

**Submission to VicGrid on the REZ Study Area map:
Strathbogie Ranges and Mid Goulburn region**



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Executive summary

Purpose and Background

The Strathbogie Responsible Renewables Community Group (SRRCG) provides this submission in response to VicGrid's consultation on the Study Area map for Renewable Energy Zones (REZs), with specific focus on the Strathbogie Ranges and Mid Goulburn River regions. The SRRCG advocates for evidence-based assessments of renewable energy projects, particularly emphasizing the importance of community consultation.

This submission evaluates VicGrid's classification of the region as a Tier 2 REZ area (with small sections of Tier 1) and argues that the area is unsuitable for large-scale renewable energy projects. Key points focus on the quality of wind resource, the region's biodiversity, the landscape's significance, cultural heritage and socioeconomic impacts.

Key Issues and Considerations

1. Wind Resource

- The submission raises concerns about the accuracy of the wind resource data used in the Strategic Land Use Assessment (SLUA) model, particularly the reliance on the Global Wind Atlas which uses modelled rather than observational data. This model lacks validation in the Australian context, there are no Bureau of Meteorology wind measurement stations close to the study area, and local observational data suggests the region may not have the wind potential indicated in the model.
- Recommendation: Site specific wind data collection over several years should be conducted before considering the area for wind energy development.

2. Biodiversity and Natural Environment

- The Strathbogie Ranges and Mid Goulburn region is home to unique and fragile ecosystems with a rich and diverse array of flora and fauna, many of which are threatened species. industrial-scale renewable energy development would pose a significant risk to these species and their habitats. Fragmentation of existing habitats would undermine ongoing conservation efforts and exacerbate the loss of biodiversity. The submission argues that current biodiversity data is incomplete, especially on private land, leading to a reliance on outdated and incomplete datasets in assessing the region's ecological value and impact of renewable energy developments
- Recommendation: Incorporation of both local biodiversity knowledge and comprehensive, independent, on-ground studies are essential to inform REZ planning to ensure that development decisions do not threaten species and habitats. This additional data should lead to an increased rating of the Biodiversity Constraint in the SLUA model and a consequent reduction of the region's current Tier 2 rating.

3. Landscape Significance

- The landscape of the Strathbogie Ranges is a region of significant aesthetic and environmental value, supporting tourism and residents attracted by the natural amenity. It is equally significant as other regions, such as the Macedon Ranges which have been excluded from wind energy developments due their declaration in

planning schemes as distinctive areas and landscapes. The presence of renewable energy infrastructure (wind turbines, solar farms, and transmission lines) would irreparably alter the character of the landscape, affecting both residents and visitors.

- Recommendation: Landscape assessments already conducted for Mitchell and Murrindindi shires should be considered in REZ determinations, and independent assessments should be conducted before any REZ declarations are made.

4. Community Amenity and Socioeconomic Impact from Competing Land uses

- The region's land use is very different from regions used by most renewable energy developments. It has a diversity of land uses and is primarily dominated by lifestyle properties, with a minority of large-scale agricultural activities. Declaration of a REZ has the potential for property devaluation, disruption to the rural character, loss of tourism and impacts on community amenity and its socio-economic fabric.
- Recommendation: Lifestyle properties in farming zones should have the same "Most Constrained" rating as those in Rural Residential zones to protect land values and community amenity.

5. Cultural Heritage

- The Strathbogie Cultural Landscape is of high significance to the Taungurung people, however current data on cultural heritage is sparse and further studies are required to protect these valuable sites. The development of industrial-scale renewable energy projects could destroy culturally significant landscapes and sites.
- Recommendation: Thorough investigation of cultural heritage sites, in collaboration with Traditional Owners, must be a priority before considering any development.

SUMMARY OF RECOMMENDATIONS

Area of Concern	Recommendation No.	Recommendation
Wind resource	1	Several years of actual wind data measured from an appropriately high tower (proposed turbine height) would be required before an assessment could be made about the quality of the wind resource suitable for wind energy developments. Declaration of REZs should not be made based on assumed wind resource from modelled sources such as the Global Wind Atlas.
Biodiversity and Natural Environment	2	Increase comprehensive, empirical and observational on-ground data collection by independent experts to determine likely impacts to ecosystem functions and inform REZ locations
	3	Consider cumulative impacts of multiple potential developments on ecosystem functions and connectivity.
	4	Provide more transparency in the individual constraints datasets and include local, regional and community information in the next phase of the REZ identification process.

	5	Based on evidence provided in this submission, significantly increase the Constraints rating related to Biodiversity in the SLUA for this region
Landscape Significance	6	Landscape Assessment studies conducted for the Murrindindi and Mitchell shires should be taken into consideration in REZ determinations despite the significant landscape findings not yet being reflected in Planning Schemes. Once considered, these studies will provide the evidence that the Strathbogie/Mid Goulburn region is of equivalent landscape significance as the Macedon Ranges region which has been excluded as a potential REZ.
	7	Independent landscape assessments should be conducted for any candidate renewable energy zones to ascertain the landscape impact prior to the declaration of REZs.
Community amenity, socio economic impacts	8	Lifestyle properties in farming zones should have the same “Most Constrained” rating as those in Rural Residential zones to protect land values and community amenity.
Cultural heritage	9	Further rigorous and collaborative investigation of cultural heritage is essential before any industrial-scale development could be considered in this area. The knowledge of the Traditional Owners must be centred in this process.

Conclusion

The evidence presented in this submission demonstrates that the Strathbogie Ranges and Mid Goulburn River region is unsuitable for declaration as a Renewable Energy Zone. The area’s unique environmental, landscape, socioeconomic and cultural attributes require protection from industrial-scale renewable energy developments. SRRCG urges VicGrid to incorporate comprehensive data collection, community consultation, and a thorough evaluation of cumulative impacts before finalizing REZ locations.

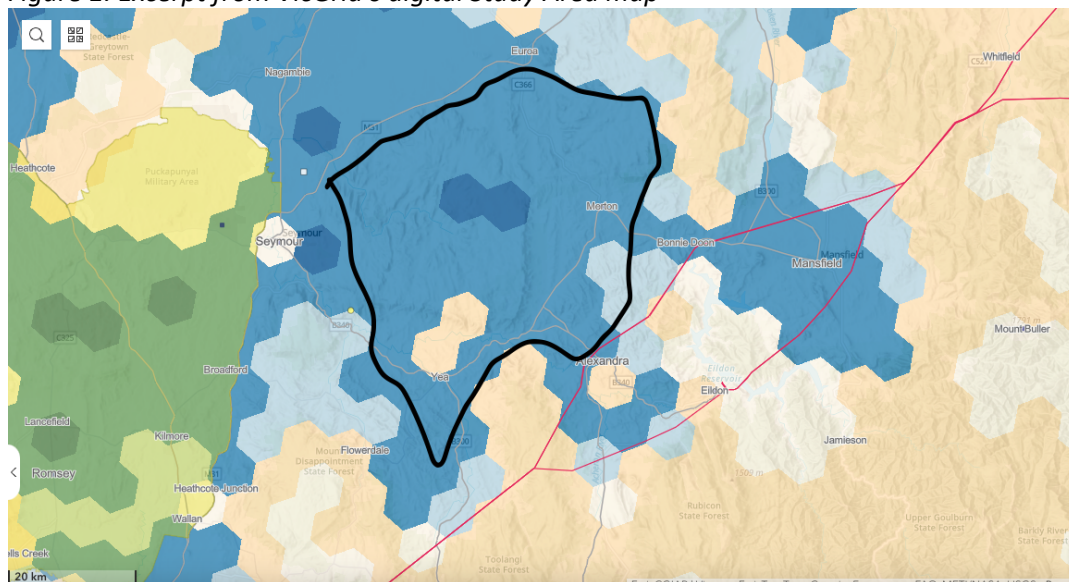
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Study Area

The Strathbogie Responsible Renewables Community Group (SRRCG) formed in 2022 with a stated purpose of using an evidence based approach to assess the impacts of proposed renewable energy projects in the region and ensure that impacted communities are consulted and engaged in these developments.

The focus of SRRCG's submission to the VTP Study Area consultation process is on the Strathbogie Ranges and mid Goulburn River region as shown approximately in the black outline on the map below. This is currently designated as Tier 2 with small areas of Tier 1. This area is bounded roughly by Seymour to the East, Strathbogie to the West and the Melbourne - Sydney transmission line near Alexandra to the South

Figure 1: Excerpt from VicGrid's digital Study Area map



We understand that the prioritisation rankings for investigation of areas for suitability to become REZ's are based on VicGrid's Strategic Land Use Assessment (SLUA) model which uses the following criteria and weightings:

Opportunities

- Wind and solar resource

Constraints – Themes:

- Natural hazards and climate vulnerability -10%
- Natural environment – biodiversity and water systems – 30%
- Natural environment – community amenity – 10%
- Landuse/ socioeconomic – 25%
- Cultural heritage – 25%

Our submission addresses the following:

Opportunity:

- Wind Resource

Constraints:

- Natural environment - Biodiversity and Water systems
- Natural environment – Community amenity/landscape significant areas
- Land use/socioeconomic – Existing use
- Cultural heritage

Our submission provides evidence which we believe must be taken into consideration by VicGrid in the next phases of the VTP to finalise the REZ locations. We believe that this evidence makes it clear that the region in question is not suitable to become a REZ.

