is for underground transmission, no long term visual adverse effects are anticipated by the proposed transmission line, regardless the co-location within the existing transport network will concentrate any visual impact during the construction phase, mitigating any perceived landscape and visual effects. In addition, the proposed co-siting and use of the road corridor encourages increased operational efficiencies, such as enabling easy access for any maintenance and any repair activities.</p> <p>The proposed transmission line located within the road reserve within a rural environment and will be located away from residential development.</p>
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As with the original application the proposed underground transmission line is consistent with the relevant objectives and policies of the CODC District Plan.