

JLCI response to Port Authority's Glebe Island and White Bay Draft "Port Noise Policy"

Executive Summary and index.

As industries left Pyrmont in the 1990s the State Government resolved to redevelop the area as mixed use residential and commercial precinct. Jacksons Landing at the northern end of the Pyrmont Peninsula was planned and created as a residential complex overlooking Jones Bay and Glebe Island with a masterplan of landscaped parks and gardens, renovating industrial buildings where possible, adding new contemporary designs. The first residents moved in in 2000. By 2013 when all residential buildings were complete, a community of some 2,500 residents occupied 1,400 apartments, terraces and town houses. The population of the Pyrmont – Ultimo area now exceeds 22,000.

The Port Authority has drafted a Port Noise Policy (PNP) which heavily favours port activities over the environment and local communities. The attitude that has produced this outcome is revealed on page 26 of the draft which refers to the Jacksons Landing apartment buildings as having "*encroached on the port.*" This indicates that the Port Authority views the apartment buildings as interlopers. The residences should not have been built where they are, and they should not interfere with the running of the port. This apparent view continues through the whole document.

The Port Authority's description is a de facto admission that something has gone wrong here with government planning. The government has allowed over a thousand apartments to be constructed directly opposite Glebe Island. Design requirements dictated that the buildings be well insulated against noise. However, the extensive balconies and windows fronting the water indicate that a future reindustrialisation of Glebe Island and a major escalation of bulk materials handling vessels was not contemplated. That is now history. The apartments were built and, contrary to the Port Authority's apparent preference, the thousands of people living in them cannot now be ignored.

Summary of our key concerns about the draft Port Noise Policy (PNP)

- A. **Attempting to unduly influence the EPA:** The Port Authority seems to be seeking to coerce the Environmental Protection Authority (EPA) and other regulatory authorities to ensure that Environmental Protection Licences (EPLs) and similar licences do not independently impose noise controls, in spite of the clearly expressed concerns of local residents. We believe the Port Authority is trying to exert undue influence on the EPA to comply with its wishes. (Page 3)
- B. **Raising effective noise limits via the dual noise source approach:** The PNP treats landside precinct activities and vessels as distinct sources of noise and applies different regimes to them. This creates complexity and allows higher effective noise limits. (Page 4)
- C. **The narrow scope of the PNP:** The PNP is restricted in its scope to ships at berth, the MUF and the Proposed Hanson Concrete Plant. It specifically excludes ships arriving and departing, which are known from experience to be a major source of peak noise and sleep deprivation. It should cover the cumulative effect of noise from the MUF, the proposed Hanson Concrete Plant (if approved), associated shipping activities, the Western Harbour Tunnel and Rozelle Interchange support and construction sites, fabrication activities on Glebe Island and the future Metro Rail station recently announced. (Page 5)

- D. **Excessive nominal noise limits:** The proposed limits are well in excess of the Port Authority’s existing Environmental Protection Licence for Glebe Island, the Port Authority’s own noise policy for the White Bay Cruise Terminal (WBCT), standards adopted in many overseas jurisdictions, and World Health Organisation recommendations. The proposed limits are in excess of noise levels caused by ships in the past, both in port and arriving/departing, that are known from experience to cause sleep deprivation, even with doors and windows closed. (Page 7)
- E. **The flawed noise setting methodology:** The methodology of setting noise limits is either missing or flawed. The limits seem to be determined solely by reference to what is achievable for the Port Authority and its clients without regard to environmental impact. (Page 11)
- F. **The scope of the industrial interface.** The PNP assumes that all of Jacksons Landing is an urban industrial interface because this would allow the Port Authority to set higher noise limits. Further work is required to determine whether there is in fact an industrial interface in this area and the PNP needs to include new, lower noise limits for receivers not in such an interface. Jacksons Landing is a high-density residential community, which has experienced a low frequency of ships during the last decade. (Page 12)
- G. **Raising the vessel noise limits via the Vessel Noise Operating Protocol:** The additional noise margins in the Vessel Noise Operating Protocol have the effect of significantly raising the true noise limits for vessels. Like so much of this PNP, its overriding objective appears to be to protect the Port Authority’s tenants rather than the environment. (Page 13)
- H. **The failure to recognise Sundays and Public Holidays:** The PNP fails to recognise Sundays and public holidays as days when noise should be restricted to avoid disturbing thousands of nearby residents in Balmain, Glebe and Pyrmont. (Page 14)
- I. **Abandonment of an evening time period for vessel noise:** The Port Authority ignores its own WBCT noise policy and EPA policies which distinguish between evening and night and set lower noise limits for the former. The apartments at Jacksons Landing all have balconies. People spend time on these balconies, particularly dining in the evenings. Accordingly, the distinction between evening and night is an important one. (Page 14)
- J. **No real limit to noise limits or consequences for exceeding them:** As a result of numerous exceptions, concessions, and discretions, for all intents and purposes there is no daytime limit on vessel noise in the PNP. It is important to remember that for the purposes of the PNP ‘daytime’ is 7 am till 10 pm. (Page 15)
- K. **Unjustifiable restrictions on lowering vessel noise limits in future:** The PNP specifies that any reductions at the time of a review will not exceed 2 decibels and in no circumstances will the noise limit fall below 50 decibels. What possible basis is there for the Port Authority limiting its ability to reduce noise pollution in this way other than protecting its tenants? This is directly against the interests of the public. (Page 16)
- L. **Ineffective compliance regime:** There are multiple layers of ‘management’ before the Port Authority takes any meaningful punitive measures. It would be difficult for a vessel to get itself banned for excessive noise. The process would take a long time. The contrast with the White Bay Cruise Terminal noise policy is stark – *“A third occurrence of Excessive Noise by a vessel will have the consequence that the vessel will no longer be permitted to utilise the WBCT facility.”* If a vessel exceeds a noise limit by one decibel on three occasions, it is banned. How is it possible that the policies could be so different when the venues are only a few hundred metres apart? (Page 17)

- M. **Noise mitigation ignored as it is considered too difficult:** The PNP is primarily about setting and justifying ‘achievable’ noise limits. It proposes no meaningful mitigation measures. Indeed, it sets out ‘reasons why’ mitigation is not possible. It favours only the Port Authority and completely ignores the need and welfare of residents. (Page 18)
- N. **Ignoring the possibility of a curfew:** The failure of the PNP to address the curfew option is yet another example of inconsistency between the PNP and the EPA’s Noise Policy for Industry (NPI) that the PNP purports to be guided by. Page 23 of the NPI lists various strategies for “Best Management Practice” including “*scheduling the use of noisy equipment at the least-sensitive time of day*” and “*not operating, or reducing operations at night*”. On page 26 the NPI identifies “times of operation” as a mitigation measure. Residents have been raising the curfew issue for more than two years. Sydney Airport has a curfew. By excluding ships arriving and leaving from the PNP, it is like proposing an aircraft noise policy that only considers the noise of planes on the ground at the airport. (Page 19)
- O. **No reference to fitting silencers and/or other similar vessel modifications:** Page 14 of the PNP – “*There are currently no international or national environmental design criteria for noise emissions from a vessel to manage noise levels at nearby sensitive receivers.*” The PNP is effectively saying that vessels themselves offer no prospect of facilitating noise mitigation – ‘it is out of our hands; there’s nothing we can do’. This is self-evidently incorrect. Vessels can be modified to improve performance. Any equipment that deteriorates with age can obviously be repaired or replaced. (Page 22)
- P. **No exclusion for “crane and bucket” unloading:** The EPA made a submission in the REF about the potential for crane and bucket unloading to create excessive noise. Elsewhere the Port Authority has stated that crane and bucket unloading will not be used. This needs to be spelled out in the Noise Policy so it cannot be used by any ship at any time in berths G1 and G2 (Page 22)
- Q. **No reference to the orientation of vessels:** The PNP acknowledges that “a vessel may emit 10dBA more noise out of the port side than the starboard side due to fan orientations.” The PNP needs to include a specific requirement that vessels berth in the ‘quietest’ direction. A mechanism for monitoring compliance with this requirement should be clearly defined. (Page 22)
- R. **The absence of Port Authority provided at-receiver attenuation:** The WBCT noise policy includes a noise attenuation program. A similar program needs to be included in the PNP which relies heavily on at-receiver attenuation at Jacksons Landing. In addition to the cost of noise mitigation measures, there will also be the costs of physical health issues, mental health issues and a reduction in property values, all of which have to be paid by residents, directors, regulatory authorities, or ultimately the tax payer. (Page 23)
- S. **Conclusion** (Page 23)

JLCI response to Draft Glebe Island and White Bay Port Noise Policy Review

A. Attempting to unduly influence the EPA.

Page 1 – “Port Authority of New South Wales (Port Authority) has considered previous community feedback about port noise and has worked **in consultation with the Environment Protection Authority (EPA)** to develop the new Port Noise Policy.”

