Thank you for the opportunity for me to provide a submission concerning the **Hunter Valley Operations (HVO) North and South Open Cut Coal Continuation Project**, EPBC Number: 2025/10177 (North) and 2025/10176 (South), currently being reviewed by the Australian Government Department of Climate Change, Energy, the Environment and Water.

Executive summary

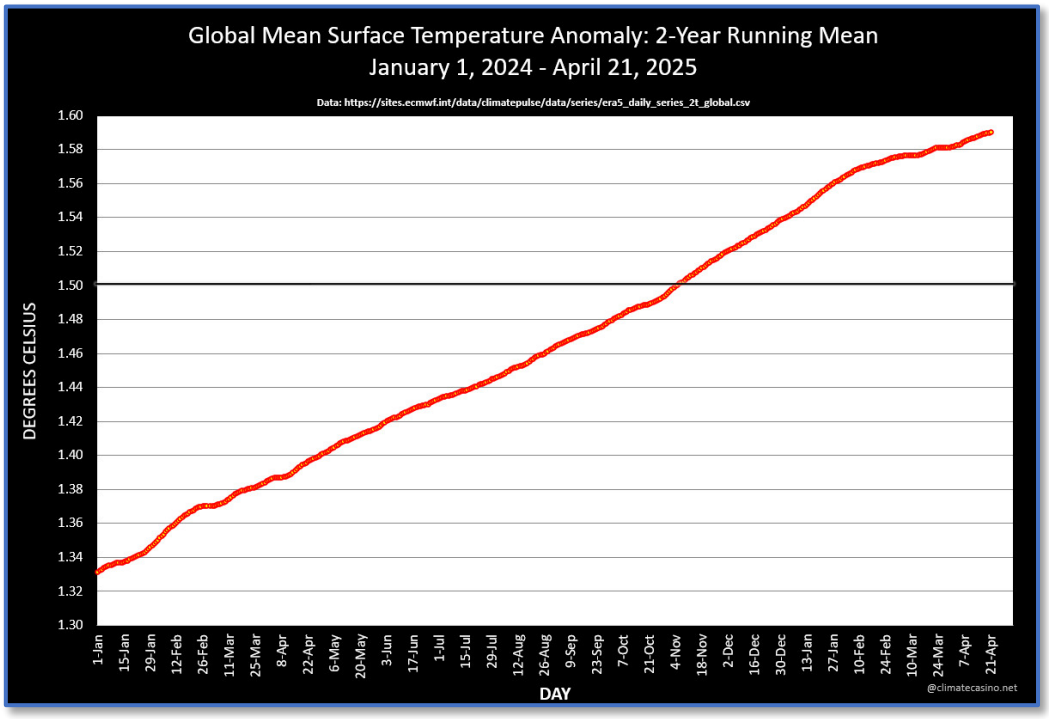
Humanity is on a collision course towards a +3 °C global mean surface temperature (GMST) anomaly, or more; a world beyond any past human experience. Large-scale depopulation would be likely. We are on the road to "climate ruin."

Burning more carbon-based substances is 'civilisation suicide'!

The proposed action should be assessed as a controlled action under the EPBC Act because the Hunter Valley Operations (HVO) North and South Open Cut Coal Continuation Project proposal contributes to exacerbating climate change. Climate change is exacerbating pressures on every Australian ecosystem. **All new and extensions of existing coal project proposals must be denied approval to mitigate worse climate and ecosystem outcomes.**

