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Review of Ecological Effects of the Contact Energy Proposed Southland Windfarm – Technical Review

1.0 Introduction

Contact Energy has lodged an application under the Fast Track Approvals Act (FTTA) 2024 for the construction and operation of the Southland Windfarm. Southland District Council has sought external support to review the application and provide comments to the expert panels on its behalf. SDC engaged e3scientific to undertake a review of the ecological assessment completed to support the application.

With respect to ecology the application includes an ecological effects assessment set out in the following two documents:

- Southland Wind Farm Technical Assessment #5: Terrestrial and Wetland Ecology (Nick Goldwater and Dr Kelvin Lloyd)
- Southland Wind Farm Technical Assessment #6: Long-tailed Bat Effects (Gerardus Kessels and Ian Davidson-Watts)

In addition to the above Contact engaged Mr Roger MacGibbon to review the ecological effects assessment and Mr MacGibbons review is set out in the following report:

- Southland Wind Farm Technical Assessment #7: Review of Terrestrial and Wetland Ecology and Ecological Offsetting and Compensation (Roger MacGibbon)

Please note we have focussed our review on the work completed by Wildlands and Mr Kessels and Dr Davidson-Watts as they contributed to the primary ecological assessments.

A suite of the management plans have also been prepared to support the application as set out in the following documents:

- Vegetation Management Plan
- Lizard Management Plan
- Terrestrial Invertebrate Management Plan
- Avifauna Management Plan
- Biosecurity Management Plan
- Bat Management Plan
- Habitat Restoration and Enhancement Management Plan

We note the Wildlands report references the drafting of an overarching Terrestrial and Wetland Ecological Management Plan however this plan was not included in the application documentation.

The application includes a detailed suite of consent conditions that have been drafted to ensure the ecological effects are managed in accordance with the mitigation, offsetting and compensation package set out in the application.

We have reviewed the full suite of impact assessment, management plan and consent conditions to inform my view on the likely effects of the construction and operation of the Southland Wind Farm.

The following sets out e3scientifics views on the ecological assessment and provides comments against the following matters:

- Characterisation of Ecological Values
- Ecological Effects Assessment
- Consent Conditions

2.0 Technical Review

2.1 Ecological Characterisation and Effects Assessment

2.1.1 Terrestrial and Wetland Ecological Values

Wildlands has completed a multi-year assessment of the terrestrial and wetland ecological values of the Southland Windfarm. The ecological work has included

detailed vegetation, botanical, invertebrate, lizard and avifaunal survey work and the assessment methods and findings of the work are detailed in the text and maps set out in the report. e3scientific considers the methods and level of ecological survey provides a sound basis to establish the ecological characteristics of the site. In our view the work completed is comprehensive and provides a strong basis for understanding the ecological effects of the windfarm and the management measures required to mitigate, offset and compensate for ecological effects that will occur. Notwithstanding this point, we make the following comments with respect to wetland delineation on the Jedburgh Plateau and the lizard and bat assessments.

Wetland Delineation

The mapping of wetland environments on the Jedburgh Plateau has clearly been a challenging piece of work. The intricate patterning of wetland and dryland environments with plant species that can inhabit both environments makes wetland delineation difficult. Notwithstanding this, the methods utilised including analysis of high-resolution aerial imagery and application of the Wetland Delineation Protocols (MfE, 2022) provide the best approach to complete this assessment. We consider that the methods used provide a sound basis for the wetland mapping completed for this area and therefore understanding the extent of the effects of the development wetlands on the Jedburgh Plateau.

Lizard Assessment

Section 2.3 of the Lizard Management Plan (LMP) provides a description of the habitats where lizard species have been recorded across the site. Based on this information it would be helpful to produce a plan that spatially shows the areas of habitat quality for both the species recorded (tautoko gecko and tussock skink) and species that are possibly present (green skink and herbfield skink). This would assist the reader in understanding the scale of habitat for each species compared to the areas of disturbance. Furthermore, understanding the areas of moderate to high value habitat and how these relate to the areas identified in Figures 2a and 2b of the LMP would assist in understanding the rationale for the areas requiring management actions including pre-clearance checks and salvage. We consider this plan would also be helpful for management actions regarding the mulching of vegetation.

Long-tailed bat Assessment

The Long-tailed bat (LTB) characterisation work involved the completion of a total of eight bioacoustic survey events between 2022 and 2024. The surveys have

clearly demonstrated that long-tailed bats forage in the vicinity of the proposed wind turbines located near the escarpment of Matariki Forest. The assessment has identified this area of the windfarm as having very high habitat value for LTB and the wind turbines present a very high risk of turbine strike and barotrauma. The applicant recognises the need to manage this risk appropriately which is discussed in the ecological effects section below.

2.1.2 Assigning Ecological Value

The ecological assessment utilises the information collected to establish the ecological values through application of a standard industry methodology. The assessment also considers the ecological values against the Significance Assessment Criteria in the Southland Regional Council Regional Policy Statement and Schedule of Threatened, At Risk and Rare Habitat Types. The findings of this work are set out in Appendix 5 of the Terrestrial and Wetland Ecological assessment. I have reviewed this assessment and consider the assignment of ecological values and significance assessment accurately represents the values associated with the vegetation, habitats and species recorded across the site.

2.1.3 Summary

In summary e3scientific concludes that the ecological values of the site are well characterised and provide a strong basis for the ecological effects assessment.

