UPPER HUNTER SHIRE COUNCIL

OBJECTION TO THE

MAXWELL UNDERGROUND COAL MINE PROJECT

APPLICATION NUMBER SSD-9526

OFFICE OF THE MAYOR

Office of the Independent Planning Commission
Level 3, 201 Elizabeth Street,
Sydney
NSW 2000

25th November 2020

Maxwell Underground Coal Mine Project Objection

Dear Commissioners,

Thank you for the opportunity given to Council to meet with you and outline our concerns with the Maxwell Coal Project. Council decided to not present during the public hearings, but chose instead to listen to all the speakers over the two day hearings and to carefully consider the expert opinions put forward.

You will recall that Council did not repeat the objection made to the EIS during our meeting with the Commission. However, having now reviewed those expert opinions presented at the hearings and having given due consideration to those issues raised, Council reconfirms its objection to the Maxwell Project.

This is due to the unacceptable impacts the project will have on the Equine Critical Industry Cluster, particularly Groundwater and surface water impacts to the two studs (most notably to Coolmore Australia, the closer of the two farms to the project) and the unacceptable Greenhouse Gas [GHG] emissions and associated climate change implications of the project.

It is clear that the water-related impacts to Coolmore Stud in particular have not been adequately assessed nor properly understood by either the Proponent or the Department of Planning (the Department). Council notes the expert opinion of Sean Murphy with regard to the impacts to vulnerable ground water resources beneath Coolmore and the impacts to soil moisture and the effect this will have on Coolmore's property and pastures.

The comments of Coolmore's Farm Manager, John Borg, regarding river levels, the difficulties of drought conditions, of accessing Hunter River water during drought conditions and the jeopardy that Maxwell places the farm in were, in Council's view, compelling and not satisfactorily dealt with in the Department's responses at the conclusion of the hearings.

Council is concerned that the principles of the NSW Groundwater Quality Protection Policy are being paid only nominal attention by both the Department and the Proponent. The first principle is, "*All groundwater systems should be managed such that their most sensitive identified beneficial use (or environmental value) is maintained*". Council submits that the most sensitive beneficial users of this groundwater system are Coolmore and Godolphin Woodlands. The 'precautionary principle' is put forward by the Policy:

Precautionary principle extract, NSW Groundwater Quality Protection Policy page 14

> *'Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.'*
>
> The precautionary principle is particularly applicable to groundwater management in NSW. There are often long time scales associated with shifts in the condition of many groundwater systems and our knowledge of groundwater is often poor.

Council was also concerned with various other issues related to the Equine CIC that came to light during the hearing.

No specific Equine Health impact assessment has been undertaken by the Proponent, or required by the Department. This is a serious omission. Indeed when questioned on whether his company had investigated impacts on the two studs and their horses, Mr Seabrook responded that Malabar had produced a "*bespoke booklet*" for each stud and had taken advice from their experts in this area and from the Department.

It became clear that the previous proponent Anglo American's Equine Health Impact report, a report which previous PACs did not accept, had been relied upon.

Comments by the Commission in various meeting transcripts suggest undue weight has been given to the two submissions of the Department of Primary Industries [DPI]. The first submission was to the EIS and comprised a one sentence "*no comment*". The second submission was included in the November 5th correspondence between DPIE and the IPC. The DPI's advice was given within one day and based only on information provided to them by the DPIE. This is absurd.

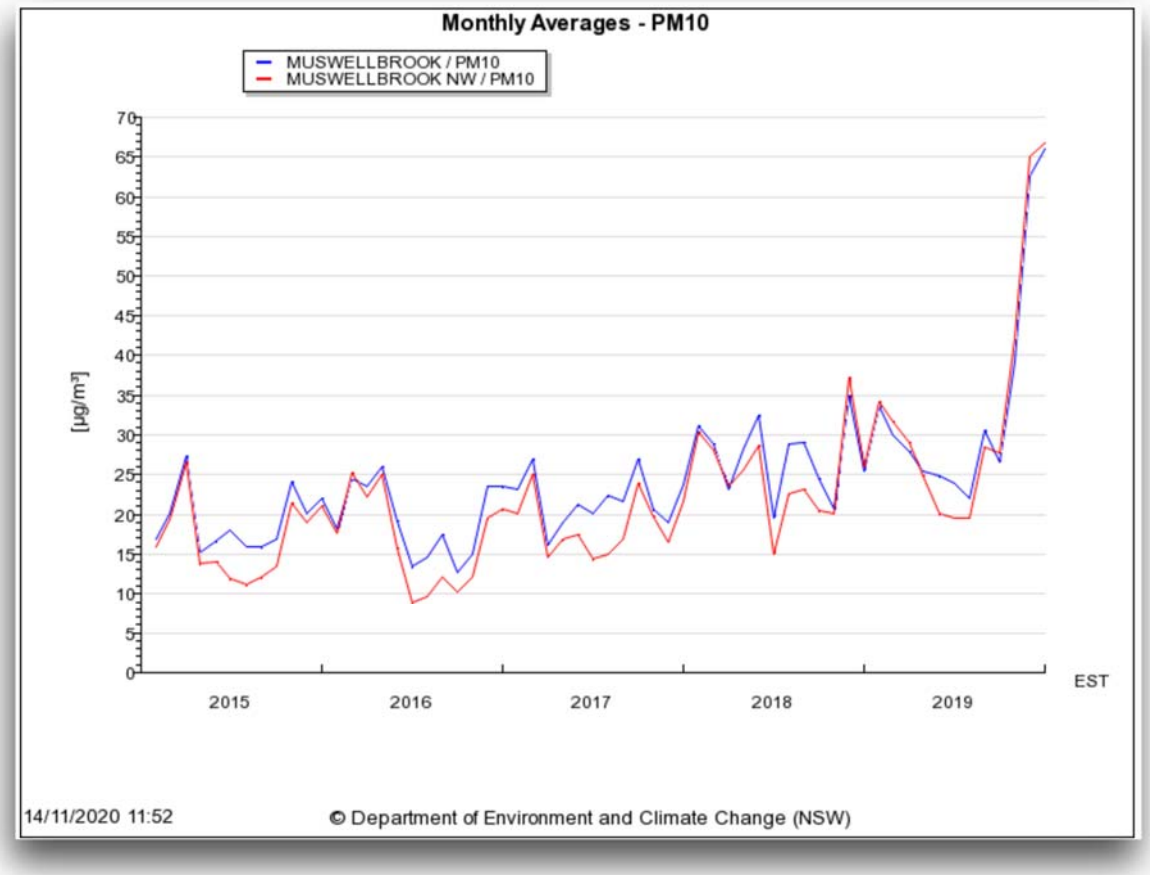
Council notes a previous DPI response dated 2/7/2015 to Mr. Sprott of the Department regarding the former Drayton South project, "*The proponent reports that the technical studies conducted for the Project "found that the project will have no adverse impact on equine health or the viability of Coolmore or Woodlands Stud". There is no independent information available to assess the latter claim. Importantly, if the CICs were to be adversely impacted by the Project, there could be a*

reduction in local employment associated with these industries". Council would ask, what has changed? Where is the 'independent information' to assess Malabar's and the Department's claims?

Both the Department and the Proponent are seemingly unaware of the difference between equine and human auditory acuteness. This was particularly evidenced by Mr. Young's response that he was "*not qualified to comment on that* [what horse's hear]" which followed his admission that "*no analysis*" on equine noise impacts had been undertaken.

Neither the Proponent nor the Department seem to understand the ongoing issues of Air Quality in the Upper Hunter, or indeed the high sensitivity of thoroughbred studs to those impacts. While Council understands that Maxwell must be considered on its incremental impacts, we remain of the view that the deteriorating quality of the Upper Hunter air-shed is very much the responsibility of the Department and their failure to first set and then enforce appropriate conditions of consent on previous mining project applications.

It was disheartening to hear the Department respond to questions about air quality at the hearings' end with the well-worn 'woodsmoke defence'. While woodsmoke is an issue in the towns in the winter months, data from the HVAQN invariably demonstrates that those winter months are actually the periods of the best air quality across the network.