1.5 degrees Celsius is here and now

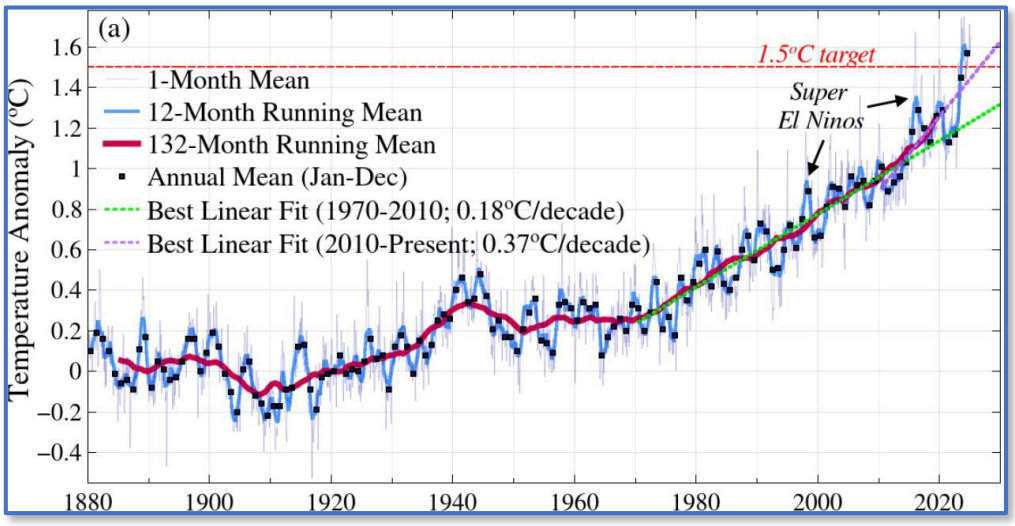
For all intents and purposes, the GMST anomaly has now breached the +1.5 °C threshold, with the 2-year running mean, relative to the 1850-1900 baseline, using the Copernicus ERA5 dataset, and is now approaching the +1.6 °C GMST anomaly.[1]



[1] https://bsky.app/profile/climatecasino.net/post/3lnijf7dzpk2v

The world is warming at a rate of >0.1 °C every three years

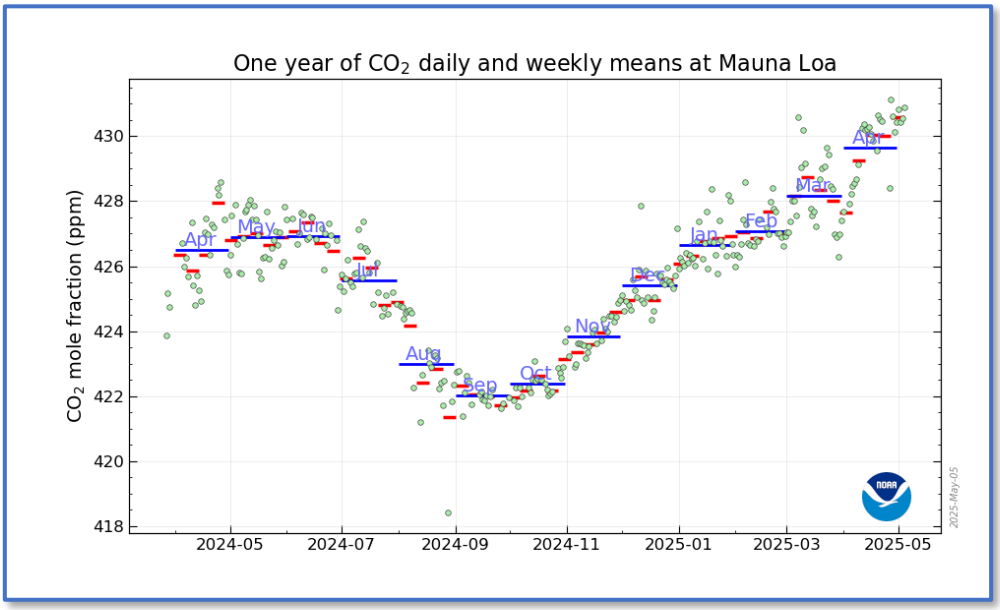
During the period 1970-2010, the linear best fit rate of warming of the Earth System GMST was 0.18 °C/decade, but post-2010, has accelerated to 0.37 °C/decade.[2]



On the current global warming trajectory (i.e. 0.37 °C/decade, or ~0.1 °C/3 years), the +2.0 °C threshold is likely to be breached within the next 15 years, and the +3.0 °C threshold could be potentially breached as soon as the 2060s.