Page 4 – “The environmental criteria specified in this policy are intended to be incorporated by approval authorities in planning approvals and **environmental protection licences**.”

Page 8 – “Where agreed with regulators and approval authorities the outputs of these guidelines may be incorporated into the following for port developments: • conditions in planning approvals and • Environmental Protection Licences issued by the EPA.”

Our concerns:

The PNP refers constantly to the involvement of the EPA and to the reliance of the PNP on EPA analysis. The EPA is mentioned more than a hundred times. This could be viewed as an attempt both to give the PNP environmental credibility and to lock the EPA into compliance with the PNP in the future. It could constrain what the EPA puts in its EPLs and restrict other noise-limiting activities. The reality is that there are many aspects of the PNP that are inconsistent with EPA analysis, including the NPI, and the PNP would allow noise limits well in excess of existing EPA EPLs.

B. Raising effective noise limits via the dual noise source approach

The scope of the PNP is limited to “port noise originating from port activities at Glebe Island and White Bay”. It then adopts a dual noise approach to “port noise” by distinguishing between landside activities and vessels as different sources of noise. The PNP goes to great lengths to argue that this dual noise source approach, rather than some kind of cumulative approach, is the only workable basis for analysing and managing noise in this case.

Our concerns

The PNP purports to observe the principles of the EPA NPI and yet by drawing a distinction between vessel noise and landside noise, it sets no cumulative noise limits.

Page 2 – “While the [existing NSW] guideline did have a cumulative assessment approach, it was not well suited to an active and dynamic port environment where vessel berthing activities resulted in transient background noise levels and impacts.” “Compliance with noise limits set under the existing guidelines has generally been problematic given they use industrial noise criteria that were not specifically based on vessel noise.”

Page 7 – “The application of existing NSW noise policy to a port holds some unique challenges as there are significant differences between a port and an industrial site.” Page 7 lists various differences between a port site and an industrial site.

Vague assertions that a cumulative assessment is “not well suited” and that there are “unique challenges” are meaningless. They represent no valid justification for the approach adopted. When the primary issue is the adverse impact of noise, the specific manner in which that noise is generated is irrelevant. The key issue is simply the cumulative quantity of the noise.

All the discussion contrasting port and industrial sites could be construed as an attempt to manufacture a justification where one does not exist. It is disingenuous at best. The EPA does not accept this distinction in its NPI which refers to “major clusters of industries, for example ports”. Page 18 of that document also refers specifically to ports. That document, which is about “managing noise from industrial activities”, indicates that the EPA considers a port to be industrial.

Note that the document 'Noise as an environmental challenge for ports' issued by the Baltic ports states on page 22 that "As port noise is classified as industrial noise, the noise emissions from a vessel become industrial noise as soon the vessel enters the water area of the port."

(http://projects.centralbaltic.eu/images/files/result_pdf/PENTA_result4_noise.pdf)

The result of the PNP's dual noise source approach is that the landside precinct and the vessels are treated separately and, in particular, each has its own noise limit. When you apply two limits, the result is an effective combined limit greater than the individual limits. Take the example given in Appendix G, page 11 – "*The outcome was the 50dBA assigned to the previously approved MUF was split evenly into two to provide the batching plant and proposed MUF a maximum permissible noise level of 47dBA under the precinct.*" In other words, if each plant operates at 47dBA, the total will be 50dBA. The total is greater than each individual component. Accordingly, if the landside precinct generates noise at night at the 50dBA landside limit and vessels generate noise at the 55dBA vessel limit, the combination will be well in excess of 55dBA. The dual source approach means that the effective cumulative noise generated from the port may be well in excess of the individual noise limits set in the PNP.

This approach effectively facilitates much greater noise emissions than would otherwise be permitted. It conflicts directly with the EPA's views expressed on numerous occasions in the NPI –

"To limit continuing increases in noise levels from application of the intrusiveness level alone, the ambient noise level within an area from all industrial noise sources combined should remain below the recommended amenity noise levels specified in Table 2.2 where feasible and reasonable."

"The recommended amenity noise levels represent the objective for total industrial noise at a receiver location."

"The important parameters for predicting noise are listed below. These will set the boundaries of the noise prediction process. They need to be determined and clearly identified for noise impacts to be predicted adequately. The parameters are: • all noise sources related to the proposed development ..."

This is a major issue. The PNP seeks to use the dual source approach to facilitate exceptionally high noise limits, much higher than has previously been allowed by the EPA (for example in the NPI and the Port Authority's own EPL 13008) and well beyond levels that are considered safe by the World Health Organisation as discussed below.

There is also a technical question as to the feasibility of separately measuring noises from different noise sources in the same location.

C. The narrow scope of the PNP

In addition to adopting the dual noise source approach, the PNP expressly **excludes two major noise sources** from its scope.

Other landside activities

Page 9 – "*The Noise Management Precinct will not include the operations of construction projects and staging support being carried out on Glebe Island and White Bay.*"

The PNP's landside noise precinct will include the Multi-User Facility (MUF) and the Hanson concrete plant (if it proceeds). However, a number of new activities will commence on Glebe Island in the next twelve months including the Western Harbour Tunnel and Rozelle Interchange support and construction sites.

These are excluded from the PNP's landside noise precinct. In order to severely limit the application of the PNP, the Port Authority is proposing a partial precinct. This means that the actual landside noise levels experienced by local residents will be higher than the landside precinct noise limits set in the PNP. Once again, this approach is inconsistent with the EPA's policy in the NPI – *"The recommended amenity noise levels represent the objective for total industrial noise at a receiver location."* The key is noise at the "receiver location" not at a range of multiple sources.

Vessel movements

Page F5 – *"Noise levels associated with vessel arrival at and departure from berth (including preparation for) or vessel transit are excluded from noise assessments. This is because noise levels at this time may not be representative of noise emission from the vessel throughout the stay and may include noise from on-board engines, tugboats and essential processes relating to the safe departure and arrival of a vessel."*

This is a major exclusion and it seriously undermines the effectiveness of the PNP in its purported goal of managing noise. Local residents know from experience that ship movements and tugs after 9 p.m. are by far the greatest cause of peak noise sleep deprivation. This exclusion makes a nonsense of other parts of the PNP that analyse sleep disturbance.

It is ridiculous to exclude the noise made by vessels arriving and departing as 'not representative' of vessel noise. It is the impact of high, intermittent noise that is of major concern, particularly when ships are arriving and leaving. In applying a noise policy to a factory, it would be absurd to suggest that some noises made by the factory are 'representative' and some are not; that some would be covered and some would not. This is entirely inconsistent with the approach adopted by the EPA in its NPI, its EPLs and elsewhere. It seems to be yet another example of the Port Authority's desire to significantly restrict the application of the PNP.

The Port Authority has indicated that there will be 80 vessel berthings per year for the MUF. The figure for the Hanson plant is 120 vessel berthings per year. That equates to 400 vessels arriving and departing each year, or more than one a day. On that basis, the noise of vessel movements is clearly 'representative' of the noise generated by these developments.