Even with woodsmoke the winter months invariably have the lowest PM10 concentrations

As can be seen from the graph above which reproduces data from the two monitors referenced by the Department in closing questions, PM10 levels actually decrease significantly in the middle period of the year, during those winter months when woodsmoke is typically produced.

It is during the other seasons, particularly the hotter months, that the frequent spikes in dust levels occur, those spikes that are so injurious to health.

Coal Quality

Another major concern arising from the hearing was that the Proponent, once again, declined the opportunity to release even limited coal quality data, or indeed any evidence to support their claims around coal quality and coal production ratios between thermal and the potential metallurgical coal types; soft, semi-soft and PCI.

Indeed the very deliberate and carefully constructed wording the company uses is instructive. If anything, that wording became even more obfuscatory during the hearings and remains in sharp contrast to the Department's use of much stronger phraseology such as "*high quality coking coal*" and "*high value metallurgical coal*", descriptions which litter their assessment report and the meeting and hearings transcripts.

During the hearing the Department turned to the EIS submission of the Division of Resources and Geoscience [DRG] to provide justification for these claims. However, the DRG submission to the EIS does not provide the necessary reassurance which the DPIE relies on, indeed quite the contrary (see page 6, '*Resource recovery*').

The Whynot seam coal for which the proponent is forecasting a 3% premium for as a 'low ash soft coking coal', the DRG says it is "*suitable for a low ash export **thermal** coal markets*" (emphasis added). This is the least productive seam and produces 8.5mt or 5.7% of the Maxwell's total 148mt of ROM coal.

For the Woodlands Hill seam (which produces 59.3mt or 40% of Malabar's total ROM coal of 148mt, and is the most productive of the four targeted seams) the DRG says "*The coal can be washed to produce a 9% to 14% ash content product suitable for both semi-soft cooking and export **thermal** markets*" (emphasis added).

Council notes that the high ash content range of the Woodlands Hill seam is problematic. The upper end of acceptability for ash content in a semi-soft coking coal product is reportedly 9-10%. Indeed S&P Global Platts (the global coal market monitoring and price tracking service) list an ash criteria limit of 9.25% for Australian semi-soft coking coal.

Malabar's 'Project Rom Coal Production Table' shows that the modest quantities of coal produced from the Whynot Seam would severely limit any opportunities to blend that coal with the high ash Woodlands Hill seam coal. Production comes from these 2 seams exclusively in years 1 to 9 and forms the clear majority of ROM coal up until year 12 when the Arrowfield seam production ramps up. In year 4 for example, Malabar project <0.1mt of Whynot seam coal to potentially blend with 8.0mt of Woodlands Hill seam coal.

Additionally, there are other important coal quality parameters that need to be considered such as phosphorous content, fluidity, fixed carbon, and the CSN (crucible swelling number) all of which materially effect the suitability of the coal for use as a coking coal. None of this additional information has ever been provided by Malabar.

As such, based on the DRG's own summation, at least 46% of the product coal is not only a potential thermal coal product, but possibly better suited to the thermal market due to its high ash content. That is a substantial variation from the Proponent's 25% thermal coal claims. In Council's view, the DPIE has misrepresented in part the advice and submission of the DRG when responding to the Commission.

Despite the assurances given by the Department, the Commission cannot be satisfied on the available evidence that Malabar's claims, which underpin their economic assessment, are achievable. Council previously noted that this issue could have been settled at the Response to Submissions stage, it remains unresolved.

Further, whatever the coal produced - thermal or metallurgical - Council notes the findings of Preston CJ [at 546 -549] in Gloucester Resources Limited v Minister for Planning [Rocky Hill] that "*Producing coking coal* [is] *not a justification for GHG emissions*". His Honour found [at 549] "*The GHG emissions of the project cannot therefore be justified on the basis that the project is needed in order to supply the demand for coking coal for steel production*".

These findings directly rebut the subsequent comments of the DPIE in the Assessment Report [at 3.1.9] that "*The coking coal that would be recovered by the Project therefore represents an important contribution to global steel production …*". Council submits that the Maxwell project and its low-grade coking products are materially inconsequential to global steel production, as are their high-grade thermal coals to global energy production.

Further, the GHG emissions produced are highly consequential to the global carbon budget. Council has already pointed out to the Commission that the life-of-mine total GHG emissions predicted by Malabar for this project are greater than the annual GHG emissions of France in any given recent year since 2016. That is a grotesque level of impact and notably similar in size to the GHG impacts of the rejected Rocky Hill Mine.

In their Assessment Report [at 6.6.51] the Department states "*While this impact may seem significant, the Department notes that these emissions levels should be considered relative to the global impacts that would arise from the recovery of alternative coal resources for power generation and steel making, and weighed against the potential economic and social benefits of the Project".*

This argument is colloquially referred to as 'the drug-dealer's defence'. In the Rocky Hill case Justice Preston [at 534 - 545] comprehensively rejected, at great length, these arguments which he referred to as '*market substitution and carbon leakage*'. It seems conceivable, likely even, that the authors of the DPIE Assessment Report paragraph 6.6.51 have neither read nor understood the Rocky Hill judgement or else they surely would not have repeated this specious claim.

Council remains of the view, based on the evidence from the DRG, the surrounding mines and previous proposals both at Drayton South and the adjacent Mt Arthur Underground that the basic coal quality details and coal type ratios should be made available, at the very least to the decision makers.

The economic assumptions and justifications put forward in the Proponent's EIS and the Department's report cannot be substantiated or relied upon in the absence of these details. Further, the GHG emissions associated with this coal, whatever its type, cannot be justified and that the

Department's arguments to the contrary have already been disproven at great length in the Rocky Hill judgement of Justice Preston.

Diversification and Economics

The Department repeated the 'diversification' argument previously put forward in their Assessment Report. Council presented to the IPC a list of various approved Hunter Valley underground mines during our meeting. We include it again -

- Austar (Met) in Care and Maintenance (2018)
- Bulga Blakefield North (Thermal / Met) Approved, undeveloped
- Dartbrook (Thermal) in Care and Maintenance (2006)
- Donaldson Abel (Met) in Care and Maintenance
- Donaldson Tasman Extension (Met) Approved, undeveloped
- Integra (Met) moved to a 5 day week in 2020
- Mt Arthur Underground (Thermal) Approved, undeveloped
- Ravensworth Underground (Thermal) in Care and Maintenance (2014)
- Ravensworth Cumnock Underground in Care and Maintenance (2003)
- Wambo Underground (Thermal) temporary shutdown in Sept 2020 and half the workforce furloughed

Of those ten mines, 5 are in Care and Maintenance, 3 are approved but remain undeveloped and the remaining 2 have both implemented production limitations this year.

This 'diversification' has been available to the local mining industry for a prolonged period of time and has not been taken up for economic reasons. Further, Council notes Justice Preston CJ held in the Rocky Hill case [at 548] that, "*The current and likely demand for coking coal use in steel production can be met by other existing and approved coking coal mines in Australia*".

Council would suggest that the number of approved but undeveloped mines in the Hunter Valley - when looked at in combination with both the current production slow-downs and low coal prices - indicates that the existing levels of demand for these coal products are already being met, indeed exceeded by the local mining industry.

