



13 December 2020

An Appeal to Geoscientists

I am a petroleum geologist with 35+ years of experience with Petrocorp/Fletchers, Santos, TAG, and Genesis. Since the NZ Government introduced a ban on new offshore permits I have been researching climate science to understand the basis for the alarming warnings of impending catastrophic environmental and social collapse that are causing such distress and anxiety for today's youth. A summary of my review is attached and the full review can be accessed on my website (www.kaurioilandgas.co.nz). I will state upfront I am unashamedly pro oil and gas because of the benefits they bring, but I disagree with frac'ing in New Zealand (for technical reasons) and am ambivalent about renewables - they should simply be included in the portfolio and used where they are the most cost-effective, efficient, safe and least environmentally damaging option.

I started the review highly sceptical of the claims being made and didn't believe human activity could have such an impact. I was wrong. Two years on, my conclusion is AGW is real (although not actually global) but is not the result of using fossil fuels (the Greenhouse Effect has been disproved by actual measurements), it is more likely to be the result of ongoing and increasing emissions of chlorofluorocarbons (CFCs). The good news is the problem can be fixed quickly, easily, and without crippling the economy – and has been done before.

IPCC Model

Several things initially struck me in the IPCC reports:

1. The IPCC advisory groups include very few geoscientists;
2. The IPCC dismisses crustal heat flow as insignificant in climate trends;
- 2 The IPCC discounts subsurface contributions of CO₂ and methane;
3. Climate science assumes that, because CO₂ and methane are capable of absorbing and emitting infra-red radiation, an increase in concentration will lead to higher temperatures. This is the basis of the Greenhouse model. The steadily rising CO₂ curve is then overlain and re-scaled on one of many temperature datasets to validate this premise. **The actual impact of increasing CO₂ on temperature has been measured and is insignificant.**

The technical merits of these assumptions are addressed in the review.

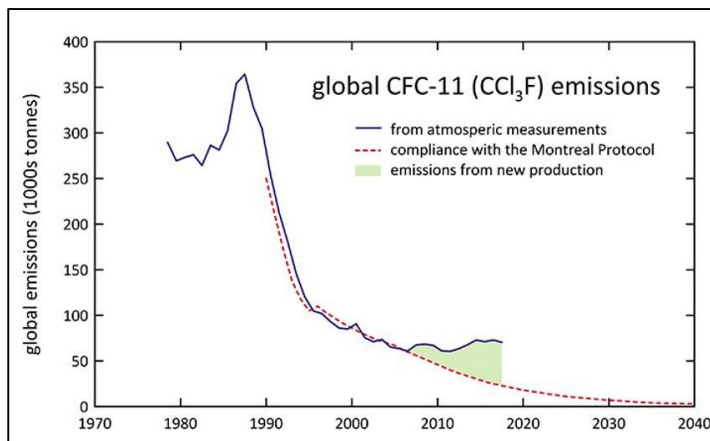
So what is causing warming?

It is more likely that unusually rapid warming since the 1950s is another consequence of ozone depletion. The destruction of ozone enables more high-intensity short-wavelength radiation to enter

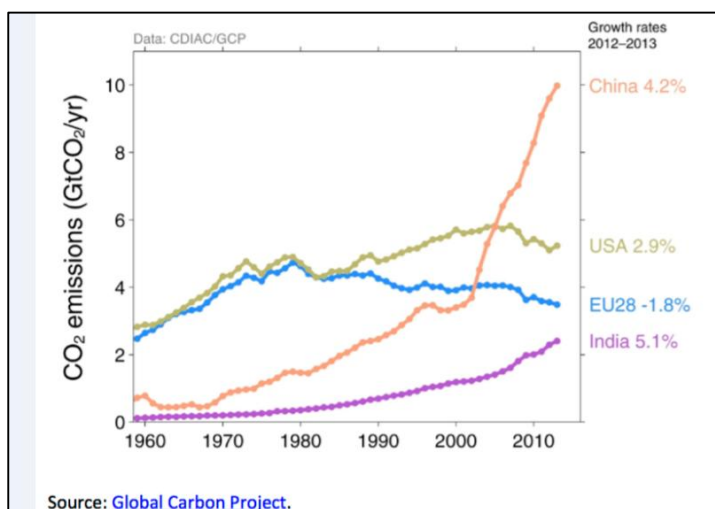
the atmosphere and reach the earth. This is absorbed not only by ozone but also by oxygen and water (vapour and liquid). It also increases evaporation.

The production of CFCs and associated emissions reached a peak in the 1980s. When the damage was recognised the Montreal Protocol was signed by all nations. Emissions fell and this reduction can be tracked through a number of climate-related datasets – ozone density, UV Index, water vapour and ultimately temperature (the temperature pause of 1998-2012). In contrast, none of these bear any relation to the CO₂ concentrations which have consistently tracked upwards at 4%.

