

18 July 2018

To Ministry for the Environment  
[ZCB.Submissions@mfe.govt.nz](mailto:ZCB.Submissions@mfe.govt.nz)

## **Submission on the Zero Carbon Bill/Act**

### **1 Dr Hugh Barr: My background:**

I have trained as an applied mathematician, (B Sc, M Sc Auckland) and PhD (Toronto) I worked in the Department of Scientific and Industrial Research (DSIR) for thirty years before setting up my own consulting company in business and risk management. I have had an interest in Climate Change for the last 25 years. I am available to talk to the MoE about this submission, should you wish..

### **2 The NZ Public Service: a world-leading procrastinator on Climate Change (so far):**

Thank goodness that the Labour-led coalition won the 2017 General Election, and is taking Climate Change seriously. Prior to that John Key and the National Party, and other previous governments back to 1990, have done very little about taking action against Climate Change. Key, a banker and currency speculator with no scientific training, is not in a position to understand greenhouse gases and climate change. In the 28 years from 1990, he/they have followed "Business as Usual", namely burn as much fossil carbon as we can, with fossil carbon use growing at 5-10% per year. Most NZ Business leaders have been similarly negative, some even going as far as seeing Climate Change as a fraud, as a reason for doing nothing.

### **3 Business Climate Leaders Coalition:**

So the recent (announced on 13 July 2018) Sustainable **Climate Leaders' Coalition** of 60 major New Zealand businesses covering some 60% of our climate Change gases, including fossil carbon, is an important first step. As Mike Bennetts, CEO of Z energy and Chair of the Coalition said "*for many of us this is one of the most significant business risks we face, and inaction is not an effective risk management strategy.*" If they do perform and co-operate, then it will be a much-needed driver of climate change response in New Zealand. But it remains to be seen how well they will perform. Companies involved include Fonterra, Aair NZ, Kiwirail, Auckland Airport, Ngai Tahu, Toyota, Ports of Auckland, Z energy, Wales, Vector, Freightways, Meridian, Contact, BNZ, Kiwi Property, Watercare (Auckland).

### **4 NZ Procrastinators – Business as usual (BAU):**

Until the 2017 Election, the NZ Public Service and business **were almost the world leaders in doing nothing about Climate Change – procrastinators extra-ordinary,**

including taking the view that NZ should become the Saudi Arabia of the Pacific. (Saudi Arabia has the largest reserves of oil of any country in the world.). The quaintly named Ministry of Business Innovation and Employment (MBIE) has a website that may still boast about this, and that NZ should use and export as much coal (the worst fossil-carbon fuel) as possible, This highlights that MBIE has been infiltrated by large fossil-carbon interests, e.g. trans-national oil and coal companies) and as such, should be disestablished as soon as possible, and replaced by an agency that is clearly able to develop strategies to combat NZ's Greenhouse gas (GHG) emissions.

### **5 NZ Business Leaders see the light – Climate Change as an opportunity**

With the 13 July announcement that 60 of NZ's largest Coys, representing over 50% of NZ's fossil carbon use have formed an alliance to promote achieving NZ's Paris Targets themselves, and more. These corporates have jumped over the last 28 years of New Zealand business procrastination, and to the front of the queue worldwide. It sets up positive co-operation and achievements which should assist NZ to reach all it's Paris targets.

### **6 Business opportunities from climate change R&D:**

Business opportunities in R&D arise because transition technologies will likely be more efficient and effective than present fossil carbon technologies. New technologies such as LED technologies (use only one tenth of the electricity that filament lights do) and Photo Voltaic (PV – electricity from sunlight) (have 30 years of R&D behind them, that has moved them way down the learning curve, and keep on getting less expensive each year). Better insulation in houses is another. These new technologies provide opportunities to reduce GHG emissions.. And continuing R&D creates further new technologies and further new opportunities.

### **7 Errors in the MfE Questionnaire and Document:**

- (a) MfE does not appear to know what NZ's undertakings in the Paris Accord are. NZ undertook to keep its emissions to less than 1.5 degrees increase, not 2 degrees, to assist our Pacific neighbours, some of whom had low-lying islands that might sink below the waves, because of sea level rise.

