Submission on the Chain Valley Colliery Consolidation Project (SSD-17017460)

I object to the Chain Valley Colliery Consolidation Project (SSD-17017460).

NAME: Dr Janet Roden

BACKGROUND: Retired health professional – Nurse and Midwife

First Section on Concern for Continuation of Coal-fired Power Stations like Vales point Station:

I have an interest in coal-fired power stations and their polluting outcomes. In 2018 I undertook a project in Muswellbrook, NSW to understand the closure of the Liddell power station and the coming energy transition, and to assist the Upper Hunter in managing this transition. My concern about pollution was raised as a health professional. I also worked in an organization and held the environmental health portfolio. I found out that from AGLs self-reported pollution data that for 2016-2017 the Liddell power station emitted 8,855,569 tonnes of carbon dioxide and 28 other kinds of pollutants: the most concerning being sulphur dioxide 33,490 tonnes, oxides of nitrogen 18,627 tonnes and particulate matter 2.5 um 18.3. The Acting General Manager of the Muswellbrook Shire Council's Fiona Plesman stated that the levels of nitrous oxide were a community and council concern, especially in regard to air quality (see Janet Roden's Report – goggle my name and 'Muswellbrook: between eight coal mines and two power stations'). After this report was written, research undertaken by Dr Ben Ewald revealed that every year in NSW, air pollution from burning coal for power kills 279 people; it also causes 369 new cases of diabetes type 2, and 233 low birth babies (less than 2,5 kgs) are born. This research also showed that particulate matter 2.5 um played a big part in causing stroke and cardiac events. (Media Release, Environmental Justice Australia, Nov 21, 2018).

The experience of undertaking this research project and the resulting research undertaken by Dr Ben Ewald has alerted me to the extent of health problems that have occurred like stroke, cardiac /heart disease, Black lung and other lung conditions, as well as asthma in children. As a health professional I am keen to see these illnesses reduced or even eradicated with the closure of coal-fired power stations, and the removal of the great harm that burning coal for electricity has caused.

Delta Coal Needs evidence Which Will Support How It Will Manage Its Environmental Impact:

Delta Coal should:

- Undertake a Carbon Audit and Assess the Vales Point Power Station's Scope 1, Scope 2 and Scope 3 Emissions. Assessing the offsite air quality from the impacts of burning the coal extracted from the mines at Vales Point Power Station is important. The impact of nitrogen oxides (NOx), Sulphur dioxide (SO2), coarse and fine particulate matter (PM 10 and PM2.5) and mercury are important to guage for a successful environment impact statement. Assessment of the combustion emissions from the 250 plus coal trucks that transport coal to the Port of Newcastle every day is also important to consider.
- Undertake an Impact Health Assessment. It is important to know what the impact of nitrogen oxides (NOx), Sulphur dioxide (SO2), coarse and fine particulate

matter (PM 10 and PM2.5) and mercury are on the health of the community. They have only done a Risk Assessment. Already we know from recent Australian research (Ewald, 2018) what the severe health outcomes of the burning of coal from power stations can amount to as I have previously stated, and

- Consult with NSW Department of Health.

These three important actions must take place before a decision can be made by the Independent Planning Commission.

In his review the expert found that the potential impacts of contaminated water being discharged from the sediment dams into Swindles Creek are not adequately addressed in the EIS.

it is concerning that ground water is pumped out from the underground mines to the surface and into sediment dams, where it is stored before discharging into Swindles Creek. Swindles Creek then runs into Lake Macquarie. However as well as ground water being pumped to the surface and into sediment dams this mixes with other dirty water runoff from the Project site such as water that has come into contact with coal and is also diverted to the sediment dams. Contamination could well occur and this should be addressed in the EIS.

The expert also identified inadequacies in the biodiversity impact assessment of the Project. He stated that the diversity assessment consisted of past seagrass surveys and ocean-floor organism surveys. His concern was that the large-scale pumping of ground water from the mine and the discharge of that water into Swindles Creek and Lake Macquarie could cause potential

impacts on ground water and surface water. Therefore a through assessment is needed to examine the quality of ground water; to monitor private groundwater bores; to assess elevated levels of heavy metals in surface water; and to assess for any likely flooding impacts.

Concern is raised about subsidence and a more detailed assessment of the potential subsidence effects and impacts of this Project. The expert review of the subsidence assessment found the following issues:

- the assessment relies on past predictions and does not include a new subsidence assessment for the Project;
- subsidence is generally increasing over time for the shoreline monitoring data as a whole;
- sea floor surveys over Zone B mining areas are discontinued 3 years after mining in the underlying area is complete, and there is no justification provided and that this may not be appropriate given that the highest levels of subsidence as measured by the surveys that occurred in 2020 took place over areas mined in 2017; and last but by no means least,
- there is considerable uncertainty associated with predicting subsidence associated with underground coal mining which is not given adequate consideration in the EIS.

Second Section on Delta Coal Introducing Mines Under Lake Macquarie:

Introducing mines under Lake Macquarie is not only a concern in regard to the additional impacts on ground and surface water and subsidence, but also because of the impact of

producing/mining more coal will have globally and the potential for further fueling Climate Change.

All greenhouse gas emissions whether scope 1, 2 or scope 3 contribute to the effects of climate change and cannot be ignored when considering the likely impacts of this Project. The impacts of climate change and increasing global warming include bushfires, floods, heatwaves, ocean acidification, heavy precipitation and flooding and drought. These effects of global warming will impact a number of matters that are required to be assessed as part of the EIS including air quality, health, biodiversity, water and social impacts however the EIS does not address these cumulative impacts.