Daily atmospheric CO_2 measurements are now exceeding 430 ppm

The daily atmospheric CO_2 at the NOAA Mauna Loa Observatory on 7 Mar 2025 was 430.60 ppm. This is the first <u>daily mean</u> reading above 430 ppm ever directly recorded at this location.[3]



[2] http://www.columbia.edu/~jeh1/mailings/2025/2025GlobalTemperature.15April2025.pdf
[3] https://www.co2.earth/daily-co2

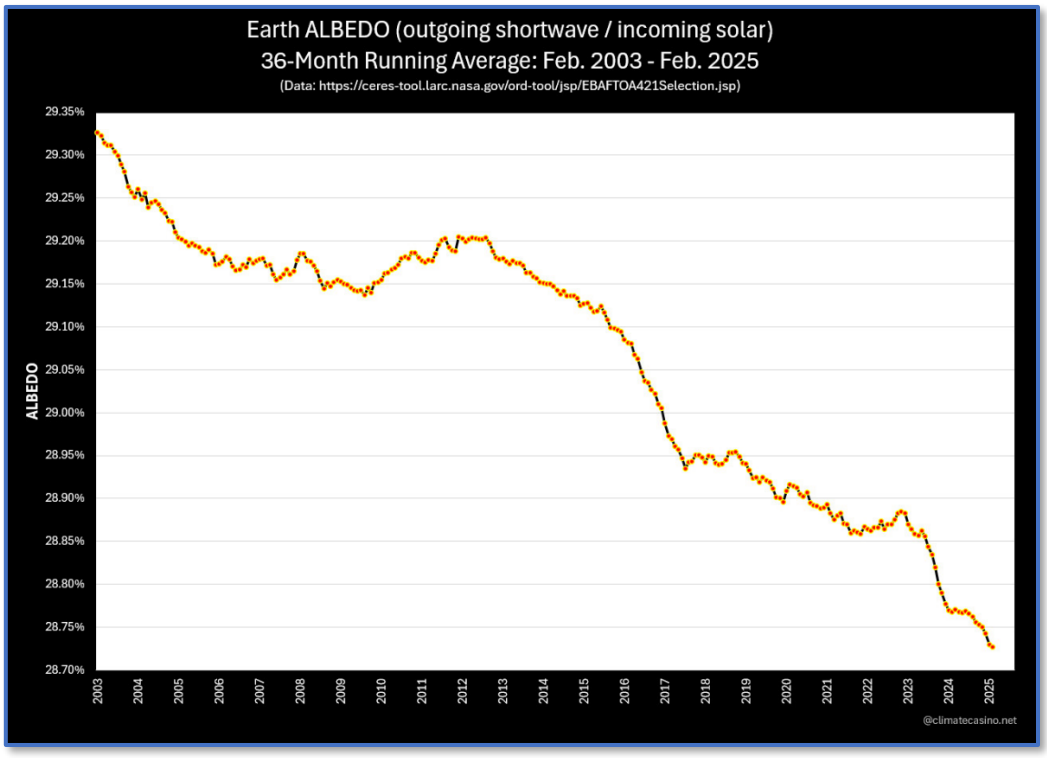
Atmospheric CO_2 levels have not been this high since the Pliocene Epoch, 5.33 to 2.58 million years ago. Global sea level was about 25 m higher then, compared with current sea level.[4]

Note that modern humans (aka *Homo sapiens*) have only been in existence on planet Earth for about the last 250 to 300 thousand years.[5] During the last 300,000 years, there have been at least 3 cold glacial periods and at least 3 warmer interglacial periods, where the GMST ranged from as low as about 8 °C (during the coldest glacial periods) to about 16 °C (during the warmest interglacial period - the Eemian).[6]

The Earth System has left the climate of the relatively stable interglacial Holocene Epoch (last 11,700 years of the Earth's history), transiting towards a warming climate like the Mid-Pliocene (circa 3.3 to 3.0 million years ago) by mid-century (i.e. 2050s), on the way towards the Mid-Miocene (15.97 ± 0.05 million years ago to 11.608 ± 0.005 Mya) by perhaps the end of this century.

