

# Changes to the Regulation of Wind Farm Noise

Consultation, submissions and response



July 2021

## Acknowledgements

DELWP would like to thank the Environment Protection Authority and the Department of Health as partner agencies in this project, as well as all the community members and representatives from industry, and councils other government agencies who have provided input to development of the Regulations.

## Author

Department of Environment, Land, Water and Planning

### Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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# Introduction

## Purpose of this document

This document has been developed by the Department of Environment, Land, Water and Planning (DELWP) and the Environment Protection Authority Victoria (EPA).

It summarises the issues and comments raised during the Victorian Government's recent consultation on the proposed changes to the regulation of wind farm noise in Victoria.

It also provides the Victorian Government's response to each issue and explains how the feedback has informed the final regulatory measures.

## Abbreviations and acronyms

DELWP	Department of Environment, Land, Water & Planning
EPA	Environment Protection Authority Victoria
EP Act	<i>Environment Protection Act 2017</i>
NZ Standard	New Zealand Standard (NZS 6808)
RIS	Regulatory Impact Statement
WEF	Wind energy facility

# Background

Wind farms play an important role in ensuring a sustainable, reliable and affordable energy future for all Victorians.

Victoria has some of the best wind energy sites in Australia. As at 31 August 2020, there were 29 operational wind farms in Victoria with 16 more either under construction or approved, and a further three wind energy facilities (WEFs) seeking planning approval. These sites collectively account for 29% of Australian wind energy production.

Due to the nature of their operations, wind farms create noise and it is therefore important that noise emissions from wind farms are subject to regulatory controls to protect human health and amenity.

From 1 July 2021, the *Environment Protection Act 2017* (as amended, EP Act) brought about a transformational change to environmental regulation in Victoria, with the introduction of a 'general environmental duty' and 'unreasonable noise' provisions. These provisions apply to all businesses, including wind farm operators.

Approvals for the development of new WEFs will continue to be made by the Minister for Planning under the *Planning and Environment Act 1987*.

Clear and consistent regulation for wind farm noise is needed to provide certainty to industry and confidence for communities.

## Consultation Process

In February 2021, the Victorian Government sought feedback on proposed new regulations for wind farm noise through the Engage Victoria website. This consisted of responding to a series of questions about the proposed regulatory changes and an opportunity to provide written submissions.

The Government invited feedback on three approaches to the regulation of wind farm noise, after an assessment of the costs and benefits of each through a Regulatory Impact Statement (RIS).

The three alternatives were:

- Option 1: No additional regulation – relying on general provisions within the new EP Act
- Option 2: Direct regulation – setting specific requirements to demonstrate compliance
- Option 3: Permissions – requiring permission from the Environment Protection Authority (EPA) to produce wind turbine noise within set limits.

The Government also invited feedback on a package of requirements for wind farm operators to demonstrate compliance with the EP Act.

The following package of requirements for wind farm operators was proposed under both Option 2 (direct regulation) and Option 3 (permissions):

- complying with the relevant noise standard (New Zealand Standard NZS 6808)
- implementing a noise management plan, including a complaints management plan
- completing a post-construction noise assessment
- providing an annual statement of actions taken to ensure compliance
- conducting noise assessments every five years.

There were 65 responses to the consultation, received through Engage Victoria or via email.

Most submissions received were from industry representatives and individual community members, with others from local councils, acoustical consultants and community groups.

## Subordinate Legislation Program

A previous public consultation was undertaken as part of the broader EP Act Subordinate Legislation Program. This consultation was open for comment from September to October 2019.

This program included the proposed Environment Protection Regulations, which cover a broad range of activities including the regulation of some noise sources. However, they did not specifically include the regulation of wind farm noise.

Submissions relating to wind farm noise were received from two councils, Moyne Shire and Corangamite Shire, as well as the Municipal Association of Victoria and the National Commissioner for Wind Farms (now the Australian Energy Infrastructure Commissioner).

