

What has changed? Well the scientific evidence has certainly changed. The science supporting man made climate change has strengthened, with events occurring at a faster rate than predicted. Tipping points are now very much a probability. Thus we are now in a worse position, requiring more urgent and costly action as a consequence for ignoring this issue.

And in the meantime NZ's total emissions have increased some 21% since 1990, putting us in the top category of per capita of the developed world. Our Emissions Trading Scheme is a complete failure and is even falling short of our trivial 5% reduction pledge. It is embarrassing to say the least. Contrary to what the Minister told us, we are now deforesting at twice the rate we are planting, thus effectively increasing our emissions liability. To say we will meet our obligations by purchasing emission reduction units at a substantial cost to future taxpayers – which are 'paper' units - contributes nothing to overall global greenhouse gas reduction.

Loss of trust and the failure of governments to keep its citizens truly informed of the ever increasing scientific evidence is a major obstacle to meaningful action being taken. The public have been influenced by a very successful denial industry that is well funded by vested interests that have also been able to 'control' governments.

Action on climate change needs to put into law within the term of this current Government. Action needs to be meaningful, transparent and accountable.

The Science

The science is well proven and the Government is well aware of this. That debate is over and it is not my intention to include this aspect in this submission except to say I fear we are on the brink of several tipping points (tundra melt, methane release) beyond which there is no future for our grandchildren. We have to *"build for the future, not steal from it."* And let's not forget, the two degrees warming target is not the scientific opinion of the safe limit, but a politically agreed target. The scientific opinion is that present green house gases already in the system will take us to that level and that the planet faces greater warming.

We still have a strong 'denial' industry which continues to very successfully, create uncertainty in our communities whilst the Government has not shown any leadership in education of the public.

This Government needs to show leadership and educate our citizens of the science. Such is the importance of this issue, that non- political cross – party approach is required.

NZ's unique opportunity

The political world is at a stale mate with any action being 'too little, too late'. New Zealand had an unique opportunity to distinguish itself on the world stage and break that stale mate that is delaying action. Past NZ vested interests have claimed that we should not be disadvantaged compared to our trading partners but this totally ignores NZ's unique potential – and commits the planet to fry.

We have been admired in the past for 'punching above our weight' on many issues and have achieved a good global reputation, a reputation of standing up for peace and global justice.

We have portrayed a “Clean Green” or “100% Pure” marketing tool which plays a major part in our food/agricultural and tourism promotion around the world.

Sadly we are losing those reputations very fast as the world is realising we are not what we purport to be. This loss of image will have huge economic detrimental consequences to our food/agriculture and tourism industries.

This Government needs to lead by example with a real action plan and seek a zero carbon emission's target by 2050 or sooner.

Agriculture

Agriculture is very important to NZ – it is our economic backbone and having qualifications and career of the same, I am fully aware of that fact. It is also one of the major sources of our emissions for which there is not an easy remedy – or is there?

Our food/agricultural industries are totally dependent on fossil fuels – for transport, machinery, weed and pesticides, fertilisers – lets ignore for a minute the soil and animal/human health implications of these inputs - indeed, United Nation's research indicates, if we continue farming as we do now, we will reach 'peak soil' within 60 years. But ignoring that – how will this industry cope with the end of cheap available fossil fuels? (Refer 'peak oil' below)

The present Government's target of increased dairy production is not sustainable and very questionable if it is achievable. It may help GDP but that is no measure to judge progress. Worldwide results show that whilst intensification increases income, it also increases costs so the net result is similar. Meantime, it is detrimental to the environment, increases emissions, increases farming debt thus stress, suicides on our farming families – for what, to please a government and its big corporate backer, Fonterra.

Our agriculture industry has the unique opportunity to move to a less intensive sustainable model with the added opportunity to sequester carbon into the soil – a plus for climate change. Research at the Chinese Academy of Sciences' Institute of Botany found that by organic farming, this changed the outcome from a carbon source to a carbon sink whilst also increasing soil quality and crop yields.

This move to less intensive production would capitalise on our “Clean Green” image by producing 'real food' – for which world demand is steadily growing (Lincoln University research).

Less intensive methods would require more intensive labour thus rebuilding our rural communities, taking the pressures off our cities (don't mention Auckland housing) which would have many positive community benefits – both rural and urban.

There is much research advising that the recent global moves to industrial, large scale mono food production is not sustainable. The future to feed the world is with smaller family units, creating local employment and (re) building communities.

International research 2007 by IAASTD (International Assessment of Agriculture Knowledge, Science and Technology for Development) found that small scale organic farming was the only way to feed the world plus the development of locally-based, ecological agriculture provided better support for farmers.

UNCTAD (United Nations Commission on Trade and Development) – “Trade and Environment Review 2013 – Wake up before it is too late” came to a similar conclusion concluding that “Business as Usual” is not an option and that an urgent shift towards ecological agriculture was necessary for food security and climate resilience.

Thus NZ food/agriculture industry has a unique opportunity to tick numerous boxes. Whilst currently NZ’s population is 87% urban, this is not about country verse townies – we are all in this together so we must work together.

This Government should support building local food resilience and security

Perfect Storm

Climate change is but one of the several future uncertainties facing civilisation which simultaneously create the ‘perfect storm’. And they are often interrelated. As well as increasing extreme weather events and sea level rise, we have ‘peak oil’, ‘peak soil’, direct threat to plant growth and food production, global financial instability, obscene inequality, resource depletion, spread of tropical diseases, species extinction, habitat destruction, ocean acidification to name a few.