1. Opportunities

1.1. Wind resource

It is noted that VicGrid's Strategic Land Use Assessment (SLUA) model uses the Global Wind Atlas for wind speed data. The Global Wind Atlas (GWA), developed by the Department of Wind Energy at the Technical University of Denmark uses modelled rather than observational data. The GWA states that its model has not been validated in Australia but rather only in Bangladesh, Maldives, Pakistan, Papua New Guinea, Vietnam and Zambia. Most of these are in light wind areas such as the tropics or south of the Himalayas.

Bureau of Meteorology (BOM) wind observation stations are not widespread and extrapolation of these observations to neighbouring regions is very inaccurate as it cannot take into account the impact of different terrain and features. For example, the Strathbogie ranges, North east of Seymour is shown as having high wind resource in the GWA and marked as Tier 2 with small areas of Tier 1 in the VTP Study Area.

The Strathbogie Ranges are protected from strong wind by the high mountains and hills around them. There is an unbroken wall of high ground from the south west to south, south east and through to the north east. These are the Tallarook ranges, Mt Disappointment and the Kinglake area, the Black range, and the very high mountains from Lake Mountain to Mount Buller and Mt Samaria and Mt Strathbogie. The predominant wind directions for the proposed area are from the south, south west, south east and north. Only the northerly winds are unaffected by the surrounding terrain. The Cherry Tree windfarm is nearby, sitting on a hill next to the Goulburn River. It benefits from the valley breeze that flows upriver during the afternoon and downriver at night. Much of the Tier2/1 study area will not benefit from this additional wind flow.

The closest automated BOM weather stations that have searchable wind data are the BOM stations at Eildon Fire Tower, Mangalore, and Puckapunyal (Lyon Hill). Eildon Fire Tower is at 637m AMSL (Above Mean Sea Level) but it's 50km to the east and on the edge of some very high terrain. Mangalore is roughly 25km West but at an altitude of 140m AMSL in the flat plains of the Goulburn Valley. Puckapunyal is 50km to the west and only 190m AMSL in low hills. Kilmore Gap is at 527m but it is much further away and has no hills between it and the coast. Kilmore Gap often records double the wind speed observed by paragliders at Mt Broughton (646m AMSL) on the southern edge of the Strathbogies. Strathbogie township (502m AMSL) readings are done manually twice a day so it is a very limited data set and not very useful.

Wind prediction models assume higher winds are directly related to ground level and do not take into account the wind blocking effect (wind shadow) of nearby high ground for the predominant

directions. Extrapolation of the data from the BOM sites listed would give inaccurate results because of the distance and very different terrain at each location. Accurate modelling of this unusual region for different wind directions is, therefore, very difficult.

Observational information from an experienced paraglider pilot (PG5, Pilot Licence 207433 Sports Aviation Federation of Australia) who has been flying in this region for 24 years is that this is not a high wind resource area. Mt Broughton in this region is a popular launch point for paragliders due to its light winds (and proximity to Melbourne). Paragliders prefer winds of 5-10 km/hour which they can rely on in this region.

Recommendation 1.

Several years of actual wind data measured from an appropriately high tower (proposed turbine height) would be required before an assessment could be made about the quality of the wind resource suitable for wind energy developments. Declaration of REZs should not be made based on assumed wind resource from modelled sources such as the Global Wind Atlas.

2. Constraints

2.1. Natural environment – Biodiversity and Water - Biodiversity of the Strathbogie Ranges/ Mid Goulburn River landscape

2.1.1. Introduction

The Strathbogie Responsible Renewables Community Group supports [Wintle, et al's, \(2024\)](#) recent warning that, *“Human-driven climate change damages nature – and loss of nature exacerbates climate change. So, if humanity’s efforts to mitigate climate change end up damaging nature, we shoot ourselves in the foot. Australia, however, must face up to an uncomfortable truth: we are putting renewable energy projects in places that damage the species and ecosystems on which we depend.”*

Identifying REZs to accommodate industrial scale renewable energy development projects must consider the contiguous nature of species’ movements and seasonal requirements. Of great concern raised by the proposed REZ, is that there will be increasing fragmentation and isolation of remnant and establishing patches of habitat throughout the Strathbogie Ranges. Citing Wintle et al’s observations, the current draft REZ risks increasing impacts on threatened species migration, genetic diversity, habitat distribution, and potential local extinction of some iconic species.

Opening the statutory door to inappropriate renewable energy projects will undermine generations of ongoing community efforts to build connectivity across landscapes, waterways and local landholdings.

2.1.2. Unique Significant Landscape.

The importance of the unique landscape in the Strathbogie Ranges and adjoining Goulburn River floodplains near Yea and Molesworth must be understood from multiple scales when determining the REZs across the State. In this case, it’s the area’s unique location, separated from the main part of the Great Dividing Range by the flood plains of the Broken and Goulburn Rivers ([Lobert, 2024](#)). The environment is characterised by its elevated table lands and a complex system of rocky ridges, spring soaks and valleys and associated fragile Ecological Vegetation Classes (EVCs). Across the Central Victorian Upland tablelands (from Upton Hill to Highlands and stretching to the Molesworth districts of the Strathbogie Ranges), large blocks of native forest and woodland and riparian vegetation have been retained on both private and public land reserves.

This proximity, located between Tallarook Ranges and northern Great Dividing Range, functions as a stepping stone into the ranges of northeast Victoria, unique and fragile due to its separation from contiguous geological formations of the more northern ranges.

“The Strathbogie Ranges in northeast Victoria cover an area of 240,000 ha and are separated from the main part of the Great Dividing Range by the Goulburn and Broken Rivers. The deep and wide valleys of the Broken and Goulburn Rivers separate the Strathbogie Ranges from elevated country to the south and east. Their isolation from the main range, their geology and topography, together with their proximity to more arid and hotter northern Victoria, have combined to develop a unique combination of landforms and associated ecologies. Granitic geology has created diverse soils, from deep and friable, shallow and rocky, to low-lying and waterlogged” (Lobert., 2024).

These unique attributes of the Strathbogies’ landscape and ecology are directly associated with the foundations of unique granitic batholith geology, which is scientifically significant and globally recognised. In a global context the [Strathbogie granite](#) (and surrounds) is scientifically important for three reasons: the extensive and abundant occurrence of the igneous mineral cordierite not seen on this scale in other granites; its shallow emplacement with some of the granite reaching within 1 km of the surface (now eroded to be exposed at the surface); and the unusually thin sheet of granite (less than 400 m but almost 100 km in length across the surface) (Philips et al, 2019).

This area and its tapestry of fragile ecosystems and associated diversity of species has been impacted by historic vegetation clearance – something many landholders and regional Natural Resource Management (NRM) agencies (including farmers and lifestyle property owners) have been working to reverse. Local community-led groups care about these areas for their natural values. Efforts to restore landscape connectivity has been occurring on private land through local initiatives (i.e. GBCMA, Landcare, Trust for Nature (TFN), private investment) for nearly 40 years because it is understood that:

“The environment must not be separated from community values when decisions are made: recognition of the importance of the community in achieving biodiversity outcomes is crucial and support must be provided to land managers as active environmental stewards”
[Goulburn Broken Catchment Biodiversity Strategy 2016-2021, p 10]

The region’s significance is recognised by the Trust For Nature (TFN), who identified the Mid-Goulburn region as one of 18 “focal landscapes”, or priority areas for accelerating protection &/or rehabilitation of private land. This plan was prepared in collaboration with CMAs & other state agencies with input from non-government conservation and land management networks e.g. Landcare Victoria. TFN’s [State Conservation Plan](#) (see maps pp 8 and 15). The Hughes Creek Catchment Landcare Network is one of these locally based groups which has worked with communities to protect remnant habitat on private land and build connectivity to large habitat patches and waterways.

