

# Submission to the EPA Victoria on the Loy Yang B works approval

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Submission to EPA Victoria on a Works Approval Application to upgrade Loy Yang B power station in the Latrobe Valley.<sup>1</sup>

Doctors for the Environment Australia (DEA) is an independent voluntary organisation of medical doctors and students who work to address the adverse health effects of environmental damage, pollution and anthropogenic global warming.

DEA welcomes the opportunity to comment on the Works Approval Application from the Loy Yang B (LYB) brown coal power generation plant in the Latrobe Valley.

## Works Proposal

A Works Approval Application has been submitted by IPM Operation & Maintenance Loy Yang P/L, to retrofit new and higher efficiency turbine blades to each of the existing two power generating units at LYB. The retrofit will increase the efficiency of the plant, decreasing the greenhouse gas emission intensity (GEI) from 1.23 tCO<sub>2</sub>-e/MWh to 1.17 tCO<sub>2</sub>-e/MWh. New turbines will increase power production capacity, and the company has indicated that it will need to increase power production for commercial benefit to recover costs associated with the retrofit (estimated at \$40-\$50 million).

## Background

Significant global warming has already occurred, and there is widespread concern that the 'carbon budget' – the capacity in the atmosphere for further greenhouse gas emissions while limiting global warming to under two (or even 1.5) degrees – is already spent. There is urgency for swift mitigation strategies across all levels of society, as it is undisputed that our current global warming trajectory will have profound impacts on present health and wellbeing standards. To avoid such run-away warming, calculations reveal that Australia must keep 80% of all known coal reserves in the ground for the time being.<sup>2</sup>

Victoria's coal fired power stations are responsible for almost 50% of the state's climate pollution. It is impossible to make a difference to Victoria's carbon pollution without addressing the operation of these power stations. Any energy derived from brown coal is 'part of the problem', as its GEI is above that achievable from other sources of electricity generation.<sup>3</sup>

After a retrofit, LYB's total greenhouse gas emissions intensity would decrease from 1.23 tCO<sub>2</sub>-e/MWh to 1.17 tCO<sub>2</sub>-e/MWh, which is still 36% higher than the National Energy Market's average emissions intensity of 0.86 tCO<sub>2</sub>-e/MWh, and twice as high as that of the OECD average.<sup>4</sup>

One of Victoria's primary policy drivers for greenhouse gas emission reduction is the *Climate Change Act 2010*. In June, this year, the Victorian Government announced its acceptance of a Review of this Act in which, under guiding Principles and a Charter, "*Climate Change Objectives must be taken into account in all plans, policies, programs and operational decision making across government*". Although the *Environment Protection Act 1970* currently enables regulation of GHG emissions based on harm to the environment<sup>5</sup>, the government intends to clarify that the EPA has power to regulate GHG emissions consistent with Victoria's long-term emission reduction targets.<sup>6</sup>

In early June 2016, the Victorian Government committed to legislating renewable energy targets of 25% by 2020, 40% by 2025, and net zero carbon emissions by 2050.<sup>7</sup>

While no interim emission targets have been announced, it is essential to move to reduce emissions as soon as possible. DELWP is leading the Victorian Government's commitment to climate change action, working with business to develop effective strategies to reduce greenhouse gas emissions and help Victoria adapt to the effects of climate change.<sup>8</sup>

## **DEA'S Objections to works proposal at Loy Yang B**

### **1. DEA opposes any increase in greenhouse gas emissions from stationary power energy sources.**

The Works Approval Application stated that there is likely to be an increase in electricity power production at LYB for commercial benefit after the retrofit has been completed. The amount of coal consumed by the plant will potentially increase by 3.2% with corresponding increases in greenhouse gas emissions. This plan is at odds with the recent COP21 agreements in Paris including the aim of keeping global temperature increases to well below 2°C. All efforts must be made to mitigate greenhouse gas emissions urgently and planning for the upgrade of a coal fired power plant that will likely lead to an increase in both greenhouse gas emissions and the longevity of the plant are incongruous in 2016 with both the Victorian Government's Emission Reduction Target plans and the Paris Treaty.

