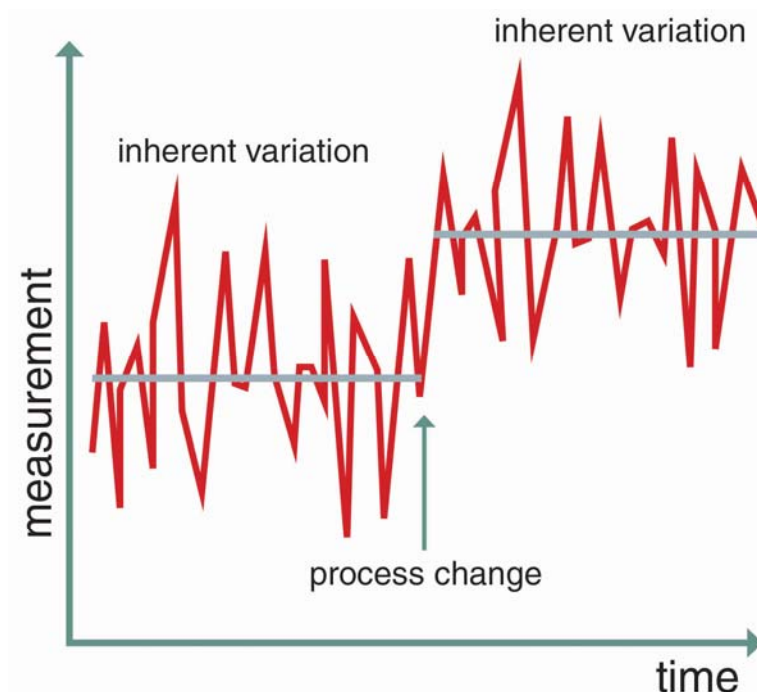


#### 4.4 Summary of empirical evidence on climate relevant to this complaint

Science is decided by empirical evidence. The empirical evidence on carbon dioxide and temperatures confirms that carbon dioxide has no effect on climate and confirms that human production of carbon dioxide cannot affect the level of carbon dioxide in the air.

Sadly, the understanding of statistics among academia, journalists, members of parliament, legal professionals and the public generally is poor. Few people learn of, much less understand, the two main causes of data variation: inherent variation and process change. Simply put, inherent or routine variation is ever-present and due to the random combination of many factors within a process continuing unchanged. Exceptional variation though reveals a process change.



Society's lack of understanding of variation is a boon to anyone who has an agenda to promote climate alarmism, be they academics, journalists or members of parliament (MPs). It allows such people to misrepresent regional and local weather events, such as cyclones, droughts, seasons and other natural inherent variation as a process change (ie, exceptional variation). They can then incorrectly leap to imply humans cause global climate change.

Analysing temperatures, sea levels, storms, droughts, rainfall, floods, snowfall and other climate variables that academics portray as alarming, confirms humans are causing no process change (ie, exceptional variation).

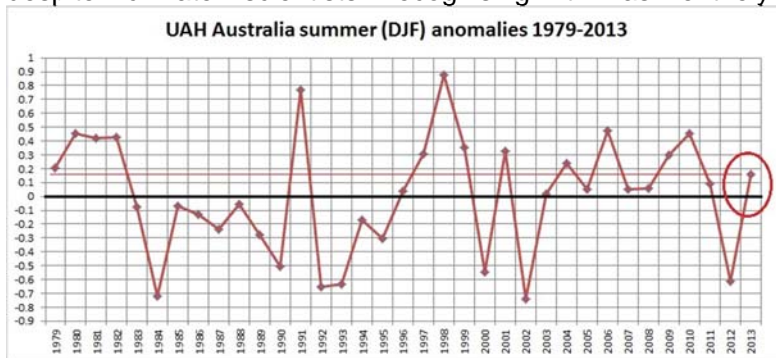
Temperatures: the key variable to assess is temperature since the basis for claimed global climate change is claimed unusual global warming. Due to the UN IPCC's theory that human carbon dioxide is claimed to be affecting atmospheric temperatures, the key temperature variable is atmospheric temperatures, particularly tropospheric temperatures being that part of the atmosphere from Earth's surface to an altitude above sea level varying from 7 kilometres at the poles to 20 km in the tropics, averaging around 17 km.

Satellites have measured such temperatures accurately since 1979 and since 1958 weather balloon radiosondes did the measurements with lesser yet scientifically acceptable accuracy. Ground-based measurements of the atmosphere though have been demonstrated to be corrupted due to sub-standard measurement and deliberate tampering without scientific justification.

