

Submission Mod 2 North West Mains Development

Dear Sir,

Thanks for the opportunity to make a submission regarding this proposal.

I oppose the Mod 2 North West Mains proposal.

I am opposed to this coal mining proposal across a range of considerations from global to local.

Firstly, I am opposed to coal mining from a global perspective given the emerging global crisis of climate change. In 1896 Svante Arrhenius was the first person to use basic principles of physical chemistry to calculate estimates of the extent to which increases in atmospheric carbon dioxide (CO<sub>2</sub>) will increase Earth's surface temperature through the greenhouse effect. This idea was corroborated by Charles Keeling in 1961 demonstrated that the quantity of human-caused carbon dioxide emissions into the air is enough to cause global warming.

Since then continued and increased levels of the burning of carbon based fossil fuels has paralleled increasing economic activity across the globe causing increased carbon dioxide in the atmosphere.

<https://climate.nasa.gov/evidence/>

Scientific evidence for warming of the climate system is unequivocal.

- Intergovernmental Panel on Climate Change

This has led to dramatic increases in world carbon dioxide levels with commensurate increases in world indicators of global warming. They are as follows.

Global Temperature Rise

1.18 degrees Celsius since the late 19th century, a change driven largely by increased carbon dioxide emissions into the atmosphere and other human activities. This has led to on Earth temperatures of greater than 50 celsius at Nawabshah in Pakistan, Phalodi in India and Basra in Iraq.

<https://www.theguardian.com/cities/2018/aug/13/halfway-boiling-city-50c>

Warming Ocean

Rising in temperature in the ocean has absorbed much of this increased heat, with the top 100 meters of ocean showing warming of more than 0.33 degrees Celsius since 1969.

#### Sea Level Increase

Global sea level rose about 8 inches (20 centimetres) in the last century. The rate in the last two decades, however, is nearly double that of the last century and accelerating slightly every year

#### Ocean Acidification

Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30%. This will ultimately result in the extinction of sea shelled creatures known as Molluscs which evelived 500 million years ago.

#### Shrinking Ice Sheets

Experiment show Greenland lost an average of 279 billion tons of ice per year between 1993 and 2019, while Antarctica lost about 148 billion tons of ice per year.

#### Glacial Retreat

Glaciers are retreating almost everywhere around the world — including in the Alps, Himalayas, Andes, Rockies, Alaska, and Africa. The Hoover dam in America has much less water as a result of decreased ice melt. This threat will have great impact on India.

#### Decreased Snow Cover

Glaciers are retreating almost everywhere around the world — including in the Alps, Himalayas, Andes, Rockies, Alaska, and Africa.<sup>8</sup>

#### Declining Artic Sea Ice

Both the extent and thickness of Arctic sea ice has declined rapidly over the last several decades. Alarmingly, Trans-Arctic Shipping Has Begun. The Northern ice cap has shrunk so much, for some of this winter, Alaska was warmer than California. Accompanied by an ice breaker, a gas tanker cut the time from European Russia to China by two thirds.

<https://www.maritime-executive.com/editorials/the-arctic-shipping-route-no-one-s-talking-about>

## Extreme Events

The number of record high temperature events in the United States has been increasing, while the number of record low temperature events has been decreasing, since 1950. Recently the state of Texas experienced the worst winter onslaught in decades.

Sources: ClimateReanalyzer.org, Climate Change Institute, University of Maine | Note: The map shows the difference between the current day's forecasted temperature and the 1979-2000 mean for the same day of the year.

<https://www.nytimes.com/interactive/2021/02/16/us/winter-storm-texas-power-outage-map.html?action=click&module=Spotlight&pgtype=Homepage>

In Australia there are numerous examples. Vineyards are requiring replanting of varieties withstanding greater heat and less water or are being moved to lower latitudes.

Perhaps the most egregious example of global warming affecting Australia is the movement south of warmer ocean currents which has resulted in the loss along the eastern coastline of Tasmania of the grand forests of giant kelp (*Macrocystis pyrifera*) that once dominated the region. In fact a whole blossoming industry provided by Alginates Australia at Triabunna in Tasmanina which was harvesting the kelp closed the factory and shut its doors in 1973 due to climate change and global warming.

<https://www.abc.net.au/news/science/2021-02-27/tasmania-giant-kelp-forests-disappearing-global-ocean-warming/11209188?nw=0>

The cause is simple. It is the burning of carbon and carbon based chemicals or fossil fuels. The solution is simple. Stop burning carbon.

The denial of proposals such as this current one, for more coal mining around the world is a significant first step to saving the globe from dangerous tipping points and futures such as 3 and 4 degrees of global warming. Such warming would produce a dystopian future causing catastrophic loss of human life, macro-fauna and food production around the globe and an unimaginable economic loss.

## Mining under the Water Catchment

Second of all regarding the current proposal I am opposed to further coal mining in the water catchment areas of Sydney.

Modification 2 seeks approval to tunnel underground in the Metropolitan Special Area of the water catchment, a total distance of about 8 kms extracting both coal and rock.

## Tunnelling

I am concerned with any tunnelling beneath the water catchment including 2.4m high and 5m wide bords. There are two immediate concerns with any of this. Primarily the maintenance of abandoned bords over large time periods of hundreds of years. There is concern over the longevity of the current coal company that long to effect maintenance

The possibility of future removal of coal pillars by retreat mining is the second concern.