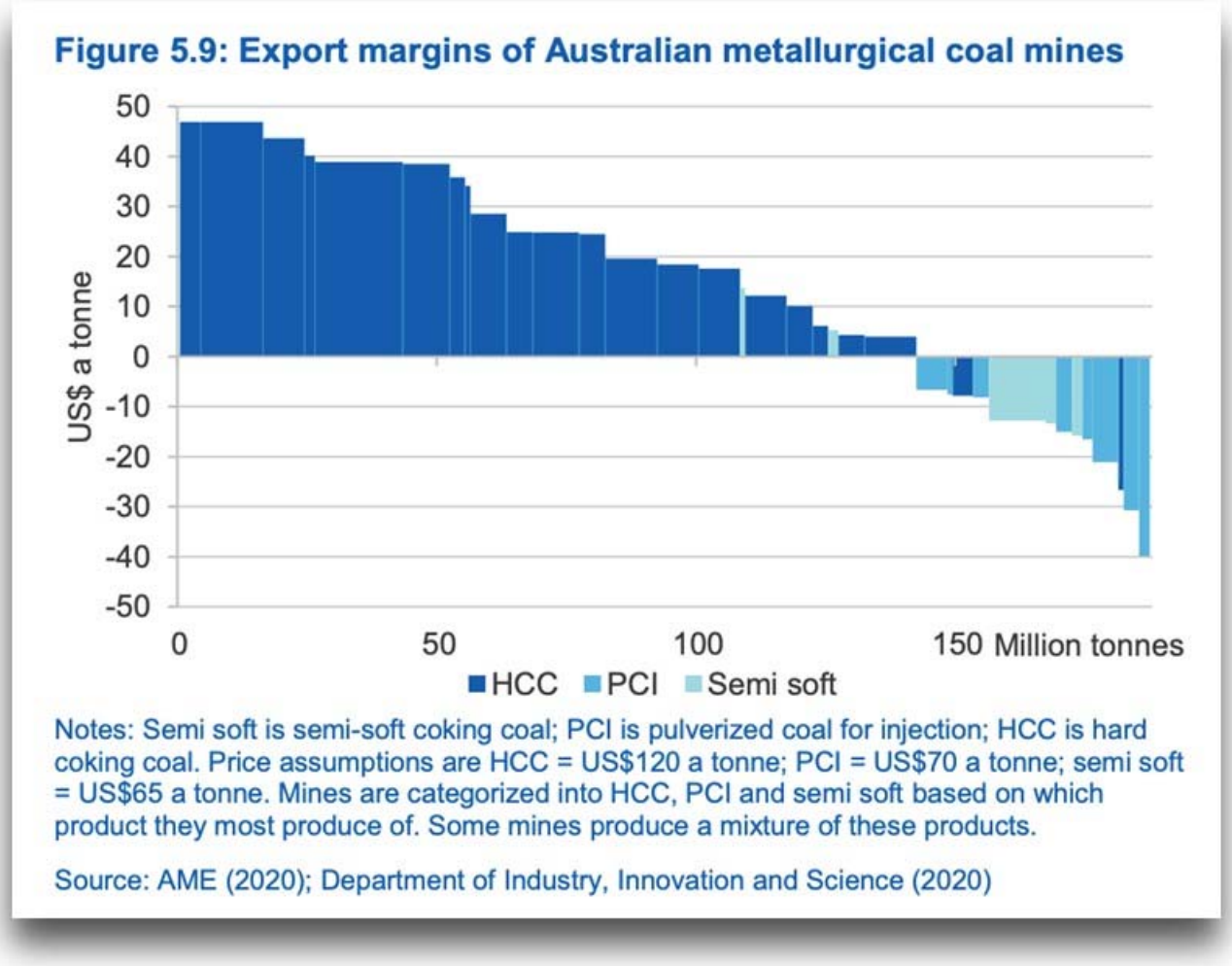
The Office of the Chief Economist's Resources and Energy Quarterly September 2020 edition confirms this, stating:

"However, producers of semi-soft coking coal and PCI appear to be more exposed to a prolonged period of low prices. To date, several Australian mines have announced production cuts in response to low prices. In July, Glencore — Australia's largest coal miner in 2019–20 — announced that it would reduce global output over the rest of 2020. While the strategy aims mainly to reduce thermal coal output, it will target lower grade metallurgical coals too. This will be achieved with targeted shutdowns of two or three weeks at certain mines …

Also in August, Peabody announced that it would halve the workforce at its 2.5 million tonne per annum Wambo underground thermal and semi-soft coking coal mine in New South Wales. This decision followed a two-month temporary closure since June. Production will also be slowed at

Peabody and Yancoal's 2.7 million tonne Middlemount mine (which produces mostly PCI) in Queensland's Bowen Basin".

'The coal is high value metallurgical coal. So the likelihood of – the likelihood of sustained coal prices is – is, I suppose, slightly more secure for this project'. Mr. Sprott to IPC [15/10/2020]



The metallurgical section of the REQ concludes:

"The outlook for Australia's metallurgical coal exports has deteriorated. Australia's forecast metallurgical coal export earnings have been revised down by $2.3 billion in 2020–21 and by $1.4 billion in 2021–22, due to a stronger $A/$US exchange rate and reduced export volumes. Forecast export volumes in 2020–21 have been revised down by 8 million tonnes, and volumes in 2021–22 down by 2 million tonnes".

The thermal coal section of the REQ notes:

"Australia's thermal coal export volumes are forecast to edge down from 213 million tonnes in 2019–20 to 208 million tonnes in 2020–21. Forecast low prices over 2020, currently being exacerbated by the relative weakness of the US dollar, are expected to result in lower production at higher-cost mines during the first half of 2020–21…

At current prices, a significant proportion of Australian thermal coal production is loss-making. On a calorific-value-adjusted basis, an estimated one-third of Australian thermal coal exports are cash negative at prices of US$50 a tonne for Newcastle 6,000 kcal NAR coal …

Some of the mines that are uneconomic at current thermal coal prices do not rely on their thermal coal sales for the bulk of their revenue, since they mainly produce metallurgical coal (Figure 6.12). However, low prices for metallurgical coal could threaten the viability of some of these mines".

Council has to ask how a lower volume underground mine producing limited quantities of benchmark thermal and low-grade coking coal (an average of less than 3 mt per annum across the first five years) with start up capital expenditure costs in excess of half a billion dollars can realistically compete with existing lower cost open cut competitors, competitors who are themselves already struggling?

The Commission raising the possibility of Maxwell's "*early closure … or if it had to go into Care and maintenance because the coal price could move all over the place*" during their meeting with the DPIE was both unprecedented and concerning. As indeed was the framing of the question, which concerned the suitability of rehabilitation conditions to these scenarios. Council would point out that nowhere in the Economic assessment of Maxwell is early closure or care and maintenance mentioned. Any deviation from the blue-sky cost benefit analysis contained therein would materially and detrimentally impact that analysis.

Furthermore, the number of mines already in Care and Maintenance mode is of concern to Council, particularly those that have been shuttered for considerable periods of time.

Council has concerns that 'Care and Maintenance' is becoming a convenient place to park uneconomic assets and to continuously defer the rehabilitation requirements associated with those assets. This is particularly relevant when extensions are routinely applied for by mining companies and approved by the Department.

During the hearing, the Department specifically referred to the Dartbrook mine, shuttered in 2006 and an excellent example of deferred rehabilitation obligations. That Proponent has recently reached agreement with the IPC over its Class 1 appeal and potentially secured a five year extension. On the same day that agreement was made public, that Proponent appointed a coal assets Mergers and Acquisitions specialist as a Director.

That appointment, coupled with the company's lack of any operational mining experience and lack of any personnel with mining experience, indicates to Council the company's intentions not to mine but rather to sell their 'asset'. The associated consequence of this is that the final rehabilitation of the mine will effectively be deferred for five years should the agreement be finalised. This is a mine that was last mined in 2006, since when it has emitted well over 1 million tonnes of CO2e into the atmosphere.

The real diversification needed in the Hunter Valley is the just transition to a low carbon future. The IMF put this succinctly in the 2019 Fiscal Monitor, "*Some coal-mining communities and regions are especially at risk because of a lack of other jobs and sources of fiscal revenues. Industries, workers, and communities whose livelihoods depend on fossil fuels may thus oppose reforms to mitigate climate change. Policymakers should design appropriate assistance and measures to build a better future for groups especially affected by drastic changes associated with mitigation policies*".

To be fair the NSW Government's Upper Hunter Economic Diversification Plan is a well thought out document which the state's planning system has not caught up to.

Issues arising since Council's meeting with the IPC, October 21st 2020.

1). Deloitte Access Economics *A New Choice, Australia's Climate for Growth*.