2.1.3. Incomplete Biodiversity data used in Habitat Value 2023 model for the SLUA

In part, because of the area’s isolation, it is well recognised that there are a lack of biodiversity data relating to private land to provide and inform empirical baseline knowledge. Consequently, State Government and renewable energy development applicants rely upon the patchy records in the Victorian Biodiversity Atlas (VBA), a cumbersome system that struggles to update records in a timely fashion. Accordingly, the region shows few official comprehensive records to show distribution or diversity of species. Associated with the VBA data records for this region, very few detailed surveys have been undertaken, other than point based records or those focusing on infrequently state funded projects, such as those targeting the [Macquarie Perch](#) or [Perched bogs](#). Hence, there is an acknowledged reliance on incomplete data sets used to build habitat distribution models such as the Habitat Value 2023 model used for the REZ SLUA. This lack of baseline species distribution data suggests that the development of the REZ proposals is relying on incomplete data. VicGrid has stated

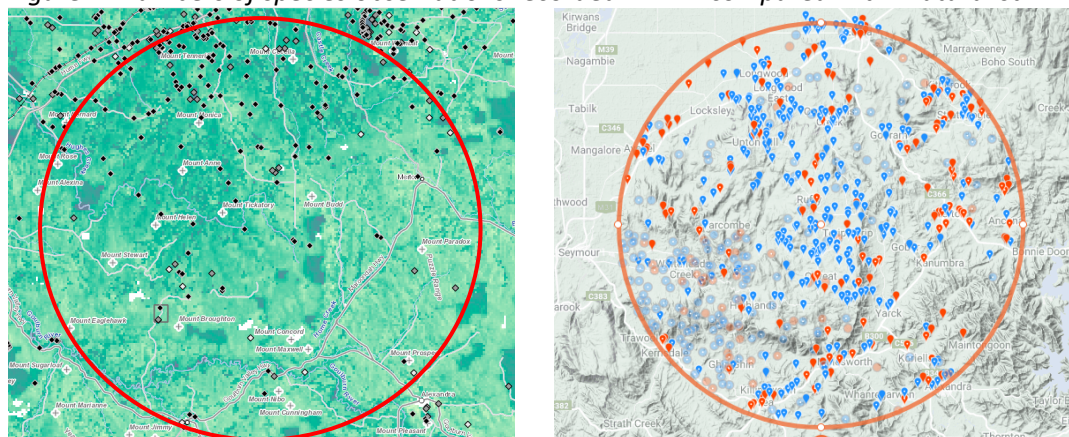
in Appendix A to the Draft VTP Guidelines in relation to aboriginal cultural heritage, “*the lack of data simply reflects the lack of assessment, not a lack of heritage values*”. This submission argues that this is also true of biodiversity data.

Responding to this lack of information, recent projects have been established by local community members and researchers. A summary of some recent studies is provided below.

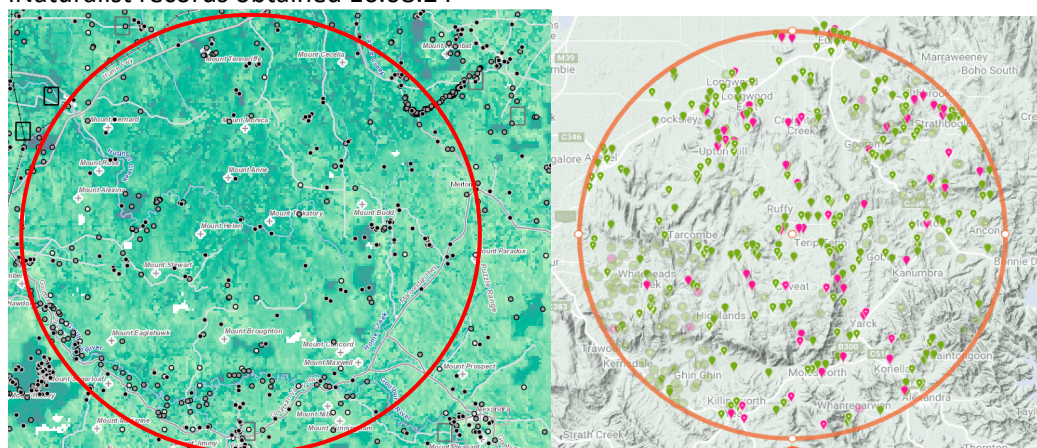
1. [Strathbogie Ranges Nature Atlas Project iNaturalist](#) (SNAP) was initiated in 2021 to establish local knowledge of species in the area (see examples of mapping below), to help augment VBA data gaps.

In 2023, the local community directly uploaded 286 records of threatened and iconic fauna, from the SNAP iNaturalist app to the VBA. As at September 2024, none have yet been peer reviewed and are therefore not included in the Habitat Value model used for the REZ SLUA. Species observations recorded in SNAP iNaturalist are increasing significantly over time – from 4259 observations in July 2023, to 6500 in March 2024 and 7445 observations in September 2024. While over 60% of these observations are classified as Research Grade in iNaturalist, very few, if any, have been added to the VBA.

Figure 2: Numbers of species observations recorded in VBA compared with iNaturalist.



Significantly fewer **Fauna** records in VBA NatureKit (Left) in Southern Strathbogie compared to iNaturalist records obtained 16.08.24



Significantly fewer VBA/NatureKit threatened **Flora** data records (Left) in Southern Strathbogie region compared to iNaturalist (obtained 16/08/24).

In June 2023, Fera Australia contracted Biosis (ecological consultants) to conduct a desktop biodiversity assessment of the area proposed for the Seymour Wind farm (within the Study Area

which is the focus of this submission). This assessment found that the region had large extents of native vegetation, scattered trees, rocky outcrops, waterways, plantations and constructed dams. It was likely to have 4 endangered Ecological Vegetation Classes (EVCs); 3 EPBC Act listed threatened ecological communities and 2 FFG Act listed threatened fauna communities.

Biosis found that 46 threatened flora and 51 threatened fauna species had a moderate to high likelihood of occurrence in the wind farm (including transmission line) footprint.

The following table summarises the threatened species observed and documented in the region from 5 different sources. This is **not** a comprehensive list of all surveys:

1. SNAP iNaturalist project
2. Tzaros -Bird surveys in the Strathbogie ranges, 2019
3. University of New England, preliminary report biodiversity survey of one property in Upton Hill. 2024
4. Lobert – Arboreal mammals in the Highlands-Caveat districts. 2024
5. D’Ombrain (Biodiversity Services) – Survey of roadsides in the Strathbogie Shire. 2018.

It is important to note that these observations are either incidental (iNaturalist observations) or from surveys of limited scope (ie small, targeted locations or specific animal/plant sub-groups) rather than broad on ground surveys designed to capture all the biodiversity of the region. The occurrence of the expected species is likely to be much higher. Biosis notes that “*a common assumption of likelihoods assessments [of occurrence of threatened species] is that a paucity of recent species records infers a loss or absence of the species (and suitable habitat) from the study area. In this study, however, paucity of recent species records may be the results of a lack of survey effort within private property.*”

Table 1: Threatened species (listed under FFG and/or EPBC Acts) occurrence within the study area

Threatened Species	Observations by Survey source				
	iNaturalist	Tzaros	UNE	Lobert	D'Ombrain
Southern Whiteface	1				
Gang-gang Cockatoo	37	Y			
Little Eagle	1		Y		
Hooded Robin	1				
Grey-crowned Babbler	1				
Speckled Warbler	1	Y	Y		
Diamond Firetail	13	Y			
Barking owl			Y		
Square tailed kite			Y		
Brown tree creeper		Y			
Swifts parrot					1
Brown Toadlet	4				
Platypus	4				
Southern Greater Glider	8			3	
Brush-tailed Phascogale	17				
Eastern Horseshoe Bat	1				
Common/Eastern bent wing bat			Y		

Grey headed flying fox	1				
Striped Legless Lizard	2				
Bearded Dragon	19		Y		
Lace Monitor	1				1
Ausfeld's Wattle	3				6
Hickory Wattle	6				67
Buloke Mistletoe					18
Tiny Daisy	1				
Cottony Cassinia					30
Late-flower Flax-lily	3				541
Hairy Hop-bush	8				1
Common Pipewort	1				1
Austral Crane's-bill	1				1
Euroa Guinea-flower					24
Benambra Club-sedge					1
Fireweed Groundsel (Euroa variant)	2				

Footnote - Two of the surveys - Tzaros and UNE did not record numbers of observations (just presence of that species) so the Total number observations is likely to be under reported

- 2. Recent independent biodiversity research preliminary results (University of New England) indicate that modified agricultural landscapes in this region provide habitat supporting a wide range of species**, including the critically endangered Eastern Bent-wing Bat (*Miniopterus schreibersii*) and Barking Owl (*Ninox connivens*) and the Vulnerable Bearded Dragon (*Pogona barbata*). The property surveyed supported over 172 species, including FFG and EPBC listed bird species. Thanks to this research we now know that at least 14 species of microbat persist in this area. Examples like this detailed farm-based survey suggest that there is much more to understand about the role of these agricultural and amenity-based properties to support migratory and threatened species and ecosystem health, and more to learn about how agricultural land in this area supports faunal species richness. These modified landscapes are not 'empty'.
- 3. Ecologist, Chris Tzaros** has [undertaken bird surveys in the area since 2019](#) and noted that there is poor baseline data from which to work. Tzaros has found that several species rely on the area for migration and maturing habitat in planted farm shelterbelts that provide important habitat for woodland birds. More cryptic threatened species such as Swift Parrot (*Lathamus discolor*) and Powerful Owl (*Ninox strenua*) have also been recorded. The region is used seasonally as species migrate between lower lying areas and mountain ranges, such as the Gang Gang Cockatoo (*Callocephalon fimbriatum*). Anecdotal evidence suggests that these patterns are changing because of climate change impacts, including refuge from bushfire affected areas in nearby ranges. The area is home to many breeding pairs of Wedge Tailed Eagles (*Aquila audax*) and other raptors.
- 4. In 2023, the SRRCG engaged ecologist Bertram Lobert to undertake an arboreal mammal survey in the Highlands-Caveat area, with a focus on the endangered Southern Greater**

Glider (SGG) (*Petauroides volans*). Lobert also noted that very few systematic surveys have been conducted to understand the ecological diversity of the area to be able to inform management decisions, something which the local community understands as critical to any statewide renewable energy zone mapping processes. The results of this initial survey indicate that dispersed distribution of the Southern Greater Glider exist in the region, which means that remaining animals are at increased risk of further habitat fragmentation and potentially, extinction, should development projects impact connectivity of ageing Eucalypt Herb Rich Foothill Forest. Further independent surveys would contribute to a better understanding of how this agricultural and amenity land use area supports diverse and dispersed fauna and flora species. Lobert recommended protection and enhancement of remnant habitat to support the SGG and other arboreal mammal species. Records of this survey have been submitted to the VBA but are not yet publicly available because the process and system is slow and cumbersome. The unpublished report is available from SRRCG.