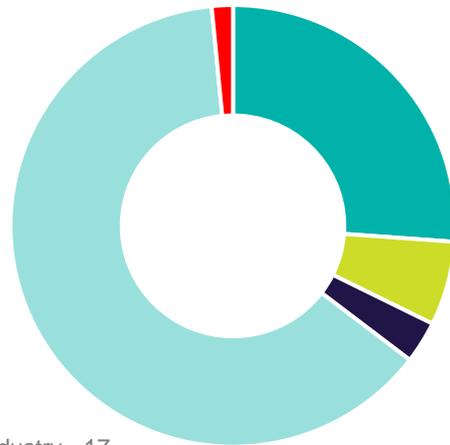
The submissions noted the need for specialist acoustic skills and the cost burden for councils in assessing and enforcing noise compliance. The submissions also sought a stronger role for EPA in compliance and enforcement under the new EP Act.

# Who made a submission?

## Submissions

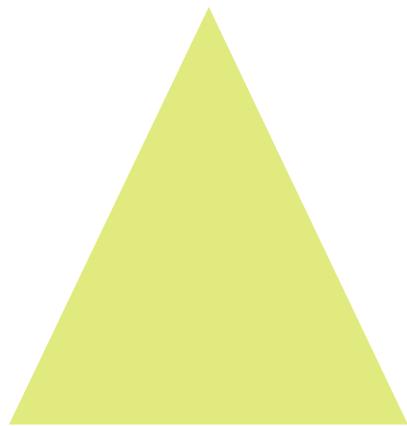
There were 65 responses, received through Engage Victoria or an email submission. This included:

- 41 individual members of the community, most of whom live near planned or existing wind farms
- 17 members of industry and acoustical consultancies
- four local councils which have wind farms in their regions
- two environmental and community organisations
- the Australian Energy Infrastructure Commissioner (formerly the National Wind Farm Commissioner).



- Industry - 17
- Councils - 4
- Environmental and community organisations - 2
- Individuals - 41
- Australian Energy Infrastructure Commissioner - 1

Figure 1: Number of submissions by stakeholder type



# Feedback and responses

## 1. Support for the “direct regulation” approach

Analysis in the RIS identified ‘direct regulation’ as the preferred option (as opposed to ‘no additional regulation’ or ‘permissions’), as it provides for greater consistency and clarity for the management of wind farm noise.

### *Feedback*

75% of submissions supported the direct regulation option. 25% of submissions supported either ‘no additional regulation’, ‘permissions’ or another option.

Councils noted the need for EPA to be adequately resourced to respond to local concerns.

The Australian Energy Infrastructure Commissioner suggested the permissions-based system may be more effective. A similar approach is used in NSW.

One submission called for wind farm noise to be managed through a ‘compliance code’ rather than regulation to provide increased flexibility to industry.

### *Response*

The direct regulation approach is to be adopted as the regulatory mechanism to manage operational noise from wind farms.

This is based on feedback received during the public consultation, which supported the RIS analysis of the benefits of direct regulation.

## 2. Changes to the Regulations

The following key changes will be made in response to submissions and to improve clarity and effectiveness of the Regulations.

### 2.1 Allow a more flexible approach to periodic noise monitoring

#### *Exposure draft*

The exposure draft Regulations required that all WEFs would have to undertake periodic noise assessments.

The RIS explored periodic assessment of different timescales with or without background noise testing. The preferred RIS option of requiring five yearly testing of wind turbine noise was seen as a pragmatic solution to requiring some form of checking noise controls without being overly burdensome to the operator.

The testing options that required background noise testing were ruled out as being overly expensive if required for every assessment.

### *Feedback*

Feedback clearly indicated that in the assessment model proposed, WEF operators may need to rely on old data sets (up to 20-25 years) of background noise levels, which may not enable definitive determination of compliance. Feedback from acoustic professionals has highlighted that turbine noise is not expected to increase over time when appropriate preventative maintenance procedures are implemented and where remediation procedures are undertaken when required.

However, background noise may increase over time, for example due to growth of vegetation. If background noise is also required to be re-assessed, this would result in significantly higher costs to industry, similar to testing scenarios not recommended by the RIS.

