



1 May 2013

Committee Secretary  
Senate Standing Committees on Community Affairs  
PO Box 6100  
Parliament House  
Canberra, ACT, 2600

Dear Dr Holland

**Senate Community Affairs Reference Committee - The Impacts on Health of Air Quality in Australia**  
Reference: EX/019/00116

Thank you for inviting North Queensland Bulk Ports (NQBП) to provide a written submission for the Senate Community Affairs Reference Committee (Senate Committee) into the impacts on health of air quality in Australia. NQBП is the incumbent Port Authority for the following ports:

- Hay Point (existing port and proposed expansion) 40km south of Mackay;
- Mackay Port (existing port) 5km north of Mackay;
- Abbot Point (existing port and proposed expansion) 25km north of Bowen; and
- Weipa (existing port) located on the northwest Cape York Peninsula.

Potential and perceived health impacts associated with coal dust have featured prominently in local awareness campaigns associated with the proposed coal terminal developments at Dudgeon Point, south of Mackay. Part of NQBП's role is to coordinate whole-of-port environmental monitoring and we voluntarily participate in dust monitoring with terminal operators at the Port of Hay Point. NQBП is also managing the preparation of Environmental Impact Statements (EIS) for a proposed expansion of the existing Port of Hay Point (on Strategic Port Land at Port Dudgeon Point) and is working with the proponents at Abbot Point on the proposed coal terminal development at this port. Air quality issues are required to be addressed in all port and coal terminal expansion assessments and the matters to be assessed are determined by the Government and detailed in the relevant EIS Terms of Reference.

NQBП is therefore, pleased to provide input to the Senate Committee and supports appropriate evidence based research to inform any required changes in air quality policy, legislation or management in Australia.

This submission is structured around the defined Terms of Reference (TOR) of the Committee and also based upon NQBП's current experience and understanding of air quality issues associated with coal dust and particulate matter, specifically dust generated from the mechanical movement, stockpiling and transportation of coal.

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## Summary of Key Points and Recommendations

- There is currently poor definition and description of the types of particulate matter, the sources of particulate matter and potential health effects. Improvements to publicly available (Commonwealth and State) air quality information would assist in promoting a more considered understanding and communication of particulate matter.
- Improvements to the understanding and communication of facts about potential air quality health risks, together with monitoring and reporting requirements would greatly assist in improving public awareness of air pollutants, particularly in areas with high levels of concern. Greater research into understanding pollutant pathways would aid understanding of the relationship between specific air pollutants and the actual risks or effects to human health.
- The need to update or amend current standards and regulation to air pollution levels should be reviewed on the basis of sound, objective scientific research and an understanding of the impacts these changes would make.
- A review of the current monitoring requirements should be undertaken to establish whether Total Suspended Particle (TSP) monitoring should continue as the principal form of dust / particulate monitoring for the purposes of environmental approvals for terminal operations and new developments.

### TOR 1 – particulate matter, its sources and effects

Particulate Matter is generated from a wide range of both natural and anthropogenic sources. In air quality terms, particulate matter is classified according to particle diameter; the smaller the particle, the greater the potential for health impacts. Coal is carbonised plant matter, with the major constituents being carbon and moisture, with variable amounts of volatile matter<sup>1</sup>. Coal dust is an anthropogenic source of particulate matter of varying particle sizes. Particles measuring between 2.5 and 10µg in diameter (PM<sub>10</sub>) are considered to be a coarse particulate<sup>2 3</sup>. Smaller particles measuring less than 2.5µg in diameter (PM<sub>2.5</sub>) and less than 0.1µg are considered as fine and ultra-fine particulates respectively.

Recent media statements from Communities Protecting Our Region suggest the creation of coal dust from mechanical movement and transportation of coal has been identified as 'PM<sub>2.5</sub>' or 'fine coal dust'<sup>4</sup>. Statements such as this are incorrect and are often wrongly accompanied by references to severe health effects associated with exposure to PM<sub>2.5</sub>.

Information presented on Commonwealth and State websites in relation to air pollution often groups particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>) together with limited distinction between the actual sources and potential health effects of different particles sizes.

