SUBMISSION ON THE PRODUCTIVITY COMMISSION'S ENQUIRY INTO A LOW CARBON ECONOMY ABOUT ENVIRO-MARK SOLUTIONS

Date of this Submission: 10/10/2017

Prepared by: Dr Ann Smith, CEO, Enviro-Mark Solutions

JAS-ANZ
WWW.JAS-ANZ.ORG/REGISTER

CDP ACCREDITED PROVIDER 2017

WE MEAN BUSINESS

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

CLIMATE NEUTRAL
MEASURE REDUCE OFFSET NOW

Sustainable Business Council
wbcsd New Zealand partner to the world business council for sustainable development

sustainable BUSINESS NETWORK

Landcare Research
Manaaki Whenua

ENVIRO-MARK SOLUTIONS

ABOUT ENVIRO-MARK SOLUTIONS LIMITED

Enviro-Mark Solutions is a wholly-owned subsidiary of Manaaki Whenua-Landcare Research and as such is 100% owned by the New Zealand government.

Enviro-Mark Solutions provides environmental verification/certification services based on international best practice. The Enviro-Mark, Energy-Mark, CEMARS and carboNZero programmes are owned and operated by Enviro-Mark Solutions. These are certification programmes based on international standards for improving environmental and energy management and carbon footprinting for organisations, products and services.

With respect to the carbon programmes, Enviro-Mark Solutions is accredited under ISO 14065 by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).

The CEMARS programme is licensed under the UK Climate Change Act 2008 as equivalent to the Carbon Trust Standard and recognised for compliance reporting in the UK.

The CEMARS standard (also used for carboNZero certification) is accredited by the CDP (formerly Carbon Disclosure Project) as an approved verification standard for listed companies reporting into the CDP.

Enviro-Mark Solutions is a CDP Accredited Verification Provider.

A large part of the work undertaken by Enviro-Mark Solutions is directed at assisting business and industry to improve environmental performance and take robust climate change action.

Through the carbon programmes, Enviro-Mark Solutions has worked with over 1,000 companies in five countries and has been able to demonstrate that the framework provided by the carbon certification programmes results in demonstrable emissions reductions of 10-50% over five years.

Q1 How can the Commission add the most value in this enquiry?

The atmosphere only sees absolute emissions reductions. If we are to prevent global average temperature increase exceeding the 2°C limit, we have to achieve absolute emissions reductions. Reduction in carbon intensity is important and provides economic advantages, but absolute reductions are critical.

Help New Zealanders to understand the economic risks and opportunities associated with taking climate action. There have been reports showing the cost to New Zealand of meeting emissions reduction commitments through offsetting using international units. This needs to be put in the context of the cost of not meeting New Zealand's NDCs. And this needs to be considered in the context of the costs and opportunities of innovating to make deep emissions reductions.

The cost of doing nothing and allowing New Zealand's emissions to continue increasing include the cost of physical impacts, costs of increased demand on the health sector, the costs of reputational damage, the costs of potential trade penalties from markets that have achieved emissions reductions, the financial impact of divestment of fossil fuel dependent investments by institutional investors, and the costs of lost opportunities where innovations are not implemented.

Work is needed on the economic and marketing opportunities for New Zealand through committing to deep reductions in emissions, domestic innovation and exporting NZ innovation and know-how.

The United Kingdom now has nearly a decade of experience and there are a number of reports showing the economic benefits to the United Kingdom economy of meeting the reduction targets in the five year carbon budgets under the Climate Change Act 2008. Benefits include job creation, cost savings, improved health and well-being, increased ability to attract and retain talented staff. The following articles talk to the economic benefits of the United Kingdom climate change policy.

WWF 2014 The economics of climate change policy in the UK.

http://assets.wwf.org.uk/downloads/wwf_climate_economics_summary_a4_web.pdf

Green, F. 2015. Nationally Self-interested Climate change mitigation; a unified conceptual framework. London School of Economics.

www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/07/F_Green_Nationally_Self_Interested_Climate_Change_Mitigation.pdf

Bassi S and Duffy C 2016 UK climate change policy: How does it affect competitiveness? Grantham Research Institute.
www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/05/Bassi-and-Duffy-policy-brief-May-2016.pdf

Q2 Chapter 3 of this issues paper mostly looks at ways to reduce emissions directly at their source. What other approaches would help identify opportunities to effectively reduce emissions?