Additionally, there could be practical issues such as access being refused to private land that had been used for previous noise monitoring.

Several submissions proposed the use of intermediate assessment locations to overcome these issues, as is allowed for in other states in Australia.

### *Response*

In response to feedback and technical input, the requirement for five-yearly ‘monitoring’ will be retained. Rather than a uniform ‘assessment’, greater flexibility of methodology will be allowed in order to demonstrate compliance with the relevant noise standard. This will include the use of alternative locations to assess noise, where appropriate.

Measurement of noise at alternative locations is required for practical reasons, for example, where it is not possible to access a neighbouring property to undertake noise measurements. This approach is used in other jurisdictions and in other sectors, such as commercial, industrial and trade premises. It has been shown to provide reliable predictions of noise at the location of nearby dwellings. It avoids technical and logistic challenges and will reduce costs for wind farm operators compared to ‘at location’ assessments.

Assessments will still need to be prepared by a suitably qualified acoustician and peer reviewed by an environmental auditor.

This approach:

- allows for flexibility in noise monitoring that is not constrained by the technical limitations noted above;
- is more proportionate to risk, in that the methodology used can be adapted depending on the likely impact on neighbouring areas; and
- provides a standardised assessment period, giving assurance to community and predictability for industry.

## 2.2 Continue to allow for stakeholder agreements

### *Exposure draft*

The exposure draft Regulations required a WEF to comply with the noise limits in the relevant noise standard (generally the NZ Standard).

Many existing wind farms in Victoria have agreements with the owners of neighbouring properties, which allow higher noise levels than those prescribed in the NZ Standard.

Such stakeholder agreements are allowed under the existing planning system and were not specifically covered in the exposure draft Regulations.

### *Feedback*

Some submissions from industry sought assurance that stakeholder agreements, both existing and in future, would be accommodated under the new Regulations.

### *Response*

Stakeholder agreements are recognised in the DELWP guidelines for *Development of Wind Energy Facilities in Victoria*. They support the achievement of Victoria's renewable energy targets by allowing increased numbers of wind turbines to be built.

The Regulations will enable the continuation of existing stakeholder agreements, while allowing new stakeholder agreements subject to a noise limit of 45 dB or 5 dB above background, whichever is greater.

This is consistent with the recommended limit for stakeholder agreements in the existing DELWP guidelines. It is also applied in other jurisdictions in Australia and overseas, which allow stakeholders to agree to a reasonable increase to noise limits above the level as defined by the relevant standard.

## 2.3 Definition of wind farms

### *Exposure draft*

The definition of wind turbines had a minimum threshold of a swept rotor area of 200m<sup>2</sup> in order to

be covered by the draft Regulations, based on specifications in the 2010 NZ Standard.

### *Feedback*

One submission questioned whether this threshold may exclude smaller commercial wind farms.

### *Response*

The definition of wind turbines has been amended to remove the reference to a swept rotor area, and the definition of wind energy facilities has been amended to specifically exclude non-commercial wind turbines.

This will ensure that the Regulations will cover all commercial wind farms in Victoria.

## 2.4 Relevant noise standard

### *Exposure draft*

The criteria for which noise standard applies for a given WEF were expressed as a list of conditions.

### *Feedback*

Some submissions stated that the criteria conditions were overly complex or difficult to understand.

### *Response*

The criteria for which noise standard applies has been simplified into a table format. The applicable standard will continue to be either the 1998 NZ Standard, the 2010 NZ Standard or another standard based on conditions contained in the WEF planning permit.

## 2.5 Post-construction noise assessment

### *'Acoustician' to conduct assessments*

The exposure draft Regulations required a 'suitably qualified and experienced *acoustic engineer*' to conduct the post-construction noise assessment. This was not seen as necessary or reflective of industry practice. This has been amended to a 'suitably qualified and experienced *acoustician*', to clarify that the acoustician will not need to have engineering qualifications.

### *Remove reference to pre-construction background sound levels*

The exposure draft Regulations included a reference to the use of *pre-construction background sound levels*. This was not seen as necessary, as the requirements and methodology relating to the *post-construction assessment* are already included within the New Zealand Standard. This reference has been removed.