Planet Earth's albedo is at a record low

Planet Earth's albedo, the fraction of light that the planet's surface reflects, hit a record new low, for the 36-month running average, per the latest CERES satellite data.[7]



[4] https://en.wikipedia.org/wiki/Pliocene
[5] https://youtu.be/U8pLrRkqbb0?t=218
[6] https://www.youtube.com/watch?v=8KrgPPO1h0A
[7] https://bsky.app/profile/climatecasino.net/post/3lnnuoku3b22a

Global mean sea level rise (SLR) rate is approaching 6 mm/year

Per the World Meteorological Organization report titled *State of the Global Climate 2023*, in Figure 6, the global mean rate of SLR was 4.77 mm/year for the decadal period Jan 2014 to Dec 2023, with an acceleration rate of 0.12 ± 0.05 mm/year^2.[8]

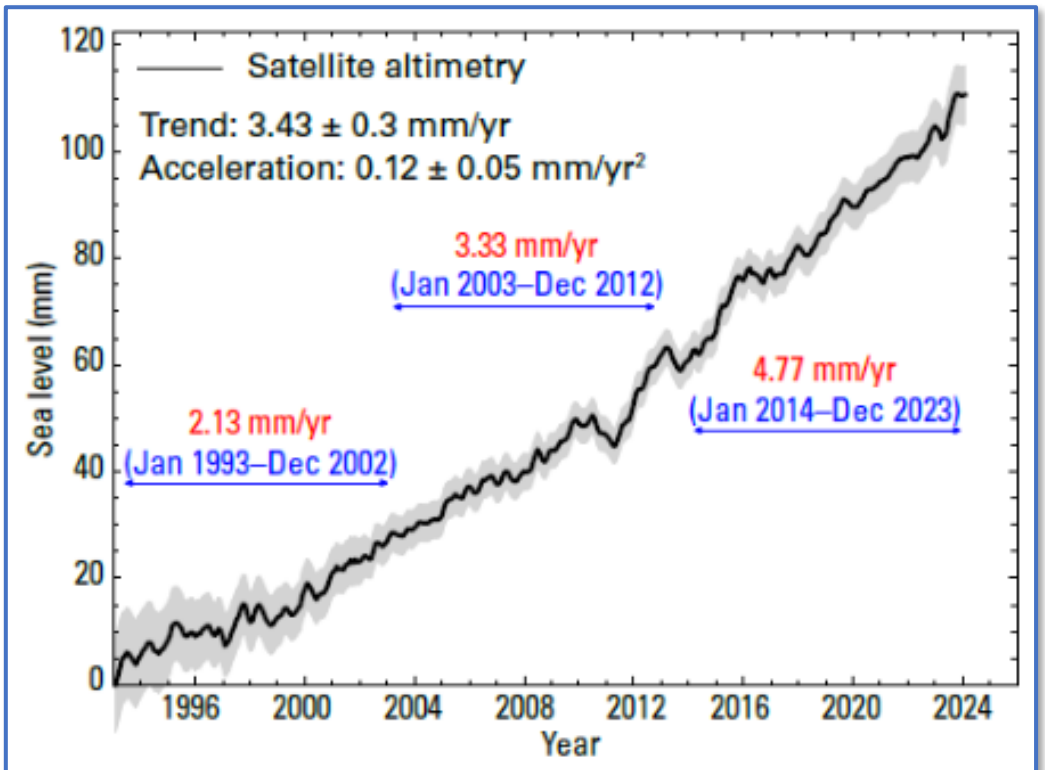


Figure 6. GMSL evolution between January 1993 and December 2023 based on satellite altimetry. The black line is the best estimate, and the grey shaded area indicates uncertainty. Red and blue annotations indicate the average rate of sea-level rise during three decades of the record as indicated.