Government and local government procurement could have a large influence on emissions reduction by preferring suppliers of goods and services who are taking credible climate action that meets government approved standards. Supply chain and government procurement represent a large untapped opportunity to incentivise emissions reductions and reward suppliers who take climate action.

Q3 To what extent is it technically and economically feasible to reliably measure biological emissions at a farm level?

With the dependency of most farms on Overseer, there needs to be confidence that we can rely upon any calculations and reporting of biological emissions at farm level There is increasing interest in producing farm carbon footprints. While more reliable methods are developed to reduce GHG emissions of livestock, use of fertilisers and invetsigatethe potential for soil to act as a carbon sink, farms have the potential to implement the efficiencies that any non-agricultural businesses can achieve and make emissions reductions of 10-20%. This includes energy and fuel efficiency, moving to electric vehicles, waste reduction and recycling, and planting native forest on marginal land. There are many opportunities to incentivise action by farms e.g. the former Carbon Farming Initiative in Australia which issued carbon credits backed by AAUs to projects, many of which were farm based. These projects were transferred to the Direct Action programme and are funded through the Emissions Reduction Fund. There are many options for Australian farmers to earn tradeable units backed by AAUs. These include destruction of methane, soil sequestration, reducing nitrate in cattle feed, energy efficiency projects, re-afforestation and afforestation etc. The following articles are relevant.

Parliamentary Commissioner for the Environment 2016 Climate change and agriculture. Understanding the biological greenhouse gases.

www.pce.parliament.nz/media/1678/climate-change-and-agriculture-web.pdf

Australian Emissions Reduction Fund

www.environment.gov.au/climate-change/government/emissions-reduction-fund

Eligible projects under the Australian Emissions Reduction Fund

www.environment.gov.au/climate-change/government/emissions-reduction-fund/methods

Q4 What are the main opportunities and barriers to reducing emissions in agriculture?

We need to change how we talk about New Zealand's having a unique emissions profile and being disadvantaged because of the nearly 50% of emissions are due to agriculture. Agricultural emissions in the UK are 13% of the UK annual emissions; this represents around 91 mtCO_2e which is higher than New Zealand's total annual footprint and double New Zealand's emissions from agriculture. Agriculture in the UK accounts for 84% nitrous oxide and 44% of methane emitted in the UK. It is highly relevant to study what the UK is doing to reduce agricultural emissions.

As discussed above, there are opportunities to implement efficiencies in the non-agricultural operations on a farm, install renewable generation, to convert marginal land to native forest and to apply precision technologies to fertilizer application and irrigation.

The barriers are political and market-based. Although consumers state that they are concerned about climate change, they not preferentially purchasing goods and services from companies taking climate change action. Changing purchasing decisions would reward growers and producers taking climate action. Retailers, however, are increasingly looking at reducing carbon intensity of goods and services they purchase and choice editing on behalf of consumers. The following article is relevant.

Parliamentary Commissioner for the Environment 2004 Farming for good. Intensive farming, sustainability and New Zealand's environment.

www.pce.parliament.nz/media/pdfs/Growing-for-Good.pdf

Q5 What are the issues for government to consider in encouraging alternative low-emissions land uses?

If New Zealand were to seriously consider reducing livestock numbers, then alternative crops and products need to be high value and be able to be grown and produced with significantly lower GHG emissions. Full life cycle comparison needs to be made between products based on livestock and products from alternative crops before making such a radical change to the New Zealand economy. Farming marginal land for carbon and landscape values could provide economic benefits through carbon trading and tourism without reducing productive land.

Q6 What are the main barriers to sequestering carbon in forests in New Zealand?

Lack of long-term certainty over carbon price. The carbon price needs to give a significantly better return on investment than the alternative of harvesting and selling the lumber.

Q7 What policies, including adjustments to the New Zealand Emissions Trading Scheme, will encourage more sequestering of carbon in forests?