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<sup>1</sup> Queensland Health (2010) Clean and Healthy Air for Gladstone Project – Human Health Risk Assessment –Final Public Health Report.

<sup>2</sup> World Health Organisation (WHO, 2005) Guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide. Global Update 2005 Summary of risk assessment (p9-10).

<sup>3</sup> CSIRO Submission 12/472 (2013) Inquiry into the impacts on health of air quality in Australia.

<sup>4</sup> Communities Protecting Our Region (2013) **Coal Dust and Health in the Mackay Region.**

NQBP proposes that this Senate Committee Inquiry informs the future definition and presentation of publicly available information associated with particulate matter. This would help educate members of the public and result in more informed responses in relation to developments which may contribute to dust dispersal and deposition.

## **TOR 2 - those populations most at risk and the causes that put those populations at risk**

Determining and understanding the risk to a population from specific or general air quality issues is a very complex process and dependent upon a wide range of factors. This is considered to be a function of the State Government rather than for industry to undertake.

In building an improved understanding of risk factors to populations, NQBP propose that the following should be taken into consideration by the State Governments in setting air quality standards:

- Promotion of greater public understanding and awareness of air quality issues, specifically in relation to particulate matter sources and effects;
- Support for monitoring and reporting to keep communities informed of actual rather than perceived risks to public health, with particular focus in areas with high levels of concern;
- Scientific based research into understanding the pathways of certain air pollutants, and therefore the risk factors by which they affect human health; and
- Health based research to inform any proposed changes to air quality standards.

NQBP is aware of a community survey undertaken on the residents of Mackay in relation to the proposed Port of Hay Point port expansion and the concerns raised from members of the general public in relation to the port expansion and health issues experienced. NQBP questions the statistical rigour of this survey to provide verified quantitative research into the relationship between air quality (coal dust) and health effects experienced in Mackay. For example, the definition of respiratory illness has been taken very broadly to include hayfever and other allergies (page 13). We also raise concern that the survey template refers respondents to 'Coal's Assault on Human Health'<sup>5</sup> which primarily covers health effects associated with coal combustion.

Local communities affected by proposed coal terminal expansions should rightly be made aware of noise and coal dust impacts and these issues are already communicated by NQBP through existing community liaison and will be addressed further through environmental assessments in accordance with EIS Terms of Reference defined under relevant legislation.

## **TOR 3 - the standards, monitoring and regulation of air quality at all levels of government**

### Standards for Particulate Matter

Current standards for air pollutants are set through the National Environment Protection Measure for Ambient Air Quality (the 'Air NEPM') and then in Queensland through the Environment Protection (Air) Policy (Air EPP). This standard includes a measurement for PM<sub>10</sub> and advisory standard for PM<sub>2.5</sub>. Although the standards are comparable with other developed countries, specifically western European, the climatic and demographical distribution of Australia is markedly different to other locations, and, in the case of PM<sub>2.5</sub>, the greatest contributing factor is usually motor vehicle emissions.

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<sup>5</sup> Physicians for Social Responsibility (2009) **Coal's Assault on Human Health**.  
[www.psr.org/coalreport](http://www.psr.org/coalreport)

In the Communities Protecting Our Region report<sup>4</sup>, references are made to the World Health Organisation (WHO) 2005 Guidelines<sup>2</sup> stating that any amount of particulate matter (PM<sub>2.5</sub>) over background levels (3-5 µg/m<sup>3</sup>) as being harmful. However, this is not referring to the actual advisory guidelines, but is included within supporting text in relation to reducing air quality related health issues of major global cities. Where tighter or improved standards are proposed, this is generally based on high levels of background exposure, for example in major urban areas with existing air quality issues.

Coal terminal operators are bound by the regulatory and advisory standards. It is not NQBP's role to advise whether these standards should be amended or, in the case of PM<sub>2.5</sub> be made mandatory. This should be determined on the basis of sound, objective scientific research and an understanding of the impacts a change to the standards would make. This decision-making is part of the on-going role of the State Governments and their agencies to determine air quality standards that will protect both the health and amenity of residents. These standards will be imposed on industry through environmental approval conditions if a project is approved to proceed to construction and operation.

