

4.23 Comments on Land Court case Exhibit 12 being Professor Hoegh-Guldberg's report

Land Court case Exhibit 12 is Professor Hoegh-Guldberg's report entitled *The current and future impacts of climate change and ocean acidification on the Great Barrier Reef*. It is available here: <http://envlaw.com.au/wp-content/uploads/carmichael17.pdf>

Professor Hoegh-Guldberg claims that global climate change due to human production of carbon dioxide from use of hydrocarbon fuels (his term is "fossil fuels") threatens the Great Barrier Reef through causing climate change and ocean "acidification". His claim is demonstrably false and contradicts empirical evidence. He provides no empirical data to support his core claims that use of hydrocarbon fuels affects global climate and neither provides nor cites sources of empirical evidence and/or logic proving human causation. He relies on hearsay, coincidences and scientifically unfounded opinions while contradicting empirical evidence. Yet he provides engineering advice relying on assumptions and calculations that are part of chemical engineering services as instanced in his report's paragraph 28.

His report's paragraph 49 makes an unfounded claim about thermal threshold. To be factual such a claim would need to be **based on engineering assumptions and calculations** involving temperature, ocean carbon dioxide content and atmospheric carbon dioxide partial pressures, and temperatures. He seems to ignore the empirical evidence that global atmospheric temperatures have been in stasis for almost 20 years and that CSIRO data on ocean temperatures reveals that at any time there can be a 5°C temperature difference between the southern and the northern Great Barrier Reef. http://www.marine.csiro.au/~lband/web_point/ In addition there are wide seasonal temperature differences.

He neglects to mention coral bleaching during the winter of 2008 in which many parts of Queensland experienced record cold temperatures.

He misrepresents temperatures and instead of empirical evidence uses a schematic implied to be scientific validation. He relies on the works of the UN IPCC and the Great Barrier Reef Marine Park Authority that misrepresent climate science.

He advises on engineering topics being heat and mass transfer and the effect of carbon dioxide from human sources upon ocean pH on alkalinity. He makes many demonstrably false statements about the impact of coal mining on global climate and claimed consequences.

Professor Hoegh-Guldberg's income has benefitted directly and indirectly from his claims that misrepresent climate and climate science. Please see pages 54-59 of *CSIROh!* Appendix 9. He bases his claims on a scientific consensus that is the antithesis of science. He fails to adequately explain the scientifically known natural explanations of coral bleaching events in 1998 and 2002 and instead implies both are due at least in part to human use of hydrocarbon fuels. **He provides advice on chemical engineering matters in that he claims the effects of human production of carbon dioxide on water chemistry.**

His report relies on schematics and disparate data yet fails to present empirical evidence and causal logic tying climate and ecosystem variability to human use of hydrocarbons. He implies certainty that is not founded in the empirical data.

His report relies extensively on ambiguity through words such as 16 uses of the word “likely”, 23 uses of “would” and 10 uses of “may” yet provides no empirical evidence of human causation. He omits relevant data contradicting his claims and in doing so misrepresents climate, carbon dioxide and science. His report’s paragraph 32 for example, neglects to mention far greater natural variations in carbon dioxide levels in earth’s history predating human industrialisation.

In some of his report’s paragraphs it is difficult to know whether Professor Hoegh-Guldberg’s explicit or implied claims and **engineering advice rely on engineering calculations** or guesses. The latter is poor science and the former beyond his competence and appears to break Queensland legislation.

Corals have lived on Earth for 500 million years and have experienced far greater climate variability and variability in atmospheric carbon dioxide levels than those of recent times. During the last 20,000 years the Great Barrier Reef itself has negotiated a rise in sea level of as much as 120 metres and then a further 60 metres. Interestingly, these facts are easily and publicly available and at least one source credits the Great Barrier Reef Marine Park Authority (GBRMPA) with providing this information.

Professor Hoegh-Guldberg’s core claims are fanciful, unsupported and contradict empirical facts. On that basis, he projects scary emotive scenarios about our loved Great Barrier Reef. **Yet his report gives engineering advice.**

Remarkably for a marine biologist, Professor Hoegh-Guldberg does not mention the interaction of ocean-atmosphere cycles—seasonal and longer in duration—driving atmospheric carbon dioxide levels. This is fundamental.

Professor Hoegh-Guldberg relies on the UN IPCC’s computerised numerical models. Despite the UN IPCC’s admission of errors with its erroneous unvalidated models, he discusses model outputs and projections seemingly as if they’re real observations.

His report’s last page prior to providing references is page 20 containing an *Expert’s statement – additional facts and Declaration*. In that he states, quote: “I am not aware of any further readily ascertainable additional facts that would assist me to reach a more reliable conclusion”. Yet I have repeatedly provided Professor Hoegh-Guldberg with empirical evidence and/or sources of empirical evidence falsifying his claims and have provided him with extensive documentation of the UN IPCC’s misrepresentation of science and the UN IPCC’s undermining of the scientific process.

He then continues in his declaration stating, quote: “*In accordance with rule 24F(3) of the Land Court Rules 2000 (Qld), I confirm that:(a) the factual matters stated in this report are, as far as I know, true; and (b) I have made all enquiries considered appropriate; ...*” (Malcolm Roberts added underlining)

His report cites 15 references that he has written or co-written and relies upon the UN IPCC. Yet he lacks understanding of empirical evidence and causation. His curriculum vitae does not mention his work for, payments from, nor connections with Greenpeace and WWF activist groups that have been shown to systemically misrepresent climate science.

Scientists using post-normal ‘science’ based on opinions and fabricated consensus need to be replaced by engineers familiar with the primacy of empirical data in engineering and real science.