

BEFORE THE HEARINGS PANEL

UNDER THE

Resource Management Act 1991

IN THE MATTER OF

the Proposed Far North District Plan

**STATEMENT OF EVIDENCE OF JON STYLES ON BEHALF OF TOP
ENERGY**

HEARING STREAM 6 & 7

Acoustics

7 October 2024

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1 INTRODUCTION

- 1.1 My full name is Jon Robert Styles. I am an acoustic consultant and director and principal of Styles Group Acoustics and Vibration Consultants. I lead a team of seven consultants specialising in the measurement, prediction and assessment of environmental and underwater noise, building acoustics and vibration working across New Zealand and internationally.
- 1.2 I am the past-President of the Acoustical Society of New Zealand (**ASNZ**). I completed two consecutive two-year terms as the President from 2016 to 2021. I have been on the Council of the ASNZ for approximately 16 years. Styles Group is a member firm of the Association of Australasian Acoustical Consultants (AAAC) and I am on the executive team of the AAAC.
- 1.3 I have approximately 22 years of experience advising on the management of noise and vibration effects, including the construction, maintenance and operational noise effects of major and strategic transport infrastructure (including port, road, air and rail) and the protection of strategic industry and transport infrastructure through the effective management of reverse sensitivity effects. I have assisted a large number of councils to process a significant number of resource consents and notices of requirement subject to noise and vibration standards, and I have provided expertise to large number of District Plan reviews and plan changes across New Zealand.
- 1.4 I have been engaged by Top Energy to support its submission and further submission in respect of noise, particularly on emergency generators and the how noise is proposed to be addressed in the Proposed Far North District Plan (**PDP**).

Code of conduct

- 1.5 Although this is not an Environment Court proceeding, I have read and am familiar with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court Practice Note 2023, and agree to comply with it. My qualifications as an expert are set out above. Other than where I state that I am relying on the advice of

another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

2 SCOPE OF EVIDENCE

2.1 My evidence addresses submission (#483) and further submission (#FS369) by Top Energy on the PDP and is structured as follows:

- (a) Overview to district plan noise exemptions (Section 3);
- (b) Top Energy's operations (Section 4);
- (c) Relief sought by Top Energy and s42A recommendation (Section 5);
- (d) Use of generators in emergencies (Section 6);
- (e) Use of generators during testing and maintenance (Section 7);
and
- (f) Recommendation (Section 8)

2.2 I have reviewed the recommendations of the Section 42A Report (the **S42A Report**) and the "Review of Submissions"¹ (**Mr Ibbotson's Review**) undertaken by Far North District Council's acoustic consultant, Mr Ibbotson.

2.3 My evidence relies on the statement of evidence from Russell Fernandes (Network Maintenance) and David Badham (Planning).

3 OVERVIEW TO DISTRICT PLAN NOISE EXEMPTIONS

3.1 This evidence relates to the extent to which emergency services or lifeline utilities are exempt from the PDP noise rules and standards during emergencies and when undertaking routine testing and maintenance of generators and the distribution network.

¹ Page 43 of
https://www.fndc.govt.nz/_data/assets/pdf_file/0025/32866/Appendix-3.pdf

- 3.2 It is very common for District Plans to identify activities that are excluded from compliance with noise limits. For example, it is very typical for District Plans across to New Zealand to include exemptions for normal household activities in a residential zone, and the seasonal or intermittent noise of animals and mobile machinery in rural zones.
- 3.3 It is also very typical for District Plans to provide noise exemptions that are designed specifically for emergencies, and activities that may be required to ensure that emergency services and network utility operators are prepared for emergencies. Common examples include the use of sirens by emergency services, helicopter landings for emergency response and the use of generators in the event of a network outage. It is also common for District Plans to exempt the noise from the maintenance and testing of those generators².
- 3.4 The noise exemptions that are specifically designed for emergency services and lifeline utilities generally prioritise the need to provide and ensure continuity of essential services to the community above the potential infrequent and short-term noise disruptions that may arise.

4 TOP ENERGY'S OPERATIONS

- 4.1 The evidence of Russell Fernandes for Top Energy describes how generators are relied on to ensure continuity of supply to the Far North during planned and unplanned outages. The evidence also describes the routine maintenance practice for all generators. The detailed service is required on an annual basis, or upon every 250 hours of run time, whichever is sooner.
- 4.2 The evidence confirms that these run times do not take into account the time required to diagnose and fix defects. I understand that the additional run time required associated with diagnosis and repair may result in run-time of between several hours to several days.

