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6th August, 2014

Ms Karen Jones
Director, Infrastructure Projects,
Development Assessment Systems & Approvals
NSW Department of Planning & Environment
Sent by email
karen.jones@planning.nsw.gov.au
cc Planning Minister, Hon Pru Goward
cc Andrew Gee, MP

Dear Ms Jones

Re: WELLINGTON GAS FIRED POWER STN - MP06_0315 MOD 2

Mr Nat Barton, owner of heritage listed "Nanima" has asked me to write to you concerning the above project, and specifically the likely effectiveness of the proposed modifications, designed to reduce the noise impact from the proposed gas turbines.

Despite the proposed modifications to both the turbines and the proposed noise barrier, Mr Barton is still very concerned about the impact of infrasound, low frequency noise (ILFN) and vibration on his home's amenity and on his own health.

I share his concerns for himself and other members of the community who are located within the acoustic impact zone of this development, because of what I know about what happened at Uranquinty power station, in NSW near Wagga. The precise distances of the acoustic impact zone from this design of turbine is unknown, because there is no public data I can find relating to the exact noise emissions (rather than models) from these turbines in frequencies below 200 Hz, particularly in the infrasound and very low frequency noise part of the sound spectrum. These frequencies are particularly penetrating, and the proposed sound barrier for Nanima therefore may not prevent the symptoms of "annoyance" which include repetitive sleep disturbance.

Residents' reports at Origin Energy's Uranquinty gas fired power station, (prior to being silenced with non disclosure clauses as part of their property buy out agreements), suggest that there was a significant infrasound and low frequency noise component involved in the noise emissions. However in the absence of adequate public information about either the resident's experiences, or the full spectrum of acoustic emissions inside and outside their homes, the likely emissions and impacts of the proposed Wellington development remain unknown.

Mr Barton is well aware of the expensive planning and noise pollution regulation debacle at Uranquinty Gas Fired Power Station, despite the best attempts of those responsible to ensure that those affected (residents) or professionals (acousticians) were all silenced with non disclosure clauses. I heard directly from some residents, before they signed their non disclosure clauses, and the symptoms and health problems were identical to those described by Professor Geoffrey Leventhall as “annoyance” resulting from exposure to environmental low frequency noise.¹ Their symptoms included those of repetitive sleep disturbance as well as physiological stress. Both these adverse health effects (chronic sleep deprivation and chronic stress) have serious longterm consequences and are well known to clinical medicine to result in degraded health and wellbeing, and to result from excessive environmental noise, so this is not unexpected.^{2 3 4 5 6 7 8}

The facts remain that at Uranquinty, numerous families (ten according to Mr Barton) were forced from their homes because of excessive and health damaging noise pollution in the low frequencies below 200 Hz, **resulting from underestimation of the noise emissions in the planning stage of that development**, and therefore underestimation of the likely adverse health impact when that gas fired power station development was approved by the NSW Department of Planning.

It would seem that history is repeating itself, again, this time at Wellington.

Non disclosure clauses have prevented public transparency about the nature and severity of the subsequent noise impacts resulting from the decision to approve that type of development in that location, close to homes, in a quiet rural environment. This has the unfortunate effect of ensuring that we cannot learn from previous mistakes, and the lack of public transparency allows proponents of similar developments such as this proposed Wellington gas fired power station to infer there is no or little adverse health impact from the ILFN and vibration, when the actual reality in quiet rural areas is that the impacts can be significant, and incompatible with remaining living in one’s home if people are badly impacted by, and sensitized to, the impulsive nature of the sound energy. **The NSW Department of Planning is well aware of the outcome at Uranquinty, and I would have thought would be giving serious consideration to the adoption of a truly precautionary approach to this development, given previous experiences at Uranquinty.**

I note that current President of the Australian Acoustical society and Australian Low Frequency Noise Acoustic expert Dr Norm Broner has suggested that homes should be at least 1.5 - 2km away from these developments, in an article entitled “Power to the People” which was part of a paper delivered at a conference in the UK in 2012.⁹ I also note that some of the seriously affected households at Uranquinty lived **further than 2km** from the gas fired power station. There was a clear dose response relationship and evidence of a direct causal effect between sound emissions and “annoyance” symptoms (which were intolerable in their impact), just as Dr Neil Kelley et al found in 1982 in the USA.¹⁰

Apart from Mr Barton’s close proximity at 700 metres, I am also very concerned about the proximity of the Wellington township to this proposed development, with sensitive receptors such as the nursing home, and the closeness of the Wellington Correctional facility, (all within 3-5 km away according to Mr Barton). If residents who are inmates of the jail are particularly sensitized to the LFN over time, they will be unable to escape its adverse impacts on health and sleep. This could put Australia (NSW) in clear breach of the Convention against Torture and other cruel inhuman and degrading treatment, particularly if the sound

¹ <http://waubrafoundation.org.au/resources/review-published-research-low-frequency-noise-leventhall/>

² <http://waubrafoundation.org.au/resources/berglund-hassmen-job-sources-and-effects-low-frequency-noise/>

³ <http://waubrafoundation.org.au/resources/goines-l-hagler-l-noise-pollution-modern-plague/>

⁴ <http://waubrafoundation.org.au/resources/health-effects-environmental-noise-other-than-hearing-loss/>

⁵ <http://waubrafoundation.org.au/resources/roberts-c-ecoaccess-guideline-for-assessment-low-frequency-noise/>