It is equally ridiculous to claim that this exclusion is driven by 'safety' concerns. Self-evidently vessel movements must be undertaken safely. However, that does not mean that they should not be taken into account when developing an appropriate noise policy. As discussed further below, noise mitigation such as a curfew on vessel movements can be adopted without jeopardising safety.

Yet again, this approach of excluding noise from vessel movements is inconsistent with the EPA's policy in the NPI – *"The recommended amenity noise levels represent the objective for total industrial noise at a receiver location."*

It is also worth repeating the passage cited above from 'Noise as an environmental challenge for ports' issued by the Baltic ports states on page 22 that *"As port noise is classified as industrial noise, the noise emissions from a vessel become industrial noise as soon as the vessel enters the water area of the port."* There is no distinction between different types of noise emission from a vessel.

On the first page of the PNP is a statement that the Port Authority has listened to community feedback in developing its policy. There is little evidence of that. The fact that vessel movements represent the single greatest cause of sleep deprivation and the biggest cause of concern with the new Glebe Island developments has been a constant message given by local residents over a period of more than two years to the Port Authority, which seems to have completely disregarded this aspect of our concerns.

We note that the justifications used in the PNP – ‘unrepresentative’ noise and tug safety – are self-evidently specious arguments. There are many other such arguments used in the PNP and we find them exceptionally frustrating. It is as if the Port Authority was not expecting anyone to actually read the PNP. It is certainly not indicative of a publicly owned organisation taking seriously its responsibilities to the community.

Types of vessel noise

Page E3 – “The NSW EPA requires the consideration of other modifying factors such as tonality, intermittency and low frequency for industrial noise sources. Where parameters at a noise sensitive receiver exceed defined thresholds a penalty of up to 5dBA may be applied for each of these factors. Where there is more than one factor present the total value of penalties is capped at 10dBA. In contrast criteria in guidelines for other forms of transportation noise such as road traffic noise, rail noise and aircraft noise receive no penalties even though annoying characteristics, that may otherwise be subject to a modifying factor, may be present. This is because the modifying factors are an inherent part of the noise source and already considered in the transportation specific noise criteria under their respective guidelines and standards.”

This response is inadequate. The PNP seems to be saying that vessels should not have penalties because other forms of transport do not. However, tonality, intermittency, and low frequency are particularly problematic with the engines of vessels at berth overnight. They can be a major cause of sleep disturbance. The Port Authority clearly recognises that there is an issue here given the comments at page 6 of Appendix F – “An approach to manage low frequency noise will be developed following the implementation of this policy. ... The Vessel Target Noise Levels will be updated once approaches for low frequency noise have been established.” There is no indication of the timing for this.

D. Excessive nominal noise limits

The nominal noise limits

The key noise limits for the two noise sources are set out on page 11 of the PNP.

Table 3 ‘Vessel trigger noise levels’ - Vessels at G11&2

Day (LAeq, 15hr) (7am to 10pm)	60 dBA
Night (LAeq, 1hr) (10pm to 7am)	55 dBA
Night (LAmix) (10pm to 7am)	65 dBA

Table 4 ‘Port landside precinct noise criteria’

Day (LAeq, 11hr) (7am to 6pm)	60 dBA
Evening (LAeq, 4hr) (6pm to 10pm)	55 dBA
Night (LAeq, 9hr) (10pm to 7am)	50 dBA

As a preliminary point, we note that we refer to these noise limits as ‘nominal’ because they are not in fact the true noise limits set by the PNP. For example, the introduction to the ‘Port landside precinct noise criteria’ states – “The cumulative noise limit is outlined in Table 4. These criteria represent the total amenity noise level that all port landside activities collectively **must not exceed** following successive

industrial developments.” That is misleading. Page 11 is at the front of the PNP and represents a supposed summary of the crucial noise limits, the key feature of the entire document.

A reader looking to determine the environmental protection provided by the PNP would assume from this section that these noise limits would be the ‘worst case’ going forward even after “successive industrial developments”. However, page 8 of Appendix G states as follows – “Where the Collective Benchmark Noise Level is equal to or greater than the Cumulative Noise Limit, noise levels will be limited to no greater than the Cumulative Noise Limit **where feasible and reasonable.**”

In other words, the cumulative noise limit on page 11 is not in fact the true limit. There is no limit. This reflects the reality that nothing is binding in the PNP. This is just one example of how the PNP is constructed – a series of nominal limits upfront followed by numerous exceptions, concessions, and discretions. Some of these are discussed later in this document. Given the highly technical nature of acoustics, we have no doubt that there are more that we have not been able to identify.

The nominal noise limits are deeply flawed for the many reasons set out below.

The dual noise source approach

The dual noise source approach discussed above provides for the simultaneous application of separate noise limits to two different noise sources. That effectively allows cumulative noise levels in excess of the individual limits. For example, if the landside precinct generates noise at night at the 50dBA limit and the vessels generate noise at the 55dBA limit, the combination will be noise well in excess of 55dBA. For the ‘evening’ period, noise at the 55dBA limit for landside and the 60dBA limit for vessels will result in cumulative noise for receivers well in excess of 60dBA at 10pm. And that is without accounting for the noise contribution of vessel movements and other activities on Glebe Island not included in the landside precinct.

Environmental Protection Licence 13008

The Port Authority says that in developing the PNP it considered the “Environment Protection Licences for each of the premises for shipping in bulk licensed by the Environment Protection Authority in Glebe Island and White Bay”. One of those EPLs was issued by the EPA to the Port Authority – EPL 13008.

<https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=189420&SYSUID=1&LICID=13008>

Page 7 of EPL 13008 addresses noise -

“L2.1 Noise from the premises must not exceed the noise limits (measured in dBA) at locations specified in the following tables. For the purposes of this condition the terms 'evening' and 'night' have the same meaning as described in the NSW EPA - Industrial Noise Policy.

Evening

Location	Evening LA eq (15 minute)	Evening LA eq (Evening)
Pyrmont	53	50

Night

Location	Night LA eq (15 minute)	Night LA eq (night)	Night LA 1 (1 minute)
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These are *much lower* than the limits in the PNP – 50 in the EPL versus 60 in the PNP for the evening. 45 in the EPL versus 55 in the PNP for the night. These are huge differences. One acoustic engineering website says that “it takes a 10dBA increase before the average listener *hears double* the sound” –

<https://www.abdengineering.com/blog/perception-vs-reality/#:~:text=“Perceived”%20sound%20levels%20report%20how,and%20brain%20interpret%20the%20sound.&text=In%20fact%2C%20you%20have%20to,a%20far%20cry%20from%203dB.>

How does the Port Authority justify setting vessel noise limits double those in its existing EPA EPL? Why would the EPA agree to such a massive increase, particularly given that for more than a decade only a handful of vessels have berthed at GI 1&2 each year whereas the PNP will potentially apply to 200 vessels a year?

White Bay Cruise Terminal Operational Noise Management Plan

In recent years, the Port Authority has instituted a noise policy for the White Bay Cruise Terminal (WBNP). The noise limits in that policy are significantly lower than in the PNP. Based on the figures in Table 1 of the WBNP, the closest receiver is ‘Dockside’ apartments. For this receiver, the WBNP has a limit of 55 dBA for the ‘evening’ period from 6pm to 10pm and a limit of 46 dBA for the ‘night’ period. The equivalent limits in the PNP are 60 dBA and 55 dBA. Again, the obvious question is how does the Port Authority justify such huge differences? The difference at night of 9 decibels represents nearly twice the volume.

There are two other important points to note. First, there are many more people located close to GI 1&2 than is the case with the cruise terminal. Secondly, the WBNP is a much tighter regime without the many exceptions, concessions, and discretions that undermine the effectiveness of the PNP.