There is potential to create a son or daughter of the PFSI for riparian forest projects and small land parcels that are aggregated through trusts and based on a 2000 or 2005 base year. It is important that such projects are backed by NZUs or any future equivalent of AAUs in order to address the issues of additionality and double counting, and to ensure that any carbon claims made by the users of the units are recognised in overseas markets e.g. if an export product claims to be carbon neutral after cancelling such units.

There are opportunities to sequester more carbon and achieve other co-benefits through riparian restoration and re-afforestation of marginal land. Issue of legitimate carbon credits to such sites could incentivise more sequestration through the Dairy Water Accord and projects such as Trees for Life, the SBN million metres stream project, and the conservation sites created through various trusts and sanctuaries. Creating carbon credits from these is limited by the 1990 base year methodology used by the Permanent Forest Sinks Initiative because baseline measurements through satellite technology at the time only had a 30m resolution. If a base year of 2000 or 2005 could be used, 1m resolution is available making it feasible to have a new generation of Permanent Forest Sinks Initiative projects based on aggregated riparian planting and aggregated small land parcels. Using 2005 as a base year for such projects would align with the New Zealand NDC reference year. There is a growing appetite of the NZ public to invest in such projects where associated with a trust or similar governance body. Some people think that they are offsetting their personal or company emissions when they donate to unverified/uncertified projects even though no credible carbon units are issued. There is a significant credibility risk if companies make carbon claims based on such projects.

Q8 What are the main barriers to the uptake of electric vehicles in New Zealand?

Leaving uptake of electric vehicles to take place as voluntary action by individuals and businesses is a barrier. Many countries have announced dates after which no new combustion engine vehicles may be manufactured or imported. These announcements provide policy certainty that aids long term planning and stimulates investment in replacing company fleets with electric vehicles. As a result, some major car companies have announced dates as early as 2019 after which they will not manufacture combustion engine vehicles.

Q9 What policies would best encourage the uptake of electric vehicles in New Zealand?

Announce a date after which NZ will not import combustion engine vehicles. Without this, NZ may become a dumping ground for combustion engine vehicles that have been banned in other countries. Provide similar incentives to the countries overseas that are achieving high uptake of electric vehicles. Other countries that are

achieving high uptake of electric vehicles have implemented policies and provided incentives for the uptake of electric vehicles.

Q10 In addition to encouraging the use of electric vehicles, what are the main opportunities and barriers to reducing emissions in transport?

A major issue is finding environmentally responsible ways of dealing with the redundant combustion engine vehicles which may have little second-hand value. A product stewardship scheme should be developed to deal with the redundant combustion engine vehicles and recover and recycle any useful materials. There also needs to be answers for the recycling of EV batteries. Critics are using the EV battery as an objection to EVs

Q11 What are the main opportunities and barriers to reducing emissions from. the use of fossil fuels to generate energy in manufacturing?

Except where very high temperatures are required for the manufacturing process, the main barrier would seem to be energy security and energy storage. As battery storage improves, these barriers should be overcome. High temperature requirements could be met with technology such as the solar thermal power plant planned for Port Augusta in South Australia described in the link below.

www.adelaidenow.com.au/business/south-australia-energy-plan-port-augusta-will-be-home-to-new-650-million-solar-thermal-power-plant/news-story/857bd46f35b44689846cfbd04a5af54b

Q12 What changes will be required to New Zealand's regulatory, institutional and infrastructural arrangements for the electricity market, to facilitate greater reliance on renewable sources of energy across the economy?

Even though the grid provides 80% renewable energy, a "green" or "renewable energy" certification, such as the carboNZero certification of Ecotricity electricity product, is possible. There are marketing advantages and users of carboNZero certified electricity generally look for other additional opportunities to reduce their carbon emissions.

Q14 Apart from the regulation and operation of the electricity market, what are the main opportunities and barriers to reducing emissions in electricity generation?

Losses of electricity through transmission and distribution are around 7%. This could be reduced through local generation and distribution systems. Local generation could potentially limit the scale of outages under adverse weather conditions. Local distribution could become important when looking at climate change adaptation and resilience.

Q15 What are the main opportunities and barriers to reducing emissions in industrial processes (such as the production of steel, aluminium and cement) and in product use (such as the use of hydrofluorocarbons in refrigeration and air conditioning equipment)?