### **6 Conclusions and Recommendations:**

- (a) **The Zero Carbon Bill should be passed into legislation immediately**, so that NZ can start taking effective action against climate change ASAP. The sooner we start the easier it is to make progress in reducing fossil carbon and other GHGs. As well it gives us more time to transition, a very important consideration.
- (b) **NZ should aim to be carbon zero by 2040, in recognition of our undertaking to our Pacific Island friends (1.5 degrees centigrade target)**
- (c) Q2: I want to see **Net Zero Emissions for all GHGs by 2040. I also want to see methane emissions reduced significantly, as these have a much higher adverse effect short term on global warming.**
- (d) **Climate change is one of the biggest challenges facing people in poverty** in NZ. One way around this is to pay all citizens a Climate Change dividend, say taken from a Carbon Tax levy. This will allow the poor to gain some of the benefits of NZ's Climate Change transition. This cross-

subsidisation is already what we have been doing, namely subsidised insulation, incentives for electric vehicles, etc.

- (e) We can't ignore the impact climate change is having on our **island neighbours** in the Pacific.

## **Answers to the MfE Questionnaire:**

### **2050 Targets**

#### **Q1: Option 1: The Govt sets 2050 targets in legislation (ZCB) Now:**

We know what our Paris Accord target is now, namely transition to Zero carbon by 2050. **Instead, NZ is known for being an innovative country, and punching above its weight. I want NZ to reach our 2050 target by 2040.** This is what we undertook to do at Paris, keep GHGs below 1.5 degrees C. Why isn't MfE aware of this? Is it ignorant? Or has the former National Govt been bullying it?

**Q2: I choose: Net zero emissions across all GHGs by 2040,** Reason: NZ has procrastinated for 28 years and done almost nothing. The sooner we catch up with ourselves the better. **Lets stop going backwards ASAP, and start going forward.**

**Q3:** The NZ bureaucracy is still asleep at the wheel. The assumption is that NZ cannot do anything about Global warming. This is just a cop-out. Last time NZ spent good NZ money buying worthless Ukrainian hot air, i.e. NZ was ripped off by the Ukrainians. The NZ Govt under John Key was ripped off. Instead I want NZ to sell its certified emissions reductions e.g. **from forestry on the world market, and make foreign exchange from them.**

As stated before, Key knows nothing about global warming, and was way out of his depth. My proposal is the reverse of what he proposed. Whoever defined this question, MBIE? was aiming at doing nothing!. This policy will increasingly cost the earth, as the price of credits skyrockets, as countries transition to zero carbon. And weather continues to produce floods from downpours, hurricane force winds, droughts, sea level rise etc.

**Q4: Could the ZCB be revised if conditions change? NO.** Only a procrastinator would ask this question. How could Global warming change? Storms, rainstorms, flooding and gale-force winds are getting worse and are more frequent. The incentive to do something about global warming must be very high. And we get reminded about how bad it is about once a month.

I strongly support NZ getting to zero GHG emissions by 2040. The only changes that should be allowed are reducing the date of reaching NZ's 1.5 degrees centigrade GHG target.

**Q5: Five-year budgets, with at least three in place.** This is the UK system, one of the best processes, since 2008. Hence it is worth a try, unless something better comes along. Which is unlikely.

**Q6 : No.** Only if the target time is reduced, as discussed in my Q4. It would be best to have cross party support, as presumably we do have for NZ's commitment under the Paris Accord. Which was presumably passed unanimously (or by most parties except ACT).

**Q7: Change the second 5 yr Target. NO!** See my answers to Q4 and Q5. NZers want to pull their weight in combating Climate change, not like the former Key Govt, whose goal was to do nothing, and not scare their voters..