If coal is to be mined until 2029 there is the potential for a large amount of coal to be produced for 6-7 years. Delta Coal consider that all this coal will be used for keeping the Vales Point coal-fired power station going. It is worth considering that if excess coal is produced then Delta Coal may decide to ship this off to other countries.

Continuing to produce coal until 2029 is not considered an ethically responsible act for the world and Australia. Australia has already been warned by the IPCC's sixth Assessment Report, explained by the Climate Council, that our country is extremely vulnerable to future Climate Change effects like drought, floods and extreme bushfires. As we are experiencing the Anthropocene period when global world weather is unstable and unpredictable the act of digging up considerable amounts of coal up until 2029 should not be counternanced, especially as this will substantially increase GHG emissions and continue to feed and fuel the extreme weather that will occur for the local community as well as affecting the global weather situation.

It goes without saying that the previous first section which lists the health impacts of air pollution perpetuated by the Vales Point coal-fired power station will continue until 2029 if Delta Coal gets its way.

Delta Coal plans to extract an additional 9.5 million tonnes of coal if the Project is approved. The greenhouse gas assessment estimates that if the Project is approved there will be an staggering additional 25,350,157 tonnes CO2-e of greenhouse gases emitted (Scope 1, 2 and 3). However serious problems appear with the expert's opinion in reviewing the GHG assessment: Fugitive Emissions and Difficulties Associated with Assessing their GHG Contributions.

The feasibility of capturing and burning the fugitive methane emissions caused by mine depressurisation should be evaluated to reduce GHGs.

The estimate of GHG emissions does not attempt to quantify gases liberated by the mine depressurisation systems that are not captured by the mine ventilation systems.

The EIS should explain how the calculations of the fugitive GHG emissions were calculated. The primary contributor to Scope 1 GHG emissions is caused by fugitive methane emissions however, the technical bases for the calculations of the fugitive GHG emissions have not been and should be fully explained.

The EIS should be upfront with the dangers associated with fugitive emissions. These fugitive emissions containing methane are many times more powerful and polluting of GHGs than carbon dioxide. As happens with underground mines, depressurisation of the coal seams and adjacent strata will result in the dissolution of gases dissolved in that groundwater under the pre-mining pressures. It will be very hard to provide an accurate assessment of this additional GHG source. A portion of those liberated gases will be

collected and released to the atmosphere by the mine ventilation systems. Over time, the remaining liberated gases will work their way upwards (under buoyant conditions) through flooded mine works and permeable strata as methane and carbon dioxide bubbles. These fugitive emissions contribute to overall GHG emissions and potentially present a risk to ecological receptors (Lake Macquarie) and land occupants above the mines but have not been quantified in the EIS. it would be important to review past research from the USA and Queensland, Australia in regard to coal seam gas and fugitive emissions causing potential health concerns.

I would like further material I have collected noted below. It addresses coal-fired power stations in Australia and their poor standards compared to other countries.

Vales Point power station is not very far from the Liddell Power Station site. We also know that all Australian coal-fired power stations, including Vales Point power station, are poorly regulated by global standards. Not only are they well in excess of the World Health Organisation standards but NSW power stations emit 8 times more sulphur dioxide; 71/2 times more nitrogen dioxide and 5 times more particulate matter 2.5 um pollution than that permitted by the European Emissions Directive and multiple times higher than USW, China, Japan and Germany (Farrow, Anhauser and Myllyvirta. 'Lethal Power. How Burning Coal is Killing People in Australia.' Greenpeace Australia Pacific).

Moreover, evidence of yearly premature deaths in Australia due to air pollution from coal-fired power stations are 785 compared to the highest category of premature deaths being car accidents of approximately 1,200 people. There is also concern that premature deaths occur quite a distance away from emitting power stations, for example, premature deaths in the ACT, NSW, South Australia and Tasmania are attributed to the Melbourne power station group, as well as those in Victoria. (Farrow, Anhauser and Myllyvirta. 'Lethal Power. How Burning Coal is Killing People in Australia.' Greenpeace Australia Pacific).

I echo my support for the Greenpeace recommendations to mitigate the health effects of pollution from coal-fired power stations:

- Plan development to phase out coal-fired power stations. It is quite wrong that Vales Point Power Station be allowed to run until 2029!
- Strengthen emission limits in existing power stations, equivalent to the lower atmospheric emission limit adhered to by the European Industrial Emission Directive, until such power stations are closed. For example, fitting catalytic converters to these power stations could reduce emissions.
- My Report (as previously referred to) addresses the financial cost attributed to health issues for coal-fired power station pollution. The NSW Government needs to estimate and recoup appropriate pollution fees from such power stations.
- Produce a robust air pollution policy by conducting independent health risk assessments for major sources of air pollution, and
- Adopt the advice of peak health organisations on the appropriate science-based values for ambient air quality standards for sulphur dioxide, nitrogen dioxide and ozone.

We should also comment in general terms on health issues surrounding the effects of Climate Change, acknowledging that Greenhouse Gas (GHG) emissions from coal-fired power stations contribute to fueling Climate Change. We are already aware of extreme weather events impacting mental health in vulnerable populations. It has also been determined that there are severe mental health consequences from Climate Change in Australia. Suicide is the leading cause of death in teenagers and young adults in Australia –