

RURAL  
DESIGN

SINCE 1984

11 December 2023

Katie Martin (Team Leader) - Whangarei District Council  
Application Number (LU2300093)

Stuart Savill (Consents Manager) – Northland Regional Council (NRC)  
Application Number (APP.045356.01.01)

Cc/: Alister Hartstone

**In the matter of: Meridian Energy Limited (MEL) Proposed solar energy farm development at Ruakaka.**

Rural Design 1984 Ltd (RDL) have been asked to undertake an Ecological Peer Review on behalf of Whangārei District Council (WDC) and Northland Regional Council (NRC) relating to a solar energy farm development proposal (WDC-LU2300093 and NRC-APP.045356.01.01) by Meridian Energy Ltd (MEL) ('the Applicant') at three sites between Ruakākā township and Marsden Point ('the Site').

As part of the ecological peer review process, RDL carried out a peer review of Ecological Effects Assessment (dated 28 August 2023) prepared by Boffa Miskell Limited (BML) and prepared a S92 request relating to ecological matters (dated 3 October 2023). A joint site visit with was undertaken with Tanya Cook (Boffa Miskell Limited) (BML) and Andrew Guerin (Meridian) on the 28<sup>th</sup> of September 2023. Furthermore, RDL undertook a more thorough site visit on the 5<sup>th</sup> of October 2023. A consolidated response to the ecological matters raised by RDL was received on 9 October 2023 (prepared by Reyburn and Bryant with input from BML).

This final memo provides a summary and conclusions related to the proposal from an ecological perspective. Please note that only the primary points of contention between BML and RDL assessments have been described, and there may be other points where agreement has not/cannot be reached between RDL and BML.

## ASSESSMENT OF ECOLOGICAL SIGNIFICANCE

The Ecological Effects Assessment (dated 28 August 2023) prepared by Boffa Miskell Limited sets out a complex approach to determining the ecological value and significance of habitats and species present on site, mixing the non-statutory EIANZ framework (under Sections 5.1-5.7), with statutory framework for assessment of ecological significance (Section 5.8), i.e. the ecological significance criteria as described under Appendix 5 of the Northland Regional Policy Statement. The overall assessment of ecological value presents confusing and conflicting results, in reference to the assessment of ecological value and significance under Appendix 5 of the Northland Regional Policy Statement (Table 12).

Irrespective of the above, RDL considers that the wetland habitats recorded on site are representative of a complex system of dune slack wetlands (seasonal wetlands). The wetlands associated with the coastal interface are a rare ecosystem in the Waipu Ecological District and a 'Nationally Endangered' ecosystem of high ecological significance when considered in both a Regional and National context. While the onsite dune slack wetland areas are largely modified in nature, they have been assessed as habitat for 'Critically Endangered' matuku/Australasian bittern, among other 'At Risk' and 'Threatened' flora and fauna such as tassel sedge (*Carex fascicularis*). Dune slack wetlands have unique characteristics and naturally have high levels of dynamism and are characterised by a pattern of pronounced annual fluctuation of the water table, related to the landform of the dune system as well as climate and the nature of the underlying geological features.

## ECOLOGICAL EFFECTS ASSESSMENT AND MANAGEMENT

The Ecological Effects Assessment (dated 28 August 2023) prepared by Boffa Miskell Limited sets out a complex approach to determining the level of effects, following the non-statutory EIANZ framework. The methodology involves use of a matrix with the assignment of ecological value on a five-point scale, combined with the magnitude of effect, to determine the overall level of ecological effect (loss or alteration). While RDL agrees in principle with the magnitude of effect assessment (Section 7.9), we consider that BML's assigned level of ecological effects with recommended effects management in place as being overly optimistic regarding the potential off-set package in reducing the potential level of ecological effect to 'low' or 'very low'. RDL disagrees with this assessment.