5. At a regionally strategic scale, both the Trust for Nature and GBCMA have **classified the southern Strathbogie Upland Slopes critical natural attributes as one of “natural beauty, diverse landscapes and biodiversity, unique remnant natural landscape, open spaces and tall remnant trees in forests and paddocks”** ([Regional Catchment Strategy](#)). The GBCMA [Biodiversity Action Plan](#) (BAP) highlights roadsides of high biodiversity value in the region (see map below). These connections with remnant vegetation could be impacted by large scale renewable energy developments needing to access rocky, hilly elevated areas for transporting materials and equipment, including 80 - 90 metre long turbine blades. Construction works on narrow, winding roads will impact roadside vegetation that includes large old, hollow bearing trees and ground storey vegetation functioning as important connectivity between agricultural land and blocks of native vegetation.

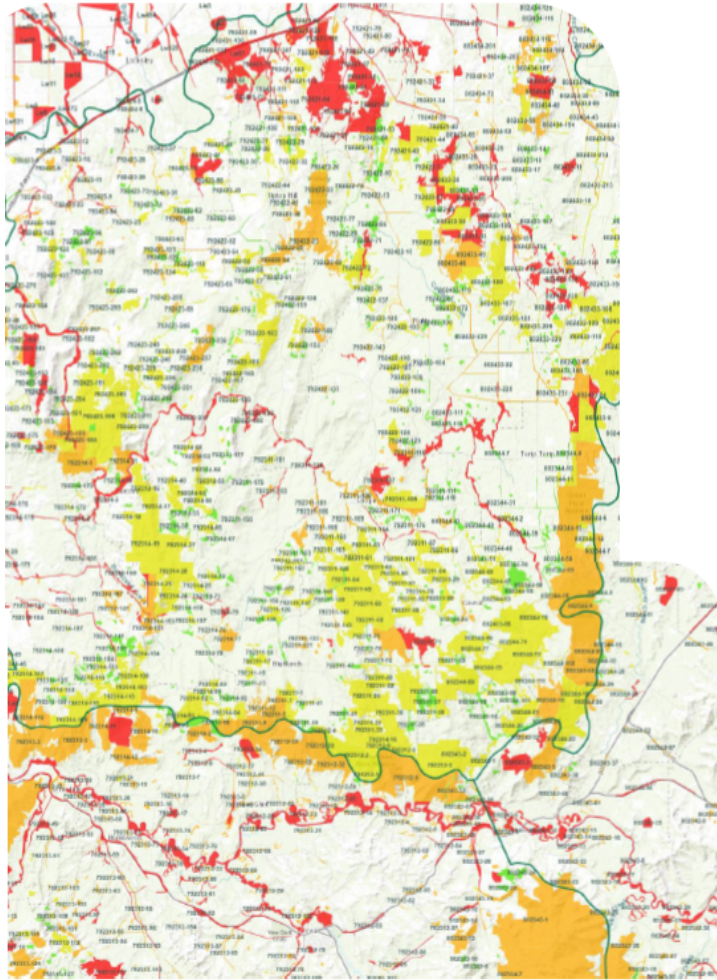


Figure 3: Map showing conservation priorities of *GBCMA Biodiversity Action Plan*, showing dispersed range of importance (High (red)-medium- (gold)) across the landscape, including roadsides, riparian zones, patches of native vegetation and elevated geological formations containing perched bogs and springs. Various regional and statewide biodiversity maps indicate the network of ridgelines, waterways, roadsides and blocks of remnant vegetation/scattered trees in the Strathbogies/ Mid Goulburn river flats. Local knowledge and more recent studies have assisted to fill in knowledge gaps that underscore the complex network of the granite tablelands and associated riparian zones.

6. **There are many knowledge gaps about the groundwater hydrology** that feeds into the granite perched swamps, multiple streams and creeks such as Hughes Creek and ultimately the Goulburn River. These upland waterways, fed through a network of springs that act like a ‘sponge’, are habitat for threatened Macquarie Perch (*Macquaria australasica*) and Platypus (*Ornithorhynchus anatinus*), plus a range of other aquatic fauna. Stewardson, Western & Wallis (2009) who investigated the unique hydrogeological formations notes “there is little known specifically about the hydrogeology of the Strathbogie Batholith.” Without further investigations of the geology and associated sensitive hydrology of the area, we have no comprehensive baseline from which to evaluate, monitor or even justify the potential regional and downstream impacts of industrial scale developments.

2.1.4. Local community knowledge and evidence raises concerns and highlights the inappropriateness of a REZ in this fragile ecosystem.

Roadsides, waterways, shelterbelts and rocky hillsides are critical thoroughways for species movement. The narrow, winding and tree lined roadsides in this region provide a network of habitat interconnecting remnant vegetation for a range of fauna species, including threatened birds, reptiles and arboreal mammals. Data in SNAP (2024) and survey results of Lobert (2024) indicate use by a wide range of species on many old hollow-bearing trees along these easements.

Species include Brush-tailed Phascogale (*Phascogale tapoatafa*. Vulnerable FFG Act), Krefft's Gilder (*Petaurus notatus*), Sugar Gliders (*Petaurus breviceps*), Koalas (*Phascolarctos cinereus*), Feather Tail Glider (*Acrobates pygmaeus*) and a range of possums. These species will be at risk from major development and transportation of heavy machinery across the hilly landscape to reach the tablelands that are many kilometres from the grid. These centuries old trees are irreplaceable, and biodiversity offset requirements are clearly inappropriate to mitigate this impact.

Mix-use dryland agriculture hosts scattered old paddock trees, forming a complex and patchy network of native vegetation with larger and isolated reserves (private and public). GBCMA Biodiversity Strategy in 2016 noted that in the Upland Slopes of the catchment, land ownership and land use is *"Changing socially, from farming dominated, to a mix of farming and lifestylers, and tourism is becoming important. A potential approach to conserve biodiversity is to educate new landholders about understanding and better managing threats, coupled with incentives for on-ground works."* Protection of these ecological landscape attributes are [becoming more achievable through investment in locally led landscape scale projects](#). This is due to *"[the] diversification of rural land use which is seeing landscapes that were once valued for their productive capacity become increasingly valued for their consumptive amenity values (scenery, recreation), as an increasing number of people seek a rural lifestyle change"* (Cooke, B & Lane, R., 2015).

As **climate change impacts affect other areas of SE Australia**, this elevated and sheltered area can be understood as important refuge for Federally listed threatened migratory species such as Gang Gang cockatoos and Swift Parrots. Following the 2019-20 bushfires, landholders have observed Gang Gang Cockatoos and King Parrots staying for much longer periods of time than prior to these fires. Further loss of old growth canopy habitat poses risks to heat sensitive arboreal marsupials such as Tuans, Koalas and a range of Gliders. Permanent waterways and spring soaks provide refuge during summer for many species when hotter and drier areas diminish in resources.

This region is at serious risk of further fragmentation of existing habitat from large scale industrial renewable energy developments. The national threatened bird index shows increasing levels of decline, particularly *"[when a] [lot of habitat disappears and the bits left are fragments that are disconnected](#)"*. Enabling this loss would contradict objectives of State Government Biodiversity Strategy, Bio2037, which aims to enhance existing habitat and native vegetation cover.

Conclusion

This area is known to be unique with a rich biodiversity. Industrial scale windfarm developments present a significant collision risk by raptors, bats and migratory species. Unnecessary, increased habitat fragmentation through potential industrial scale developments contradicts numerous state and federally funded NRM programs that aim to enhance and mitigate habitat loss. It is much harder and more costly to rehabilitate losses than to enhance what is there (Lobert, 2024., Wintle, et al 2024).

Societally and collectively, we will risk contributing to species declines "under our own watch" if industrial scale developments occur in landscapes such as these. Any potential wide-scale development across the region presents **risks of cumulative impacts** from multiple renewable energy projects, roadworks, increased traffic movement, easements and infrastructure resulting in habitat loss and fragmenting connectivity.

Because the area supports a range of State and Federally listed threatened flora and fauna, ranging from Macquarie Perch in our waterways, to the Southern Greater Glider in remnant Foot Hill Forests, it is our responsibility that they must be adequately protected from large, industrial scale developments.

Recommendation 2.

Increase comprehensive, empirical and observational on-ground data collection by independent experts to determine likely impacts to ecosystem functions and inform REZ locations. To do otherwise presents a risk of biased and ad hoc surveys being conducted by developers' consultants who have vested interests and/or continuing to rely on modelled and incomplete datasets. Without good baseline knowledge we have no way of monitoring the impacts of industrial scale energy developments on invaluable ecosystems.