The emissions associated with refrigeration and air conditioning are generally poorly measured or not measured at all. Larger users of refrigerants should be required to report stocks held and emissions from these systems and have management plans in place to reduce emissions and prevent accidents that could result in emissions from stocks.

Q16 What policies and initiatives would best promote the design and use of buildings that produce low greenhouse gas emissions?

Infrastructure and buildings being constructed now, may be locking in high carbon ways of living and working for decades to come and undermine efforts to deliver New Zealand's NDC and stay within the 2° C limit. Building regulations need to include requirements for construction materials with low embodied emissions, design that enables low carbon operation of the buildings and neighbourhood design that assumes very few vehicles being owned by the occupants. Removal of parking and garages would enable other community facilities to be designed into neighbourhoods including play grounds, sports facilities, community orchards and allotments.

Q17 What are the main opportunities and barriers to reducing emissions in waste?

It is too easy and cheap to dispose of waste and there are too few incentives to avoid, reuse, repair, recycle waste. More product stewardship schemes are needed. Regulations requiring manufacturers to take back packaging and to take back brown and white goods at their end of life would help. Single use plastic is a major environmental issue and needs to be addressed.

Q18 Policies to lower emissions from particular sources, technologies and processes can have interactions with emission sources in other parts of the economy. What are the most important interactions to consider for a transition to a low emission economy?

There may be perverse impacts on the economy such as loss of export income if livestock herds are reduced and the alternatives do not have similar export value. Reducing emissions through design of urban infrastructure, buildings and housing could have positive impacts on the economy through reduced health costs achieved through improved air quality, residential design that facilitates more walking and cycling etc. The healthcare sector faces some of the biggest challenges if climate impacts continue to increase and alternatively some of the biggest opportunities if a commitment to deep reductions in emissions results in reduction of expected impacts and radical lifestyle changes.

Q19 What type of direct regulation would best help New Zealand transition to a low-emissions economy?

Put a real price on carbon and provide incentives for all levels of society to take action to reduce GHG emissions. Announce a date after which combustion engine vehicles cannot be imported. Create regulations requiring new buildings and new houses to generate a specified proportion of their electricity requirements as onsite renewable energy generation. Create regulations requiring a proportion of freight to be moved by rail and increase this proportion over time. Introduce regulations requiring refrigerant gas stocks and emissions over a certain volume to be reported to the regulator.

Q20 Acknowledging the current review, what changes to the New Zealand Emissions Trading Scheme are needed if it is to play an important part of New Zealand's transition to a low-emissions future?

Implement a floor and a ceiling to the NZ-ETS. Do not make the mistakes that Australia has made of constantly changing policy – many Australian companies have suffered significant financial losses as a result of the changing Australian regulations as well as damage to the national reputation.

Q21 What type of market-based instruments would best help New Zealand transition to a low-emissions economy?

A price on carbon and making sure that all sectors of the economy including individuals, households and communities understand the cost of carbon in the economy and how it is relevant to them.

Q22 What type of support for innovation and technology would best help New Zealand transition to a low-emissions economy?

Set ambitious carbon budgets and establish a scheme for creating carbon credits based on emissions reduction to encourage innovation in technology where these credits are backed by NZUs (or in the future backed by AAUs or the equivalent under the Paris Agreement). There is an incredible amount of willingness of leading NZ businesses to commit to deep emissions reduction targets and to offset based on New Zealand projects – if government sets ambitious targets, this will drive innovation.

Q23 How can New Zealand harness the power of financial institutions to support a low-emissions transition?

Require financial institutions to disclose the carbon intensity of their investments and financial lending. Make the costs of insurance payments transparent with respect to climate change damage.

Q24 What type of alternative approaches (such as voluntary agreements or support for green infrastructure) would best help New Zealand transition to a low-emissions economy?

Many New Zealand organisations are taking voluntary action to measure and reduce their carbon emissions. These organisations wish to understand where their actions fit in national policy and have their contributions recognised. There are two technical issues that need to be resolved in order to increase participation of the wider NZ business sector in taking voluntary climate action:

1) To what extent is any businesses' footprint already offset by the NZ-ETS? Is it legitimate to apply compensation to voluntary action based on compliance action taken by other companies?