**Q8: There should be no change in setting carbon budgets, except reducing the time-line, as I discuss in my Q4, Q6 and Q7.** Anything else is appeasement and procrastination. We have had 28 years of that, and John Key has now gone.  
**Disestablish MBIE ASAP**

**Q9: Should the ZCB require Governments to set out emissions reduction targets? No this should be done by the Climate Change Commission, not the Govt. The Govt should endorse it, or discuss why it doesn't want to endorse it publicly. This is the UK model that NZ is following.**

**Q10: What are the most important issues for the Govt to consider in setting plans to meet budgets?**

This is a very open question. There are a large number of issues including:

- (a) **Charging a fossil carbon charge (as a way of discouraging fossil carbon use.) This is at present at about \$22 per tonne of carbon, and is far too low to have any effect. This should be factored up for GHGs other than CO<sub>2</sub>, on a similar basis to the tax on CO<sub>2</sub>. \$300 per tonne of CO<sub>2</sub> would be a good start, say by 2022.**
- (b) **Poorer people will always have difficulty in upgrading to better lower carbon options e.g. in NZ better insulation for healthier homes and dwellings, heat sources in houses/apartments etc. This can be done by a carbon tax dividend, as a way of being fair in bearing the costs of climate change policies. The dividend could be a re-cycling of the Carbon tax to all citizens over the age of 18.**
- (c) **Public consultations: Consulting with the affected public is essential, Alternative options need to be prepared and modified by public feedback.**
- (d) **Transition to a low carbon economy will have significant capital costs e.g. changing to electric vehicles, to reduce fossil carbon fuel use.** Alternatives include more compact cities, more use of light and heavy rail, cycling and walking. Many people will choose what suits them best, including their desire to help NZ transition to sustainability. Walking and cycling may become much more popular, with consequent health benefits. Generally it is important to make our cities and towns more compact, and so reduce the need for travel. Also encourage people to grow their own foods in apartments (hydroponics on the sunny side of the building) etc and in back yards, would be valuable. In some ways, we would be returning to the way people lived before starting to use coal and locomotives, but with the availability of the amazing technologies that humans have developed since 1840.
- (e) **Biofuels: New Zealanders have always used firewood to cook and heat themselves. NZ is well placed to grow firewood and other biofuels, and has developed wood-burners that burn with minimal smoke etc. Biofuels are a**

substitute for coal, and boilers that burn biofuels rather than coal, should be a top priority for conversion whenever the opportunity of e.g new boilers in hospitals, cities arises. There are already supplies of firewood available nationwide. Also possible liquid biofuels for ships, aircraft, etc.

(f) **The present NZ Electricity generating system:**

This is both a major asset (70 years of building managing and optimising it, and a sunk capital cost of billions of dollars) but also potentially a liability, as it sees itself as competing against new Carbon Zero electricity distributed generators such as wind, but more likely PV (electricity from the sun). Transpower already has a very large electricity lines system. It's basis, linking the North and South Islands via the Cook Strait Cable (Benmore to the Hutt Valley). Some of this system may become unprofitable with distributed PV. However, as more generation is needed for electric vehicles, electrified rail, etc there should be enough money generated without strife. The Cook Strait Cable remains central to moving electricity from large generators around. I still have concerns about our five big, partly privatised gentailers (Contact, Meridian, Genesis, Trustpower and Mercury). Which may feel under threat. It is **surprising that no commercial body has established PV stations, in sunny areas such as Nelson, Marlborough, Bay of Plenty and Northland.** Presumably it is considered commercially too risky to do so until the electricity generation system settles down, and adequate rules are in place to protect PV and wind distributed development.

(g) **Recycling our rubbish:** We live on a finite planet, and so have limited resources. We need to change to a society that recycles and re-uses its rubbish. This is almost as important as stopping climate change. The present things that we recycle are paper, glass, some plastics (often made from fossil carbon materials), metals, including copper, aluminium iron and steel. Recycling usually improves utilisation and so can improve productivity. Recycling can significantly reduce global warming. It is essential for the survival of human life on our planet, It generally does reduce energy use in recycling processes, e.g steel making, recycling aluminium. So it is of value in reducing GHG formation.

(h) **Emissions Trading Schemes (ETS).**

Under the Kyoto Protocol, only rich nations were required to reduce GHG emissions, not 2<sup>nd</sup> world nations, Consequently "rich" nations could subsidise industries that might go to a second world country, to stop this flight of industry. Apart from finding out which NZ Industries registered, I cannot see any value in continuing with an ETS. In many ways it reflects the mistakes that previous Governments have made in the past.