In the State of the Environment report 2023, the Commissioner for Environmental Sustainability, Dr Gillian Sparkes noted that *"Good data, interrogated for understanding, is the foundation for evidence-based environmental policy, regulation and management"*. **We urge VicGrid to use this principle in their assessment and decision making.**

Recommendation 3

Consider **cumulative impacts** of multiple potential developments on ecosystem functions and connectivity.

Recommendation 4

Provide more transparency in the individual constraints datasets and Include local, regional and community information in the next phase of the REZ identification process.

The current REZ interactive mapping does not provide enough detail of the data used to assess individual constraints and therefore identify gaps and inaccuracies in the model for communities to input their local knowledge.

Recommendation 5

Based on evidence provided in this submission, significantly increase the Constraints rating related to Biodiversity in the SLUA for this region.

2.2. Natural environment – community amenity – Landscape Significance

2.2.1. What is Landscape Significance

Landscape Significance is defined as:

Landscape significance is the designation of a particular landscape as special or important arising from its visual values, including its landscape features, aesthetic variety, and composition, with consideration of its other values (e.g., other aesthetic qualities, cultural heritage, environmental, scientific, social etc.); and for its predominantly undeveloped or rural character, in which built development is absent or clearly subordinate to its natural landscape qualities.

Reference:

[Mitchell Shire Landscape Assessment Study. Vol. 2: Landscape Significance](#) report 2022.

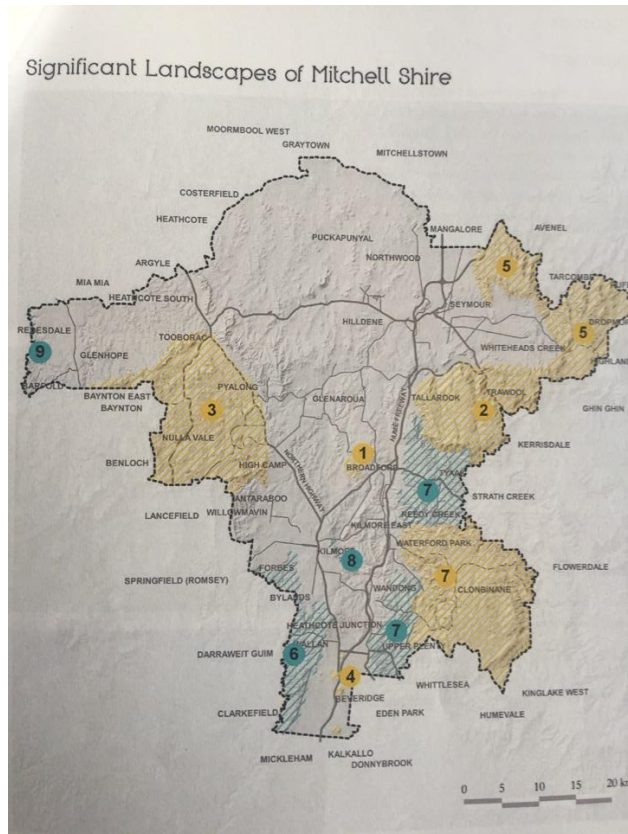
2.2.2 Planning Controls – Existing and under consideration

Victoria is home to a number of unique and sensitive places that are highly valued for their environmental, social, cultural and economic assets. These areas provide people with clean air, drinking water, food resources and recreational opportunities. These areas are under increasing pressure for development because of their attractiveness, accessibility and proximity to our cities and because of environmental factors like the impacts of climate change. The Victorian Government

Planning Scheme includes protection of distinctive and significant landscapes from inappropriate development.

Local Government Studies and Policies

The REZ Study Area for this submission covers the LGAs of Mitchell (part), Murrindindi and Strathbogie. Mitchell and Murrindindi Councils have undertaken Landscape Character Assessment studies in the past and the Strathbogie Council is in the process of commencing one.



The Shire of Mitchell commissioned a study in 2022 by Claire Scott Planning – [Mitchell Shire Landscape Assessment Study](#). Volume 2 of this study – Landscape Significance, identified the Western Strathbogies (the section of the Strathbogies in Mitchell LGA) including Dropmore, Tarcombe/Hughes Creek and the Waggs Range (Area 5, P39) of Regional Significance based on rating the individual elements of landscape significance:

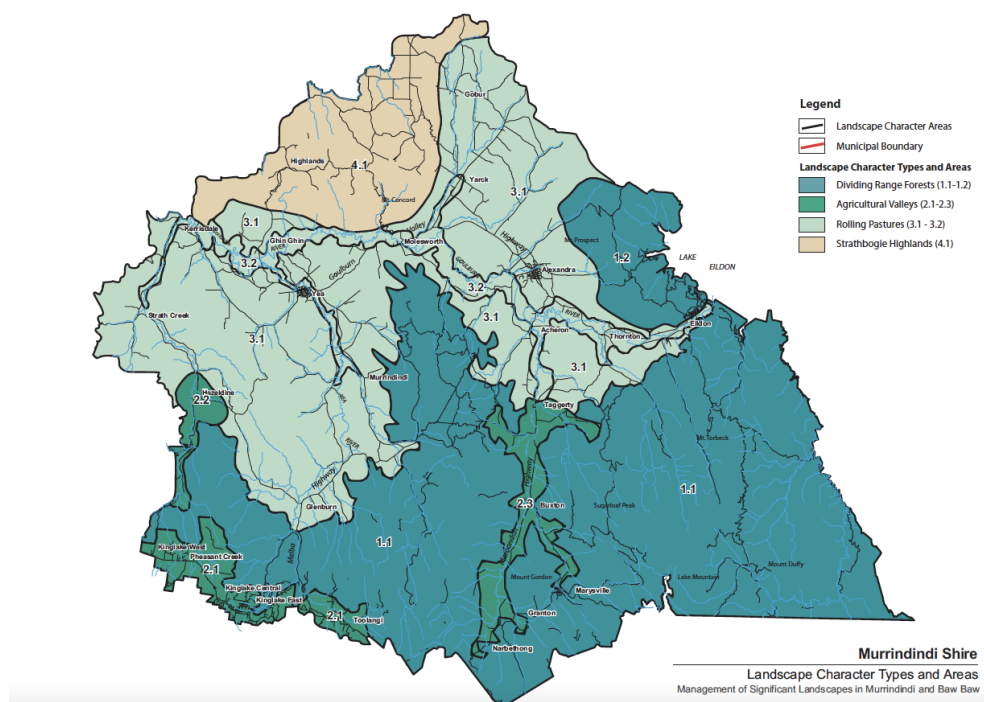
- Landscape features: Moderate to High
- Aesthetic variety: Moderate to High
- Composition (Views): Moderate to High

The report notes *‘The diversity of landscape features offers stunning scenery, and the complex terrain is largely inaccessible, giving the area an isolated and quiet ambience’*.

A Strategic Landscape Overlay (SLO) was recommended for these areas to ensure that development was sensitively sited avoiding hill tops and ridgelines. The Council decided not to pursue a planning scheme amendment for area 5 as there was no perceived threat of development **at the time**. However, a REZ would certainly provide a new threat to the significant landscape.

The landscape character identified in the Shire of Mitchell assessment also extends over the Strathbogie granite landscapes of Strathbogie and Murrindindi Shires.

The Victorian Department of Planning also commissioned a landscape assessment for the Shires of Murrindindi and Baw Baw undertaken by Planisphere in 2005 (John Curtis Urban Design was a sub consultant) – *Management of Significant Landscapes in the Murrindindi and Baw Baw Shires*.



Indicators of Significance were identified in the report for each landscape type. The following are for the regions within this submission's potential REZ area:

Yea-Alexandra Rolling Pastures

- Yea River is identified as a regional scenic and recreation resource.
- A number of important scenic drives and touring routes occur in the area including the Melba Highway and Murrindindi Road.
- The former Tallarook to Yea railway line is a dominant historic feature with architectural and cultural values of National Estate significance (including the Cheviot Tunnel).
- The Yea Baragwanathia Flora Fossil Site is a location of international scientific significance.
- A number of significant Aboriginal cultural heritage sites occur in the Character Area.

Goulburn River Flats

- Scenic riverscapes occur throughout including substantial river red-gums and wetlands. The scenic character of this precinct is accentuated at 'edges', where there is a backdrop of hills, such as at Molesworth and Trawool.
- The landscape surrounding the Goulburn River near Kerrisdale is a National Trust landscape and listed on the National Estate register for scenic qualities and geological and cultural significance.
- Whanregarwen Road and other highly scenic and accessible locations important to the local community and have been the subject of artistic works including paintings by Arthur Streeton.
- Goulburn River is listed as a heritage river under the Heritage Rivers Act 1992.
- Several significant Aboriginal Places have been identified along the Goulburn River in this Character Area.

The Landscape Management Guidelines in this report recommended that the character of the Highlands escarpment and other prominent hill faces should be maintained and enhanced and recommended the avoidance of:

- Loss of vegetation along watercourses and roadsides
- Buildings and structures in prominent locations

- Buildings on skylines
- Straight roads up hillsides and in prominent locations
- Development which is insensitive to the setting of heritage features and cultural sites eg. Heritage homesteads, Cheviot Tunnel
- Unsympathetic or intrusive development in key view fields

Murrindindi Council's October 2023 [Murrindindi Planning Scheme Review \(P11\)](#) recommended that **Council**

"Implement the report Management of Significant Landscapes in Murrindindi and Baw Baw (Planisphere, 2005) and introduce new SLO mapping, policy and provisions."