Deloitte Access Economics [DAE] released this report in November 2020. The lead author is the head partner of the company, Pradeep Philip. Council notes that DAE also authored Malabar's Economic Assessment.

The two DAE reports are fundamentally incompatible with one another. While the latter focuses on the economic risk to Australia posed by unanswered and unmitigated climate change, the Maxwell report does not even mention the words 'climate change'. Not once. Not even during consideration of the "*Assess risks and test sensitivities projected outcomes under alternative scenarios*" section prescribed in the NSW Treasury's '*NSW Government Guide to Cost-Benefit Analysis Guideline Requirements*'.

Assess risks and test sensitivities		
Projected outcomes under alternative scenarios	N/A	
Sensitivity and Threshold Analyses	Yes	4.5
Emphasis given on pessimistic alternatives	Yes	4.5

Extract from Economic assessment of Maxwell Project p.60

To underline this point, DEA's '*A New Choice*' report notes that "*Climate Change is not a scenario, it is the baseline for decision making*".

How can any economic assessment report for any coal mining project not consider the project's climate change risks and impacts? Not even mention 'climate change' and still be considered adequate? Even when the NSW Treasury requires an assessment of risks in its guidelines? Particularly when the impacts of the Rocky Hill mine on climate change [at paragraphs 422 to 485] were dealt with at considerable, extended length in Justice Preston's judgement? Particularly since DAE also produced Gloucester Resources' economic assessment?

Deloitte Access Economics says it *"believes where it is accepted that human induced global warming causes climate change, it must also be accepted that a 'business as usual' growth trajectory is innately miscalculated if it does not account for the damages and impacts of climate change"*. Council shares this belief.

The fundamental flaw in and the critical omission from Maxwell's economic assessment report has been underlined by the same company that produced the report. DAE have effectively and essentially undermined they own Maxwell assessment report. DAE's '*A New Choice'* report states (page 28, their emphasis) -

The growth in the global economic system is currently contingent on emissions intensive activity. Economic theories and models that provide the ability to understand emissions intensive activity and growth, are also maintaining society's 'business as usual approach to preventing climate change.

That is, the ***climate change economic paradox:*** *the economic fundamentals that make economies strong on paper with emissions intensive production, are equally what expose economies to disruption from both the climate and economic transition. And because the economic fundamentals are strong, it prevents the necessary policy and economic change from taking place.*

Climate change is not an economic scenario, it is the baseline and economic modelling is part of this wicked problem. Most ***current economic models and their trajectories of trend growth assume unconstrained emissions****. This is* [the] *economic baseline on which most decisions are made – government and business alike.*

But this baseline does not account for the economic consequences of unmitigated climate change or the world's response to it – both due to damages, and/or inevitable policy responses to mitigate the impacts. Climate change damages and mitigation policy are often modelled as a scenario due to the range of possibilities and future states. And this makes sense – to a point.

To leave the economic impacts of a changing climate out of economic baselines and decision making misses a trick … Understanding and accounting for the longer-term effects of climate change on productivity, potential output and economic growth is critical to knowing the path of growth, and the distribution of the impacts of disruption.

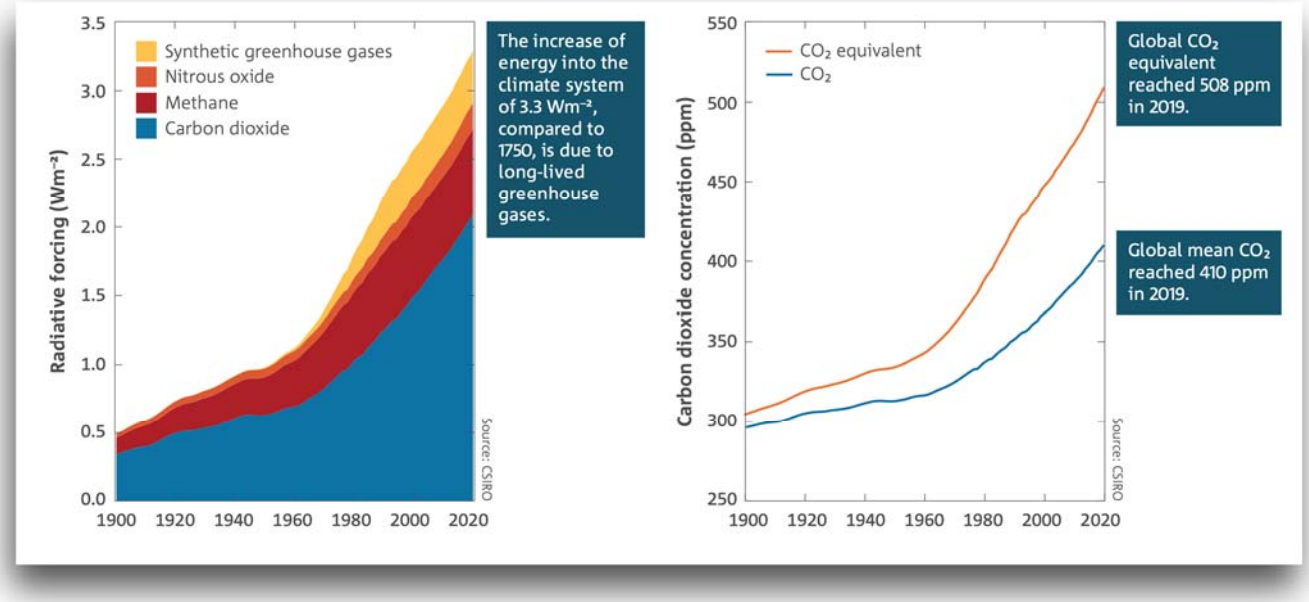
The report goes on to list coal mining as the most extremely intensive of all industry sectors and that mining will be the hardest hit of all Australian industries by unanswered climate change (- A$350 billion by 2070). Concluding that ***"the pathway of inaction or mis-action leads to economic losses of $1.1 trillion in present value terms by 2050 – or 3.6% of GDP. This loss sees almost 330,000 jobs lost by 2050".*** (DAE's emphasis)

2). <u>The Bureau of Meteorology and the CSIRO 'State of the Climate 2020'</u>

The two agencies "*play an important role in monitoring, analysing and communicating observed and future changes in Australia's climate"*. This report is the sixth in a biennial series. It finds -

- *"Australia's climate has warmed on average by 1.44 ±0.24 °C since national records began in 1910, leading to an increase in the frequency of extreme heat events.*
- *In the southeast of Australia there has been a decline of around 12 per cent in April to October rainfall since the late 1990s.*
- *There has been a* ***decrease in streamflow*** *at the majority of streamflow gauges across southern Australia since 1975.*

- *There has been an increase in extreme fire weather, and in the length of the fire season, across large parts of the country since the 1950s, especially in southern Australia.*



- ***Concentrations of all the major long-lived greenhouse gases in the atmosphere continue to increase**, with global annual mean carbon dioxide (CO2) concentrations reaching 410 ppm in 2019 and the CO2 equivalent (CO2-e) of all greenhouse gases reaching 508 ppm. **These are the highest levels seen on Earth in at least two million years**.*

In the coming decades Australia will experience ongoing changes to its climate. Australia is projected to see:

- ***Continued increases in air temperatures**, **more heat extremes** and fewer cold extremes.*
- ***Continued decrease in cool season rainfall** across many regions of southern and eastern Australia, likely leading to **more time in drought**, yet more intense, short duration heavy rainfall events.*
- *A consequential **increase in the number of dangerous fire weather days** and a longer fire season for southern and eastern Australia.*

Projections of Australia's average temperature over the next two decades show:

- *Every year is now warmer than the range it would have been in a world without human influence, known as climate change 'emergence'.*
- ***The year 2019 was Australia's hottest year on record,** due to the combination of climate variability and long-term warming. **This is expected to be an average year** in a world where the global mean temperature is 1.5 °C above the pre-industrial baseline period of 1850–1900 (emphasis added).*
- ***While the current decade is warmer than any other decade over the last century, it is also likely to be the coolest decade for the century ahead** (emphasis added).*
- *The amount of climate change expected in the next decade is similar under all plausible global emissions scenarios. However, by the mid-21st century, **higher ongoing emissions of greenhouse***

gases will lead to greater warming and associated impacts, while reducing emissions will lead to less warming and fewer impacts". (All emphases above added)