China recommenced production around 2008 and emissions are estimated to be growing by 7,000 tonnes/year. The plots below show global CFC emissions (the area in green reflects new production in contravention of the Montreal Protocol) and CO₂ emissions. China recently pledged to be carbon neutral by 2060. Yeah right. Yet this pledge is now being used to justify even harsher economic penalties for New Zealanders.



Global CFC emissions (Paul Crumell, CSIRO)



CO₂ emissions of China, India, U.S. and EU

Why bother?

I'm regularly told the political and social momentum is now so strong that it's futile trying to swim against the tide – accept the world has changed, embrace the new technologies, get on the right side of history etc etc. I'm told I'm one of only a handful of geoscientists refusing to accept the settled science, which is certainly not consistent with what I hear from other geoscientists. There are compelling reasons I keep poking my head up to be ridiculed:

1. Decarbonisation will not fix the problem. This seems self-evident but apparently not. If you accept climate change, if you accept temperatures are increasing and think we should slow or reverse this trend, then we need to identify the problem correctly. There is no evidence that increased concentrations of carbon dioxide in the atmosphere causes harm, but direct evidence that it is beneficial. Decarbonisation will have no effect on climate but the cost is crippling. Presumably the most successful outcome of this strategy would be to eliminate CO₂ from the atmosphere, after which plant life will become extinct, which will drive the final mass extinction.
2. The future is not bleak and the kids need to be reassured. We have allowed self-appointed climate scientists to travel around the country fearmongering in schools and bullying councils (and now our government) into declaring emergencies. Climate change resources provided to schools include statements such as *'there is no alternative explanation that does not involve rising CO₂'*. This is simply false. It is not science, it is propaganda.
3. The proposed solution is likely to have unintended consequences that are worse than the perceived problem. China plans to build a weather modification system by 2025 to actually try and control weather – where and when rain falls, restricting the extent of snow etc. The west has it's own wealthy elite prepared to start geo-engineering projects to interfere with the atmosphere when we demonstrably do not yet understand how the system works.
4. The integrity of science is on public trial. If anyone who dares speak up is ridiculed, fired, or otherwise cancelled the young generation learns to keep their mouths shut unless they're comfortably in the majority.
5. The costs of decarbonisation are huge and are not transparent. On top of the costs of achieving 100% renewable electricity generation, replacing the vehicle fleet, additional taxes on individuals and businesses based on supposed climate impact, there are huge international commitments being made. The gap between New Zealand emissions and commitments made to is likely to be around 20 million tonnes/year and will be closed by purchasing carbon credits. These are expected to be around \$100/tonne, so over the next 10 years New Zealand will be liable for in excess of \$20 billion. On top of Covid debt this is building a debt by 2030 of over \$10,000 per person. Given half pay net tax, this is a burden of \$20,000. If it is difficult for first home buyers to get a house now, it will be simply impossible in future.
6. New Zealand is a trading nation. We need to sell goods or services that people beyond our borders want – natural gas, tourism (including movies), agricultural products, IT (games, software etc). The notable exception being bottled water, which we give away and in return contribute to plastics in the ocean. Spending vast amounts of money rebuilding our domestic energy supply systems and infrastructure may create jobs and allow us some pious posturing, but it is diverting funds from real problems – housing, health, education, child poverty. An LNG export industry would be worth \$360 Billion over 30 years, \$100

Billion in government revenues over 30 years, \$40 Billion to regional economies and 30,000 jobs over the project lifetime. Norway now has US\$1 trillion in it's Sovereign Fund (Oil & Gas Revenues). Loading future generations with debt while at the same time shutting down high value industries seems an underwhelming legacy to leave.

What can you do?

As we are incessantly told, every individual can make a difference and it is past time for geoscientists to start making their voices heard.

1. When I discuss Climate Change with people, the common response is it's too complex, people don't have time to read , there's too much information coming at them etc etc. The review has been written with these people in mind. End your apathy and invest the time to understand the issue. Most baby-boomers put more time into researching their next purchase- that home entertainment system or electric vehicle - than into checking the veracity of what their children and grandchildren are being taught. If you want to leave the world a better place, invest some time.
2. If you agree with my conclusions, forward this to every geoscientist you know and forward the summary to your friends, family and colleagues.
3. I intend to broaden communication and will be using articles (possibly a book), videos etc to get this information in front of New Zealanders. Ideally I would like to subject the Crown's policy to ban new offshore exploration permits to judicial review as the basis for the policy is fundamentally flawed. If we are indeed following evidence-based science then all evidence should be subject to scrutiny and meet a legal standard of proof – the case against CO₂ is circumstantial. Assistance in compiling data, especially economic data to illustrate the cost of decarbonisation, would be welcome.
4. The Climate Change Commission is preparing its first carbon budget. There will be a period of consultation from 1 February – 14 March and the Commission's recommendations will be presented to government in May 2021. Kauri Oil & Gas will be making a submission and so should anyone else who disagrees with current policies.
5. This work is self-funded and any assistance would be greatly appreciated – there is a PayPal button for donations on my website.

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