

**Submission to the Minister for the Environment on the Zero Carbon Bill
July 9th 2018
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I made a similar submission to the New Zealand Tax Working Group. 20th April 2018.

The problem: We all know our fossil fuel use is now running on borrowed time. Yet most of us still go about normal life, commuting, flying, trips, as if it doesn't matter, or for just a bit longer, partly because it's so cheap. Successive governments everywhere do their best to make sure it stays cheap, because any rise in the price of fossil energy is inflationary - and who wants inflation! But humanity's economic/political playing field has begun to tilt, the physics of our atmosphere and oceans is starting to change due to the effects of increasing CO₂ and methane playing out, and physics is not interested in human problems. Our fossil fuel use must reduce and be replaced by electric motors powered by renewable energy asap, and NZ is in a great position to show how it's done. The tax system could be used to nudge our society to a far more sustainable system, meet our international obligations and even lead the way with our existing and enhanced renewable system. Failure to transition away from fossil fuels may already have cost our descendants terribly.

Consideration: In London in the 80's I was paid as a systems analyst, and this is the skill I have been applying continuously to the "climate" problem ever since 1987 when I first visited NZ. I moved here soon afterwards, spurred on by this issue. Unfortunately for us, NZ is high up on the "badly-behaved" list - planes, agriculture, forestry, import/export and car kms per person (with Australia way out in front). We need to do a lot more to reduce our FF use, and we have an excellent renewable electric infrastructure already.

My recent research concerns the current exponential Arctic methane release to air, from melting permafrost and thawing undersea methane hydrates, through a friend in Germany - a PhD methane - and Siberian scientists working up there. Hydrate methane release has increased 100x over an area of 2 million km², in the 9 years since my book was published in 2009. I have numbers. This suggests we are perilously close to (or may even have passed!) a serious irreversible tipping point where this positive feedback may spiral our climate into catastrophic territory for humanity. When will we know it's "too late"?

Of all the myriad environmental issues we face, only one thing really matters now - the one we have all been avoiding most - fossil fuel use must be reduced and fast, hence this submission to the Zero Carbon Bill. NZ can do this - we have lots of hydro, geothermal, and wind, and lots more untapped wind and solar available.

Even though protesters target the fossil fuel companies - they are easy targets - they are not really at fault, except for their deliberate obfuscation and delays. They just feed a huge demand by people, industry, agriculture, import/export and airlines. But really this fuel is so damaging in the long run, it is far too cheap - the externalities have been ignored too long - and it should be valued much more highly. Each user should feel a rising cost of using it, thus effectively sending a signal to the public and business, discouraging its use and encouraging a switch to renewable electric (or perhaps to simply using less energy!)

“Climate Change” is presenting increasing “extreme weather events” everywhere, and we have personal experience with the devastation of our beach house from seawater inundation in Ruby Bay last February from cyclone Fehi. Temperature and rainfall records are broken often these days. There are large associated costs to society which have been predicted and will only increase over time - the sea is rising and warming, storms are becoming bigger, droughts will be longer, rainfall and bushfires will be more damaging, agriculture and infrastructure will struggle with increasing costs and losses. Who will pay? Insurance? Or some form of carbon tax? This would be more appropriate since it is the unconstrained use of fossil fuel that is causing the change and the damage.

My poem Earthworks, the sequel to my book, <https://cliffinthefog.wordpress.com/category/climate-issues/earthworks/>, makes the case that the underlying effect (a long term negative feedback) of all life for the whole history of life on Earth, has been to sequester carbon into the ground, with every leaf on land, and every cell of algae in the ocean. In just one long human lifetime we have reversed many millions of years of this process, maybe 100’s of millions of years, by burning this long-sequestered carbon from underground, simply replacing the carbon into our delicate atmosphere and oceans as a byproduct of all our journeys, heating and processing. We really do need to find a better way very soon.

James Anderson of Harvard - the ozone scientist whose work resulted in the Montreal Protocol about the Antarctic ozone hole - recently stated in a speech that if we want to have viable agriculture in 2100, we need to finish with fossil fuels worldwide within 5 years. Without radical change (90% reduction), business as usual gives us a trajectory of not 2C but 4-6C temperature rise this century, together with a much faster-than-predicted rising sea due to the breakdown of the cryosphere. This is because the northern methane is getting out and the planet could become hostile to life as we know it - as it has before, most recently during the Paleocene-Eocene Thermal Maximum, the 5th mass extinction, about 55 million years ago. These would be conditions well outside what humans have ever experienced over much of the world, and many scientists warn about imminent extinction. “Normal” economics and politics would not survive. NZ must do its bit and we can, but we must act quickly. “ACT” means finding a viable way to effectively discourage fossil fuel use in all sectors of society in order to **massively reduce its use**, and successfully replace it as our primary energy source.

Carbon taxes.