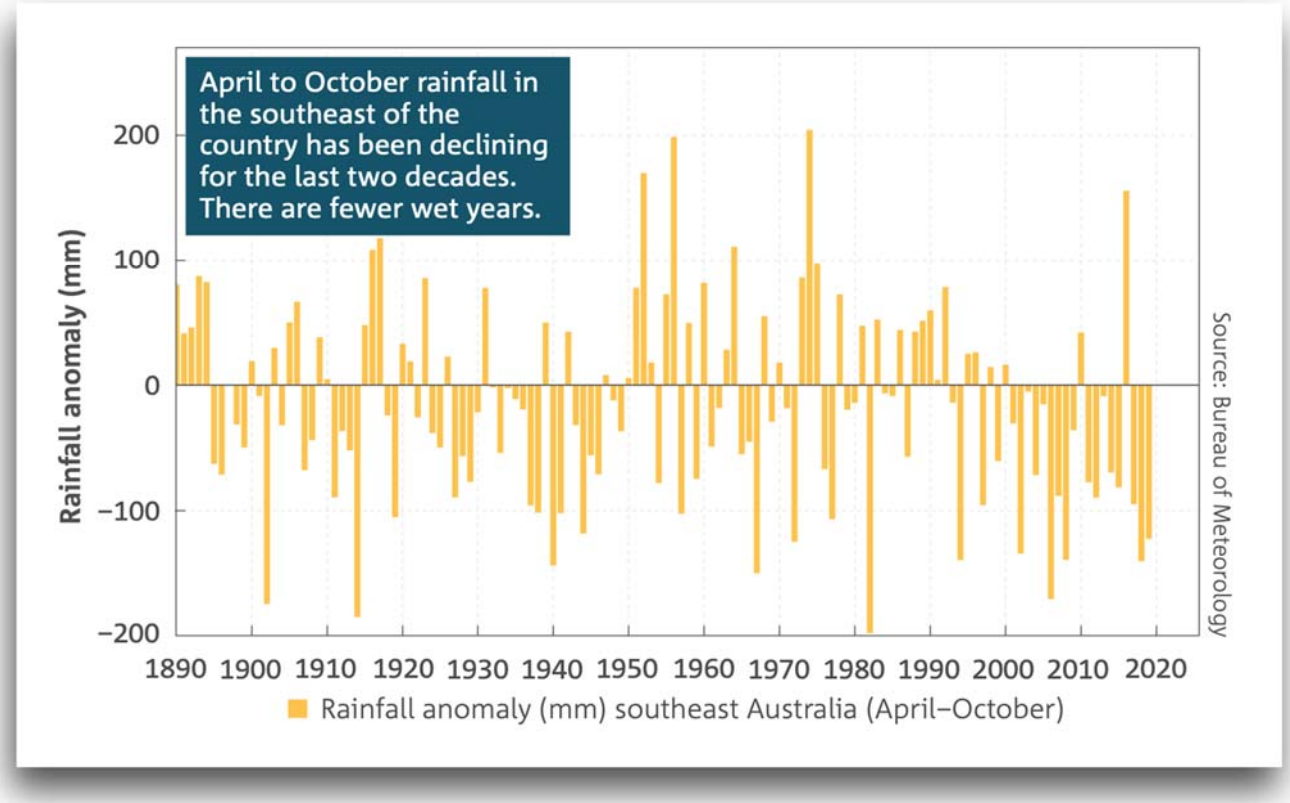
3). Royal Commission into National Natural Disaster Arrangements, October 2020

The 'Bushfire Royal Commission' released its report in October, finding, "***A future where such events will, regrettably, be more frequent and more severe***. *Consecutive and compounding natural disasters will place increasing stress on existing emergency management arrangements. As the events of the 2019-2020 bushfire season show,* ***what was unprecedented is now our future***".

The Royal Commission found:
2.4 ***Climate change has already increased the frequency and intensity of extreme weather and climate systems*** *that influence natural hazards.*

2.5 ***Further global warming over the next two decades is inevitable****. As a result, sea-levels are projected to continue to rise. Tropical cyclones are projected to decrease in number, but increase in intensity. Floods and bushfires are expected to become more frequent and intense*

2.18 We heard from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science research agency, that ***climate change is adding to Australia's natural climate variability****,* ***driving changes in average and extreme weather****, and* ***increasing climate impacts on our water resources, ecosystems, health, infrastructure and economy, both now and continuing into the future****.*



2.19 Clear trends have emerged in recent decades beyond the 'noise of Australia's natural climate variability.13 Warming is an ongoing trend – ***Australia has warmed by approximately 1.4 degrees*** *since 1910.14 As shown in Figure 2, 2019 was Australia's hottest year on record.*

2.20 ***There is also a drying trend across much of the southern half of Australia****, particularly in the south west and particularly in the winter months.17 Over the last 20 years, the southern half of Australia experienced below average rainfall.18 This is the most sustained large-scale change in rainfall since national records began in 1900.*

2.21 These trends are influencing fire seasons, heatwaves, rainfall and flood risk.20 Observed changes that are being influenced by background climate trends include:

- ***increased frequency of heatwaves and record high temperatures***
- *longer fire seasons with more extreme fire danger days*
- *increase in marine heatwaves, and*
- ***reduced annual average rainfall*** *in some regions.*

2.28 There are three factors that determine the climate, and hence climate risks, in future scenarios: ongoing natural climate variability; global socio-economic development ***and the resulting emissions of greenhouse gases*** *and aerosols; and how the climate responds at a regional level to these emissions.*

2.29 The 2018 State of the Climate Report, issued by the CSIRO and the Bureau of Meteorology (BoM) stated that the 'amount of climate change expected in the next decade or so is similar under all plausible global emissions pathways'.33 Globally, ***temperatures will continue to increase, and Australia will have more hot days*** *and fewer cool days.*

*2.33 The climate response under both emission pathways are very similar in the next 20 years but then diverge after that.39 We heard from the BoM that further '****warming over the next two decades is inevitable*** *and that over the next 20 to 30 years, 'the global climate system is going to continue to warm in response to greenhouse gases that are already in the atmosphere'. We heard from CSIRO that some* ***further climate change is 'locked in', 'because of emissions we've already had****'.*

2.36 ***Warming beyond the next 20 to 30 years is largely dependent on the trajectory of greenhouse gas emissions****.*

2.48 Heatwaves are commonly defined as three or more days of consistently high temperatures that are unusual for a region. Other heat indices include overnight minimum temperatures, and other factors relating to human comfort (eg humidity). Heatwaves are Australia's deadliest natural disaster, accounting for almost five times more fatalities than bushfires.

2.49 ***Heatwave events have increased in intensity, frequency and duration*** *across Australia in recent decades. Hot temperatures are occurring earlier in spring, and later in autumn. 2019 was Australia's hottest year on record, with a record 42 days when Australia's area-averaged daily mean temperature was above the 99th percentile.*

2.50 ***Further warming over the next two decades is inevitable, in response to past and future greenhouse gas emissions. Hot days, warm spells and heatwaves are all projected to occur more often and with increased intensity****. Extreme hot days that now occur every 20 years are expected to occur every two to five years by 2050.*

*2.51 Fire weather is primarily a function of temperatures, humidity and winds. T****here has been a long-term increase in dangerous fire weather, and in the length of the fire season****, across large parts of Australia. There has been a reduction in the time between the catastrophic bushfire events of Australian history*

2.52 In Australia, changes in fire danger risk are often assessed using trends in the Forest Fire Danger Index (FFDI), which uses temperature, humidity, wind speed and rainfall to assess fire danger. In southern and eastern Australia, the length of the fire season, as measured using the FFDI, has increased in recent decades.67 The fire weather season now arrives more than three months earlier than in the mid-twentieth century in some parts of Australia. The lengthening of the fire season is reducing the opportunities to undertake prescribed burning, and this is likely to get worse in the future.