### Monitoring Particulate Matter

Air Quality Monitoring in Queensland is undertaken by the Department of Environment and Heritage Protection (DEHP). DEHP has 25 monitoring stations around the State, including one for PM<sub>10</sub> in Mackay. NQBP, together with operators of the coal terminals in the Port of Hay Point, has had a dust monitoring program in place for almost 20 years, which is continually developed and expanded to improve dust management practices at the port. In addition to this, there are 23 dust monitoring sites in the coal terminals and surrounding communities, including four monitors which continuously monitor for total suspended particles (TSP). TSP monitoring captures all particle sizes (usually anything less than 50µm, including those greater than 10µm, PM<sub>10</sub> and PM<sub>2.5</sub>) but does not distinguish between them. Monthly reports are prepared by independent consultants and these reports are made available to the community on NQBP's website.

Coal terminal operators have Environmentally Relevant Activity (ERA) Permits issued by DEHP, which sets the air quality standards their terminals are required to meet. Results from the TSP monitoring are currently provided to DEHP to ensure these standards are met and all reasonable measures are taken to minimise environmental impacts and implement best practice environmental management. DEHP has not currently requested PM<sub>10</sub> or PM<sub>2.5</sub> monitoring by the terminal operators.

For prediction of the impact of the proposed Port of Hay Point expansion on local air quality, as part of the EIS development, air quality modelling is being carried by an air quality consultant to determine possible cumulative impacts of the project on air quality. This modelling uses the extensive air quality data collected in the port over the past twenty years as the modelling basis. The modelling also provides predictions of TSP, PM<sub>10</sub> and PM<sub>2.5</sub> across the region and allows assessment against air quality standards required by the State and Commonwealth Governments.

NQBP has experienced community concern regarding the effectiveness of TSP monitoring in reporting the levels of PM<sub>10</sub> and PM<sub>2.5</sub>. In response to this, NQBP has installed both a PM<sub>10</sub> and PM<sub>2.5</sub> monitoring station at McEwens Beach, south of Mackay in April 2013. This additional monitoring station aims to improve understanding of particulate matter and dust monitoring in the local area, but is not a regulatory requirement.

Air quality data is most useful when collected over long periods of time as well as monitoring day to day occurrences in consideration of local weather patterns or seasonal events (for example cane burning, dust storms or bush fires). Monitoring and reporting of air quality needs to consider all sources of particulate matter at a particular location in addition to point or individual sources (i.e. coal dust).

As part of improving awareness and understanding of particulate matter, NQBP suggests that this Senate Committee Inquiry aims to inform the development of future monitoring practices in relation to particulate matter by providing clear guidance on the types of particulate matter monitoring and reporting recommended for operation of industry. Specifically, whether TSP should continue as the principal form of monitoring, or whether it should be replaced. This will enable operators to plan ahead in terms of reviewing current air quality monitoring and establishing new or different monitoring stations for particulate matter.

**TOR 4 – any other related matters**

The submission by Communities Protecting our Region has presented some information that may misinterpret NQBP's role, which we would like to clarify to avoid community confusion:

- a) NQBP is the Port Authority for the Port of Hay Point, plus other ports. NQBP does not own or operate any coal terminals or any coal loading activities. NQBP's activities as a port authority do not generate any coal dust emissions. Operation of coal terminals in the port are undertaken by coal terminal operators, which are private companies. The setting of environmental standards for the coal terminals and ensuring compliance with these standards is undertaken by DEHP through site environmental authorities and permits.
- b) NQBP is not responsible for monitoring dust emissions from terminals in the Port of Hay Point. Terminal operators are required to carry out air quality monitoring through their environmental authorities and permits. This local monitoring complements the air quality monitoring carried out by DEHP across the State.
- c) NQBP is coordinating environmental studies and approvals for the Dudgeon Point Coal Terminal Project on behalf of several proponents. NQBP's involvement in the project will however, allow cumulative impact assessments of the development in the port to be considered and will ensure high environmental standards are maintained.

NQBP thanks the Senate Committee for the opportunity to provide this feedback into the Inquiry on Impacts of Health of Air Quality in Australia. Should you have any further queries, please contact me.

Yours sincerely

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**General Manager Environment**

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