Overseas comparisons of noise levels

The PNP says that it considered New Zealand Standard 6809:1999, Acoustics – Port Noise Management and Land Use Planning. That document is now more than twenty years old and it employs a different approach based on “inner and outer noise contour control boundaries”. In any event, our preliminary advice is that this standard has been superseded in relation to vessels by NZ Standard 6802: 2008

<http://docs.niwa.co.nz/library/public/NZS6802-2008.pdf>

Page 9 of that standard states that, *except as provided in section 1.2.3*, it does not apply to matters covered in another standard. Section 1.2.3 states that “Where sound from *transportation* or construction is part of the ongoing sound emission from activities, it shall be assessed using this standard”. Page 28 of NZS 6802:2008 has upper noise limits at residences of –

Daytime 55 dB LAeq (15 min) Evening 50 dB LAeq (15 min) Night time 45 dB LAeq (15 min)

These are 15-minute measurements but are still lower than the limits in the PNP which are based on longer periods. The comparison would be greater still if the NZ standard used measurements for full periods.

In any event, the most appropriate NZ comparison with Sydney is Auckland. Noise control for the Port of Auckland is dictated by the Auckland District Plan:

<http://www.aucklandcity.govt.nz/council/documents/central/pdfs/part1408.pdf>

Part 14.8 of the Auckland District Plan addresses the “Port Precinct”. It states that “Noise arising from any activity (except construction or blasting activities) within the Port Precinct shall not exceed the following levels: ... when measured at or within the boundary of residential property ... On all days 7am to 11pm L10 55dBA ... On all days 11pm to 7am L10 50dBA L_{Amax} 75dBA ...”. These are lower than the PNP and incorporate *both* vessel and landside noise.

Page B4 of the PNP states that in Finland 55 Leq applies at all times. However, page 30 of the document ‘Noise as an environmental challenge for ports’ issued by the Baltic ports (including Helsinki, Finland)

http://projects.centralbaltic.eu/images/files/result_pdf/PENTA_result4_noise.pdf

gives the figures for Finland as 45 decibels at night for new areas and 50 for old. It also gives the figure of 45 at night for Estonia. All these figures are lower than those proposed in the PNP.

Page B5 of the PNP gives the following limits for Sweden – Day, Leq 50 Evening, Leq 45 Night, Leq 40. These are much lower than proposed in the PNP.

Page B5 also gives the following limits for the UK – Day, Leq Background+5dBA Evening, Leq Background+5dBA Night, Leq Background+5dBA.

Background usually refers to the “rating background noise level” or RBL. According to page 10 of Appendix D of the Port Authority’s REF.

https://www.portauthoritiesnsw.com.au/media/2887/180124-ref-final_appendixd.pdf

the relevant RBLs for Pyrmont are – Day 50 Evening 49 Night 47. Applying the UK approach of +5dBA, that would result in Day 55 Evening 54 Night 52. These are all lower than the PNP’s limits for vessels and lower than two of the three limits for the landside precinct. If the UK limits are based on a single source approach, they would be significantly lower than those in the PNP.

When considering the limits proposed in the PNP, it is also useful to refer to the World Health Organisation’s many pronouncements on the dangers of excessive noise and the need for appropriate limits in residential areas. See for example at page 61 – ““At night, sound pressure levels at the outside façades of the living spaces should not exceed 45 dB LAeq and 60 dB L_{Amax}, so that people may sleep with bedroom windows open.”

<https://www.who.int/docstore/peh/noise/Comnoise-4.pdf>.

For adverse health effects see: -

https://www.who.int/quantifying_ehimpacts/publications/e94888.pdf?ua=1

The European Environment Agency 2016 states that “During the night, environmental noise starting at L_{Anight} levels below 40 dB can cause negative effects on sleep to occur such as body movements, awakenings, self-reported sleep disturbance and, in addition, effects on the cardiovascular system that become apparent above 55 dB. All these impacts can contribute to a range of health outcomes, including premature mortality. The WHO has set a Night Noise Guideline level for Europe at 40 dB L_{Anight}.”

<https://www.eea.europa.eu/data-and-maps/indicators/exposure-to-and-annoyance-by-2>

In summary, the noise limits proposed in the PNP are too high. They make a mockery of the Port Authority’s claim that the PNP represents best practice.

How does the PNP justify such excessive and unsafe noise limits? It doesn't really try to. The closest it gets is at page G4 where it cites the EPA's Road Noise Policy to conclude that "*An internal noise level of 55dBA is considered unlikely to cause awakening.*" This is a classic example of the selective analysis evident throughout the PNP. It is useful to provide the wider context from that EPA document –

"The World Health Organisation report (2009) ... concluded that ... at LAnight, outside levels between 40 dB(A) and 55 dB(A), adverse health effects are observed, with many people needing to adapt their lives to cope; vulnerable groups are more severely affected ... and at LAnight, outside levels above 55 dB(A), adverse health effects occur frequently, and a sizeable proportion of the population is highly annoyed and sleep disturbed.

Cardiovascular disease risk rises, and public health is also threatened. The report recommends a long-term LAnight, outside noise guideline level of 40 dB(A), with an interim LAnight, outside target level of 55 dB(A). The interim target is only intended as an intermediate step in localised situations as health impacts, particularly on vulnerable groups, are apparent at this noise level."

From experience, it has become very clear to residents living opposite Glebe Island that any noise levels above 60 decibels cause people to wake up during the night, especially intermittent noise like ships arriving or leaving, even if doors and windows are closed.

E. The flawed noise setting methodology.

Page 11 of the PNP states that the noise trigger levels "*have been obtained from a review of median noise levels from vessels (refer to supporting data from previously published port noise measurements) and what is reasonable and feasible to achieve*". The supporting data referred to here is very revealing. It covers nine vessel visits over the last decade and, for evening and night periods, provides both actual noise measurements and predicted period assessments based on those actual measurements.

For the 'evening' period, the actual median was 54 dBA and the predicted median was 53 dBA. This compares with the evening noise limit in the PNP of 60 dBA. It is clearly a nonsense to suggest that the latter limit was "obtained from a review" of prior vessels. **Not one of the nine vessels exceeded 60 dBA on either an actual basis or a predicted basis. In other words, the PNP proposes evening limits that would not trouble any previous vessels. So much for 'best practice'.**

It is also worth noting that on several occasions the vessels covered by the historical data did trigger exceedances of EPL 13008 – see for example the CSL Pacific. That is because EPL 13008 sets higher environmental standards. The PNP proposes a serious reduction in those standards.

For the 'night' period, the actual median in the historical data was 54 dBA and the predicted median was 53 dBA. This compares with the night noise limit in the PNP of 55 dBA. Again, the PNP uses a figure well above the historical median. From the nine historical visits, only one gave rise to a prediction in excess of 55 dBA – 57 dBA for the CSL Pacific. That constituted an 'exceedance' of 11 dBA under EPL 13008. By contrast, it would only constitute a dBA exceedance under the PNP and in any event, for the reasons outlined below, would have no consequences for the vessel operator.

It is clear from this review of the historical data referred to on page 11 that that data has been used to ensure that the vessel noise limits are **high enough** not to cause difficulties for any vessel operators. This is what the PNP refers to euphemistically as "*what is reasonable and feasible to achieve*". **In other words, the noise limits have been determined by reference to what is achievable for the Port Authority and its clients without regard to environmental impact.**

This is reiterated in Appendix F which addresses vessel noise in detail. Page F8 states – “*Noise trigger levels are to be set in consultation with the EPA and DPI&E and based on the levels that can feasibly and reasonably be achieved by vessels visiting the port.*” And “*The Vessel Trigger Noise Level must always reflect reasonably achievable levels for vessels available to service Australia and specifically the tenants/operators of Glebe Island and White Bay.*” There is no reference here to the environmental impact or considerations of what is fair and reasonable, let alone safe, for local residents.

Page F8 also says – “*The Noise Policy for Industry identifies how to set alternative reasonable and feasible noise targets where standard noise target levels within the Noise Policy for Industry cannot feasibly and reasonably be met.*” However, it does not actually explain why those target levels cannot be met. It simply repeats on numerous occasions that they are not reasonable and feasible. In particular, it does not explain why much higher target levels are adopted in the PNP than in EPL 13008 which covers exactly the same type of activities.

