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1 The need for NZ to take action immediately to reduce fossil carbon emissions:

The NZ Government's policies, both National's and Labour's (prior to 2008) have both been incompetent at reducing fossil-carbon (CO₂) fuels laid down hundreds of millions of years ago, and other greenhouse gas emissions. It is now recognised that human survival is at stake, with the need to transition our society to a low-carbon emission system of living (Carbon zero emissions).

However NZ politicians seem to have no interest in doing anything that may bring this about. As a result, NZ has had a Emissions Trading System (ETS) that appears to have achieved nothing, except the stealing of plantation forest credits from the specific export forestry companies.

The NZ political language is instructive. The ETS is a "trading" system, i.e. aimed at making money for traders, not reducing fossil carbon or greenhouse gas emissions, as it should be. It is seen as a speculator bonanza, not as a problem of specific greenhouse gas reductions, essential to the survival of homo sapiens. It is not called an **Emissions Reduction System** (ERS), as emissions reduction must be its goal.

This may have a lot to do with NZ prime minister, John Key as having been a currency trader. Currency trading is about bullying, speculation, and deception over very short time-scales, not of **having a plan, and a means of bringing it about**. There is a world of difference.

2 World best practice in reducing greenhouse gases:

The best place to start is with the UK programme, because it is where "best practice" is. For the UK zero carbon is difficult. Yet the UK has made marked progress. The UK started early, eg in year 2000, 8 years after the Kyoto declaration was agreed by many countries. Other countries eg Norway, Denmark, Sweden have also put in place targets and plans aimed at achieving them.

The **2006 Stern Review *The Economics of Climate Change***, named after Lord Stern, the UK Secretary of the Treasury at the time, (http://www.wwf.se/source.php/1169157/Stern%20Report_Exec%20Summary.pdf) was a ground-breaking report internationally. It analysed the various ways in which fossil carbon fuels were used in the UK, and how they could be reduced or eliminated, the most easily replaced being first. The need for urgent action was stressed, as a

change in world temperature of only two degrees is enough to fry the planet, in terms of homo sapiens survival.

The Stern Report developed policies for reducing greenhouse gases in the most economic way. Research was also backed, and has already proved valuable, in creating new technologies eg photo-voltaic electricity, potentially better battery technology, and wind power, will help us a great deal. NZ does encourage research into reducing agricultural GHG emissions – a start in the right direction, and encouraging arable crops, as against ruminant pastoralism.

There is a need to increase city residential density, to reduce the need for travel, a more difficult issue being reducing the amounts of fossil fuel used in transport. The Stern Report showed that the benefits of strong early action on climate change greatly outweighed the costs, and especially their associated risks.

The Stern approach has been set out in the UK Climate Change Act 2008. (<http://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/global-action-on-climate-change/>)

The UK Climate Change Act was passed in 2008 and established a framework to develop an economically credible emissions reduction path. It also strengthened the UK's leadership internationally by highlighting the role it would take in contributing to urgent collective action to tackle climate change under the Kyoto Protocol.

The Climate Change Act includes the following:

- **2050 Target.** *The act commits the UK to reducing emissions by at least 80% in 2050 from 1990 levels. This target was based on advice from the CCC report: Building a Low-carbon Economy. The 80% target includes GHG emissions from the devolved administrations, which currently accounts for around 20% of the UK's total emissions.*
- **Carbon Budgets.** *The Act requires the Government to set legally binding 'carbon budgets'. A carbon budget is a cap on the amount of greenhouse gases emitted in the UK over a five-year period. The Committee provides advice on the appropriate level of each carbon budget which are designed to reflect cost effective paths to achieving the long terms objectives. The first four carbon budgets have been put into legislation and run up to 2027.*
- **The Committee on Climate Change** *was set up to advise the Government on emissions targets, and report to Parliament on progress made in reducing greenhouse gas emissions. It includes the Adaptation Sub-Committee (ASC) which scrutinises and advises on the Government's programme for adapting to climate change.*
- **A National Adaptation Plan** *requires the Government to assess the UK's risks from climate change, prepare a strategy to address them, and encourage*

critical organisations to do the same. For more detail, visit the UK adaptation policy page.

The UK has spent the last 8 years implementing climate change policies and applying new technologies. As with all of the EU, companies are keen to understand the best actual and potential new technologies, so that the infrastructure investments that they make are future-proofed as far as possible.