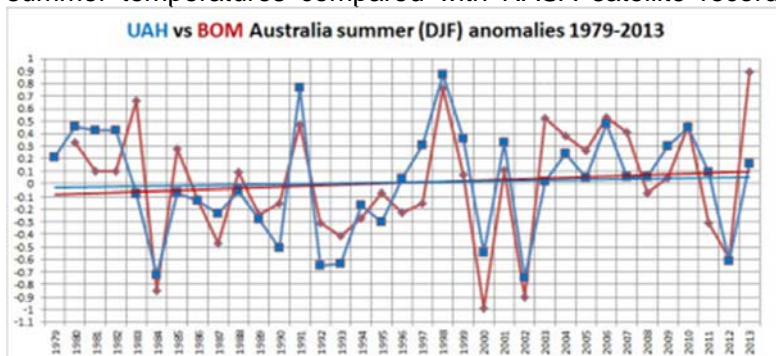
- **Global atmospheric temperatures – satellites.** These show no warming since early 1998 (almost 19 years) and arguably since 1995 despite rapid and record human production of carbon dioxide due to rapid economic growth and industrialisation in China and India;
- **Global atmospheric temperatures – weather balloons radiosondes.** These reveal cooling from 1958 to 1976 despite rapid economic growth and industrialisation in western nations. 1976 saw the Great Pacific Climate Shift in which temperature rose slightly. This is known to have been entirely natural. After 1976 temperature rose slightly until 1995/1998. Since 1995 there has been no warming trend;
- **Ground-based air temperature measurements.** These reveal cooling from the late 1890's to 1910 and almost four decades of cooling from the late 1930's to 1976 during massive industrialisation after the Great Depression and during and after the Second World War. Dr. Phil Jones, Director of the Climatic Research Unit and responsible for ground-based temperature measurements relied upon by the UN IPCC admits there has been no warming since 1995. For more than half the last century, there was no warming in the following periods: 1900-1910 cooling; late 1930's-1976 cooling; 1995-2015 and continuing, temperature stasis. The last century started with and ended with no warming trend and was dominated during mid-century by a cooling trend. Please note the accompanying quotes and decisions from the Land and Resources Tribunal Queensland decision on 15 February 2007. The current century has been dominated by a complete absence of atmospheric warming;
- In the last 120 years, the longest uninterrupted period was a cooling period lasting almost four decades from the late 1930's to 1976. That was concurrent with rapid increase in human output of carbon dioxide;
- According to the world's most comprehensive temperature measurement network in America, the warmest decade was the 1930s, being warmer than all recent decades and years;
- According to Bureau of Meteorology records, Australian temperatures were warmer in the period 1860-1890, than in current and recent decades. Yet the BOM chooses to show data only from 1910 onwards, using a starting time at the end of the cooling period and after the worst drought in Australian history. This misrepresents current climate;
- The world's longest continuous temperature record is the Central England Temperature record from 1650 onwards. The warming cycle from the late 1690's to late 1720's showed a greater temperature rise and a longer warming period than Earth's most recent warming cycle from 1976 to 1995. The whole record confirms temperature is cyclical, a fact confirmed by Australian climate cycles since the mid-1880s. There is no process change (ie, exceptional variation) at all;
- Other long records including Berlin, Germany from the 1730's and St. Petersburg, Russia from 1740's to the present reveal cyclic and inherent natural variability and show no net rise in temperature;
- The Medieval Warming Period (MWP) a thousand years ago is known scientifically from measured temperature proxies and historical records to have been warmer than current decades. It is accepted in science;
- In 2001 the UN IPCC presented the infamous fabricated '*hockey stick*' temperature graph falsely purporting current decades as unusually

warm. It unscientifically removed the known record of the Medieval Warming Period and misrepresents recent and current decades as warmer than normal when in fact those decades are proven scientifically to be significantly cooler than the MWP. The UN IPCC's graph drove frightening headlines around the world to capture and drive political attention. It drove public and political concerns in Al Gore's movie *An Inconvenient Truth*. Yet scientific peer-review of the graph and associated paper had been prevented and on that basis it should have been discarded. Despite this, it became the core of the UN IPCC's 2001 report to national governments and was the UN IPCC's media showpiece. After several scientists and statisticians independently proved it to be an unscientific fabrication, it was quietly withdrawn without fanfare. An organisation such as the UN IPCC that prevents scientific peer-review or fails to provide the raw data and methodology is not scientific;

- The Climate Commission with Professor Hoegh-Guldberg on its Science Advisory Panel claimed that the 2013 summer was abnormally and dangerously warm. It labelled the summer as the '*Angry Summer*' yet atmospheric temperatures showed it was close to average and reveal that there has been no rise in Australian summer atmospheric temperatures during the entire period of satellite measurements (UAH) since inception in 1979. Note the 1998 El Nino prominent in recent decades and originally used politically to claim unusual warming despite climate scientists recognising it was entirely natural:



<http://joannenova.com.au/2013/03/hottest-summer-record-in-australia-not-even-close-says-uah-satellite-data/> Note BOM's reporting of 2013 summer temperatures compared with NASA satellite records (UAH):



Heatwaves in the late 1880's were more severe than in recent decades: <http://joannenova.com.au/2012/11/extreme-heat-in-1896-panic-stricken-people-fled-the-outback-on-special-trains-as-hundreds-die/>

- Now turn to the second key empirical factor: the level of carbon dioxide in earth's air. Scientists recognise that in Earth's past carbon dioxide levels were many multiples higher than today during climatic periods far colder and periods far warmer than today;

- The UN IPCC deliberately omitted 90,000 reliable measurements of carbon dioxide levels in air during the last 200 years including those measured by Nobel Science Prize winners in science. These reveal enormous natural variability in carbon dioxide levels with some being almost 40% above current levels;
- Earth's past natural carbon dioxide levels were far higher than today;
- Data on carbon dioxide levels in the air from the 1950's to today and cited by the UN IPCC combined with an understanding of variation **confirm that carbon dioxide levels are a result of temperature changes not a cause. This is clear seasonally from data cited by the UN IPCC yet the UN IPCC misrepresents and reverses carbon dioxide's relationship with temperature. Empirical evidence confirms human production of carbon dioxide cannot affect levels in air since the UN IPCC admits that oceans contain, in dissolved form, fifty times the amount of carbon dioxide in Earth's entire atmosphere. Ocean-atmosphere interactions controlled by temperature determine the level of carbon dioxide's in air;**
- **In Earth's history and over any time scale, changes in carbon dioxide levels have always followed changes in temperature. In the overall long-term trend, ice core analyses confirm carbon dioxide levels follow temperature changes with a gap of around 1,000 years.** The current rising trend follows one thousand years after the MWP;
- The 1,000-year lag seems due to deep ocean currents circulating toward the surface and giving off carbon dioxide. Short-term changes in earth's temperature over a few decades have little effect on current levels of carbon dioxide. Carbon dioxide levels during the last 60 years of measurements used by the UN IPCC show levels rising during cooling periods, warming periods and periods of no warming. Human production of carbon dioxide has continued increasing since industrialisation yet temperatures have cooled warmed or been flat for decades. **Empirical data prove that carbon dioxide trends over periods of a few decades do not depend on current temperature and are independent of human production of carbon dioxide;**
- To provide context and assist understanding, internationally-awarded scientist Professor Ian Plimer advises that atmospheric carbon dioxide is only 0.001 per cent of the total carbon dioxide held in the oceans, surface rocks, air, soils and life. That is the carbon dioxide in air is one one hundred thousandth (1/100,000<sup>th</sup>) of the carbon dioxide on earth;
- As the UN IPCC describes its core *theory* at the heart of its climate claims, the *theory* contradicts empirical observations and laws of science and nature. Some of these contradictions are presented in the accompanying copy of *CSIROh!* Appendix 19 available at: <http://bit.ly/1snwKVB> In simple terms, **in the open atmosphere carbon dioxide takes heat energy from earth's surface via conduction and radiative absorption and then 'convects' it away from earth's surface toward space. In the open atmosphere, carbon dioxide is a coolant. How can it warm the earth? It cannot. Professional engineers understand this.**
- Further, earth's biosphere is warmed overwhelmingly by the sun and partly by geothermal energy. Yet implicit in the UN IPCC's assumptions is that carbon dioxide adds heat. This is fundamentally not possible.
- The empirical evidence on global climate variability, and climate drivers and factors including temperature, precipitation, polar ice caps and other ice sheets, floods, droughts, cyclone severity and frequency, ocean salinity and ocean alkalinity shows no process change (ie, exceptional variation). There is only ongoing natural inherent variability

superimposed on natural cyclical variation. The natural inherent and cyclic variability dominates all aspects of global climate and there is no evidence of global process change due to human activity. **No agency—including the UN IPCC, CSIRO, BOM, NASA-GISS, NOAA—or person has ever produced empirical evidence of process change (ie, exceptional variation) much less process change due to human production of carbon dioxide;**

- Carbon dioxide is proven empirically to have no effect on global climate. Empirical data and laws of nature show it cannot affect the level of atmospheric carbon dioxide;
- Townsville’s international award-winning climate scientist and palaeoclimatologist Professor Bob Carter and co-authors provided a scientifically peer-reviewed paper proving that the Southern Oscillation Index drives global temperatures. (*McLean, J. D., C. R. de Freitas, and R. M. Carter, 2009, Influence of the Southern Oscillation on tropospheric temperature, J. Geophys. Res., 114, D14104, doi:10.1029/2008JD011637*). Hundreds of scientifically peer-reviewed and other papers scientifically document the effect of solar activity driving Earth’s heat levels, temperature, weather and climate. *CSIROh!* Appendix 4 pages 33-35 list natural factors that control climate;
- Warm periods are optimal for plant and animal life and beneficial for humans and civilisation. Life has flourished in Earth’s past far warmer periods that are labelled scientifically as ‘*climate optimums*’. Humans welcome warmer periods and are threatened by cold periods.