Again, on page F8 – “*“Noise targets should generally not be unachievable as unachievable standards removes (sic) the incentive for an individual vessel to comply.”* This is a remarkable justification for setting low environmental standards. If they are too high, operators will not have an ‘incentive’ to comply with them. Environmental standards should be set at appropriate levels to protect the environment. It should not be a case of having to incentivise people to comply with those standards.

Yet again on page F8 – “*When setting the Vessel Trigger Noise Level it is permissible to take into account actions by frequently visiting ships to implement noise mitigation measures on board.*” What does this mean? That it does not matter if vessels are too noisy provided that the operators frequently implement mitigation measures? That the outcome does not matter as long as the operators are trying?

Page F11 continues the PNP’s permissive approach – “*The daytime Vessel Noise Trigger Level should be set at a level that facilitates maximum unloading rates for vessels, particularly those that may be subject to reduced or cessation of unloading restrictions. Permitting a vessel to discharge cargo at the maximum operational capacity will assist in reducing nighttime noise exposure by reducing the vessel’s overall length of stay.*” In other words, vessels should be allowed to be extremely noisy during the day in order to shorten their stay.

The Port Authority’s words indicate that it is bending over backwards in the PNP to impose the minimum restrictions possible on the vessels of its tenants and, more importantly, its potential tenants.

F. The scope of the industrial interface.

Page 11 states – “*The precinct criteria are applicable at the worst affected sensitive receiver and are equivalent to the Noise Policy for Industry’s amenity criteria for an **urban industrial interface**.*” The EPA’s NPI allows limits to be 5 decibels higher for an industrial interface. But is Jacksons Landing an urban industrial interface? The Port Authority assumes that it is. Without that assumption the above noise limits for the landside precinct would all drop by 5 decibels to 55, 50, and 45, a major improvement. Jacksons Landing is not an industrial interface. It is a high-density residential community, which has experienced a very low frequency of ships during the last decade.

Page 12 of the NPI defines an industrial interface as “*an area that is in close proximity to existing industrial premises and that extends out to a point where the existing industrial noise from the source has fallen by 5 dB or an area defined in a planning instrument*”. Therefore, those nearby buildings (or parts thereof) that are beyond the point where noise has fallen by 5 decibels may not be within an industrial interface.

This seems to be confirmed by page 16 of the NPI which states that *“Beyond the interface region (that is, beyond the point where noise has fallen by 5 dB) the recommended amenity noise level relevant to the receiver category that most describes the area (rural, suburban or urban) would apply.”* That would be the standard noise limit without the 5 decibels uplift for an industrial interface.

It may be that the Port Authority benefits from just analysing the position of the worst affected receivers because they are within an industrial interface. The Port Authority said in the REF that *“Due to the proximity and topography between residential areas and the working port area, noise levels have been reported by Port Authority to regularly exceeded noise criteria. On this basis the Port Authority considers the noise environment at the boundary of the port to be an industrial interface.”* This may be correct at the boundary but not for all of Jacksons Landing. The Port Authority does not apply the definition in the NPI.

Note that page 18 of the NPI states that *“Where it has been clearly demonstrated that the noise levels set out in this policy cannot be achieved in the short or long term due to the physical relationship between an industrial precinct and surrounding residential land uses (that is, due to existing legacy noise issues), the application of the industrial interface will be considered. Under these circumstances a planning instrument could be used to declare a zone around an existing and/or expanding industrial precinct as an interface zone. This would be done in recognition of the importance of the industrial land use and based on balancing social, economic and environmental considerations on a regional level.”*

However, nothing in the REF or the RtS indicates that the Port Authority has actually ever made or confirmed such a declaration.

As a matter of priority, the urban industrial interface issue needs to be reviewed. That will necessitate testing at various locations within Pyrmont to determine whether there is in fact an urban industrial interface and, if so, the extent of that interface. In addition, the PNP needs to set new, 5 dBA lower limits for receivers not in an industrial interface.

G. Raising the vessel noise limits via the Vessel Noise Operating Protocol

The 180-page PNP contains very little on monitoring and compliance. In relation to vessels, page 13 says – *“Port Authority will measure the noise level for all visiting vessels and initiate actions, outlined in the operating protocols, if exceedances occur.”* The relevant Vessel Noise Operating Protocol (VNOP) sets out the actions to be taken where exceedances occur. For the daytime period (7am – 10pm), exceedances of 0 - 3 decibels only ever trigger ‘notification’ and ‘data collection’. That is the case even where five or more exceedances occur. This ‘additional margin’ means that the effective noise limit until 10pm is at least 63 decibels, not the 60 decibels set in the Port Noise Policy document. (Given the dual noise source approach, together with the exclusion from the PNP of noise from vessel movements and other Glebe Island activities, the true noise limit may be closer to 70 decibels.)

If exceedances of 3 - 5 decibels occur, the worst case for the vessel operator is a ‘management plan’. However, this is only a requirement to prepare and, if necessary, amend a management plan. There are no financial penalties, operating prohibitions or other punitive actions. According to the VNOP, a vessel can continue to generate 5 decibel exceedances without any meaningful consequences. This means that *the effective noise limit until 10pm is at least 65 decibels.*

It is only after a vessel has committed exceedances of more than 5 decibels on four or more occasions that the vessel *might* finally be banned from returning. The VNOP provides one further out. A vessel is

banned “unless it can be demonstrated to Port Authority’s satisfaction that vessel has undergone adequate modification to significantly reduce noise levels below the Vessel Trigger Noise Level”.

For the nighttime period, the worst penalty for exceedances of 0 - 2 decibels on four or more occasions is to prepare “a management plan”. This means that the effective noise limit at night is at least 57 decibels, not the 55 decibels set in the Port Noise Policy Document.

It is only if exceedances of 3 – 5 decibels occur at night on four or more occasions that a vessel is finally subject to restriction. However, it is not banned from the port. It is still allowed to berth between 7am and 8pm and that restriction only applies “for the duration of the Corrective Action Notice”.

It can be seen that the additional noise margins in this compliance regime have the effect of significantly raising the true noise limits for vessels. Furthermore, the regime is remarkably patient in dealing with recalcitrant vessel operators. Like so much of this PNP, its overriding objective appears to be to protect the Port Authority’s tenants rather than the environment.

It is interesting to compare this regime with the Port Authority’s policy for the White Bay Cruise Terminal (WBCT). That policy contains no additional margins of 0 – 5 decibels.

<https://www.portauthoritiesnsw.com.au/media/3299/noise-restriction-policy.pdf>)

H. The failure to recognise Sundays and public holidays

In the NPI the ‘daytime’ period on Sundays and public holidays commences at 8am rather than the usual 7am. This is obviously to protect the amenity of local communities. The PNP needs to include this refinement.

I. Abandonment of an evening time period for vessel noise

The noise limits for the landside precinct cover three time periods – day (7am – 6pm), evening (6pm – 10pm), and night (10pm – 7am). However, for vessel noise there are only two time periods – day (7am – 10pm) and night (10pm to 7am). On this basis the limit of **60 dBA** applies right through to 10pm. (Compare that with the evening limit of 50 dBA in EPL 13008.)

The justification for having just two time periods for vessel noise is hidden away on page F5 – “*These time periods are broadly consistent with:*

- *NSW Government policies relating to transportation and industrial noise sources*
- *NSW legislation for state infrastructure (State Environmental Planning Policy (Infrastructure) 2007)*
- *Australian Standards used to set design levels or mitigate noise levels within commercial and residential buildings.”*

Which ‘NSW government policies’? Section 3.1 of the PNP says that in developing policy it looked at the EPA’s NPI and EPLs. The EPA’s NPI distinguishes between day, evening, and night. Page 8 of the NPI states – “It is widely accepted that noise is generally more disturbing in the evening and night because more noise sensitive activities occur at those times (such as socialising, relaxing and sleeping).” The PA’s existing EPL 13008 from the EPA also distinguishes between evening and night.