2) If compliance units are used as offsets for voluntary action to make a carbon neutral claim, could individuals and businesses contribute to New Zealand's Paris Agreement obligations by surrendering these units to the Crown rather than cancelling them?

Q25 In addition to "core" climate policies and institutions, what other changes to policy settings or institutional frameworks are required to effectively transition New Zealand to a low-emissions economy?

Government departments and state-owned enterprises need to be seen to be "walking the talk" by measuring and reporting their emissions in a consistent and comparable manner, setting short and long-term reduction targets and telling their story on what they have achieved in reducing emissions. There are many examples available through the companies/organisations that work with the CEMARS/carboNZero programmes including the nine largest councils, district health boards, universities etc. Relevant ministries need to be putting in place support and incentives fo rtheir sectors to take measure, report and reduce their GHG emissions e.g. health, education etc.

Q26 What are the main uncertainties affecting New Zealand businesses and households in considering investments relevant to a low-emissions future? What policies and institutions would provide greater confidence for investors?

Many businesses are concerned about the credibility of the actions they are taking. They wish to invest in New Zealand offset projects but there is very little choice other than the PFSI projects. Government endorsement of credible projects and carbon measurement and reporting schemes would give greater confidence. For example, Enviro-Mark Solutions CEMARS scheme (Certified Emissions Measurement And Reduction Scheme) is approved by the UK Government under the Climate Change Act 2008 as equivalent to the Carbon Trust Standard for the purposes of compliance reporting in the United Kingdom. Many more companies would take voluntary action through the CEMARS/carboNZero programmes if these were visibly endorsed by the New Zealand government. Currently, these programmes trade in New Zealand on the back of the endorsement from the United Kingdom government.

Q27 What approaches, such as regulatory frameworks or policy settings, would help embed wide support among New Zealanders for effective reduction of domestic greenhouse gas emissions?

A proper price on carbon and hypothecation of the revenue gained by government e.g. use revenue from the price on carbon to reduce road user charges for electric and hybrid vehicles, to reduce rates or taxes for households/businesses that have and energy efficiency rating or have implemented renewable energy generation on site etc.

Q28 Is New Zealand's current statutory framework to deal with climate change adequate? What other types of legislation might be needed to effectively transition towards a low-emissions economy?

No. All new legislation and existing legislation under review should be examined for opportunities to reduce carbon through the way the regulations operate e.g. building regulations could mandate NABERS-NZ, new buildings could be required to generate a specified proportion of their energy needs as renewable energy generation on site. Almost every activity and every sector have opportunities to reduce emissions – a number of these should be mandated.

Q29 Does New Zealand need an independent body to oversee New Zealand's domestic and international climate change commitments? What overseas examples offer useful models for New Zealand to consider?

Yes, New Zealand needs an independent body that has cross party support and has authority beyond electoral cycles. The Climate Change Commission in the UK is a good model but the UK Climate Change Act is 10 years old. Ask the Commission how they would set up now if they knew 10 years ago what they know now. The five year carbon budgets appear to work well and the UK has achieved economic benefits as a result. Approving carbon budgets out to 2032 (5th carbon budget) enables long-term planning to be put in place.

Q30 How can adaptability best be incorporated into the system supporting New Zealand's low-emissions transition?

A key component of adaptation is education and capability building in all sectors of society.

Q31 What types of analysis and underlying data would add the greatest value to this inquiry?

Although Enviro-Mark Solutions has a very large body of data on carbon footprints and reduction achievements of companies from almost all sectors of the economy, there is a gap in information on the financial costs and benefits. Such data across all sectors of the economy could be a very powerful driver of grater engagement with business and industry from all sectors.

Q32 What should be the mix, and relative importance of, different policy approaches (such as emissions pricing, R&D support, or direct regulation) in order to transition to a low-emissions economy?

Climate change action is such a complex and long term commitment that all tools and measures need to be developed and implemented – some that we have not yet conceived.

Q33 What are the main co-benefits of policies to support a low-emissions transition in New Zealand? How should they be valued and incorporated into decision making?