Climate change is expected to be the greatest health threat of the 21<sup>st</sup> Century. Hence the health and wellbeing of humanity depends on a swift reduction in greenhouse gas emissions from all jurisdictions and sectors,

particularly stationary energy industries as there are existing renewable energy technologies that can replace fossil fuels.

Several options are presented in the Works Approval Application for reducing greenhouse gas emissions from LYB, but the analysis concludes that there are no commercial drivers to invest in options other than increasing the power capacity and coal consumption of the plant. However, both Liddell and Yallourn Power Stations underwent a retrofit of turbines without increasing power generation capacity and in 2016 if it is not financial to upgrade the efficiency of an energy source without increased greenhouse gas emissions then the project should not be considered.

## **2. DEA opposes any increase in emissions of nitrogen oxides, sulphur oxides, and particulate emissions from the LYB plant due to the increased health risk for local populations.**

Scientific evidence documents well the adverse health impacts associated with any increase (there is no level under which health is not potentially effected) of air borne oxides of nitrogen, and sulphur oxides – both of which are expected to increase at levels corresponding to any increased coal combustion.

Particulate matter would be expected to increase by 6% (based on 6% volumetric flow increase), especially for finer particles. Air borne particulate matter of both PM<sub>10</sub> or PM<sub>2.5</sub> microns or less in diameter have also been shown to have significant health impacts with again there being no safe level. Even short exposures to particulate matter (a few hours to weeks) can trigger cardiovascular deaths and illness, while longer-term exposure (over a few years) greatly increases the risk for cardiovascular mortality and reduces life expectancy by several months to a few years.<sup>9</sup>

Not only do coal-fired power stations emit a host of potentially toxic chemical substances including particulates, sulphur dioxide, oxides of nitrogen, and mercury - all of which have profound adverse health effects<sup>10</sup> but increased coal consumption would also lead to an increase in ash generation, water consumption, wastewater generation, flue gases and carbon monoxide – all of which have potential health risks.

The resultant health costs from coal-fired power stations produce a significant economic burden which is not accounted for in the price of electricity generated but for which health services, the public and governments are then responsible. Air pollution from coal contributes to four of the five leading causes of death in western society: lung cancer, respiratory diseases, stroke and heart disease.

The air pollution health cost of coal burning in Australia is estimated at \$2.6 billion annually.<sup>11</sup>

Therefore, reducing combustion from coal fired power plants will also lead to significant, immediate, local community health and public health cost benefits.<sup>12</sup>

### **3. DEA supports the development of strong plans for a swift but smooth transition to renewable energy and alternative industries to enhance employment opportunities in the Latrobe Valley**

To install equipment acknowledged to have a life of 30 years is sending a signal of 'business as usual', and at odds with plans to drastically reduce our reliance on fossil fuels. The unexpected closures of Anglesea, Morwell, Port Augusta and now potentially Hazelwood have had disruptive effects on local communities. To provide certainty for planning in the Latrobe Valley, it is essential that communities are provided with definite timelines for power station closure.<sup>13</sup>

## **Conclusion**

- The proposed turbine retrofit for Loy Yang B would improve the greenhouse gas emission intensity of the power plant relative to other brown coal power plants in Victoria. However, any benefits in terms of reduction in the intensity of carbon emissions would be outweighed by increasing the amount of coal burnt, according to the company's plans outlined in the Loy Yang B Works Approval Application. The net increase in absolute total carbon dioxide and other greenhouse gas emissions is at odds with the State government's commitment to seriously address climate change. If the project was to proceed, any improvements in efficiency should be passed on to benefit the population of the Latrobe Valley and the environment, and must not be used for commercial benefit at the expense of producing yet more emissions.
- Increased coal consumption will increase emission of toxic chemicals and particulates, all of which add to health risks regardless of concentrations measured by standard monitoring. Increasing atmospheric pollution adds to public health costs.
- A retrofit that plans for another 30 years of coal consumption is inconsistent with the Victorian government's commitment to develop strong practical plans for a transition to renewable energy and net zero gas emissions by 2050. Earlier timelines for power station closure must be planned now so that the Latrobe Valley community will not suffer further health, environmental and economic hardship.

## References

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