Why does the Port Authority ignore the EPA? The apartments at Jacksons Landing all have balconies, including many that directly overlook the water. People spend time on these balconies, particularly dining. Accordingly, the distinction between evening and night is a very important one. It will have a major impact on the amenity of residents if levels acceptable during the day are allowed right through until 10 pm. The Port Authority must recognise this but it does nothing to address the problem. It is only concerned with maximising flexibility and profitability for itself and its tenants.

In addition, the Port Authority's own noise policy on vessels for the WBCT adopts the day/evening/night division. That policy reflects day/evening/night noise limits in the Port Authority's approval to operate the WBCT. Those limits were assessed and approved under the *Environmental Planning and Assessment Act 1979*: - <https://www.portauthoritiesnsw.com.au/media/3295/operational-noise-management-plan.pdf>)

Significantly, the landside noise guidelines in the PNP also use the day/evening/night division.

How does the Port Authority justify an approach to time periods that is inconsistent with the EPA's NPI, the Port Authority's EPL for GI1&2, the Port Authority's own noise policy for the WBCT, the assessment and approval of the Port Authority's policy under the EPAA 1979, and the Port Authority's approach in the PNP to landside noise? This anomaly for vessel noise is patently absurd and unacceptable.

It is also more than a stretch to say that these time periods are "broadly consistent" with NSW State Environmental Planning Policy (Infrastructure) 2007. That legislation only has two references to the timing of noise. Regulations 87(3)(a) and 102 deal with requiring attenuation in residential bedrooms.

J. No real limit to noise limits or consequences for exceeding them

Vessels

Not only are the noise limits very high but in many cases they would not even apply. For example, page F15 states as follows – "*Note that for daytime, some vessels may exceed the daytime Vessel Trigger Noise Level and continue to operate if the management plan can demonstrate that the daytime operations reduce the overall night time noise exposure.*" In other words, the daytime limit would not apply if the reason that a vessel was making excessive noise was that it was unloading quickly in order to reduce nighttime noise. Given that vessel operators will often, if not always, be unloading as quickly as possible for cost and efficiency reasons, this 'concession' could be used by any operator challenged for making excessive daytime noise. Accordingly, for all intents and purposes there is no daytime limit on vessel noise in the PNP. And it is important to remember that for the purposes of the PNP 'daytime' is 7 am till 10 pm.

If that did not give operators sufficient comfort that they have nothing to fear from the Port Authority's noise policy, Page F14 states as follows - "*Noise from vessels is to be managed by the Vessel Noise Operating Protocol so that noise from the berth can reasonably be expected to not exceed the Vessel Trigger Noise Level on a consistent basis, without imposing unreasonable penalties on vessel operators or tenants.*" Therefore, noise levels can be excessive so long as it is "reasonable" to "expect" that it won't happen "consistently". Even if it does, noise should be managed "*without imposing unreasonable penalties on vessel operators or tenants*". The combination of these various concessions renders the vessel noise limits practically irrelevant. It is difficult to imagine what more the Port Authority could do to protect its tenants.

Landside

It also appears that the landside precinct limits are not binding because the collective benchmark levels (combining all operators) are allowed to exceed the cumulative noise limits, particularly with new operators. Page G8 states that *“In locations where the Collective Benchmark Noise Level is less than the Cumulative Noise Limit the application of noise mitigation will limit noise level increase to no higher than permitted under the Noise Policy for Industry where feasible and reasonable. Where the Collective Benchmark Noise Level is equal to or greater than the Cumulative Noise Limit noise levels will be limited to no greater than the Cumulative Noise Limit where feasible and reasonable.”* This means that the noise policy allows the actual collective noise level to exceed the cumulative noise limit if staying below it is not considered ‘feasible and reasonable’. In other words, the cumulative noise limits are effectively not binding and provide no protection to local communities.

Page G9 states - *“The collective benchmark noise level may increase as new maximum permissible noise levels are assigned to additional operators or upgrades to existing facilities. The collective benchmark noise level should not exceed the cumulative noise limit and any increases evaluated to ensure they do not result in an unreasonable noise impact compared to existing industrial noise levels from the port.*

Guidance on reasonable increases in industrial noise level will be taken from the Noise Policy for Industry which considers impacts from successive industrial developments.” This paragraph allows for the collective benchmark level to go up with new operators such that the collective benchmark level would exceed the cumulative noise limit.

Page H3 is similar – *“Benchmark Noise Level. This is the currently approved total noise limit from the port and is the sum of noise levels from all landside operations. All feasible and reasonable measures must be undertaken so that it does not exceed the Cumulative Noise Limit or increase, following a new operator or a port redevelopment, by more than permitted under the EPA’s Noise Policy for Industry.”*

The reference to ‘feasible and reasonable’ is constantly employed to provide exceptions.

Page H6 states – *“Under the Port Noise Policy existing noise limits will be reviewed to identify new Maximum Permissible Noise Levels with the goal of meeting the Cumulative Noise Limit.”* And page I4 – *“The Benchmark Noise Level currently (as at 2020) exceeds the Cumulative Noise Limit, however the Maximum Permissible Noise Levels have been set using existing noise limits for operators that predate the Port Noise Policy. In many instances the existing noise limits are higher than actual noise levels from landside activities which indicates there is opportunity to align them with lower noise limits. Under the Port Noise Policy existing noise limits will be reviewed to identify new Maximum Permissible Noise Levels with the goal of meeting the Cumulative Noise Limit.”* The references to ‘goals’ rather than firm limits provides yet another out.

The combination of all these various concessions and uncertainties means that the purported noise limits in the PNP would have little actual application. One can only assume that this is intended by the Port Authority to assuage any concerns of potential tenants that they might be troubled by environmental restraints.

K. Unjustifiable restrictions on lowering vessel noise limits in future

The Port Authority will do reviews from time to time but only make changes if it considers them feasible and reasonable and of course it will consult with the tenants and vessel operators. To give them additional comfort, the Port Authority guarantees in the PNP to limit changes as *“in any case not reducing the Vessel*

Trigger Noise Level by more than 2dBA during each review period". The PNP goes on to say that "The ultimate noise trigger following multiple 2dBA (maximum incremental) reductions is 50dBA". In other words, the Port Authority is restricting both incremental and long-term improvements. Any reductions at the time of a review will not exceed 2 decibels and in no circumstances will the noise limit fall below 50 decibels. A maximum possible reduction over the long term of less than 10% seems inconsistent with 'best practice'.

The floor of 50 decibels is particularly challengeable. That level is described on page F13 as "the anticipated minimum noise level that could reasonably be achieved by vessels at this point in time. Any vessel noise reduction beyond 50dBA is not considered feasible given existing technology". The logical flaw in this reasoning is that 'Assessment of predicted noise levels' for a number of the vessels measured over the last decade for the purposes of the Port Authority's EPL 13008 have achieved below 50 dBA (and those are based on 15 minute measurements which are higher).

Take for example the MV Zambesi which had measured actual night time noise levels at the Pyrmont receiver location of 46 dBA and predicted noise levels of just 42 dBA -

<https://www.portauthoritiesnsw.com.au/media/3908/noise-monitoring-report-zambesi-24-25-november-2019.pdf>. See also the predicted noise levels for the CSL Brisbane of 48 dBA

(<https://www.portauthoritiesnsw.com.au/media/1292/noise-monitoring-report-csl-brisbane-27-28-february-2016.pdf>). And yet the PNP baldly asserts that such numbers "could not reasonably be achieved by vessels at this time" and "are not feasible given existing technology". We can only assume that these statements are incorrect and misleading.

Putting aside the flawed analysis, what possible basis is there for the Port Authority wanting to limit its ability to reduce noise pollution in this way other than protecting its tenants? This works directly against the interests of the public. This policy would likely create a legal estoppel argument for the tenants to prevent any future attempt to control noise. It would limit how much operators could ever be expected to do to reduce noise pollution and it would ensure that all the noisiest vessels are always used in Australia.