The main co-benefits are innovation and economic opportunities. New Zealand has untapped opportunities to export innovation and know-how in low emission technology, measurement and management. Internationally, the cost of renewable energy is coming down and benefitting households and business. EVs are less complex and therefore cheaper to manufacture. Once EV infrastructure is in place, overall costs of running vehicles should be reduced. The most significant sector that will see co-benefits is health through better air quality as burning fossil fuels is reduced, through more cycling and walking as residential design and infrastructure is changed.

Q34 Who are the most important players in driving forward New Zealand's transition to a low-emissions economy?

Currently, industry is taking the leadership position but want leadership and long term certainty from government. planning. Local government has already recognised current and long-term planning issues in dealing with the physical impacts of climate change through sea level rise, flooding, storms etc. Local government needs central government support and leadership.

Q35 What measures should exist (and at what scale and duration) to support businesses and households who have limited ability to avoid serious losses as a result of New Zealand's transition to a low-emissions economy?

Long-term certainty and planning is needed to support businesses that need to move to alternative income generation. If households need to relocate, there will need to be government intervention to provide assistance. If households need to change their existing structures e.g. insulation, change heating sources etc then there needs to be incentives from government.

Q36 What are the essential components of an effective emissions-mitigation strategy for New Zealand that will also be economically and politically sustainable?

If mitigation is interpreted as direct emissions reductions, there is a growing appetite from business, communities and households to take action. Business is looking for clear policy signals and long-term certainty. For business, communities and households, education programmes, support and incentives are needed to stimulate and reward emissions reduction action.

Additional mitigation through offsetting will be needed. Work is needed to reassure business and the public that offsetting is a credible contribution to reducing emissions. Guidance and even policy is needed on what is an acceptable credible offset unit. Action is needed to expose schemes that are selling offsets that are not credible especially where these are double counting.

Q37 Should New Zealand adopt the two baskets approach? If so, how should it influence New Zealand's emissions reductions policies and long-term vision for the future?

No. The science does not support this approach. Emerging science is likely to show that methane has a larger impact than previously thought. The two baskets approach would risk New Zealand's reputation in international markets and intergovernmental agreements. See these papers:

Parliamentary Commissioner for the Environment 2016 Climate change and agriculture. Understanding the biological greenhouse gases.

www.pce.parliament.nz/media/1678/climate-change-and-agriculture-web.pdf

Wolf J, Asra GR and West TO 2017 Revised methane emissions factors and spatially distributed carbon fluxes for global livestock.

https://cbmjournal.springeropen.com/articles/10.1186/s13021-017-0084-y

Q38 How should the issue of emissions leakage influence New Zealand's strategy in transitioning to a low-emissions economy?

Participate in international forums to ensure that other countries are also transitioning to a low-emissions economy. Export New Zealand innovation and know-how to assist these countries. Create an all sector scheme to incentivise the generation of carbon credits through a wide range of emissions reduction technologies. Through this, many necessary changes could be incentivised and rewarded. Such offset units need to be backed by NZUs or the future equivalent to AAUs. Put a price on carbon and hypothecate the resultant income to support export exposed industries to implement technology innovation and become self-sufficient over time.

Q39 What do you see as the main benefits and opportunities to New Zealand from a transition to a low-emissions economy?

Long-term policy signals allow local authorities, businesses and even households to plan over timeframes that help them to manage the costs, avoid financial shocks and transition to ways of operating and living that will bring long-term benefits. Generally, New Zealand business will benefit through competitiveness, enhancing its already strong international reputation and being a trusted partner in exporting innovation and know-how.

Q40 What does your long-term vision for a low-emissions economy look like? Could a shared vision for New Zealand be created, and if so, how?

Assessment has been undertaken by all sectors and at all levels of society to understand the adaptation required to have resilient infrastructure, buildings, residential housing and business operations. Long term climate change policies with five year carbon budgets are in place. Education and capability building programmes are in place. All organisations are measuring their carbon footprints and understand what actions they need to take to reduce emissions. Interventions are in place for high risk activities/operations and incentives are in place for voluntary action. A wide range of innovative emissions reduction activities and projects are supported through carbon trading – they are issued NZUs or the future equivalent of an AAU