I consider that adopting the BML resulting assessment and off-set package would result in the loss of part of a 'rare' ecosystem type in Waipu ED contained within a 'chronically threatened' land environment. Table 17 of the BML ecology report is revealing, in that 'low' to 'very low' levels of ecological effects with recommended effects management in place are

identified for all potentially affected ecological features. This is despite BML's ecological values assessment of each affected habitat or species ranging from moderate to very high, all of which will be either permanently lost or adversely affected by the proposed development.

RDL's conclusion with respect to adverse ecological effects is that they cannot be appropriately off-set elsewhere on a like for like basis given that the dune slack wetland ecosystems present on site are considered rare in the Waipu ED and 'Nationally Endangered.' It is assessed that these wetlands cannot be easily off-set as the ecosystem type affected is dependent on a complex array of ecological, geological, and hydrological functions and therefore are irreplaceable. While we acknowledge that Site 3 could possibly support an indigenous wetland habitat, subject to significant earthworks and changes to the overall hydrological regime, it is highly unlikely that the same mosaic of the existing dune slack wetland system could be recreated. Therefore, we consider that the adverse effects associated with the proposal will be more than minor and potentially have significant ecological effects.

#### NATURAL INLAND WETLAND EXTENT

RDL disagrees with the BML mapped extent of natural inland wetland areas (as defined under NPS-FM) within the site boundaries. BML's wetland determination has taken place over a 3-year period (being 2021-2023) and has been carried out in general accordance with MfE Wetland delineation methodology. BML identify approximately 19 ha of natural inland wetlands (both exotic and indigenous species dominated) between Sites 1 and 3, while RDL is of the opinion that the true wetland extent on site is closer to 29-30 ha (as determined utilising a combination of site visit observations and analysis of current and historic aerial imagery).

BML argued that RDL's assessment regarding the wetland extent on site is based on the site being assessed under non-normal circumstances with higher-than-normal seasonal fluctuations in rainfall and water table observed. While it is noted that 2022 and 2023 experienced several heavy rainfall events, it is considered that dune slack wetlands naturally have high levels of dynamism and are characterised by a pattern of pronounced annual fluctuation of the water table. This is further evidenced by the assessment of historic aerial imagery, which shows the wetland extent contracting and expanding year on year representative of seasonal fluctuations. I do not consider that the natural dynamism of the dune slack wetlands has been appropriately recognised within the BML wetland delineation assessment.

In addition, the wetland areas on Site 1 as mapped by BML show a high degree of separation, whereas RDL observed that nearly all the wetland features on Site 1 form hydrological connections with one another creating an extensive mosaic of wetland features, therefore the distinction between exotic species and indigenous species dominated wetlands is very subjective.

No agreement of the wetland extent could be reached following a meeting with BML on the 9<sup>th</sup> of November 2023. RDL remains of the opinion that BML reporting has not accounted for the true wetland extent on site, and that the natural inland wetland extent on site is much greater (approximately 10 ha more) than that provided within the BML reporting and mapping. Therefore, the proposed off-set package to account for the proposed wetland loss cannot be accurately assessed given that the true wetland loss on site is likely much greater than that shown in BML reporting.

## EFFECTS ON AVIFAUNA

BML surveys confirm that matuku/Australasian bittern are present on Sites 1 and 3. The proposal would result in permanent foraging and breeding habitat to Australasian bittern, which is currently relatively undisturbed (apart from ongoing farming operations). Site 1 has a strong natural connectivity with the wider natural Ruakaka beach and Ruakaka estuary, and Site 1 is not currently bisected by any formed roads, with minimal traffic within the Site boundaries. Irrespective of the disagreement between RDL and BML regarding the proposed wetland off-set area size, it is deemed that the location of the proposed wetland off-set area on Site 3 is located between two major roads (Marsden Point Road and McCathie Road), thus increasing bird collision risk with vehicles that could lead to increased mortality.