2.53 ***There has been an increase in the frequency and severity of fire weather since 1950 in southern and eastern Australia, and this trend is projected to continue****.*

2.57 Climate projections show that ***more dangerous weather conditions for bushfires are very likely to occur throughout Australia in the future due to a warming climate****. The change in climate is also likely to result in changes to the amount, structure and type of bushfire fuel. Climate models also indicate a future increase in dangerous pyro-convection conditions for many regions of southern Australia.*

14.2 Natural disasters, such as storms and bushfires, ***can have a significant impact on air quality****.* ***Poor air quality has a range of health impacts – respiratory, mental health and cardiovascular – and can result in death****. Clear and consistent information and health advice can help people manage the risks associated with poor air quality, supporting greater resilience to adverse conditions and health outcomes.*

14.6 Bushfire smoke, ***like other forms of air pollution,*** *also contains very small particulate matter. Particulate matter is a complex mixture of solid and liquid particles that are classified by size (PM2.5 and PM102).3 PM2.5 is small enough to penetrate into the lungs and enter the bloodstream and PM10 can enter the lungs through the nose and throat. The human body responds to PM2.5 and PM10 in a similar way to an injury or virus – immune and stress responses and can lead to inflammation of tissues and organs.* ***These physiological responses can result in chronic and acute respiratory and cardiovascular impacts, such as heart attack or stroke. Exposure to particulate matter is also linked to increased mortality rates.***

14.7 Poor air quality can also add pressure to the health system through increased admissions to hospital, ambulance call outs, presentations to general practitioners and sales of medications.

14.8 We are also aware of a growing body of evidence on the impacts of ***PM2.5 exposure and broader health outcomes, such as negative impacts on blood glucose control, mental health, neurological function and developmental conditions in unborn children and infants****.*

14.10 Research on particulate matter exposure has found that, in general, ***if particulate matter concentration levels double, then it could be expected that adverse health outcomes would also double****.*

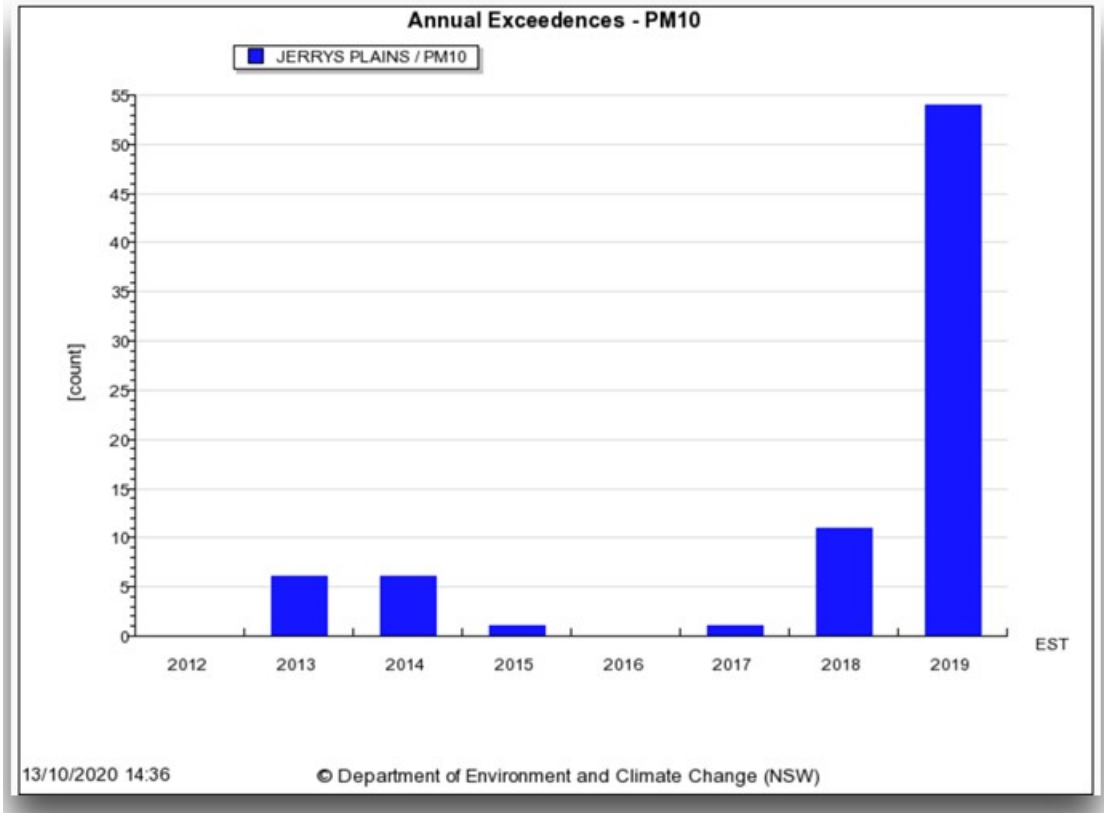
14.37 Air quality conditions can change rapidly, particularly during an air quality incident, such as bushfires or storms. ***This means that reporting 24 hour averages often does not provide an accurate representation of air quality at a particular point in time****.*

14.40 There is a broad consensus across governments and researchers on the need for shorter averaging periods for measured pollutants – ***experts generally agree that one hour averaging periods are an appropriate standard. Shorter averaging periods allow for near to real-time air quality information*** *and will help people to take meaningful steps to reduce their exposure to poor air quality.* (all emphases above added)

The findings of both the BOM / CSIRO and the Royal Commission reports are that Australia faces drying trends with ongoing decreases in rainfall and increases in temperatures and the occurrence of heatwaves. We face worsening climatic conditions due to already locked-in global warming which will deteriorate further if GHG emissions are not urgently tackled and reduced.

Considered together the reports have clear and profound implications for the Maxwell project. In particular Malabar's Groundwater and Surface water Assessment reports and the Air Quality and Greenhouse Gas Assessment report. Each of the Proponent's reports relies on historical data (and limited amounts of historical data).

"2019 is expected to be an average year …"



Council has already raised the Maxwell Air Quality report in our meeting with the IPC, it relies on just five - comparatively conventional - years of data, from 2013 to 2017. We described this as a 'convenient inconvenience' as the survey did not include the poor and incredibly poor years of 2018 and 2019, not the comparatively good year of 2012. We presented evidence collated from the Hunter Valley Air Quality Network which shows:

- Air Quality is reaching a tipping point locally even without Maxwell
- A clear trend to deteriorating Air Quality in the region since the HVAQN began in 2012
- The last four years are the worst four on record
- 2020 is currently tracking as the third worst on record
- Muswellbrook where both monitors exceeded non discretionary standards for PM10 for the last two years and PM2.5 for all years since the introduction of the network.

At the time of our meeting with the IPC the 50 microgram maximum PM10 threshold had been exceeded at the Jerrys Plains monitor on 89 or 30.6% of days in 2020. To November 22nd, that figure is now 103 or 31.7% of days. As such, 2020 remains on track to be the third worst year on record.

Further, the sensitivity analysis of the air quality report is inadequate, particularly in light of the BOM's assertion that in the future 2019 "*is expected to be an average year"* for a country increasingly impacted by the effects of climate change.

Likewise the sensitivity analysis of the Groundwater and Surface water Assessments clearly do not go far enough in encompassing the impacts of more frequent droughts - in terms of either assessing the mine's impacts on the two stud farms, or on the viability of the proponent's "make good arrangements" - their ability to actually source and deliver these reparations in periods of protracted droughts and severe water licence allocation restrictions.

As previously submitted, the NSW Government's Greater Hunter regional water strategy modelled the 1940s drought on the existing Hunter Regulated System, finding general security water allocations would be reduced to zero for 12 consecutive years.

