NCC Submission on Bayswater Power Station Turbine Efficiency Upgrade

Dear Sir/Madam,

The Nature Conservation Council of NSW (**NCC**) is the peak environment organisation for New South Wales, representing over 150 member societies across the state. Together we are committed to protecting and conserving the wildlife, landscapes and natural resources of NSW.

NCC objects to this project proceeding as proposed.

This proposal represents a significant modification of the Bayswater coal-fired power station, increasing its capacity by 100 MW from 2640 MW to 2740 MW.

As proposed, the power station will emit unacceptable levels of toxic air pollution and the NCC recommends that conditions be imposed to require the modified power station to fit pollution controls in line with global best-practice.

Sulfur dioxide pollution from NSW power stations alone is responsible for 104 premature deaths in the NSW Greater Metropolitan Region each year, as well as being linked to preterm births[1]. Bayswater is NSW's largest emitter of sulfur dioxide.

It is imperative that as the power station seeks modifications to upgrade the turbines to the best-available technology, that the pollution controls which can protect the health of NSW residents are also upgraded to best-available technology.

AIR POLLUTION

Bayswater is the largest single source of SO_2, NO_x and PM2.5 pollution in the Hunter Valley. The EIS acknowledges that current air pollution limits in the neighbouring community are regularly exceeded. Indeed, it shows that the current annual PM 2.5 standard of 8 ug/m^3 has been breached every year since recording began in Muswellbrook.

Levels of SO_2, a respiratory irritant and precursor to PM2.5, are also unhealthy in the neighbouring community. Since 2005, the World Health Organisation (WHO) standard for ambient SO_2 has been set at 0.7 pphm (24 hr average). EIS figure 8.4 reveals that this health standard is breached dozens of days each year in Muswellbrook and Singleton.

NCC is deeply concerned that the EIS attempts to characterise these unsafe levels of SO_2 as "low" when they actually breach WHO guidelines.

> *"SO_2 is considered the best indicator of coal fired power stations impacts on local and regional air quality. As can be seen from Table 8.5, Figure 8.3 and Figure 8.4 annual average and 24-hour ambient SO_2 concentrations are generally low."* EIS, p64.

The health impacts of the pollution from Bayswater are a burden borne by the residents of NSW. The EIS makes no attempt to quantify these health impacts, and this should be amended.

[1] Muzhe Yang and Shin-Yi Chou, "The Impact of Environmental Regulation on Fetal Health: Evidence from the Shutdown of a Coal-Fired Power Plant Located Upwind of New Jersey", Journal of Environmental Economics and Management, Volume 90, July 2018, Pages 269-293 doi: https://doi.org/10.1016/j.jeem.2017.11.005

One public health study by Dr Ben Ewald and published in Australian and New Zealand Journal of Public Health found that SO_2 pollution from coal power stations is responsible for 104 deaths per year in the greater Sydney Metropolitan Area[2]. Another study suggests that the health burden caused by NO_x pollution from coal-fired power stations in NSW is even greater, and that eliminating NOx, for example by fitting selective catalytic reduction (SCR), would save $ 1.7 billion in health costs.[3]

AVAILABLE POLLUTION CONTROLS

Bayswater is not currently fitted with best-practice flue gas desulfurisation or selective catalytic reduction, technologies that could reduce toxic emissions of SO_2 and NO_X by more than 90%. Both of these technologies are obligatory in other countries such as the USA, China, India, and the EU.

Pollution from Bayswater compares very unfavourably to international best-available technology, as shown in ***Table 1***.

Table 1: Bayswater power station SO_2 and NO_X pollution compared to international best practice

Pollutant	Emissions intensity of Bayswater power station (kg/MWh)[4]	International best practice for coal-fired power stations (kg/MWh)[5]	Comparison
SO_2	4.47	0.06 – 0.08	Fifty-five times worse than best practice
NO_X	2.93	0.16 – 0.42	Seven times worse than best practice

Our understanding of the health impacts of coal-fired power stations has improved greatly since Bayswater was commissioned and licenced to emit pollution in 1985. New technologies to effectively control this toxic pollution have also become available.

It is imperative that as the power station seeks modifications to upgrade the turbines to the best-available technology, the pollution controls which protect the health of NSW residents are also upgraded.

PUBLIC CONSULTATION

NCC regrets that environmental stakeholders such as NCC and our member groups were not aware of the public exhibition period for this project until the last minute.

As such, NCC may have further detail to add to our submission over the coming week.

It appears that usual processes were not followed for alerting the NCC of this EIS.

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[2] Dr Ben Ewald, "The value of health damage due to sulphur dioxide emissions from coal-fired electricity generation in NSW and implications for pollution licences", 2018, doi: 10.1111/1753-6405.12785

[3] Dr Richard Broome, NSW Health "The health impacts of PM2.5 in the NSW GMR", 2017 available at https://www.epa.nsw.gov.au/your-environment/air/clean-air-nsw

[4] National Pollution Inventory 2014/15

[5] Osamu Ito, Emissions from coal fired power generation, Workshop on IEA high efficiency, low emissions coal technology roadmap, International Energy Agency, 2011. Available at: https://www.iea.org/media/workshops/2011/cea/Ito.pdf

RECOMMENDATIONS

NCC objects to this project proceeding as proposed.

NCC recommends that the consent authority hold a public meeting to assist in weighing up the available options to minimise the impact this power station is having on the health of the people of NSW.

We recommend that the consent authority seek:

1/ An independent study of the health impacts of the Bayswater Power Station on the residents of NSW. This is not covered in the EIS.
2/ An independent assessment of the health benefit of requiring AGL to control their air pollution using the best available technologies. This option has not been considered in the EIS, and
3/ An independent cost-benefit analysis of fitting best-practice pollution controls.

NCC recommends that the Department of Planning extend the submission period for this public exhibition in light of the fact that environmental groups were not consulted or made aware of the public exhibition period.

By applying appropriate conditions of consent, this project represents an opportunity to bring the air pollution controls of the Bayswater Power Station in to line with modern best-practice and relieve the significant burden of air pollution that is proposed to be placed on the people of NSW.

We trust that these points have been useful in guiding the Department's recommendations.

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