I consider that the potential effects on avifauna include permanent habitat modification/loss, habitat fragmentation, displacement resulting from construction works, impacts on breeding birds, and impact trauma (bird strike) with panel arrays and increased risk of vehicle-bird collisions within the proposed off-set area on Site 3. My conclusion with respect to adverse ecological effects on avifauna, in particular the 'Nationally Critical' matuku/Australasian bittern is that they will be more than minor and potentially significant.

## PROPOSED OFF-SET PACKAGE

The Regional and District Plans do not provide a framework for evaluating off-set or compensation. However, the Regional Policy Statement for Northland (RPS) states that biodiversity offsets must ensure there is no net loss of biodiversity and should preferably

deliver a net gain for biodiversity. The RPS also states that there are limits to what can be offset when affected biodiversity is irreplaceable or vulnerable. In such circumstances offsetting cannot be considered as a means of dealing with adverse effects. The RPS further states that what will be an “appropriate” offset will depend on the case-by-case circumstances and current best practice.

It is considered that principles for aquatic offsetting in Appendix 6 of the NPS-FM are deemed relevant given this reflects a best practice standard.

Appendix 6: Principles of aquatic offsetting of NPS-FM clause 2 states that aquatic offsetting is not appropriate where:

- (a) residual adverse effects cannot be offset because of the irreplaceability or vulnerability of the extent or values affected:
- (b) effects on the extent or values are uncertain, unknown, or little understood, but potential effects are significantly adverse:
- (c) there are no technically feasible options by which to secure proposed no net loss and preferably a net gain outcome within an acceptable timeframe.

In addition, Section s6(c) of the RMA requires the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna, therefore, off-set or compensation may not be appropriate because it is not in accordance with s6(c) of the RMA.

My opinion is that even with the offset/compensation package offer presented within the Application package, the project would still lead to a loss and overall reduction of irreplaceable and vulnerable biodiversity, threatened and at-risk species, endangered ecosystems and land environments, therefore biodiversity compensation is not appropriate in this instance. The complex nature of dune slack ecosystems has been highlighted above and should be taken into consideration when assessing whether off-set is an appropriate mechanism to be utilised in this application.

Irrespective of the above and should offset/compensation be considered applicable in this instance, RDL is of the opinion that an insufficient off-set package has been offered to account for the permanent loss of a rare wetland ecosystem type. This is partly due to disagreement between the ‘true’ wetland extent on site, with BML identifying approximately 19 ha of wetlands, while RDL is of the opinion that the true wetland extent on site is closer to 29-30 ha (as determined utilising a combination of site visit observations and analysis of current and historic aerial imagery). Therefore, the fundamental disagreement remains between what is an appropriate off-set for the potential wetland loss.

In respect to the current off-set proposal, I consider that BML has been overly optimistic regarding the potential success of the proposed off-set wetland area creation, mitigation planting and the overall ecological significance which could be achieved by Year 5 post-establishment. It is noted that the proposed off-set area on Site 3 is almost in its entirety in grazed pasture, and wetland creation in this area will involve significant earthworks and modifications to the existing hydrological regime to create a self-sustaining wetland type ecosystem, which is highly unlikely to ever be representative of a dune slack wetland ecosystem type. I remain of the opinion that should off-set be deemed acceptable (once the true wetland extent on site has been accounted and agreed upon between BML and RDL), the creation of the wetland offset area should take place a minimum 5-years prior to the construction work beginning to ensure that suitable offset habitat is provided for prior to the "removal" of the wetland areas on Site 1. The 5-year period between the new wetland offset creation and start of construction works would ensure that suitable lag-time is available for the offset wetland area to reach canopy closure, allowing for any susceptible fauna relocation or facilitation of assisted movement prior to the reclamation of their existing habitat on Site 1.

In summary a no net loss or net gain cannot be achieved if offsets are generally allowed in habitat types that differ from the habitat type being disturbed or lost. Allowing offsets in these circumstances would not maintain indigenous biological diversity in the Region. It is considered that off-set may be considered inappropriate altogether, given that the wetland habitat types identified on Site 1 are dune slack wetlands, which are rare and nationally threatened ecosystem types and are considered irreplaceable. Irreplaceability is a consideration both under the RPS and NPS-FM. If a component of biodiversity, for example, a habitat type or a population of a threatened species is represented by a single site, then irreplaceability is maximal because no other site can contribute to the biodiversity it contains.