### ***Clarifying nature and timing of the audit report***

The exposure draft Regulations required that an environmental auditor prepare a report to verify the noise assessment has been conducted in accordance with the NZ Standard. This requirement has been retained and a reference added to the relevant functions of environmental auditors under the Environment Protection Regulations: Regulation 164(ca)(i).

The exposure draft Regulations also required that the noise assessment report and the audit report be provided to the Authority within 10 days of completion. This could be taken to mean separate timelines for the two reports. This has been amended to require that the reports must be provided within 10 days of them both being completed, which is simpler and more practical.

## **2.6 Noise management plan**

### ***Exposure draft***

The exposure draft Regulations did not specify who is required to review a noise management plan.

### ***Feedback***

A number of submissions asked about how the requirement to prepare a noise management plan relates to existing requirements under planning permit conditions.

### ***Response***

It is common practice that acousticians will be engaged by WEF Operators to undertake this complex task. The Regulations have been amended to require that the noise management plan is reviewed by an environmental auditor. This is consistent with current conditions under planning permits.

## **2.7 Annual statement**

### ***Evidence of turbine operating modes***

The exposure draft Regulations required WEF operators to provide evidence that turbine operating modes complied with any related conditions of planning permits or other authorizing documents. Feedback from industry was that only a small number of WEFs have such conditions. This requirement has been limited to “where applicable” to clarify that it is not required in every case.

### ***Demonstrating the relevant noise standard has not been contravened***

The exposure draft Regulations required that WEF operators “provide evidence” that the relevant noise standard has not been contravened. Some submissions stated that this could be interpreted as

requiring additional noise assessments each year. This requirement has been amended to require that WEF operators “demonstrate whether or not the wind turbine noise complied with the requirements of the relevant noise standard including”. This will not require an additional noise assessment to be undertaken every year.

## **3 Other issues raised**

A number of other issues were raised as part of the public consultation process that did not lead to a change in the proposed Regulations. These are described below.

### **3.1 Use of the New Zealand Standard for assessment of wind farm noise**

#### ***Exposure draft***

The exposure draft Regulations required the WEFs demonstrate compliance with the New Zealand Standard (NZS 6808). This is generally the current standard used in planning permits in Victoria.

#### ***Feedback***

Some feedback from individuals and community groups questioned the adequacy of the NZ Standard in protecting human health and amenity. Some submissions suggested that there should be limits on low-frequency noise or infrasound.

#### ***Response***

The NZ Standard sets noise levels to protect amenity and sleep, based on scientific evidence. It is an accepted standard across jurisdictions in Australia and internationally.

Infrasound (and ultrasound) frequencies produced by wind turbines are below the threshold of human perception. Current evidence does not justify setting a more precautionary limit.

The Government will closely monitor evolving research and review noise standards if required.

### **3.2 Real-time noise monitoring**

#### ***Exposure draft***

The exposure draft Regulations included a requirement that noise assessments be undertaken every five years to ensure ongoing compliance.

#### ***Feedback***

Some submissions from individuals and community groups suggested that there should be ongoing monitoring of noise levels from wind turbines and the results should be made available to the public in real time.

### **Response**

There would be significant technical challenges to consistent, ongoing noise measurement across different turbine technologies and in different locations.

Accurate assessment requires analysis over different combinations of wind speed and direction, in order to separate wind farm turbine noise from background noise levels.

### **3.3 Oversight of acoustic consultants**

#### **Exposure draft**

The exposure draft Regulations required that noise assessments be undertaken by a “suitably experienced and qualified acoustic engineer”.

#### **Feedback**

Some submissions queried the independence of consultants engaged by wind farm operators to conduct noise assessments.

#### **Response**

The current requirements for acousticians and environmental auditors are considered proportionate to the risk of non-compliance, and consistent with settings in other sectors and jurisdictions.