Extract from the Greater Hunter regional water strategy, page 2

Numerous hydrologic, environmental and economic studies were undertaken to inform and assess the current risks, and how those risks change with combinations of drivers and infrastructure. The key findings from this analysis are:

- Drought security was confirmed as the primary economic risk facing the Upper Hunter. This risk extends to all sectors, including urban, agriculture, mining and power generation.
- Analysis of historical rainfall patterns shows that droughts have been under-estimated in the Upper Hunter and a stronger variation in rainfall occurs across the Greater Hunter region.
- A repeat of the 1940s drought (the worst on record) would see general security water allocations reduced to zero for approximately 12 consecutive years.
- Analysis of the variability of climate indicates that the 1940s drought may occur on average 1 in 40 years.
- Reductions in the base flows of rivers have occurred, and will continue to occur, as mining intercepts surface runoff and lowers groundwater levels near rivers.
- The proposed closure of Liddell Power Station in 2022 will not significantly mitigate the risk of failure of supply to water users in the Hunter Regulated River.

How will Malabar Resources be able to source or deliver 'make good' water to their neighbours, including Coolmore and Godolphin Woodlands, under this type of scenario? Very simply, it will not be possible. At times of greatest water stress, when Maxwell's impacts will be most keenly felt, the mine will be unable to deliver the reparations.

Glenbawn Dam's water is a finite resource and entirely dependent on rainfall to recharge. In times of drought inflows to the dam are impaired and reduced, and during heatwave conditions evaporation rates increase substantially. When drought and heatwave conditions combine and persist, dam levels drop exponentially.

The dam and the river are not the 'magic pudding 'assumed in Malabar's reports, a resource that can forever be depended on to replace the water their mining operations will remove from either the river itself or the Hunter River alluvium beneath Coolmore and Woodlands. The Greater Hunter Water Strategy discusses storage level scenarios in detail

Storage Levels	• Glenbawn Dam is estimated to fall below half full approximately 50% of the time under current WSP rules and with Liddell Power Station operating. • Glenbawn Dam is estimated to fall below half full only 44% of the time with the closure of Liddell Power Station, the Barnard Scheme operating and a large connection between Glennies and Lostock Dams. • Glenbawn Dam is estimated to fall below half full 56% of the time under the scenario where Liddell Power Station is closed, the Barnard Scheme is not operating and interception losses are taken into account.

The Hunter Regulated system that flows from Glenbawn is fully allocated. Current general security water licence allocations are currently at 53%. Glenbawn Dam is currently at 47.1% capacity (up 1% since Council met with the IPC).

Whereas the BOM and CSIRO predict ongoing decreases in rainfall and ongoing decreases in stream flow, Malabar actually predict "*increased recharge to the Hunter River alluvium*" (page 89 GWA). How or from where this 'increased recharge' materialises is not detailed, except for this explanation, "*Application of recharge rates was based largely on estimates and model calibration …*".

It should also be noted that the dam and the river are also the water sources relied on by the townships of Scone, Murrurundi, Aberdeen, Muswellbrook and Denman (as well as several smaller villages) - all upstream of Maxwell. The Upper Hunter Shire Council is the relevant water provider for Scone, Aberdeen and Murrurundi and the villages in between.

Glenbawn Dam capacity levels in the previous 24 months

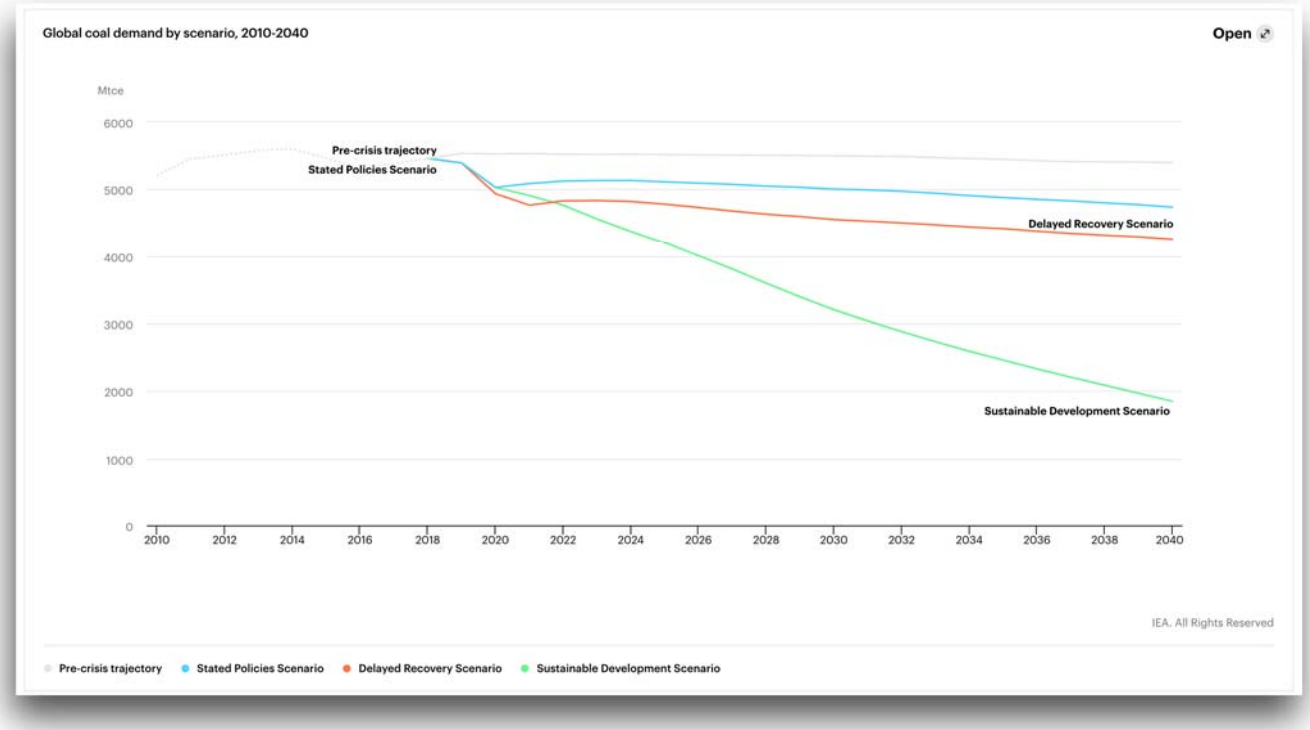
4). The rapid changing of the Geopolitical Landscape

Council has already mentioned to the IPC, as indeed have other submitters that - whatever the product coal in whatever percentages - the long-term outlook for a new coal project is especially vulnerable to political changes in an increasingly impacted and carbon constrained world.

We have already noted the stark contrast between the IEA's 2016 World Energy Outlook - relied on by the Department in their Assessment report to forecast a growth in coal demand across the life of Maxwell - and the 2020 edition where these forecasts of growth are replaced by forecasts of declining demand - across all modelled scenarios.

This quantum turnaround in the IEA's own outlook cannot be overstated. The IEA is an organisation that has stubbornly over-played and over-predicted the coal industry's future for decades. The IEA is now saying that, "*solar is the new king of electricity*" and that "*Only faster structural changes to the way we produce and consume energy can break the emissions trend for good"* and that "*new technology must be deployed at a blistering pace*" in the steel industry to head off the worsening impacts of anthropogenic global warming.

IEA Global Coal Demand 2010 to 2040



The political landscape is changing at astonishing speed. Within two days of each other in late October, Japan and South Korea - two target market countries identified in Malabar's EIS for Maxwell's product coal - both made clear and unequivocal commitments to reach net zero emissions by 2050.

The new Japanese Prime Minister, Yoshihide Suga, in a notable departure from his predecessor's reluctance to set an ambitious climate goal, announced the target in his first policy speech to the national parliament since assuming the office. Japan accounted for 13% of Australian thermal coal exports and 17% of metallurgical coal exports in 2019.

Recently re-elected South Korean Prime Minister, Moon Jae-in followed suit within 48 hours. South Korea accounted for 8% of Australia's thermal coal exports and 13% of metallurgical coal exports in 2019, although historically those figures are most often higher, particularly for thermal coal.