2.2.3. The Landscape of the Strathbogies and the Mid Goulburn River region

As noted in the Biodiversity section (2.1), the geology of the Strathbogie Ranges underpins its distinctive landscape. The Range consists of a granite batholith with steep escarpments to the east and south to meet the Goulburn Valley and surrounding hilly country. To the west, wide extensive plains extend to Shepparton and beyond. Professor Neil Phillips has studied the Strathbogie granite batholith for several years and describes the tablelands as being crisscrossed with a series of cracks and fractures which in turn determined the main drainage pattern of the plateau with creeks and drainage lines following these cracks. These cracks defined the course of Seven Creeks, parts of Hughes Creek and the cracks are actually the fault lines within the batholith.

Main Landscape Elements

The landscape elements of the region in the submission include:

- Strathbogie Highlands
- Rolling and Hilly Pastures
- Dividing Range/Upland Forests
- Goulburn and Yea River Floodplain

The Strathbogie Highlands



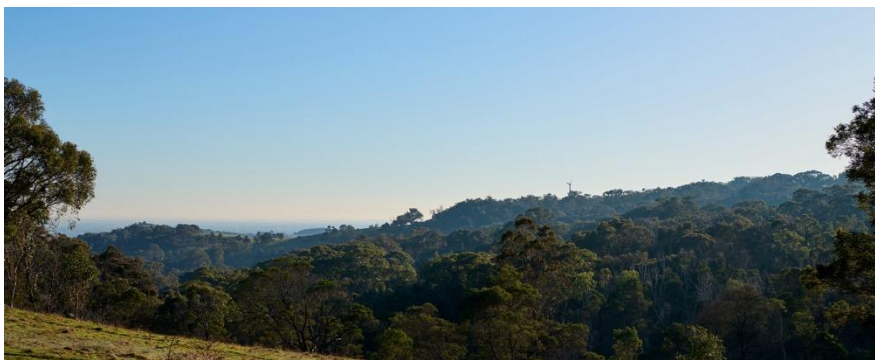
The granite batholith which underlies this landscape unit is defined by the eastern and western vegetated escarpment and rises from the western plains with a series of rocky hills paralleling the Hume Freeway. The landscape is characterised by peaks and hill faces defining broad valleys drained by Hughes Creek, Stewarts Creek, Ponkeen Creek and Sevens Creek and related tributaries. Peaks are often crowned with spectacular granite boulder outcrops.

Rolling and Hilly Pastures



This is the dominant landscape beyond the Strathbogie Ranges granite country and includes the wide valleys of the Goulburn River, Yea River, and Sevens Creek. The landscape has mostly been cleared for agricultural purposes with some retained old paddock trees and remnant roadside vegetation.

Dividing Range/Upland Forests



This forested country extends from the dividing range with its temperate rainforest to the drier eucalypt forests of the Black Range, Mount Wombat and Strathbogie/Boho area.

Native vegetation on roadsides, nature and riparian reserves and private land

Native vegetation exists in many nature and riparian reserves, roadsides and private land throughout the region. Stands of remnant eucalypts and other vegetation exist scattered across hill faces and peaks and across agricultural land.



Goulburn and Yea River Floodplains.



The flood plains are utilised for recreation and grazing purposes and include spectacular river redgums and picturesque billabongs or anabranches. The banks of the Goulburn are consistently lined with mature red gums.

Landscape Landmarks



High points provide local and regional landmarks including Mounts Teneriffe, Bernard, Helen, The Peak, Good Morning Bill, Tickatory, Broughton and Concord. Further to the north is Mount Wombat. These are often associated with spectacular granite outcrops.

2.2.4. Tourism

Significant Tourist Routes and Highways

In determining areas of significant landscape, the planning process tends to favour protection for landscape which provide the backdrop for significant tourist routes and highways. Historically residents and visitors to the Strathbogies have described them as 'Victoria's best kept secret'. In recent times, the Strathbogies have seen an increase in landscape driven recreational use of the roads, be it cycling, motorbike riding or car rallies.

Main routes - highways and freeways - which have the Strathbogies as their scenic backdrop include the Hume Freeway, Goulburn Valley Highway and the Melba Highway. The Hume Freeway highlights include views to Mount Bernard and the western edge of the Strathbogie Range. The Goulburn Valley Highway passes through the National Trust classified landscape of the Trawool Valley and the outstanding views when driving over Cottons Pinch and down to Killingworth Road and Molesworth with memorable views to the Highlands escarpment, Mount Concord and The Black Range. Travelling north on the Melba Highway from Castella, the Highway emerges from the Rainforest of the Great Divide opening up to extensive views along the Yea River Valley and to the Black Range.

Other Tourist Routes: bicycles and vehicles

When touring, whether by bicycle or motor bike, the slow scenic route is often preferred by tourists. There are several thousand kilometres of scenic unsealed roads across the region. Some of the scenic routes include the Yea Highlands loop via the Ghin Ghin cutting, Whanregarwen road, Hughes Creek and Ponkeen Creek roads, Molesworth - Dropmore road, Black Range, to name a few.

Existing Tourism and Recreation and Future Opportunities

The region is rich with tourism and recreational existing and future opportunities reflecting the varied and significant landscape including the Goulburn, Yea Valley and the Strathbogie Ranges. The

scenic landscape is a significant drawcard in attracting tourists and locals to enjoy the region. A few highlights out of the many tourism attractions which are dependent on the quality of the landscape include:

- The Great Victorian Rail Trail between Mansfield and Tallarook with a side trail to Alexandra including the historic Cheviot Tunnel
- Road and gravel cycling
- Car rallies
- Fishing in the Goulburn, Hughes Creek, and other streams.
- Bushwalking
- Waterfalls including Gooram, Polly McQuinns in the Strathbogies and Willhelmina Falls.
- Several vineyards and cellar doors in the Yea Valley, Avenel and Caveat.
- Farmer's markets
- Numerous rural farm stay and vineyard cottages.



Future tourism opportunities could include:

- Eco tourism and wildlife spotting – guided and self guided walks in the abundant nature reserves and state forests
- *Gravelista* – World Series Gravel Cycling event to be staged in this region for the first time in October 2024. *“Riders will experience rugged, beautiful and, at times, unforgiving gravel routes winding through rolling farmlands, taking in vistas of the serene Goulburn Valley and Strathbogie Ranges.”*
- Increased cellar doors, distilleries, boutique breweries, farm produce providers.
- Growth in accommodation on properties (eg farm stays) and townships to accommodate increased visitation from Melbourne's residents.

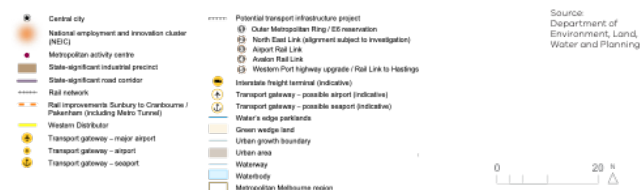
2.2.5 Growth of Melbourne and Green Wedges Melbourne 2050 Plan

Greater Melbourne has a corridor plan with urban development following the main road and rail infrastructure and this has been reinforced in State Government plans since the mid 20th century.



Map 2

Melbourne 2050 Plan



NOTE: POTENTIAL INFRASTRUCTURE PROJECTS AND GATEWAYS ARE SUBJECT TO INFRASTRUCTURE VICTORIA ADVICE AND VICTORIAN GOVERNMENT APPROVAL. THIS FRAMEWORK WILL BE UPDATED AT THE END OF 2017, FOLLOWING THE GOVERNMENT RESPONSE TO INFRASTRUCTURE VICTORIA'S 30 YEAR PLAN.

Source: Department of Environment, Land, Water and Planning

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Under the most recent Victorian Planning Authority plans, growth is concentrated into four growth corridors as shown in the plan opposite:

- North Corridor – Craigieburn, Epping, Lockyerbie
- West Corridor – Werribee
- Sunbury Corridor – Sunbury, Toolern
- South east Corridor – Cranbourne, Clyde

The Northern Growth corridor plan has significant implications for the Strathbogie Ranges and Mid Goulburn including a future role as a recreational and short-term accommodation destination for existing and future residents of this growth corridor. The corridor including the municipalities of Hume, Mitchell and Whittlesea is planned to accommodate an additional 250,000.

Recreational and Green Wedges Planning in Peri Urban Areas.

The Victorian Government's [Planning for Green Wedges and Agricultural land Action Plan 2024](#) applies to land within a 100KM radius of Melbourne, which includes part of the proposed REZ covered by this submission. The Action Plan is designed to protect Melbourne's Green Wedges and food production.



Map 19

Melbourne's green wedges and peri-urban areas



Source: Department of Environment, Land, Water and Planning

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The plan opposite shows the green wedge/peri urban region. The proposed REZ overlaps with the north east segment (part of Murrindindi shire). If expansion of Melbourne up the Northern corridor (per previous Melbourne 2050 Plan map) is taken into consideration, the 100km radius green wedges zone would shift further north and include a larger section of the proposed REZ area.