There are a number of industries that New Zealand may well want to retain for strategic and job-creation reasons. For example Glenbrook Steel, Bluff Aluminium Smelter. The Smelter is profitable now because the Chinese decided to stop making aluminium with coal based electricity, and the Bluff Smelter is now profitable, because of the price hike in aluminium that resulted. However it does have a sting in it's tail, in that some fluoridecompounds are produced which have very adverse GHG effects (Half life of 37,000 years). Any industries that NZ wants to keep, it is best to look at doing research to reduce their GHGs, their cost of

production, and improve their quality. For example tender for research scientists and engineers to reduce their adverse effects. And patent these improvements. We already have science and technology goals that this can be plugged into.

**ETSs are a waste of time, as they are not specifically targeted at reducing fossil carbon gases..**

**(i) Combining other goals besides Zero Carbon by 2040:**

MfE suggests combining the Zero Carbon Board/Group with **mitigation of Climate Change**, e.g. Sea level rise, glacier melt in Antarctica, severe flooding, very strong winds, etc. Mitigation and Zero Carbon are two distinctly different issues. So there is no reason why they should be linked together. It may prove a spur to get on with Zero Carbon. But the issue is that the large global fossil carbon and GHG reduction is not something in New Zealand's control. The world's largest polluters China, USA, and possibly Europe and Russia. If they are not pulling their weight, all we can do is lobby them.

**(j) United Nations 17 Sustainable Development Goals:**

These were passed by the UN in September 2015. to "leave no-one behind", and presumably also passed by the NZ Government.

The 17 goals are:

- 1 No poverty
- 2 Zero Hunger
- 3 Good Health & Wellbeing
- 4 Quality Education
- 5 Gender equality
- 6 Clean Water & Sanitation
- 7 Affordable & Clean Energy
- 8 Decent work and economic growth
- 9 Industry, Innovation and Infrastructure
- 10 Reduced inequality
- 11 Sustainable cities and Communities
- 12 Responsible productn & consumption
- 13 Climate Action**
- 14 Life below water (Oceans plus)
- 15 Life on land (Land conservastion of species?)
- 16 Peace & Justice, strong Institutions
- 17 Partnerships to achieve the Goals.

**Goal 13 is the ZCA Goal.** However, the UN goals are often conflicting, and do not mention a major issue – runaway population growth. I wonder why not?

Apart from Goal 13, not too many of these Goals relate to Climate Change. So there is no need for them to be considered by the ZCA Board and staff. Certainly if NZ is successful in reaching its ZCA target, it should be a spur to other countries.

**Peak Oil and Coal: Already discovered reserves of fossil carbon will give us runaway climate change, and up to five times the 2 degrees Paris limit.**

The ZCA should note that the amounts of oil, natural gas and coal already discovered but not yet used, will create GHGs five times the amount needed to get us 2 degrees warmer. So, burning more than a fifth of them will get us into runaway climate change. Hence the danger of letting this happen anywhere in the world.

Mechanisms for generating more renewable electricity and renewable energy e.g. Biofuels. Further insulation etc will still reduce electricity demand. The expectation is that further renewable electricity and energy may still be needed. A fair market is needed, where Transpower and the five gentailers cannot control the market. Allowance must be made for distributed electricity generation, e.g. for solar

and wind, and that these are not wrecked by Transpower's desire to charge too much for use of its network

**Conclusion: Can NZ do it – Yes we can!**

New Zealand, which already has 80% renewable large-scale generation.(Hydro, wind, geothermal) and is well placed to generate large-scale PV from sunshine, is better placed than most countries to get to zero carbon by 2040, as this analysis shows. It is too much small-mindedness and sabotage by big oil (Mobil, Caltex) that is holding us back. Taranaki oil and gas, together with a very flexible **Marsden Point oil refinery**, provides a bridge connection to our zero carbon future. Our small population makes it easier than for many larger countries. We must get started in showing that we can do well, Our society has the skills, and is already doing much good work.

**Dr Hugh Barr, Scientist and risk analyst.**