² I am familiar with several District Plans that provide exemptions for testing and maintenance of generators when operated by emergency services or lifeline utilities. The New Plymouth District Plan (Appeals Version), Wellington City 2024 District Plan (Appeals Version) and Christchurch District Plan are examples.

- 4.3 I understand that Top Energy also utilise a number of smaller mobile generators that are used in emergencies and also during planned network maintenance. These are typically installed to maintain supply to critical activities such as critical infrastructure, medically dependent customers or hospitals when work on the network that supplies them is undertaken.

5 RELIEF SOUGHT BY TOP ENERGY AND S42A RECOMMENDATION

- 5.1 Note 8 of the PDP Noise Chapter proposes that *"the use of generators and mobile equipment (including vehicles) for emergency purposes, including testing and maintenance not exceeding 48 hours in duration, where they are operated by emergency services or lifeline utilities"* are exempt from compliance with the noise rules and standards.
- 5.2 Top Energy's submission requests that the 48-hour duration limit is removed from Note 8. Top Energy consider that the 48-hour restriction is arbitrary and unnecessary. The evidence of Mr Fernandes for Top Energy sets out the reasons why this time restriction may not be enough to allow for the maintenance and repair activities that Top Energy normally carry out.
- 5.3 The table below shows the relief sought by Top Energy (shown in strikethrough) alongside the recommendations of the S42A Report. The recommendation of the S42A Report is that the 48-hour restriction should be deleted in favour of a cumulative time limit of 12 hours per year:

Notified Note 8, with Top Energy relief shown as strikethrough	Section 42A Recommendation
"the use of generators and mobile equipment (including vehicles) for emergency purposes, including testing and maintenance not exceeding 48 hours in duration , where they are operated by emergency services or lifeline utilities	"the use of generators and mobile equipment (including vehicles) for emergency purposes, including testing and maintenance not exceeding 48 hours in duration , where they are operated by emergency services or lifeline utilities; provided that the use of generators for testing and maintenance purposes is limited to a cumulative time of 12 hours per year."

- 5.4 The S42A Report relies on the Mr Ibbotson's Review to support an annual 12-hour limit. Mr Ibbotson's Review finds:

"We agree that limiting the use of generators in an emergency situation to 48 hours is arbitrary and unnecessary. We consider that the rule was intending to allow testing and maintenance to 48 hours per year as an exclusion. However this is not clear in the rule.

Testing and maintenance typically requires emergency generators to be operated for short periods (typically less than an hour for each test) 12 times per year. It is not unreasonable to exclude this testing from noise rules, even though there is risk that testing of noisy generators can be inconvenient/intrusive to receivers. Having no limit on emergency generator testing makes it more likely that lifeline and emergency utilities providers will locate permanent generators closer to dwellings, and be less likely to consider noise reduction measures when installing them"

- 5.5 I note that Mr Ibbotson's Review does not appear to specifically recommend that Note 8 should include a 12-hour annual limit for generator testing and maintenance. Mr Ibbotson's finding is that testing and maintenance typically involves operations on up to 12 occasions per year, for up to an hour. The evidence of Mr Fernandes for Top Energy sets out why 12 hours is likely to be insufficient to allow for the diagnosis and repair of faults, and to avoid outages when conducting maintenance on the network itself.
- 5.6 It is my experience that any noise exemptions must be clear, robust, and able to be administered without ambiguity. I agree with Mr Ibbotson that the 48-hour duration limit referred to in the PDP is arbitrary. It also is unclear as to whether the 48 hours occurs at any one time, per month, or, as suggested in Mr Ibbotson's Review, on an annual basis. I also consider that the 12-hour annual limit recommended by the Section 42A Officer is also relatively arbitrary and more restrictive.

- 5.7 Based on the evidence from Top Energy on the actual typical usage, I understand that both the notified wording and the S42A wording would be likely to create the need for multiple resource consents for situations that occur now.
- 5.8 I understand that the establishment of any permanent generator is likely to require a Notice of Requirement or resource consent, and this process will require compliance with the operational noise standards to be addressed.
- 5.9 I understand that the high financial cost of running and servicing generators is a significant limitation on the frequency and duration that any generator is likely to be operated. Based on the evidence of Mr Fernandes, I understand that generators will be operated infrequently and for short duration to minimise the cost. The only exception is the time required for diagnosis and the repair of faults. I consider it is reasonable to allow for the time that may be required to diagnose and repair faults on the basis that I understand such occasions are likely to be very infrequent.