There are many carbon tax systems operating in the world today, as well as many other systems that try to incentivise emissions reduction or carbon trading or offsetting. We even have these in NZ. None of these have worked! Our global carbon emission level has continued on up, partly due to increasing population and prosperity, partly due to all governments’ inability to actually significantly reduce their nation’s use of fossil fuels overall. After all we are a fossil-fuel addicted society, world-wide, and all our economies have depended on it for more than a century. There have recently been congratulatory figures that suggest our total global emissions may have levelled off (and we still have growth!!), but for the rising CO2 concentration to level off (let alone drop!), all carbon emissions must virtually cease!

For an explanation of why we need to level off our rising CO2, please visit my page 2C? ... <https://cliffinthefog.wordpress.com/category/climate-issues/2c/>

A good example of a “successful” carbon tax is the one used in British Columbia in Canada. It achieved a 10% reduction in overall use for a while. The money collected is returned to the poorer half of society through raised tax thresholds. But a once-only 10% reduction is just that. What about the next 10%, and the 3rd 10%, and what about population growth negating these advances. Sweden has a heavier carbon tax, but after it’s initial gain, the higher price of fuel is generally just

factored in, and business as usual continues. So any single step changes to fossil fuel prices don't have the necessary effect of achieving significant and lasting reduction.

So I believe a simple "carbon price" or "carbon tax" cannot be the right answer. The emissions trading, cap and trade, and offsetting systems all avoid the issue and achieve very little except extra bureaucracy that can often be profiteered from anyway. The fixed 10c per litre tax on petrol recently added in Auckland to pay for more roads will encourage some to go electric, but most will just absorb the cost as a necessity or complain about the effect on motorists and the poor people, as if fossil fuel use is a human right. It is not, quite the opposite.

Far more effective would be a moving price signal - a gently increasing tax on all fossil fuel, rather than a single step increase. I realise that any rise in oil costs is inflationary, but physics (and the conditions in the Arctic) are not interested in human economic problems, and soon we will all be paying an enormous delayed cost of these fuels. Who will pay? Our children and grandchildren? An article published in The Guardian recently suggested all climate modelling has badly understated the predictions of sea-level rise in even the shorter term, due to the rise actually being exponential, not proportional, as I state in 2C?. It suggests a 6m rise by 2100 is now quite likely - low-tide would be at least 1.5m above high tide now! Imagine!

Of course, plane travel and agriculture are also big polluters. Plane travel needs to be discouraged, rather than encouraged, until planes use non-FF energy. This could be done with a \$30 per seat per take-off tax plus another \$30 per hour of flying, rising with time of course, on top of the increasing fuel cost, to acknowledge every passenger's contribution to atmospheric pollution, effectively prohibiting very cheap tickets and **significantly reducing passenger miles** (which are currently rising fast!). I also realise that this will significantly affect tourism, but tourism also uses huge quantities of fossil fuel. Agriculture is tricky, because to support the food supply for a lot of people, farmers need to grow a lot of food. Clearly the cost of meat must rise fast too, in order to **significantly reduce emissions from cattle**.

These tax suggestions should also apply to all shipping in some form - another cost that "globalisation" has so far avoided and really should bear, this might help achieve the necessary reduction and transition quite quickly.

I must also note here that the only way forward must be government policy, because a small percentage of individuals in many societies have been "doing their bit", making sacrifices, "being the change you want to see in the world", and clearly this doesn't work because overall FF use has continued up, and the overall figure is the one that matters. It is necessary to change the behaviour of the majority, not just a small minority.

My proposal and summary to justify and support the Zero Carbon Bill:

All users should pay more at the point of buying to use, and experience a constantly rising price - the price of all fossil fuel (coal, gas, petrol, diesel, jet-fuel, and bunker fuel) should rise every month by at least 1% each, for both:

1. until our fossil fuel emissions have dropped well below our Paris Agreement commitments, and this tax raised is used to subsidise the complete and rapid shift in NZ to renewable electric,
AND
2. to create a ring-fenced transparent government fund for responding to the costs, and helping the victims, of extreme weather events. If and when this fund becomes insufficient to cover such costs, as it probably will, the tax rate should rise even more to meet the societal need.

So, 2% per month increase, every month, on all fossil fuels, without any later reduction or exemptions permitted, for at least 2 years. Plus a \$30 per seat take-off tax and another \$30 per hour of plane travel. If this system was to fail or be mitigated, democracy would win in the short term as nothing but a greedy popularity contest, as it has already so far, and physics will do its worst to all of us and our descendants. We need to mitigate what physics has in store for us, and the Zero Carbon Bill is an excellent step in the right direction, from which these rising taxes can be applied and justified.

I also realise that New Zealand is a small but dynamic player. Across the Tasman, Australia is working hard to resist these changes, and has now become the worst emissions-per-capita offender in the world, by quite a long way. Of course it is the worst offenders, the US and Australia, who need to change the most, and have the most to lose, which is why they resist so strongly.

Hilary Blundell