Ignoring this extensive and conclusive empirical evidence, the UN IPCC instead fabricates erroneous, unvalidated computerised numerical models of global and regional climate. These are based on very poor understanding of the fundamental climate variables including clouds and omit or downplay effects of the key climate drivers being three solar activity factors.

Quoting investigator John McLean on facts from the latest UN IPCC report is revealing: “*The fifth and latest IPCC assessment report, published in 2013, showed that climate models failed to predict the absence of warming from 1998 and 2012, and that climate scientists have no clear idea of why they failed.*

1. “... the rate of warming over the past 15 years (1998–2012; 0.05 [–0.05 to 0.15] °C per decade) ... is smaller than the rate calculated since 1951 (1951–2012; 0.12 [0.08 to 0.14] °C per decade).” [UN IPCC Summary for Policy Makers (SPM), page 3, section B.1, bullet point 3, and in full Synthesis Report on page SYR-6]
2. “... an analysis of the full suite of CMIP5 historical simulations (...) reveals that 111 out of 114 realisations show a GMST trend over 1998–2012 that is higher than the entire HadCRUT4 trend ensemble (ground-based atmospheric temperature measurements) ....” [WGI contribution, chapter 9, text box 9.2, page 769, and in full Synthesis Report on page SYR-8]
3. “There may also be a contribution from forcing inadequacies and, in some models, an overestimate of the response to increasing greenhouse gas and other anthropogenic forcing (dominated by the effects of aerosols).” [SPM, section D.1, page 13, bullet point 2, and full Synthesis Report on page SYR-8]
4. “This difference between simulated [i.e. model output] and observed trends could be caused by some combination of (a) internal climate

*variability, (b) missing or incorrect radiative forcing and (c) model response error". [WGI contribution, chapter 9, text box 9.2, page 769]*

**EXPLANATIONS:**

1 – *According to statistical practices the trend in temperature from 1998 to 2012 (the 15 years prior to the report being drafted) falls somewhere between slight warming and slight cooling. In other words there is no certainty that any warming occurred.*

2 – *Despite claims of the accuracy of climate models most of the model runs (97%) wrongly predicted warming from 1998 to 2012.*

3 – *The IPCC is admitting that "some models" – we are not told how many, so maybe it's almost all – exaggerate the influence of CO<sub>2</sub> (carbon dioxide) and other greenhouse gases.*

4 – *The models could be wrong for a number of very basic and general reasons; the IPCC really doesn't know why the models failed."* End of quote from McLean

**Canadian statistician Professor Ross McKittrick has identified that the UN IPCC has subsequently modified previous UN IPCC projections in an effort apparently to reduce the perceived discrepancy between erroneous projections and actual temperature measurements.**

Yet Professor Hoegh-Guldberg relies upon these erroneous, unvalidated, 'theoretical' numerical computer models contradicting empirical evidence.

To justify cutting human production of carbon dioxide on the claim it causes dangerous global warming or climate change requires empirical evidence that:

- Globally temperatures are rising unusually and are continuing to rise; **and** requires that,
- Temperature is determined by the level of carbon dioxide in the air; **and** requires that,
- The level of carbon dioxide in air is determined by human production of carbon dioxide; **and** requires that,
- Warming is dangerous.

*CSIROh!* Appendix 4 explains that if any one of the four conditions is not met it proves that human production of carbon dioxide is not a threat or dangerous. The causal logic is introduced on page 2 and explained on pages 6-32 with links to supporting empirical evidence. Empirical evidence proves that all four conditions are not met. Carbon dioxide is not a threat. **The UN FCCC's core claim that human society needs to be centrally controlled by the UN to cut human production of carbon dioxide comprehensively contradicts empirical evidence.** The UN's stated and implied aim to control energy, finances, politics, economics, industry and allocation of resources while removing private property rights is without any scientific or moral basis.

Professor Hoegh-Guldberg's behaviour confirms that he has no empirical evidence for his core claim. The actual empirical evidence available publicly contradicts his core claim that carbon dioxide from human activity affects global warming or global climate variability including global climate change. Is Professor Hoegh-Guldberg's core claim the product of fertile imagination or group think or herd instinct among researchers or unconscious bias or another reason? He's been making up his claim based on something other than empirical evidence.