As noted above, the Regulations have been amended to require that noise assessments are conducted by a ‘suitably qualified and experienced *acoustician*’. Noise management plans and noise assessments must also be reviewed by an EPA-appointed environmental auditor.

Further technical guidance will be developed by EPA. It is expected that acousticians would be eligible for professional membership of relevant industry associations, and subject to their codes of practice.

### **3.4 Timing of post-construction noise assessment**

#### **Exposure draft**

The exposure draft had a requirement to undertake a noise assessment within 12 months of construction, to confirm noise levels match those predicted in the pre-construction assessment.

This is consistent with existing requirements under the DELWP guidelines for *Development of Wind Energy Facilities in Victoria*.

#### **Feedback**

Some submissions from industry sought clarification on the timing of the post-construction noise assessment.

It was suggested that the noise assessment should be undertaken after *all* the turbines are operating.

#### **Response**

Flexibility is required to accommodate a range of scenarios, such as:

- Lengthy or staged approaches to construction; in which the final turbine may take several years to be completed, or
- Where turbines may be operating at limited output due to network restrictions.

EPA will develop guidance in consultation with industry in relation to the timing of the post-construction noise assessment, aiming to address community expectations and practical issues for WEF operators.

### **3.5 Setback distances**

#### **Exposure draft**

The exposure draft Regulations did not address setback distances, as this is covered under the planning system.

#### **Feedback**

Some submissions from individuals called for greater setback distances for wind turbines from residential premises.

#### **Response**

Setback distances are determined in the Victoria Planning Provisions and are outside the scope of this project, which is focused on management of operational noise.

### **3.6 EPA to have a referral role in planning approvals**

#### **Exposure draft**

The exposure draft Regulations did not address referral roles, as this is covered under the planning system.

#### **Feedback**

Some submissions from individuals suggested that EPA should have a referral role in planning approvals for new wind farms.

#### **Response**

Referral authorities are determined through the Planning system.

This issue will be considered as part of the review of operational wind farm noise conditions in the planning system.

## Next steps

The Victorian Government would like to thank all the individuals, community groups, councils and industry representatives for their time and effort in providing input to this consultation process.

The revised Regulations will commence on 1 August 2021. Note that the Regulations allow a transition period for some of the new requirements to take effect.

Changes to the *Public Health and Wellbeing Act 2009*, to exempt wind turbine noise from nuisance complaints under this Act came into effect on 1 July 2021.

Further changes to Victoria's planning system are currently being finalised to remove duplication of requirements and to reduce overlapping responsibilities for enforcement.

## Contact

For further information contact:  
[windfarmnoise@delwp.vic.gov.au](mailto:windfarmnoise@delwp.vic.gov.au)

# Appendix 1 – List of submissions

Submissions and completed surveys were provided via the Engage Victoria website and by email.

## Industry/Consultancies

1. Clean Energy Council
2. EDL Energy
3. EnviroRisk Management
4. Goldwind Australia
5. Marshall Day Acoustics
6. Meridian Energy Australia
7. OSMI Australia
8. Pacific Hydro
9. Resonate Consultants
10. Tilt Renewables

## Council

11. Glenelg Shire Council
12. Moorabool Shire Council
13. Moyne Shire Council
14. South Gippsland Shire Council

## Organisations

15. RE-Alliance
16. Wind Farm Living Community

## Commonwealth

17. Australian Energy Infrastructure Commissioner (formerly the National Windfarm Commissioner)

## Individuals

18. Jane Glare
19. Lola Puddy
20. Paul Lewis
21. Ronnie Bernardi
22. Timothy Le Roy
23. Patricia Gabb
24. Dave Berry
25. James Kimber
26. Kelvin Goodall
27. Graeme Wilson
28. Tony Edney
29. Neil Blain
30. Alice Glare
31. Maree Avery
32. Graeme James
33. Colin Barry
34. Hamish Cumming
35. Tom Casey
36. Bart Wissink
37. Viva-Lyn Lenehan
38. Melissa Ware
39. Douglas Munro
40. Sharon Dohnt

## Undisclosed

There were also 25 submissions from people or organisations who chose not to have their names published.