

HEARING SUMMARY – SIIRI WILKENING – NOISE AND VIBRATION – SOUTHDOWN SITE

1. This summary statement relates to the two statements of supplementary evidence that I have provided in relation to the Southdown Site. The first summary statement relates to noise emitted from the gas release valves. The concern raised by Mr Flexman is that the noise might startle drivers. The second statement relates to vibration, and the potential for traffic vibration from the EWL to increase turbine tripping and to increase wear and tear on equipment. This matter was raised during the Southdown specific conference held on 13 July 2017.

Noise from the gas release valves on the Southdown Site

2. Based on the information that I have read in various acoustic reports and AEEs relating to the consenting of the turbines on Site, I understand that:
 - (a) Noise from the operation of the turbines is governed by the resource consent conditions, with a boundary noise limit of 70 dB L_{A10} . Based on this level, and assuming that a noise wall is constructed along the edge of the road, noise on the shared use path would conservatively be up to 53 dB L_{A10} and outside a vehicle up to 55 dB L_{A10} . Both those levels are lower than noise experienced within and next to traffic.
 - (b) Noise from turbine start up and associated valve purging, which would be intermittent, was controlled in the 1995 land use consent to 90 dB L_{Amax} at the boundary. Based on this level, and assuming that a noise wall is constructed along the edge of the road, noise on the shared use path would conservatively be up to 75 dB L_{Amax} and outside a vehicle up to 77 dB L_{Amax} . Both those levels are similar to, and lower than, noise experienced within and next to traffic.
3. I consider that noise from the Southdown Site, if it is compliant with the consent conditions, would be at a level similar to other noise sources within traffic, e.g. car horns.

EWL traffic vibration to Southdown Site

4. The risk experts considered that there may be a perceived risk of generator tripping due to traffic vibration being transmitted from the EWL bridge to the Southdown site. I reviewed this issue and concluded that;
 - (a) The vibration sensitivity and trip settings for Southdown equipment, as provided by Mercury, is magnitudes above any potential EWL traffic vibration that may be experienced on the site.
 - (b) The transmission of traffic vibration from the bridge structure through the ground into the turbines will be below the vibration levels that would be caused by on-site vehicles and equipment, would generally be imperceptible and below the tripping criteria provided by Mercury by orders of magnitude.
 - (c) The risk of turbine tripping due to road traffic vibration is negligible (approaching zero).

Conclusion

5. Overall, I consider that noise emissions from turbine start up at the Southdown site can be mitigated by means of a road noise barrier, to avoid reverse sensitivity effects such as startling drivers. Noise levels, with the barrier in place, would be similar to other noise sources experienced in traffic.
6. Traffic vibration from the EWL would be at levels magnitudes below those that may cause equipment tripping, and any risk is negligible (approaching zero).