L. Ineffective Compliance Regime

As discussed above, the VNOP constitutes a very weak compliance regime in relation to breaches of the noise limits. There are multiple layers of 'management' before any meaningful punitive measures. It would be difficult for a vessel to get itself banned for excessive noise and if it did happen it would take a long time. The contrast with the WBCT policy is stark – "A third occurrence of Excessive Noise by a vessel will have the consequence that the vessel will no longer be permitted to utilise the WBCT facility." If a vessel exceeds a noise limit by one decibel on three occasions, it is banned.

<https://www.portauthoritiesnsw.com.au/media/3299/noise-restriction-policy.pdf>

There is also uncertainty of the landside noise limits being enforced. Page 13 of the PNP says – *"If noise levels from landside activities exceed the precinct criteria, Port Authority will require landside operators to verify and report on their noise emission. If a landside operator has exceeded their maximum permissible noise level, they will be required to reduce noise from their landside activities to meet their contractual commitments to Port Authority."* There is no reference to any form of penalty. Later, page G15 says – *"Port Authority will have the ability to enforce contractual obligations owed to Port Authority to keep noise levels within maximum permissible noise level by each landside operators under its contract with Port Authority."*

Again, there is no certainty of any adverse consequences for offenders.

M. Noise mitigation ignored as it is considered too difficult

The PNP is primarily about setting and justifying 'achievable' noise limits. It proposes no meaningful mitigation measures. Indeed, it sets out 'reasons' why mitigation is not possible. For example, page 16 –

“When assessing noise criteria and considering any noise mitigation for Glebe Island and White Bay the following reasonableness measures will be taken into account: -

- *the port infrastructure was constructed prior to any environmental noise criteria*
- *noise emissions from individual operators or proponents may be sporadic and/or seasonal which means that annual, seasonal and weekly noise exposure may vary, with quieter periods between vessel visits. (Note: the Port Authority’s own estimates are for more than 400 vessel movements per year, so there will be no “quieter periods”.)*
- *noise from an occupied berth may be reasonably consistent between different ship types or proponents over a period of many decades*
- *management of noise requires strategic planning of the port as a whole to manage noise from the individual operators. This requires individual proponents and operations to be located in places where they will create the least conflict with surrounding land uses*
- *landside operations may be shielded by the ship so that the noise from these operations is not as significant*
- *ports may be a natural amphitheatre limiting the effects of shielding, noting that vessel noise sources range from 0.5m to at least 25m above the waterline and receivers are often elevated by topography.”*

The PNP argues that mitigation is not appropriate because the 'port infrastructure' predates 'environmental noise criteria'. This is clearly not a valid argument. First, the MUF and the proposed Hanson concrete plant are new developments and cannot be exempt from any environmental controls simply because they are built in an existing port. Secondly, it cannot be the case that any infrastructure is permanently exempt from future environmental controls. The Port Authority seems to think that the port is somehow frozen in time and cannot be expected to change.

Equally absurd is the PNP's suggestion that no attempt should be made to mitigate noise emissions because the noise may be sporadic or seasonal. It is unclear what point the PNP is trying to make where it refers to the consistency of noise between different vessels over time or the need for *“operations to be located in places where they will create the least conflict with surrounding land uses”*.

The PNP identifies only two mitigation possibilities – shielding and shore power – both of which it dismisses in under half a page.

Regarding shore power, page 17 states – *“Shore power is often suggested as a solution to reduce ship noise. However noise emission from a vessel would still continue as shore power only eliminates the need for generators and not the on-board systems the generators are powering ... which can be significant noise sources. Shore power may provide a minimal reduction in noise depending on the specific vessel.”*

The experience of local residents is that it is the generators that emit far and away the most noise, particularly the noise that has sleep disturbing tonality and vibration characteristics. It is interesting that previously the Port Authority dismissed shore power on the basis that it was rare and not feasible. As shore power is rapidly taking off around the world (to the point that the Port Authority is reviewing the

issue for the WBCT), the Port Authority has now come up with another excuse to avoid it having to take any responsibility for mitigation.

The 2013 'Noise as an environmental challenge for ports' document issued by the Baltic ports provides some useful comments on 'onshore power supply (OPS) at page 26 – *“Despite its limitations, OPS is an upcoming technical solution, and OPS systems are being installed in ports around the world. OPS solutions will doubtlessly become more common during the next couple of years, and the tax reliefs already implemented in Sweden and some other countries will advance the development. Today, the ports and ship owners are both waiting for the other part to take the first step initiating the installation. It might be the ports taking the first steps, because OPS systems are required from them by the environmental authorities in a growing extent.”*

There is obviously no question of the Port Authority “taking the first steps”. Unfortunately, Australia appears to accept lower environmental standards than other developed countries. If the Port Authority was serious about 'best practice' it would be at least preparing for the move to onshore power supply which has already been adopted by dozens of ports overseas.

On page 17 the PNP falls back on the Port Authority's favourite argument against the port having to compromise or make any mitigation efforts, namely that 'at receiver' mitigation is the only form of mitigation possible in this case.

N. Ignoring the possibility of a curfew.

There are several realistic mitigation measures that the PNP needs to address. The standout one is curfews. Possibilities include curfews on landside operations, vessel unloading, and vessel movements. The closest that the PNP gets to this issue is the single reference on page 14 to “operational restrictions including hours of operation” as a potential landside mitigation option. Unfortunately, it is never mentioned again.

The failure of the PNP to address the curfew option is yet another example of inconsistency between the PNP and the NPI that the PNP purports to be guided by. Page 23 of the NPI lists various strategies for “Best Management Practice” including *“scheduling the use of noisy equipment at the least-sensitive time of day”* and *“not operating, or reducing operations at night”*. Again, on page 26 the NPI identifies “times of operation” as a mitigation measure.

Timing restrictions as a viable mitigation measure for ports is also supported in international materials – see for example page 170 of the OECD's 'The Competitiveness of global port cities':

https://read.oecd-ilibrary.org/urban-rural-and-regional-development/the-competitiveness-of-global-port-cities_9789264205277-en#page172

and page 24 of the Baltic ports 'Noise as an environmental challenge for ports'

http://projects.centralbaltic.eu/images/files/result_pdf/PENTA_result4_noise.pdf

As discussed above, the arrival at, and departure from, Glebe Island of vessels is the greatest cause of sleep disturbance for local residents. It is a major nuisance that would have a catastrophic impact on life in the more than 1,000 Pymont apartments directly opposite Glebe Island if allowed to occur 24/7.. The PNP refers on several occasions to the Port Authority having consulted local communities and yet it makes no reference at all to the major mitigation request of those communities – some form of curfew to limit noise at night. *Sydney Airport example*

The most obvious example of a curfew in Sydney is at Sydney airport. If what is arguably the single most important piece of infrastructure in Australia handling hundreds of aircraft movements a day is subject to a nighttime curfew, it is difficult to see why Glebe Island should be exempt from similar mitigation. The Port Authority contends that the MUF (and the Hanson plant if it proceeds) should not be subject to environmental controls because it is just business as usual – continued use of the pre-existing port. The Sydney Airport example demonstrates the absurdity of that contention.

From its commencement in 1933 until 1995, Sydney Airport allowed planes to take off and land at any time of the day or night. In more enlightened times, a curfew was introduced in 1995 to protect surrounding residents from the noise pollution. It would have been laughable to suggest in 1995 that unrestricted flights should have been allowed to continue simply because that had been past practice.

The PNP specifically excludes noise from ships that are arriving and departing, which are a major source of peak noise and sleep deprivation. This exclusion from the PNP is like proposing an airport noise policy that only considers the noise of aircraft on the ground and excluding landing and taking off.

Amazingly, the PNP contains a detailed discussion about the management of aircraft noise but never mentions airport curfews.