Some of the tunnelling is only 60m below the reservoir floor and WCL acknowledge that there will be cracking caused by the tunnelling!

The proposed NW mains below the base of Avon Reservoir are close to the 60m minimum. This is of prime concern to the integrity of Sydney's water supply. This is an unacceptable risk.

## Economic Modelling Concerns

Incomplete economic assessment - this project should be assessed as part of a larger proposal to mine the North-West and South-West domains.

Externalities are not costed such as loss of water through mine inflows and discharge of polluted water into Robins Creek which flows into Lake Illawarra.

The Economic Assessment makes an assumption that externality costs do not need to be costed:

"If the potential externality impacts in Table 2.1 are mitigated to the extent where community wellbeing is insignificantly affected, then no external economic costs arise." (Ec. Ass. p 7) and

"Environmental, cultural and social impacts have initially been left unquantified and interpreted using the threshold value method"

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The following externalities are possible and should be included in the costings:

Partial collapses of historical first workings have been documented. "cracking will be induced due to subsidence effects caused by the mining void"

- o Gallaghers Creek and Bellbird Creek arms of Avon reservoir (NWMD Report Vol 2 P 135)
  
- o the Moss Vale – Unanderra Railway, and below a 330 kV powerline (NWMD Report Vol 2 P 135)
  
- Loss of water through mine inflows 107 ML over five years (NWMD Report Vol 2 P 125)
  
- Polluted water being discharged into Robins Creek reaching Lake Illawarra (NWMD Report Vol 1 P 98)

The Economic Assessment admits that a Cost Benefit Analysis (CBA) needs to be done for the future North West Domain project in order to decide this initial Mod 2 component of that project.

#### Risk of insolvency

There is great concern over the financial situation of Wollongong Coal as it is at risk of bankruptcy.

1. “DPIE has previously identified that the financial viability of projects is a risk assumed by the project owners. Wollongong Coal is willing to incur a financial loss associated with MOD2 to facilitate access to the North West Domain and ensure continuity of mining operations.
  
2. Any risk that MOD2 may commence and then cease operation for financial reasons leaving unmet rehabilitation liabilities is mitigated by the fact that Wollongong Coal is required to pay a rehabilitation security deposit to DPIE as the holder of a mining authority under the Mining Act. This security deposit is held by DPIE-DRE to ensure that the legal obligations in relation to rehabilitation and safety of the site can be met following mine closure. If rehabilitation obligations are not met to the satisfaction of the Minister, then the security funds would be used by DPIE-DRE to meet the relevant requirements. “

#### Greenhouse gas emissions

Greenhouse gas emissions are underestimated by using a low carbon price and proportioning the cost to NSW as a fraction of global population.

#### Ground Water Impacts

Ground water capture and release is a concern for Lake Illawarra.

“The predicted groundwater impacts associated with the NWMD, as outlined in the SLR (2020) GWA are summarised below:

- a maximum annual total groundwater inflow associated with MOD2, for both the approved and proposed NWMD, is estimated at 36.8 ML in 2014 and a maximum daily inflow rate of 1,600 kL/day occurring for a short period in late 2024 to early 2025 (SLR 2020);

- based on the calculations in the GWA, a maximum discharge rate to LDP2 of 7,226 kL/day may be required, which is below the current discharge limit of 10,000 kL/day at LDP2, and, as such, the discharge limits at LDP2 are not expected to be exceeded as a result of MOD2; “

This means that more than 7 million litres of polluted mine water per day will be pumped out at Licensed Discharge Point 2 (LDP2) and ultimately head off to Lake Illawarra.

Of concern is there is no plan for a water treatment plant, just settlement ponds.

#### Greenhouse gas emissions and climate change impacts

I oppose the proposal on Greenhouse gas emissions and climate change impacts.

“A GHG assessment was also undertaken for the Colliery. Annual scope 1 and 2 GHG emissions generated by the Colliery represent approximately 0.291% of total GHG emissions for NSW and 0.071% of total GHG emissions for Australia, based on the National Greenhouse Gas Inventory for 2018. “

“The Air Quality and Greenhouse Gas Assessment (EMM, 2020) identified average annual Scope 1 and Scope 2 emissions of 361,297 t Co2-e and 22,029 t Co2-e, respectively. “

#### CO2 emissions

An unacceptable amount of CO2 will be released. 5 years of mining equates to 1,916,630 t CO2

There is no plan to offset this.

There is no plan to use a renewable energy Purchasing Power Agreement.

This is despite NSW commitment to reduce GHG emissions by 35% by 2030.

Planning should note that Penrith had extreme temperatures of 48 degrees in recent times and the Great Barrier Reef has had another bleaching event.

#### Ventilation concern

The proposal relies on one existing Ventilation shaft 1, meaning WCL will not have to build a new ventilation shaft at this time (capital investment). Poor design may require subsequent changes not revealed in this proposal.

#### Western Area Extension

I am opposed to WCL getting subsequent permission to mine in the Western areas and I see this Mod 2 proposal as a first step. Such a move would escalate further Carbon dioxide emissions with yet greater world impacts.

## Conclusion

I find the proposal concerning and not acceptable across the global and local concerns examined above. The steps to avoid and reduce global warming need to begin now. The specific issues outline including economic, risks of insolvency and potential impacts on fracturing with concerns for the Avon catchment and Sydney's water supply together with ground water release in to Lake Illawarra do not warrant acceptance. I would therefore ask that it be rejected.

Ian Hill