⁶ <http://waubrafoundation.org.au/resources/who-night-noise-guidelines-for-europe/>

⁷ <http://waubrafoundation.org.au/resources/who-burden-disease-from-environmental-noise/>

⁸ <http://waubrafoundation.org.au/resources/berglund-b-lindvall-t-community-noise/>

⁹ <http://waubrafoundation.org.au/wp-content/uploads/2013/03/Broner.pdf>

¹⁰ <http://waubrafoundation.org.au/resources/kelley-et-al-methodology-for-assessment-wind-turbine-noise-generation-1982/>

energy frequencies cause repetitive sleep disturbance, which itself has been clearly acknowledged as torture by both the Committee Against Torture¹¹ and the Physicians for Human Rights.¹²

Knowledge of the impacts directly caused by impulsive sound energy in the lower frequencies (not currently monitored by the NSW EPA) can be seen in the 1982 paper by Dr Neil Kelley and his colleagues,¹³ which compared the impacts of the impulsive nature of the sound from wind turbine noise with that from a gas fired power station. The impulsive sound energy penetrates through building structures, and can resonate and amplify, increasing the negative health impacts perceived by the residents. The negative health impacts are generally known as “annoyance” which understates the severity of the recognized impacts which include repetitive sleep deprivation – itself well known to cause downstream physical and mental health problems.

As you may be aware, the Waubra Foundation is concerned about excessive noise pollution, particularly in the lower frequencies, regardless of the source of the noise. To date the investigative acoustic field work we have commissioned or facilitated has predominantly been near industrial wind turbines, due to the volume of complaints received from those residents. So apart from information received about Uranquinty, and from residents adversely impacted by noise and vibration from gas fired power stations at Port Campbell and Laverton in Victoria, we rely on the measurements and public statements of others with more experience and direct measurements in this area. Unfortunately, because of the non disclosure clauses, there is no transparency about either the acoustic emissions or their impacts on people. This use of non disclosure clauses in subsequent property buy out agreements and agreements with acoustic consultants working for the noise polluters is against the public interest, and perpetuates the ignorance of the impacts amongst the health professionals at the front line of treating these symptoms and subsequent illnesses.

We note the consequences of approving noise polluting developments on neighbouring communities are complaints of excessive noise and regular repetitive sleep disturbance, along with a range of other predictable adverse health effects from chronic stress. This may also result in subsequent litigation if the approving authorities were warned of the likely impacts and ignored those warnings, resulting in predictable harm to human health.

In 2013, the NSW Land and Environment Court refused a future mine extension because of coal mining noise, amongst other issues.¹⁴ The Warkworth decision specifically noted the significant noise impacts on residents, the inappropriate noise criteria and noise control measures for the project, resulting in severe and unacceptable adverse health impacts which have also been documented by others elsewhere in the Hunter region, in many instances still not resolved.¹⁵

The Waubra Foundation is helping a number of these residents obtain access to independent full spectrum noise and vibration monitoring, as the current system of the noise polluters contracting acousticians to investigate is not trusted by the residents, who frequently report that during the monitoring period the mine operations are not as active, with immediate and noticeable increases in the noise impacts when the monitors are removed. This is one reason why the Foundation is advocating that there needs to be continuous full spectrum noise monitoring (and vibration) and that the results should be made publicly available to all interested parties. It is also our view that the requirement and the cost of such acoustic monitoring (independent of the noise polluter) should be made clear at the project approval stage.

In closing, the Foundation considers that this development, in this location, even with the proposed modifications, will be likely to cause adverse health impacts to vulnerable people residing in the township of Wellington and the correctional facility over the life of this project, as well as Mr Barton under specific

¹¹ <http://waubrafoundation.org.au/resources/un-convention-against-torture/>

¹² <http://physiciansforhumanrights.org/library/reports/leave-no-marks-report-2007.html>

¹³ <http://waubrafoundation.org.au/resources/kelley-et-al-methodology-for-assessment-wind-turbine-noise-generation-1982/>

¹⁴ <http://www.caselaw.nsw.gov.au/action/pjudg?jgmid=164038>

¹⁵ <http://waubrafoundation.org.au/resources/rich-land-waste-land-how-coal-killing-australia-sharyn-munro/>

meteorological conditions, particularly temperature inversions, where the wind is blowing from the gas fired turbines to the homes / facilities.

This proposed project is simply too close to human habitation, and the proposed barrier will not prevent the adverse health impacts if the frequencies are in the very low part of the sound spectra. The unexpected unintended impacts at Uranquinty resulted in up to ten households having to leave their homes and being silenced.

I see no reason for the same mistakes to be repeated at Wellington, particularly when the NSW Government is already aware of them.

I repeat, this practice of hiding essential acoustic information via nondisclosure clauses, in contracts with powerful noise polluters, is against the public interest.

Yours sincerely

Sarah Laurie
CEO

Attachments: (please download at the listed links)

1. Revised Acoustic Pollution Assessment Requirements from March 2013
<http://waubrafoundation.org.au/about/acoustic-pollution-assessment/>
2. Kelley et al 1982 <http://waubrafoundation.org.au/resources/kelley-et-al-methodology-for-assessment-wind-turbine-noise-generation-1982/>
3. Broner, N 2012 "Power to the People" <http://waubrafoundation.org.au/wp-content/uploads/2013/03/Broner.pdf>