To briefly expand on a couple of these:

The present **global monetary system** has played a leading role in creating the conditions for many of the above uncertainties including climate change - with its need for continued economic growth to survive. A well-known quote explains *“The only people who believe in continued growth on a finite planet are madmen and economists”*.

The present instability of the system aggravates the threat. The March 2015 report “Monetary Reform” by Frosti Sigurjonsson, commissioned by the Prime Minister of Iceland, is recent document that explains the issue – *“the world is dangerously vulnerable to future financial and economic instability”*.

“Peak Oil” is a contentious subject, often influenced by vested interests. It is not that the world is going to run out of oil but the cheap stuff has been extracted. $E R O I = \text{Energy returned on investment}$. When oil was initially discovered, it returned 100 units of energy for one unit invested to extract it. All the cheap and easy accessed oil is now gone – it now only returns 11 units for each unit invested and this is declining. Many say the industry can’t function at 1:8. It is not only money we are talking about – but net energy. More and more energy has to be put into extraction so that there is less and less available to use. We have to reduce our dependence of fossil fuels as eventually we will be forced to do so. On top of this is the moral need to leave our fossil fuels in the ground to reduce global warming, the opposite direction of this government.

This Government needs to build national resilience and reduce our dependence on fossil fuels

Global Examples of Climate Change Action.

There are economic and community benefits in tackling climate change. In US, 9 states participating in the Regional Greenhouse Gas Initiative (RGGI) have reduced emissions by 40% since 2005 whilst

their economies have grown by 8 %. Meantime the proceeds of their emission credits have resulted in savings to millions of households and businesses.

British Columbia, a region in Canada with a similar size population to NZ, introduced a carbon tax in 2008. They have reduced their emissions and have reduced fuel consumption. Yet their regional economy is performing well, above the average of the balance of Canada, proving that a carbon tax and thriving economy co-exist. NZ should seriously consider this approach.

<http://cleanenergycanada.org/wp-content/uploads/2015/02/Clean-Energy-Canada-How-to-Adopt-a-Winning-Carbon-Price-2015.pdf>

Other countries are moving on addressing emissions. Two of the biggest emitters, US and China have agreed to reduce emissions – regions/states within the US are forging ahead on their own, China appears to moving faster than its pledge, Oil rich Dubai is expanding solar, Mexico has made a larger than anticipated pledge – so it is happening.

Globally the investment and switch to green renewables is increasing (17% global investment increase in 2014). Research indicates evidence of increased employment in the renewables industries in contrast to fossil fuels. Coal is being retired, funds are divesting and there is now a growing risk of ‘stranded assets’ in the fossil fuel industries.

There are numerous reports of the job creations with renewable energy sector far out weighing those of the fossil fuels.

NZ needs to capitalise on its relative renewable electricity with electric vehicles and public transport, utilise its forestry and dairy waste as biofuel. Ultimately we will have to completely change our lifestyles.

An investment in climate change action is an investment for the future.

Legal Obligations

Whilst there is no global agreement on climate change, there are already existing legal obligations under international, human rights and environmental laws that Governments should be protecting the human race. This conclusion was reached in March 2015 under the “Oslo Principles of Global Climate Change Obligations” and which our Government should be adhering to.

This Government is legally obliged to protect its current and future citizens

Discussion Document

As requested, I will also briefly respond to the questions:

1. Our failure to make meaningful contribution to global emissions has not gone unnoticed on the world stage. Internationally we are missing a unique opportunity to build our global reputation.
And within NZ, costs and impacts on society have to be managed fairly. To date this has not been the case. Vested interests have strenuously forced a delay/diminished any Government action on climate change, and in many cases have personally benefited,

creating a costly liability for future governments and taxpayers. These organisations and individuals should be held to account if fairness and justice is to be achieved.

There has been little informing and educating of the public on the issue with the Government being more concerned for its short term future at the long term cost of its citizens. It continues to encourage the fossil fuel industries instead of building the Nation's resilience to the future by reducing our dependence of the same and encouraging the transition to true sustainability. If the public were truly informed of the 'happening faster than anticipated' climate changes, then this would not be an issue.

2. Yes the nature of NZ's emission are unique. But that is no reason to hold back as we need to create resilience for the future. Preservation of our native forests, afforestation – which has been greatly reduced due to dairy conversion – and a more sustainable agriculture industry are required. The focus on road transport instead of public transport – regional rail – is a very short sighted approach.
3. There are examples of a carbon tax that is redistributed thus encouraging a transition to low emissions whilst simultaneously sharing the burden.
4. Obviously efficiency and waste minimisation are the 'low picked fruit and a no brainer'. Encouragement of electric vehicles but also public transport, increasing our forest sinks, a move to lower input agriculture. We have to move ahead on these to build resilience for our future – ultimately we will be forced to.
5. We cannot wait and rely on future technology.

Summary

Finally I want my grandchildren to be proud of belonging to a nation that made a meaningful attempt to address the issue of climate change and for them to remember, we tried, we acted – we did not put our heads in the sand like many others have. We can make a global change by following the science and by taking meaningful actions that will reduce our emissions, build resilience into our nation and be the catalyst for global action.

Sadly I am not optimistic that our elected representatives will respond – it will be a case of too little too late. Thus I am devoting my energies into building stronger local communities creating resilience to face future uncertainties – such as are illustrated with the grass roots global Transition Towns Movement. It is with regret that many of our present Government's actions are working in opposition to this goal and it is time to remove the politics and adopt a cross- party approach.

Thank you

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