The Action Plan states:

Melbourne's green wedges and agricultural areas are major tourism and recreation attractions, offering parks, vineyards, rolling hills, grasslands, winding rivers, coasts and estuaries.

These landscapes must be protected from poorly designed, inappropriately placed development that detracts from their appearance, character and values.

A REZ would not meet this objective.

2.2.6 Comparison with Other Significant Landscape Areas

The VTP has designated a number of landscape areas as "Victorian Planning Provision – Wind project exclusion areas" which are therefore excluded from consideration as potential REZ candidates.

These include:

- Much of the Great Ocean Road
- Yarra Valley and Dandenong Ranges
- Macedon Ranges LGA including the McHarg Ranges
- Mornington and Bellarine Peninsulas
- Bass coast, west of Wilson's Promontory

It appears that these areas have been identified as exclusion zones principally because they are recognised in the respective planning schemes as Significant or Distinctive Landscapes.

Section 2.2.2 of this submission describes landscape character assessment studies undertaken for/by both Mitchell and Murrindindi Shires which have both designated regions of Landscape Significance similar to some of the excluded regions above, particularly the Macedon Ranges LGA. It is important

to note that as neither Council was aware of any threats to their landscapes at the time of these landscape assessments, they did not proceed with Strategic Landscape Overlays in their Planning Schemes. Strathbogie Council is commencing a landscape character assessment process now.

The Victorian Government's Statement of Planning Policy for the Macedon Ranges LGA, 2018, declared the region as a *distinctive area and landscape*. Factors underlying this designation include the area's range of landscape types, its biodiversity and its proximity to Melbourne and nearby towns. Notable landscape features and tourist destinations cited include rock formations such as Hanging Rock and other tourist destinations such as Mount Macedon.

As this submission establishes, the Strathbogies/Mid Goulburn region has similar landscape qualities with equally significant and varied granite landscapes including Mount Teneriffe, Bishop's Mitre, Looking Glass and Rantin Robin Rocks, to name a few. Similar to the Macedon Ranges, this region also has a rich but fragile biodiversity, significant cultural heritage and is close to Melbourne. While most of the other designated wind exclusion zones are popular tourist and recreation locations due to their significant landscapes, the Strathbogies could be classified as a "hidden gem", with its potential for eco and recreational tourism beginning to be realised but not yet protected in Mitchell, Murrindindi and Strathbogie Council's planning schemes. These planning schemes have not had the opportunity to be updated to protect the acknowledged visual amenity from the impact of a REZ declaration and subsequent multiple renewable energy projects.

Table 2: Attributes of some of the wind exclusion regions compared with the Strathbogies and Mid Goulburn region.

	Great Ocean Road	Yarra Valley	Macedon Ranges	Strathbogies/ Mid Goulburn
Scenic routes	Yes	Yes	Yes	Yes
Main road/Highway exposure	No	No	Yes	Yes
Landscape quality	High	High	High	High
Landscape variety	High	Medium	High	High
Tourism/recreation - current	High	High	High	Moderate (emerging)
Tourism/recreation – future	Medium due to overcrowding potential	Medium due to overcrowding potential	Medium due to overcrowding potential	High (growth potential)
Proximity to Melbourne	Distant	Close	Close	Close
Proximity to Melbourne growth corridor	Moderate	Moderate	Moderate	Close

2.2.7. Implications and Impacts of a REZ for the Strathbogie Ranges/ Mid Goulburn Landscape

The designation of the Strathbogies/Mid Goulburn region as a REZ would result in the transformation of a significant landscape into an industrial landscape with transmission lines, solar farms and wind turbines dominating the unique landscape. Landscape impacts associated with these developments for the region are:

Solar farms

Solar farms to date have been generally located on flat land and in flat landscapes. In these flat landscapes, solar panels are a horizontal element in a horizontal landscape, reducing the visual impact. By contrast the Strathbogies/ Mid Goulburn is dominated by hilly country interspersed by valley landscapes. Many lifestyle properties have been built on elevated sites to maximise views over the landscape. Solar farms would impact these bucolic landscapes.

Wind Farms

The landform of the Strathbogies and Mid Goulburn includes valley ranges and mountains which define the landscape. While dominant in the landscape, these landforms are not high in elevation and with numerous wind turbines, will be dwarfed in the landscape. Contemporary turbine height is around 230 metres. These will dominate significant landforms including Mount Helen (168 metres from valley floor to peak), and the Peak (160 metres above valley floor). Remnant roadside vegetation is an important landscape element in the region as well as habitat for biodiversity. Access to windfarm sites for turbine blades and other components during the construction and subsequent operation and decommissioning will involve the removal of much of the roadside vegetation during the construction phase and subsequently for maintenance purposes.

Transmission Lines

Designation of the subject area as a REZ would require additional transmission lines to connect renewable energy sites to existing transmission lines, most probably the Dederang interstate connection impacting the landscape of the southern Strathbogies eastern or southern escarpments and important landscapes of the mid Goulburn river plains. The area where the Goulburn floodplain, Black Range, Whanregarwen Valley, and Strathbogie escarpment intersect is of great significance. The transmission line easement down the escarpment will require significant loss of existing forest and native vegetation.

Access Roads and Tracks

Access roads will be required for turbines and solar farms often on hillsides. These will be prominent in the landscape, further compounding the degradation of this significant landscape.

2.2.8 Landscape Significance Summary

This submission demonstrates that the Strathbogie Ranges/Mid Goulburn region has a unique and highly valued landscape equally significant as that of the Macedon Ranges which is excluded from the REZ consideration. Based on this landscape alone, the area should not be a candidate for a Renewable Energy Zone for the following reasons:

- proximity to Melbourne offering landscape based recreational and tourism related activities
- proximity to one of three Melbourne 2050 growth corridors - the Craigieburn, Lockerbie, Wallen corridor for recreational outlets for these new residents.
- the sensitivity of the landscape to industrial scale renewable energy infrastructure including wind turbines, solar farms and linking transmission lines. The infrastructure will dominate key landmark elements and view lines, including granite rock formations and other landmark elements.
- loss of roadside vegetation during construction and for ongoing maintenance
- dominance of views of the landscape from major roads and tourist routes including the Melba Highway, Maroondah Highway, Goulburn Valley Highway and Hume Freeway.
- Loss of amenity for the increasing number of lifestyle properties residents drawn to the attractive landscape of the Strathbogies/Mid Goulburn and its proximity to Melbourne. See the following Section 2.3 for more information on the region's predominance of lifestyle property owners.

Recommendation 6.

Landscape Assessment studies conducted for the Murrindindi and Mitchell Councils should be taken into consideration in REZ determinations despite the significant landscape findings not yet being reflected in Planning Schemes. Once considered, these studies will provide the evidence that the Strathbogie/Mid Goulburn region is of equivalent landscape significance as the Macedon Ranges region which has been excluded as a potential REZ.

Recommendation 7.

Independent landscape assessments should be conducted for any candidate renewable energy zones to ascertain the landscape impact prior to the declaration of REZs.

2.3. Natural environment – community amenity and Land use/socioeconomic – Existing use

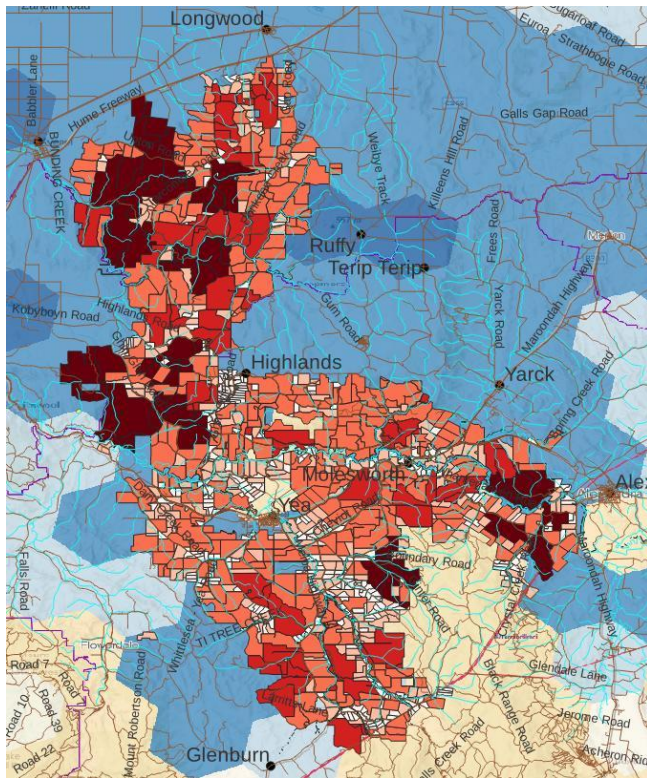
The VTP Appendix A states that the Objectives under these Themes are to *"Minimise the impact of wind/solar development on areas that have community amenity from the natural environment"* and to *"Minimise the impact of wind/solar development on valued social and economic uses of land"*. The rationale for the latter includes protecting rural residential areas.

2.3.1 Demographic profile – Predominantly small, 'lifestyle' properties.

The Strathbogie Ranges and mid Goulburn River region has a completely different demographic profile to that seen in most renewable energy projects which are generally sited in sparsely populated regions where broadacre agriculture is the predominant land use. In contrast, this region has a very high (and increasing) number of people who choose to live in lifestyle properties in farming zones because of the high scenic and environmental values, and a minority are employed in the agricultural industry.