The Japanese and Korean announcements follow on from China's earlier net zero emissions by 2060 pledge delivered a month previously in September. China accounted for 20% of Australian thermal coal exports and 27% of metallurgical coal exports in 2019.

The Australian Financial Review quoted Steven Hamilton, chief economist of the Blueprint Institute saying, *"Australia's three biggest export customers, China, Japan and South Korea, which collectively take 96 per cent of our iron ore and two-thirds of our coal, have all committed to net-zero. If we don't act soon to join them, we risk being left in the dust".*

On the day between those two net zero announcements, the Philippines Secretary of Energy, Alfonso Cusi, announced a moratorium "*on endorsements for greenfield coal power plants.*"

While this does not affect proposals that have already been granted permits or are potential expansions on the sites of existing plants, 2605 MW of the country's 7370 MW of project coal plants are greenfield coal plants which would be directly affected by the new policy.

Cusi emphasised," *We are also pushing for the transition from fossil fuel-based technology utilization to cleaner energy sources to ensure more sustainable growth for the country*". The REQ regularly lists the Philippines amongst South and South East Asian countries seen as key to maintaining Australia's coal exports.

That same day Thailand released the country's latest Power Development Plan (PDP) which sets the expansion plan of gas-based power generation and renewables with a slow phase-out of coal generation to meet the low carbon transition target. The share of non-hydro renewables in the generation mix is set to grow from 15% in 2019 to 22% in 2030, while gas-based generation is set to expand from 62% to 76% during the same period. The share of coal in the capacity mix is anticipated to halve to approximately 5% by 2030. Thailand is another country the REQ lists as a key source of coal export growth.

The election of Joe Biden to the US presidency has also seen a profound and dramatic shift in global geopolitical momentum, even before his administration takes office in January 2021. Climate change action incorporating the 'Green New Deal' was a central policy position Mr. Biden put before the American people. Just this week, president-elect Biden announced the appointment of John Kerry as his 'Special Envoy on Climate'.

The presidential election has had an almost immediate effect in Australia. On November 11th, Prime Minister Scott Morrison and members of his cabinet were busy deflecting and rejecting calls for Australia to adopt a similar 2050 target for net zero emissions. "*Australia will set its policies based on Australia's national interests. The United States will make their decisions based on their interests and their capabilities and how their economy is structured. And we will do the same*" Mr Morrison said.

Within six days Mr. Morrison was telling Japanese business leaders, "*Can I just say that Australia also shares an ambition for net zero emissions*". The first time such words have crossed his lips, albeit without an attached timeline. Since then in a speech to the Business council of Australia, Mr. Morrison has signalled a retreat on the controversial policy of using carry-over Kyoto credits to meet Paris climate emission reduction goals and set an end of year target for 'clear action' on Greenhouse Gas emissions.

Further, In a speech to the virtual G20 Summit the Prime Minister told delegates "*Australia is committed to practical pathways to reduce our emissions and meet our emissions reduction targets … this includes for the future unlocking promising low emissions technologies, technologies like hydrogen, carbon capture and storage, green steel and aluminium*". Willingly or not, the Federal Government is shifting position.

In Council's meeting with the IPC we focussed on the economic risks facing this mine under the heading 'Building a stranded asset'. Clearly the political risks of Maxwell becoming a stranded asset have multiplied significantly in just one month.

5). Coal Industry Reports and Announcements

• October 29th. The Bluff open cut coal mine in QLD which produces PCI coal announced that it was going into care and maintenance amid soft coal prices and ongoing uncertainty over Chinese imports restrictions. "*We believe it is prudent to cease operations until a sustained recovery in the PCI coal price occurs*", MACA chief executive officer Mike Sutton said.

• October 29th. ANZ announced it will cease lending to thermal coal projects from 2030 "*Our decision to only directly finance gas and renewable power generation from 2030 means we will not directly finance any new coal-fired power plants or thermal coal mines, or expansions. We will also wind down any existing direct financing of these assets by 2030*".

• November 3rd. S&P Global Platts reported, *"Chinese steel mills have received verbal notices from the Ministry of Commerce to stop importing Australian coals starting Nov. 6, several sources close to the matter told S&P Global Platts Nov. 3. The ministry held a meeting Nov. 2 to discuss various issues on import policies, including restrictions on Australian coals, sources said.*

Several steel mills told S&P Global Platts they had received verbal notices from the local authority while others said they had yet to receive any such notice. Chinese end users previously received verbal notices from customs to stop importing Australian coals but with no clear timeline.

The meeting also made clear that Australian coals arriving in China prior to the Nov. 6 deadline would be considered for port clearance, the sources said. Cargoes arriving after that date would be waiting at the port while contracts signed before Nov. 6 would have to be suspended if the cargo could not reach port before that date".

• November 10th. "*Peabody Energy* [which operates the Wambo coal complex in the Hunter Valley] *said there was a risk it could go bankrupt for the second time in five years, as it raced to renegotiate debts in the wake of tumbling demand for the fossil fuel. The New York-listed miner is at the centre of upheaval in energy markets as natural gas and renewables replace coal on the North American power grid. The economic fallout of coronavirus has also sapped demand for coal used in steelmaking, an important market for Peabody's Australian operations.*

Peabody, the world's largest private sector coal producer and the fifth-biggest coal producer in Australia, said it was "probable" that its fourth-quarter results would push the company below a required minimum net gearing ratio under its credit agreement with banks. The company reclassified all of its $1.6bn in debt as current on its balance sheet". (credit / source The Financial Times)

• November 10th. Both Toshiba and Siemens ruled out future coal plant projects. Siemens Energy said it will no longer participate in "*new tenders for pure coal energy plants*".

Toshiba, which is estimated to have 11 per cent of the global thermal power generation market outside China, said it would also cease accepting orders for new coal plants. As an alternative to coal, Toshiba will boost investment in research and development of offshore wind power and next-generation photovoltaic cells. It hopes to expand its renewable energy business to 650 billion yen by fiscal 2030, from 190 billion in FY2019. (Source Reuters, Nikkei Asia)

•November 18th. "*Switzerland-based trading and mining firm Glencore* [joint operator with Yancoal of the Hunter Valley Operations mining complex] *may cut its Australian coal production this year and indicate a lower target for 2021 than it achieved in 2019, as expectations grow among Australian mining firms that Beijing will continue to target Australian coal imports in the new year.*

The uncertainty around the future of Australian coal exports to China is leading several key mining firms to reconsider production plans at operations that are losing money at current prices. The scramble is on for marketing departments to find alternate buyers but the competition is fierce and margins are being eroded, forcing firms to look at their production profiles.

Glencore has been a leader in curtailing production without closing mines in Australia in response first to the Covid-19 demand downturn and now to China's ban situation. It took around 7mt out of its Australian operations through a 2 - 3 week closure of most mines during September-October because of lower demand caused by the pandemic. It is likely to join several other Australian coal mining firms in closing many mines for around two weeks over Christmas It has announced, in its joint venture with Chinese firm Yancoal, that it will cut 84 contractor roles at the Hunter Valley Operations mine in New South Wales". (Source Argus Media)

As Council previously noted, the coal industry was in rapid structural decline even before the COVID19 pandemic took effect. COVID is only accelerating that decline. As others have already said, Maxwell is the wrong mine in the wrong place at the wrong time.

Conclusion

In accordance with Council's Position Statement on Coal Mining and Coal Seam Gas, Council objects to The Maxwell Underground Coal Mine Project (SSD-9526) due to the project's unacceptable impacts to the Equine Critical Industry Cluster.

These impacts include, but are not limited to, Groundwater and surface water impacts to both Coolmore Australia and Godolphin Woodlands Studs.

In accordance with Council's resolved Recognition of a State of Climate Emergency, Council objects to the Maxwell Underground Coal Mine Project (SSD-9526) due to the project's unacceptable Greenhouse Gas emissions and the detrimental contribution these emissions will make to anthropogenic global warming.

Yours sincerely,

Maurice Collison.
Mayor, Upper Hunter Shire Council

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