Europe has a system of identifying useful technologies, and assisting their fast development, to achieve fossil carbon and other reductions in GHGs. NZ needs to get up with the play on such ideas. A number of people familiar with these ideas have recently visited NZ to share their perspectives.

3 Risks that NZ faces from Climate Change:

Comparing NZ with the UK, NZ has a much smaller task than the UK. First NZ's electricity generation is about 90% sustainable (non or low fossil carbon emissions), and is likely to get more so as better insulation and use of biomass (eg wood) for keeping houses warm, and electricity use is dropping as houses become better insulated and heated. Photo-voltaic electricity generation is getting cheaper, and it is economic for electricity generation in many parts of NZ.

The UK population of 60 million is over 12 times ours, and therefore NZ has a 12 times easier task on population alone. Our problem is that our government has done virtually nothing in the last 23 years.

3.1 Unacceptable export trade risks:

Countries that are transitioning to low-carbon economies will oppose NZ not doing its share. It does not take long to realise that countries that do nothing will be considered as freeloaders, and will be treated as pariahs (outcasts). NZ as a major world trader will see its export sector collapse and face economic as well as climate change ruin should this happen.

This is a risk that NZ cannot afford to take. NZ's 23 years of doing nothing since the 1992 Conference, is already a massive handicap. The massive carbon efficiency of large (8,000 container) ships can help reduce "food miles". But only up to a point.

3.2 Urgent substituting for the fossil carbon in coal and other fossil fuels:

Coal is a major CO₂ polluting fuel that must be phased out, and which gives large benefits in reducing our fossil fuel emissions. Solid Energy have already done a great job of closing down NZ coalmines through their incompetent management.

As 80% of known fossil fuels need to be left in the ground if we are to keep to the world quota of GHGs to keep climate change to below 2 degrees centigrade. Leaving the coal in the hole will be a challenge for the human race and may be very hard for homo sapiens to cope with. Yet we must.

In NZ it will require a charge on fossil fuel use to achieve, because coal is such a cheap source of energy. Fonterra, supposedly "100% pure" is unable to wean itself from coal alone (though it should have been able to just for PR reasons) A fossil

carbon charge is necessary to make sure it does. It is also desirable to avoid natural gas use, as this too is a fossil fuel, that needs to be reduced to zero.

Jobs are already appearing from installing photo-voltaic systems, and will increase as PV gets cheaper, thanks to Chinese inventiveness. Ditto wind energy. But a carbon tax of some \$20 per tonne of CO₂, or more, is needed right now to eliminate coal from NZ's carbon pollution..

Green jobs offer job creation, which is a very attractive benefit at a time when NZ jobs are disappearing to China, Thailand, Mexico India, Brazil and other low-labour cost countries.

3.3 Health and welfare benefits from taking action:

We have already seen major health benefits from having warm insulated and renewably heated homes. These provide major health benefits, while reducing electricity use. Removing fossil fuels also reduces carbon particle pollution in the atmosphere that reduces respiratory diseases, and so improves health outcomes.

3.4 More frequent severe storms, droughts, floods etc:

Increased storm, drought intensity etc create major costs in terms of damage to infrastructure and homes, and deaths, especially in poor and low-lying countries eg Pacific atolls. Sea level rise will also flood productive arable lands. Stopping climate change is a much better option. NZ can greatly help its Pacific neighbours, and should do so.

3.5 Transition to a low carbon sustainable economy:

The main risk is the desire for continued exponential economic growth. Exponential economic growth is not possible on our finite planet, much as the Treasury and politicians promote it. We must realise that we must adapt to a stable no-growth society.

4 NZ's 2030 and 2050 GHG Reduction targets:

NZ has the potential to meet challenging GHG reduction targets. But has lacked government leadership and commitment. In spite of that, NZ agencies eg EECA and individual New Zealanders have made significant progress.

What is needed is a co-ordinated approach using the "best practice" approach of the UK and other leading nations. At present NZ is heading for pariah (outcast) status. This is a much bigger risk to our trade, and shows that neither National or Labour have done realistic risk-benefit calculations.

Buying questionable "hot air" carbon credits is not the answer. Reducing fossil fuel and GHG emissions is.

NZ should immediately adopt a policy of Zero emissions for all central government departments, and for all local government groups, to get the mandarins used to the reducing GHG emissions attitude.

A NZ target of 100% carbon zero by 2050 would seem appropriate by 2050. This means that a target of 40 % reduction by 2030 should be aimed for.