## NPS-FM FRAMEWORK CONSIDERATIONS

### *Northland Regional Council considerations*

The primary aspect to consider in the remit of NRC is NPS-FM (2020) related matters. In relation to the construction of specified infrastructure, Section 3.22 subclause (1)(B)(iv) outlines that Regional Council need to be satisfied that (iv) the effects of the activity are managed through applying the effects management hierarchy. While it is considered that the application briefly considers avoidance, remediation and mitigation, a large focus of the application has been biodiversity off-set. Biodiversity offsetting should only be

considered after actions to avoid, remedy, or mitigate where practically feasible have been exhausted, and thus applies only to residual biodiversity impacts.

Section 3.22 subclause (3) requires that

(3) Every regional council must make or change its regional plan to ensure that an application referred to in subclause (2) is not granted unless

(a) the council is satisfied that:

(i) the applicant has demonstrated how each step of the effects management hierarchy will be applied to any loss of extent or values of the wetland (including cumulative effects and loss of potential value), particularly (without limitation) in relation to the values of: ecosystem health, indigenous biodiversity, hydrological functioning, Māori freshwater values, and amenity values; and

(ii) if aquatic offsetting or aquatic compensation is applied, the applicant has complied with principles 1 to 6 in Appendix 6 and 7, and has had regard to the remaining principles in Appendix 6 and 7, as appropriate, and

(iii) there are methods or measures that will ensure that the offsetting or compensation will be maintained and managed over time to achieve the conservation outcomes;

Appendix 6 of NPS-FM outlines that aquatic offsets are not appropriate in situations where, in terms of conservation outcomes, the extent or values cannot be offset to achieve no net loss, and preferably a net gain, in the extent and values. Examples of an offset not being appropriate would include where residual adverse effects cannot be offset because of the irreplaceability or vulnerability of the extent or values affected. This is relevant to the proposal given that it will result in permanent irreversible loss of interconnected dune slack wetland habitat on site, which is a rare and nationally threatened ecosystem types and also is habitat to a number of 'At Risk' and 'Threatened' flora and fauna. Therefore, it is my opinion that the proposal to removal over 19 ha of dune slack wetlands through aquatic off-set may be considered inappropriate altogether, given that the wetland habitat types identified on Site 1 are dune slack wetlands, which are rare and nationally threatened ecosystem types and are considered irreplaceable. These ecosystem types cannot be readily off-set given that they rely on a range of complex ecological, geological, and hydrological conditions. Irreplaceability is a consideration both under RPS and NPS-FM.

### *Whangarei District Council considerations*

The Whangarei District Plan Operative in Part (2022) contains objectives and policies that seek to maintain and enhance ecosystems and biodiversity and provide protection for indigenous vegetation and habitats of indigenous fauna, including indigenous wetlands.

I consider that the proposal will result in the permanent loss of indigenous ecosystems and associated flora and fauna, which cannot be addressed in isolation from the NPS-FM (2020), which is a Northland Regional Council matter.

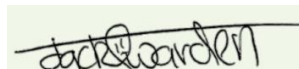
## CONCLUSION

It is my opinion that the development will result in the permanent and irreversible loss of a rare ecosystem type and loss, or displacement of threatened and at-risk indigenous flora and fauna species present on site. These concerns are also outlined in a letter prepared by the Department of Conservation dated 26<sup>th</sup> November 2023.

My conclusion in respect to adverse ecological effects is that they will be more than minor and potentially significant.

### **Ecological Memo prepared by:**

Jack Warden  
Senior Ecologist  
Rural Design 1984 Ltd

A handwritten signature in black ink that reads "jack warden". The signature is written over a light green rectangular background.

11.12.2023