An analysis of the almost 100,000ha currently under investigation for a wind farm (by Fera Australia) which is within the Tier 2 region which is the focus of this submission shows the following:

- Of the 1265 farming zoned properties (i.e. excluding townships zoned residential and rural residential) in this potential wind farm footprint, 80% are less than 100ha – predominantly "lifestyle" properties. Less than 3% are greater than 500ha, a viable size for a broadacre farming enterprise.



Map of properties in proposed Seymour wind farm footprint superimposed on VTP Study Area map.
Legend: Darkest red – largest properties, >1000ha. Lightest- smallest.

- 81% of the population are employed in industries **other** than Agriculture, Fisheries, Forestry and the population density is 2.2 per sq km. In contrast, looking at approximately the same sized footprint (100k ha) in the region around the Macarthur wind farm in western Victoria, data shows that there is a population density of only 1.06 per sq km and 55% are employed in industries other than agriculture, fisheries, forestry. *Source: ABS data by locality.* Further, the actual footprint of the Macarthur windfarm is only 5500 ha compared with currently around 100,000ha for the proposed Fera project. There are only two residences within the Macarthur turbine footprint and about ten residences greater than 3km from the boundary. The rest of the surrounding houses are over 12 km from the boundary. In contrast, there will 300 - 400 residences within the proposed Fera wind turbine footprint and an additional (as yet unknown but could be as many as 1400 including townships) number within the transmission line footprint.
- The landscape is the reason why many people choose to live in this region and underpins the diversity of land uses.

Land values

There is mounting evidence that land values are negatively impacted for lifestyle properties. Experienced rural valuer Alan Hives states: "We have found that the lifestyle properties are detrimentally affected to the greatest degree. Where the aesthetic values (views etc) are greatest, then the impact is likely to be the greatest." ([The Social and Economic Impact of Rural Wind Farms](#). Senate Community Affairs Report 2011. Ch 4.)

Creation of a REZ in this region is demonstrably incompatible with the VTP's stated objectives to minimise the impacts on community amenity from the natural environment and on valued social and economic uses of land. There should be an expectation that REZs should impact as few people as possible.

The VTP classifies rural residential zones and adjacent areas as "most constrained" due to "*potential impacts to landowners, land use, land values and visual amenity*". We argue that the same classification should be extended to farming zones where the land use is not predominantly farming (as proven by the data above for this region), but rather derived from the region's natural amenity. People living in these lifestyle properties are equally entitled to protection of their amenity as those living in residential zones.

Recommendation 8

Lifestyle properties in farming zones should have the same "Most Constrained" rating as those in Rural Residential zones to protect land values and community amenity.

2.4. Cultural heritage

2.4.1 First Nations Cultural Heritage

The Strathbogie Cultural Landscape is central to Taungurung Country and an area of high cultural significance. The Strathbogie Cultural Landscape, broadly defined as the area south of the Hume Freeway between Seymour and Benalla, Mount Samaria in the east, and the escarpments of the Strathbogie batholith to the south, are the traditional lands of the Yowung-illam-baluk clan - one of the fifteen clans that make up the Taungurung. The proposed REZ is within this Strathbogie Cultural Landscape.

A report by the Victorian Environmental Assessment Council - [Assessment of the values of the Strathbogie Ranges Immediate Protection Area - Taungurung Country](#) showed that this region is a highly significant cultural landscape to the area's Traditional Owners, the Taungurung people, but its cultural heritage has been incompletely mapped. Field visits have identified potential cultural heritage sites like rock shelters, scar trees and artefact scatters that will require further investigation, and that "*there is the potential for identification of many more cultural heritage sites throughout the Strathbogie Cultural Landscape.*" The report also states that current cultural sensitivity layers "*fail to recognize the value of high peaks with clear views and rocky outcrops*" - precisely the types of features that renewable energy developments would impact. The assessment of intangible cultural heritage across the Strathbogie Cultural Landscape is even less prevalent.

In a more recent publication in December 2023, [Rapid Biocultural Assessment of the State Forests within the Central Highlands Regional Forest Agreement \(CHRFA\) area occurring on Taungurung Country.](#), the Taungurung Land and Waters Council describe the Strathbogie and Tallarook Ranges region as Yawang (Stone Country). In this publication, Yawang is described as being "*rich in expressions of culture: archaeological material, culturally modified trees, quarries and grinding grooves all characterise this landscape. Yawang is also abundant. When the forests here are healthy, they are open and rich with plants and animals that provide food and medicine. This supports gathering for ceremony and other business.*"

While formal documentation of heritage sites is sparse, anecdotal evidence suggests a number of sites:

- At least one significant rock outcrop on the eastern escarpment of the Strathbogies.

- Rock paintings along Hughes Creek and a landmark Hill top
- Artefact scatters on several hill tops.
- A significant stone tool collection found on a property at Highlands.
- Scar trees and possible Birthing trees in the Goulburn River flood plain
- Widely scattered scar trees
- Axe grinding grooves have been identified along the Hughes Creek exposed in a recent bushfire.
- Well documented artwork exists in the Garden Range west of Strathbogie – Garden Range Aboriginal Rock Art Site 80243/005 Victorian Archaeological survey report 18 by R.G.Gunn.

Mitchell, Murrindindi and Strathbogie Shire Planning Schemes all identify the Goulburn and main streams including Hughes Creek of cultural heritage significance.

2.4.2 Post European Settlement Cultural Heritage.

The subject area has a number of significant heritage buildings. Integral with these historic properties is the associated cultural landscape. Properties include:

- Habbies Howe- Historic Building Council and National Trust citation located in the Stewarts Creek valley.
- Dropmore – located at the upper section of the Hughes Creek.

With two heritage properties at each end of the valley, the post European bucolic landscape contrasts with the backdrop of granite boulder and granite rock faces of Looking Glass, Mount Helen, The Peak and Mount Tickatory, and defines a significant landscape recognised in the [Mitchell Shire Council's Significant Landscape character assessment](#).

- Cheviot Railway Tunnel noted in the Murrindindi Planning Scheme and forms part of the Mansfield to Tallarook Rail trail. The setting is also noted in the Heritage citation.

Recommendation 9.

Further rigorous and collaborative investigation of cultural heritage is essential before any industrial-scale development could be considered in this area. The knowledge of the Traditional Owners must be centred in this process.

Conclusion

The evidence presented in this submission demonstrates that the Strathbogie Ranges and Mid Goulburn River region is unsuitable for declaration as a Renewable Energy Zone. The area's unique environmental, landscape, socioeconomic and cultural attributes require protection from industrial-scale renewable energy developments. SRRCG urges VicGrid to incorporate comprehensive data collection, community consultation, and a thorough evaluation of cumulative impacts before finalizing REZ location.

References

Biodiversity

- Wintle, B., Rogers, A., Watson, J., Ward, M., Bekessy, S. (2024). [Renewable energy transition that doesn't harm nature? It's not just possible, it's essential](#)
- Phillips, N., Clemens, J., Hergt, J. (2019). [Strathbogrie granite: a platform for local science](#)
- [Goulburn Broken Regional Catchment Management Strategy 2021 - 2027](#)
- Trust for Nature [State Conservation Plan](#)
- Biosis Pty Ltd. 2023. [Seymour Wind farm: Preliminary Biodiversity Assessment](#) June 2023
- Lobert B., (2024 unpublished. Available upon request) Arboreal mammals in the Highlands-Caveat districts.
- D'Ombrain T (Biodiversity Services Pty Ltd). 2018 – [Survey of Roadsides in Strathbogrie Shire](#)
- Tzaros C. 2019 - [Bird survey in the Strathbogries](#)
- Tonkin, Z., Sharley, J., Fanson, B., Raymond, S., Ayres, R., Lyon, J., Blacombe, S. and Bond, N. (2019) [Climate variability regulates population dynamics of a threatened freshwater fish](#). Endangered Species Research 40: 257-270
- Coates, et al (2010), [The Floristic values of wetlands in the Highlands and Strathbogrie Ranges, Coates., et al., 2010](#)
- Stewardson, M., Western, A., and Wallis, E., (2009), [Hydrology of Strathbogrie Wetlands Report 2009](#)

Landscape Significance

- [Mitchell Shire Landscape Assessment Study](#). See Volume 2 – Landscape Significance
- Management of Significant Landscapes in Murrindindi and Baw Baw. 2005. Planisphere on behalf of Vic Dept Planning.
- [Plan Melbourne 2017 - 2050](#)
- [Planning for Green Wedges and Agricultural land Action Plan 2024](#)

Land use/ socioeconomic – Existing use

- ([The Social and Economic Impact of Rural Wind Farms](#). Senate Community Affairs Report 2011. Ch 4.)

Cultural Heritage

- [Assessment of the values of the Strathbogrie Ranges Immediate Protection Area - Taungurung Country](#) -Victorian Environmental Assessment Council
- [Rapid Biocultural Assessment of the State Forests within the Central Highlands Regional Forest Agreement \(CHRFA\) area occurring on Taungurung Country.](#). 2023 - Taungurung Land and Water Council.

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