In justifying its policy in many areas, the PNP places reliance on the EPA 's analysis in the NPI (Fact Sheet F) of what is 'feasible and reasonable' – see in particular page 15. The efficacy of a curfew in the present case warrants consideration in light of the EPA's analysis. The key provisions are as follows –

“A feasible mitigation measure is a noise mitigation measure that can be engineered and is practical to build and/or implement, given project constraints such as safety, maintenance, and reliability requirements. It may also include options such as amending operational practices (for example, changing a noisy operation to a less-sensitive period or location) to achieve noise reduction.”

Selecting reasonable measures from those that are feasible involves judging whether the overall noise benefits outweigh the overall adverse social, economic, and environmental effects, including the cost of the mitigation measure. To make such a judgement, consider the following:

Noise impacts:

- *existing and future levels, and projected changes in noise levels*
- *level of amenity before the development, for example, the number of people affected or annoyed*
- *the amount by which the triggers are exceeded.*

Noise mitigation benefits:

- *the amount of noise reduction expected, including the cumulative effectiveness of proposed mitigation measures, for example, a noise wall/mound should be able to reduce noise levels by at least 5 decibels*
- *the number of people protected.*

Cost effectiveness of noise mitigation:

- *the total cost of mitigation measures*

- *noise mitigation costs compared with total project costs, taking into account capital and maintenance costs*
- *ongoing operational and maintenance cost borne by the community, for example, running air conditioners or mechanical ventilation.*

Community views:

- *engage with affected land users when deciding about aesthetic and other impacts of noise mitigation measures*
- *determine the views of all affected land users, not just those making representations, through early community consultation*
- *consider noise mitigation measures that have majority support from the affected community.”*

A number of factors have been identified in EPA literature as “feasible” mitigation measures. They include:

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- *“Changing a noisy operation to a less-sensitive period”.*
- *“Noise impacts” – a large number of people would be “affected or annoyed”.*
- *“Noise mitigation benefits” – there would be a major noise reduction and a large number of people would be “protected”.*
- *Cost effectiveness of noise mitigation”– vessel operators would be able to plan their arrivals and departures to minimise the impact of a curfew, and it would prevent an enormous “cost borne by the community, for example, running air conditioning.”*
- *If local residents had to live with all their doors and windows closed as proposed by the Port Authority, running air conditioning all night would be prohibitively expensive for most people, as well as suffering the potential health impact of a lack of fresh air.*
- *“Community views” – a curfew would unquestionably “have majority support from the affected community”.*
- *The application of the EPA’s “feasibility and reasonableness” test demonstrates the compelling case for a curfew on vessel movements as a minimum.*
- *A curfew on landside operations and vessel unloading should also be addressed by the PNP.*

The reasonableness factors then show the compelling nature of a curfew in the present case.

Having deliberately avoided addressing the curfew issue in any of its written documents, the Port Authority asked about this at one of its virtual public consultation meetings. On 22 July, the specific question was raised as to why a curfew was not being proposed by the Port Authority. The only excuse proffered by the Port Authority representatives was that a curfew would be too great an inconvenience for individual ships because they are not curfew-restricted in other international ports. Many of the world’s airports do not operate under a curfew but that does not prevent Sydney airport having a curfew. Aircraft simply work around the curfew. There is no reason why vessels cannot do the same.

It speaks volumes that the Port Authority is more concerned about the potential for a slight inconvenience to some vessels than the health of thousands of local residents. Better that a vessel be free to leave at 3am in the morning than have to wait a few hours, even if doing so wakes hundreds of people.

O. No reference to fitting silencers and /or other similar vessel modifications

Page 14 of the PNP states – *“There are currently no international or national environmental design criteria for noise emissions from a vessel to manage noise levels at nearby sensitive receivers. Outside this policy, the only noise requirements are those introduced during a vessel’s design and construction stage for on-board safety and crew comfort.”* The PNP is effectively saying that vessels themselves offer no prospect of facilitating noise mitigation – ‘it is out of our hands; there’s nothing we can do’.

This is self-evidently incorrect. Vessels can be modified to improve performance. The PNP acknowledges the issue on page E4 – *“Silencers and on-board conveyor extractions systems can deteriorate with age. Wear and tear may commonly account for around 10dBA change in noise level between different vessels, and for a single vessel at different points in time.”* Any equipment that deteriorates with age can obviously be repaired or replaced. However, that would cost money and the Port Authority is obviously reluctant to impose any obligations that might be disadvantageous to its tenants. This is yet another clear example of the PNP prioritising port users over the environment and local communities. It is not acceptable.

This is also another example of how the PNP is very selective in its application of the EPA’s NPI. In the context of ‘best management practice’, page 23 of that document discusses the need to utilise the “best available technology economically achievable’ (BATEA)”. It is unsurprising but disappointing that the PNP makes no reference to BATEA. Here is an example from New Zealand where the Port of Otago achieved dramatic noise reductions last year by requiring a port user to fit new silencers.

<https://www.portotago.co.nz/assets/Uploads/Port-O-Newsletters/Port-Otago-Newsletter-Feb20-FA.PDF>.

The Port Authority needs to engage with the EPA’s BATEA concept.

P. No exclusion for “crane and bucket” unloading

Hanson made a submission in their RtS about the potential for crane and bucket unloading to create excessive noise. On page 13 of its Response to Submissions, the Port Authority stated “Crane and bucket unloading methods would not be used as part of the unloading machinery on-board the ships visiting Glebe Island associated with the Project.”

<https://www.portauthoritynsw.com.au/media/3835/rts-report-final.pdf>.

This specific prohibition needs to be included in the PNP to make it abundantly clear this method cannot and will not be used in berths G1 and G2.

Q. No reference to the orientation of vessels

Page C4 of the PNP states – *“a vessel may emit 10dBA more noise out of the port side than the starboard side due to fan orientations.”* See also page E3 – *“Noise from ventilation systems may be highly directional with significantly more noise directed out one side of the vessel. A noise reduction of 10dBA was achieved for residences affected from one cargo vessel by orientating the vessel with the starboard side to residences rather than the port side.”* Note also page 170 of OECD document ‘The competitiveness of global port cities’ on this subject:

https://read.oecd-ilibrary.org/urban-rural-and-regional-development/the-competitiveness-of-global-port-cities_9789264205277-en#page172

The PNP needs to include a specific requirement that vessels berth in the 'quietest' direction and a to define meaningful mechanism for monitoring compliance with this requirement.

R. The absence of Port Authority provided at-receiver attenuation

The WBCT noise policy includes a noise attenuation program. A similar program needs to be included in the PNP. The PNP describes at great length about the importance of at-receiver attenuation and sets out in detail the design features incorporated in most of the buildings at Jacksons Landing. The Port Authority is effectively relying on at-receiver attenuation as the only viable noise mitigation measure. If the PNP was implemented in its current form, residents in Jacksons Landing would have to live with their doors and windows permanently closed and rely heavily on that attenuation. However, experience has demonstrated that, even with windows and doors shut, sleep deprivation of local residents occurs during the night due to noise from ships at berth and from ship movements.

The buildings at Jacksons Landing are between ten and twenty years old. In many cases, the windows and doors have deteriorated and no longer deliver the level of noise insulation they did at the time of construction. Accordingly, given the high reliance on at-receiver attenuation, a program will be required to check the degree of insulation currently provided and where necessary make appropriate repairs and improvements.

In addition to the cost of noise mitigation measures, there will also be the costs of physical health issues, mental health issues and a reduction in property values, all of which have to be paid, be it by residents, directors, regulatory authorities, or ultimately the taxpayer.

S. Conclusion

In conclusion we believe the PNP is largely a self-serving document whose objective is to protect the interests of the NSW Port Authority and its clients. Despite hundreds of objections lodged by residents over the past two years, it ignores the interests, health and wellbeing of thousands of residents who live within a few hundred metres of the location of the MUF and the proposed Hanson plant.

The Port Authority clearly does not want to recognise the fact that so many people have responded to past and current State Government encouragements and now live in Pymont and surrounding suburbs. The PNP shows little consideration for their right to live in quiet enjoyment of their neighbourhood, especially between the hours of 9 p.m. and 7 a.m.