

1) Aerial View of Berrima

Clayton Hairs

Weds 27 Feb 2019

Commissioners,

I am a layman and the information I will share with you today is not delivered from the perspective of an expert in Wind – the issue which I will address – it is to illustrate that anyone who makes just the smallest effort in digging into the facts presented in the EIS of POSCO/Hume Coal will quickly realise what I perceive to be a deliberate selectivity of data used with the aim of presenting an 'all is well' perception by both the public, the Department of Environment and the Independent Planning Commission. This is a charge laid repeatedly by numerous speakers at the public hearing on Tuesday 25th Feb 2019 at the Moss Vale Services Club.

2) Panoramic image of Coal stack height

To begin I have taken the liberty of printing out a panoramic image that I have made of the proposed mine site and onto which I have digitally composited a coal stack to give us some indication of the scale of the coal stack and temporary spoil pile. I have based the height of this stack on information given by Greig Duncan, the mine director, to the commission at a meeting held at your offices on 11th of February where, while attempting to show drone footage of the mine site, Mr Duncan makes the comment that the drone is at "a height of approximately 26 meters, which is the coal stockpile height." Twenty-six metres, commissioners is the equivalent of a 10 story building. The motorway you see alongside the image is of course the Hume Motorway servicing Sydney/Canberra/Melbourne, almost certainly the busiest inter-city motorway in the country. It is worth mentioning that the stack is not quite accurate in that it is far longer than demonstrated in the image (it should be around 800m as detailed in the EIS).

3) Return to Aerial view of Berrima

I live with my wife and two children at our small holding property 0.5km from Berrima. Shown on the map in yellow. My wife runs the Aurora Steiner School Playgroup component from the property where around 80 children aged 1 to 4 years of age attend during the week. It is worth mentioning too on the map, the Berrima Public School that has 197 children (aged between 5 and 12 years of age). Berrima as you will be aware is a favourite retirement village for many. Both these groups as you will be well aware present a vulnerability to airborne contaminants, notably those from coal and toxic spoil. In the map we also see the township of New Berrima which is the most socio-economically deprived area in the Southern Highlands just under 3km line of site from where the stockpile is slated to be placed.

I have lived (and worked) at the property for the past 5 years and have always been aware of the winds that come across the property. The prospect of a coal mine in the direction of what I perceived to be the prevailing wind prompted me to do empirical research (via a data request to the Bureau of Meteorology – BOM) that focussed particularly on wind direction and speed. I requested information from three monitoring stations surrounding the proposed development, High Range, Bowral and Moss Vale.

4) Wind Chart Comparative table (Figure 12.1 and 12.2)

I would at this point like to quote from the submitted EIS where it is stated **"Of the reviewed monitoring locations, the BoM Moss Vale AWS returns the longest period of continuous monitoring data."** Commissioners this is an outright false statement. There is a monitoring station based in Parry's Drive, Bowral that has (until its closure in December 2015) delivered weather readings for the past 40 complete years. What is more, the station is closer (6.6km versus 9.74Km) when compared to the data used by Hume Coal from the BOM's Moss Vale AWS station.

I was prompted to asked the question: why use data from a station that has not been in existence as long (18 years versus 40 years) and, furthermore, that is further away? Again, I believe the answer to be one of presenting positive perceptions to the public/Department of Environment versus factual accuracy.

When I began to look at the data I had received and compared it to the data presented by Hume Coal in their EIS I noticed a number of things:

The wind roses seemed to indicate a significant difference in top speeds of the winds. The one in the EIS has a top speed of 8 to 17 per the scale alongside the graphs and the wind roses I received had a top speed over 40. This prompted me to investigate further: why such a significant difference? It turns out that the information supplied by Hume Coal was measured in m/s-1 whereas my data was in km/h. Now, at no point in my application for data was I asked what unit of measurement I would like to receive the data in, so I must assume Hume Coal also received their information in km/h but have converted it. The question remained: why have they done so? The only conclusion I can draw is that for those reading this data, as laypeople, measurements in m/s-1 has little to no meaning, whereas all of us are well aware of what km/h feels or looks like since we experience it daily in driving our cars. What I am coming to believe commissioners is that this is one of numerous examples of Hume Coal preselecting information based on how it might be perceived rather than an exposition of facts for their own sake.

If we look at (figure 12.1 of Hume Coal's EIS) you will notice that the information shown completely disregards the windiest months of the year in the Southern Highlands ie. July, August and September. Furthermore, the company later claims that their own data for the year 2014 was incomplete (and therefore not able to be submitted) due to a technical malfunction in their monitoring station (Hume 1) - curiously, it too happened during the exact same months as previously - July, August and September ie. the windiest months of the year.

The company only present one full year of monitoring data, 2013 from an external source ie. the Moss Vale AWS station. You will notice that the percentage of winds originating from the West and South West to be approximately 14% of all winds with the fastest winds present only 6% of the time. If we refer to just one time period (noon) and use the closer monitoring station at Bowral and 40 years worth of data you will notice that 40% of all winds are originating in the West or the South West.

I will now present 40 years of data, looking at 3 hourly intervals between data set presented.

Aerial Map of Area with wind rose overlays

Interestingly in the actual text of the submitted EIS (in Figure 5.1) Hume Coal do actually refer to wind speed in km/h but they only show the MEAN wind speed (ie. AVERAGE windspeed)....the consequence is we see a windspeed in their EIS of 13.5km/h as the highest monthly (September), again a small, innocuous, little-to-worry-about number. The truth is Commissioners we are not in fact interested in the AVERAGE windspeeds, it is the very real possibilities of extreme wind speeds to which we need to apply our attention.

One of the stations from which I requested data was High Range which has only been in existence for four and a half years (from July 2014). In total the wind speeds at that station were blowing greater than 40km/h on 32 occasions in just a 4.5 year period. Even if we use the weather station that Hume Coal used (but examine the entire data-life of the station rather than just the single year to which Hume Coal refer) there are 16 occasions in 18 years when the average winds have exceeded 40km/h. Bear in mind these figures take no account of gusts of wind (they are measured in ten minute intervals to eliminate the effect of gusts). But commissioners, I submit to you, if there is anything we should be interested in it is indeed the wind gusts. Particularly when we view where the coal stacks (and temporary toxic spoil piles) will be placed geographically and the very real likelihood of wind borne particulates therefrom.

Unfortunately I am not a scientist and examination of the data presented with regards to particulates and noise is beyond my ability to examine. I would though sincerely hope that the commission might take the time to examine the data presented through the lens I have offered ie. That data in Hume Coal's EIS is selective and has an emphasis on perception rather than on factual accuracy.

Due to the geographic location, the prevailing wind speeds and directions this mine and associated infrastructure should be rejected by the commission.