2.2 Ecological Affects Assessment

The windfarm will result in ecological effects associated with both the construction and operation of windfarm. Construction effects include the loss of the indigenous vegetation and the fauna it supports while the operation effects are associated with the risk of birds and bats being struck by turbine rotors, barotrauma of bats flying near turbines and large birds flying into transmission lines.

2.2.1 Construction Effects

Construction effects include vegetation clearance required to facilitate the installation of wind turbine foundations, transmission lines, the roading and servicing network and spoil disposal.

Vegetation

A total of 134.69 ha of vegetation loss is estimated with 63.74 ha of this vegetation consisting of indigenous dominant vegetation with moderate to very high ecological values. The majority of the indigenous vegetation has been assessed as significant under the RPS. A further 80.97 ha of vegetation will be lost through

the construction of fill disposal sites with 23.68 ha consisting of indigenous dominant vegetation. All high or very high ecological value vegetation will be avoided in the construction of fill disposal sites. With respect to the fill disposal sites, Contact proposes to reinstate the cleared vegetation within 12 months of the site construction. Wildlands has assessed that the remedial work mitigates the effect of the temporal loss of vegetation. We agree with this view but it does rely on the rehabilitation work being completed to a high level. It will be critical that the rehabilitation is monitored closely to ensure the ecological objectives are achieved. In addition to this matter and this comment extends across all restoration planting activity, it is critical that performance criteria for the plantings is well established. Section 9.1 of the HREP states a target survival after 10 years of 90% is required. We consider establishment of 90% survival should be bought forward to 5 years. If 90% is achieved through this period it is reasonable to assume the plants have established and the objectives have been met. On the other hand should survival fall below this level in the first 5 years, it will give the project the opportunity to reach 90% at 10 years with replacement planting.

Management of the residual effects on the loss of vegetation communities is through the suite of offsetting and compensation measures. The approach to offsetting and compensation is exchanging the reduction in vegetation cover by uplifting existing seral communities and activating ecological processes. We agree this approach is the most practical and most likely to achieve positive biodiversity benefits. The offsetting and compensation measures are well set out in the Habitat Restoration and Enhancement Management Plan (HREP). We endorse all of the measures set out in this plan and agree that significant ecological benefits to the vegetation and habitats of the site can be achieved through successful implementation. Our only comment with respect to the proposed measures is regarding the Jedburgh Station Pest Control Area which proposes wide scale ground based and aerial pest control. In addition to these measures it would seem appropriate to also exclude the grazing of stock in this area to further minimise the browsing of regenerating vegetation.

Fauna

In addition to effects on vegetation, the windfarm construction will impact a range of invertebrates, lizards and birds who inhabit the site. While it is understood the project has avoided sensitive areas of the site as far as practicable, direct effects on habitat and fauna will occur as a result of windfarm construction activities. The application proposes to manage effects on fauna through a series of fauna specific management plans (LMP, TIMP, AMP). These plans set out a suite

of management measures designed to limit effects including nest checks during bird breeding season, pre-clearance lizard surveys and live capture pitfall trapping in high value areas. We consider the work directed by the management plans will mitigate effects of the construction work. In addition to the measures set out in the management plans we suggest an additional measure to mitigate effects on lizards (an invertebrates) is to prohibit mulching of cleared vegetation in areas of high value tautoko gecko habitat. Even with the best pre-clearance checks it is likely tautoko geckos will be missed. We consider this measure would further mitigate the risk of geckos being effected by mulching activities.

In addition to the fauna specific management plans, the Habitat Restoration Enhancement Management Plan (HREP) will play an integral role in offsetting and compensating for the residual effects on fauna through directing a range of predator and pest control measures and enrichment planting. We endorse the management plans and consider significant improvement in habitat can be achieved through minimising effects on high value areas and activating ecological processes by controlling ungulates, pests and predators.

2.2.2 Operational Effects

The operational effects of the windfarm are well set out in the ecological effects documentation. We consider the management response to the risks associated with the wind turbines and transmission lines have been well thought through and the mitigation proposed is of a very high standard with respect to deterring bird and bat collision's, monitoring effects and management responses in the event monitoring finds effects on bats and birds exceed effects targets. We agree with the view of the report authors that effects on birds and bats can be managed such that the a low level of effect can be achieved.

We note the provision of financial support to the Department of Conservation for establishment of pest control in the Beresford Range to support the LTB population. We consider this to be a significant contribution to protecting LTB and wildlife in general which should result in a significant benefit to invertebrate, bird and bat populations that will exceed the effects of the windfarm operation.

2.3 Consent Conditions

We have undertaken a review of the full suite of consent conditions. We consider they largely capture the matters that will drive down the effects of the construction and operation of the windfarm while support the implementation of measures to achieve significant ecological benefits. We have commented on

elements of the mitigation package with respect to lizards, restoration planting and stock exclusion. For clarity these matters include:

- Lizard habitat mapping into low, medium and high areas
- Exclusion of the mulching of vegetation in areas of arboreal lizards i.e tautoko geckos
- Stock exclusion from the 1400 ha Jedburgh Station Pest Control Area
- Reducing the restoration planting performance criteria to 90% at 5 years.

3.0 Conclusion

In conclusion, e3scientific considers the body of work completed to understand the ecological values and effects from the Southland Windfarm is substantial and forms a sound basis to assist the FTAA expert panel. Furthermore, we are of the opinion that the suite of measures set out in the offset and compensation package are considerable and can result in the project achieving a net positive benefit for most of the ecological values recorded across the site.

If you have any questions regarding the information provided in this letter, please contact Glenn Davis on 03 409 8664 or via email at glenn.davis@e3scientific.co.nz.

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