6 USE OF GENERATORS IN EMERGENCIES

- 6.1 The S42A wording does not restrict the duration of use during emergencies.
- 6.2 It is my experience that an exemption for emergency use is very common in District Plans across New Zealand.
- 6.3 I support the exemption to allow the use of generators in emergency situations. This includes the permanent generator installations and the use of mobile generators.

7 USE OF GENERATORS DURING TESTING AND MAINTENANCE

- 7.1 I consider that the exemption for testing and maintenance is slightly more complex. I understand from Top Energy that the generators that could be subject to this exemption could be permanent or mobile, and they could be run for regular and scheduled maintenance purposes or to maintain supply where parts of the network require repair or

maintenance. For example, where a substation needs to be taken offline temporarily for repair or maintenance.

- 7.2 In the course of preparing this evidence, I asked Top Energy to describe the typical run times of generators so that I could assess whether I support the exemption.
- 7.3 I understand that the generators are very expensive to run, so they are used for the shortest duration practicable. I also understand from Top Energy that they run for maintenance during the day and are very seldom run at night during planned network maintenance.
- 7.4 Paragraphs 4.8 to 4.12 of Mr Fernandes evidence describes the typical use. In summary:
- (a) The permanent generators are typically run for:
 - (i) Around 5 hours per year for scheduled maintenance. Sometimes longer than this is required if there is a fault or repair required.
 - (ii) A typical total of 24 hours over two days every year for planned maintenance on the 110kV line, between the hours of 7am and 7pm; and
 - (iii) Infrequent use for an additional 24 hours per year for irregular / variable network maintenance activities which are likely to occur every two or three years at a time.
 - (iv) This totals around 29 hours per year every year, and every two to three years the total could be 53 hours per year.
 - (b) Mobile generators are typically run for around 20 hours per year, per site, and typically between the hours of 7am and 7pm. The sites will vary considerably for these generators.
- 7.5 Notwithstanding the above, I also understand from Top Energy that a degree of flexibility is required because although these figures are typical and based on actual historical usage, there can be unexpected reasons why they might have to run for longer periods. These reasons could include a fault with the generator that requires a repair, unexpected maintenance requirements on the network (for example where network components deteriorate earlier than expected), and possibly other reasons that are difficult to foresee.

- 7.6 For these reasons, I understand that Top Energy would find it impracticable to work to a cap on hours per year. Such a cap would require the hours on every generator to be counted and tracked at all times, with all emergency use and other use not covered by the exemption to be subtracted from each generator total. I understand that this would be very onerous.
- 7.7 I consider that the usage described by Top Energy is very occasional and very temporary when compared to a permanent activity, or even a construction activity.
- 7.8 I consider that any noise effects will therefore be temporary and mostly limited to daytime, except in exceptional circumstances.
- 7.9 I also understand that noise from the permanent generator installations will be compliant with the noise conditions in Top Energy's consents or designations, and that noise levels that are not compliant would be very unusual.
- 7.10 I therefore expect that the exemption will apply mostly to the use of mobile generators.
- 7.11 I support an exemption that does not limit the number of hours of use on the basis that the use is very infrequent over a year, mostly during the day and temporary and for the purposes described in the exemption.

8 RECOMMENDATION

- 8.1 I have worked with Mr Badham to develop some revised wording for the exemption. The final wording is set out in Mr Badham's evidence and is repeated below:

Noise Chapter Notes:

S42A recommended wording = **additions underlined text deletions ~~strikethrough text~~**

David Badham recommended wording = **additions underlined text deletions ~~strikethrough text~~**

"The noise rules and effects standards do not apply to noise generated by the following activities:

1. ...
8. the use of generators and mobile equipment (including vehicles) **where they are operated by emergency services or lifeline utilities as defined in the Civil Defence Emergency Management Act 2002** for:
 - a. emergency purposes; **including**
 - b. testing and maintenance; **or**
 - c. the ongoing supply of electricity during planned maintenance on the electricity network.**

~~not exceeding 48 hours in duration, where they are operated by emergency services or lifeline utilities; provided that the use of generators for testing and maintenance purposes is limited to a cumulative time of 12 hours per year;~~
9. ..."

Jon Styles
7 October 2024