Source: AVISO altimetry

NASA EarthData published a piece by Jane J. Lee at NASA's Jet Propulsion Laboratory on 13 Mar 2025 headlined **NASA Analysis Shows Unexpected Amount of Sea Level Rise in 2024**.[9] It began with (highlighted text my emphasis):

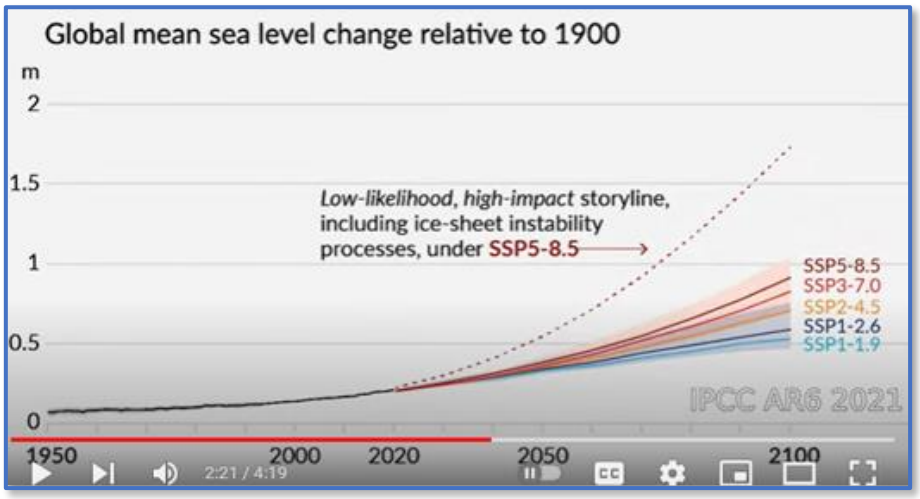
> Global sea level rose faster than expected in 2024, mostly because of ocean water expanding as it warms, or thermal expansion. According to a NASA-led analysis, last year's rate of rise was 0.23 inches (0.59 centimeters) per year, compared to the expected rate of 0.17 inches (0.43 centimeters) per year.
>
> "The rise we saw in 2024 was higher than we expected," said Josh Willis, a sea level researcher at NASA's Jet Propulsion Laboratory in Southern California. "Every year

[8] https://wmo.int/publication-series/state-of-global-climate-2023
[9] https://sealevel.nasa.gov/news/282/nasa-analysis-shows-unexpected-amount-of-sea-level-rise-in-2024

> is a little bit different, but what's clear is that the ocean continues to rise, and the rate of rise is getting faster and faster."

In the *YouTube* video titled **sea level rise - is Greenland beyond its tipping point?**, published 29 Jul 2024, duration 04:19, glaciologist Professor Dr Jason Box, from the Geological Survey of Denmark and Greenland, said from time interval **0:01:50**:[10]

> **"*Now if climate continues warming, which is more than likely, then the loss commitment grows. My best guess, if I had to put out numbers; so by 2050, 40 centimetres above 2000 levels; and then by the year 2100, 150 centimetres, or 1.5 metres above the 2000 level, which is something like four feet. Those numbers follow the dashed-red curve on the IPCC's 6th Assessment, which represents the upper 5-percentile of the model calculations, because the model calculations don't deliver ice as quickly as is observed. If you take the last two decades of observations, the models don't even reproduce that until 40 years from now.*"**



I would not be at all surprised to see the rate of global mean SLR accelerate further, from 5.9 mm/year in 2024 to 10 mm/year sometime in the 2030s, and double further to 20 mm/year before 2050. That likely equates to 40 to 50 cm of SLR relative to the year-2000 baseline by 2050, and multi-metre (i.e. ≥2 m) SLR before 2100. One metre of SLR would be catastrophic for many coastal cities.

We will need to cool off Earth to save our coastlines, coastal cities worldwide, and lowlands, while also addressing the other problems caused by global warming.

In a continuing warming world what are the consequences for us?

The University of Exeter's Institute and Faculty of Actuaries (IFoA) published their report on 16 Jan 2025 titled *Planetary Solvency–finding our balance with nature: Global risk management for human prosperity*.[11] The summary risk outlook and policy

[10] https://youtu.be/8jpPXcqNXpE?t=110
[11] https://actuaries.org.uk/news-and-media-releases/news-articles/2025/jan/16-jan-25-planetary-solvency-finding-our-balance-with-nature/

recommendations in their one-page summary of the full report, titled *Planetary Solvency: Risks and Recommendations*, included:

> There is an increasing risk of Planetary Insolvency unless we act decisively. Without immediate policy action to change course, Catastrophic or Extreme impacts are eminently plausible, which could threaten future prosperity.

The full report included Figure 12:

Figure 12: Planetary solvency risk impact and likelihood definitions (illustrative)

Rating	Financial impact	Non-financial impact			
	GDP losses	Human mortality	Climate	Nature	Societal
Extreme	≥50%	≥50% > 4 billion deaths	3°C or more by 2050. Multiple climate tipping points triggered, tipping cascade.	Breakdown of several critical ecosystem services and Earth systems. High level of extinction of higher order life on Earth.	Significant socio-political fragmentation worldwide and/or state failure with rapid, enduring, and significant loss of capital and systems identity. Frequent large scale mortality events.
Catastrophic	≥25%	≥25% >2 billion deaths	2°C or more by 2050. High number of climate tipping points triggered, partial tipping cascade.	Breakdown of some critical ecosystem services and Earth systems. Major extinction events in multiple geographies. Ocean circulation severely impacted.	Severe socio-political fragmentation in many regions, low lying regions lost. Heat and water stress drive involuntary mass migration of billions. Catastrophic mortality events from disease, malnutrition, thirst and conflict.
Decimation	≥10% >$10 trillion annual losses	≥10% > 800 million deaths	Global warming limited to 2°C by 2050. Several climate tipping points triggered.	Severe reduction in several critical ecosystem services. Major extinction events in some geographies. Frequent global food and water crises.	Severe socio-political fragmentation in regions exposed to climate and/or nature impacts. Failure of vulnerable states and mass mortality events in impacted areas.
Severe	≥5% >$5 trillion annual losses	≥5% > 400 million deaths	Global warming limited to 1.5°C by 2050 following overshoot. Some proximate climate tipping points	Some impacts to critical ecosystem services. Ongoing species extinction. Regular global food and	Some socio-political fragmentation in most vulnerable states, where adaptation has been limited. Fragile states exposed to climate risks see mass migration and mortality events from heat, water stress and

The IFoA report is suggesting without immediate policy action to change course, Catastrophic (i.e. ≥25% GDP loss and ≥25% human mortality) or Extreme (i.e. ≥50% GDP loss and ≥50% human mortality) impacts by year-2050 are eminently plausible.

Humanity is on a collision course towards a +3 °C GMST anomaly, or more; a world beyond any past human experience. Large-scale depopulation would be likely.[12] We're on the road to "climate ruin."

What's REQUIRED to avoid civilisation collapse?

- **Zero emissions at emergency speed: within a decade** — not 2050 — is the crucial time frame.
- The Earth is already too hot, so eliminating fossil fuels is not enough and **large-scale atmospheric carbon drawdown is vital.**
- **A safe means of immediate cooling** is critical to protect people & nature.[13]

[12] https://globaia.org/habitability
[13] https://youtu.be/flgq63f7TOc?t=1765

We/humanity all share the same atmosphere. We/humanity ALL need to pull our weight in rapidly reducing our greenhouse gas emissions, or we ALL reap the consequences of a planet increasingly becoming incompatible for civilisation.

Final Comments

The Laws of Physics are not negotiable!

Burning more carbon-based substances is 'civilisation suicide'!

These actions will have a significant impact not just on threatened species but on water resources and on the Hunter Estuary Ramsar site and the Great Barrier Reef and World Heritage.

These actions will make a substantial contribution to global warming, driving the Great Barrier Reef to extinction and inflicting considerable impact on other World Heritage sites in Australia.

Australia's Great Barrier Reef faces an unprecedented threat from climate change, with five mass bleaching events in just eight years, including one during a traditionally cooler La Niña year. If global temperatures rise by 1.5 °C, coral reefs could decline by 70-90%, and at 2 °C, nearly all could be lost.[14]

[14] https://www.marineconservation.org.au/wp-content/uploads/2019/10/Report-CarbonBudgetForQueensland-ClimateAnalytics-2019-WEB.pdf