Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

Text of Advice given to the Emissions Trading Scheme Review Select Committee

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When I was invited to advise the ETS Review Select Committee, I was asked to resolve differences we had with officials where we could, and then to focus on where we disagreed with officials.

My staff Dr Alex Thompson and Jo Hendy sat through many hours of submissions. They have liaised with officials and other advisors throughout the process and have provided feedback to officials on the Departmental Report draft. There were some changes as consequence of our comments, and some things that were not changed.

For transparency we will release our feedback to officials on the Departmental Report and their response to that feedback.
Much of that previous feedback was about minor issues. Today I will be dealing with significant matters.

I will cover seven areas, and make five recommendations.

This presentation is mostly focused on omissions – things we think the officials should have said or spent more time analysing.

Seven areas.
1) Climate change science.
2) 2020 Target
3) Complementary measures
4) Independent body.
5) Agriculture.
6) Economic modelling
7) Research.

In making the recommendations to this committee. I hope to convince you to consider them seriously as recommendations you might make in your report.

1. Climate Change Science

The 4th Term of Reference for this committee concerns the central benchmark climate change projections and the uncertainties and risks associated with these.

I note other independent specialist advisers expect us to comment on this.

I have two quick comments, to perhaps help you with questions from members of the public.

First, there are ***no credible projections other than those from the IPCC***.

Second, in successive IPCC reports, the projections get more gloomy, and the confidence in them higher. Manmade climate change is ***mainstream scientific understanding*** -- and has been for more than a decade.

2. 2020 Target

The government is right now trying to decide on New Zealand's emission reduction target for 2020. It's been in the media a lot lately.

As the Commissioner for the Environment, let me point out that the **only** way we can contribute to solving the environmental problem of climate change is through an international commitment to reduce GHG emissions.

The decisions we make on the ETS simply influence who will pay the costs of that commitment. And at present we are dependent on stabs in the dark on to determine how much the various targets will cost us.

My point is that our 2020 target is ***the*** opportunity to impact the world's climate.

Media coverage and public debate on the target choice have so far missed a critically important point.

Our international target is NOT the same thing, necessarily, as our domestic reduction target.

Our target is a ***responsibility*** target.

We can meet it with a mix of three things: emission reductions, carbon sequestration, buying credits offshore. Only the first two are domestic.

We make our impact on international emissions of GHGs when we commit to a target.

So, what should that target be?

The government supports the findings of the IPCC.

The IPCC says to avoid dangerous climate change, developed countries need to meet:

- **at least a 25% reduction** by 2020
- a 80 - 95% reduction by 2050

Please do not lose sight of what is required here.

3. Complementary Measures

The ETS is just one tool in the toolkit that is needed to reduce greenhouse gas emissions.
An ETS won't work by itself. There are many reasons for this, given in the Departmental Report and elsewhere.

Complementary measures – also called non-price-based measures - are essential. They should be being considered now.

Recently, Adrian Macey, our Climate Change Ambassador said:
"A country with complementary measures will be in a stronger negotiating position in Copenhagen *because they give credibility to its target."*

Australia, the USA, and the UK are all working on introducing complementary measures.

There are many kinds of complementary measures.

Recently I released a report on smart meters for electricity.

Part of the rationale for smart meters is that they make the demand side of the electricity market work much better, by giving consumers more ability to respond to the carbon price, (and by providing more ability to reduce their monthly bills).

Smart meters for electricity would be in part a complementary measure for greenhouse gas reduction.

A requirement that biofuels actually do reduce greenhouse gas emissions would be a complementary measure.

Renewable electricity power plants have, apparently in recent times, taken longer to consent than thermal power plants -- on average. A change that would address this problem effectively would also be a complementary measure.

The ETS is necessary, but not sufficient, to play our part in dealing the world's greatest environmental problem.

It is needed, but it is not enough.

There is little official advice on complementary measures in the Departmental Report.

We need a systematic review of what measures do, or could, complement our ETS, and likewise those that undermine the ETS. This could be similar to the Wilkins Report prepared for the Australian government last year, but on a NZ scale.

Recommendation 1

I recommend that a comprehensive study be undertaken that systematically identifies and assesses existing and potential complementary measures.

4. The need for independence

Independence is important to provide transparency and accountability.

A fundamental question for New Zealand's ETS is what functions should be done independently?

The UK has an independent expert advisory body on climate change: the UK Committee on Climate Change.

Australia is proposing an independent regulator and an independent advisory body.

Do we need some functions to be performed independently?

Officials suggest that emissions assessment, compliance, and enforcement are three functions that could be done independently. But perhaps more should be.

I'm not giving an opinion on everything that could be done independently.

I am just proposing one function that could, and should, be performed by an existing independent agent -- the Auditor-General.

Free allocations transfer the cost of greenhouse gas emissions from the polluter to the taxpayer.

For example, 90% allocation of agricultural emissions will cost the taxpayer about $800 million/yr.

There will be continuing resistance to the phase out of free allocations.

The NZ public should know the size of this subsidy paid by taxpayers to polluters.

Recommendation 2

I recommend that the Auditor-General report annually on the number of carbon credits (NZUs) that are allocated to different sectors of the economy at the expense of the taxpayer.

5. Agriculture

An ETS should be all gases, all sectors, polluter pays.

Agriculture should be included.
But there are very real challenges to including agriculture: a lack of mitigation options, and difficulties with measurement and verification.

We should address these challenges by allocation and targeted support, not by exclusion from the scheme.

The benefits of designing Agriculture into the ETS as soon as possible are these:

- It gives the government flexibility.
- Even with 100% allocation – which I am not advocating for by the way – the ETS provides a 'carrot' price signal to the sector.
- Having agriculture in the ETS would preserve our clean green image.
- And, having agriculture in the ETS validates our position as a world leader on emissions from agriculture.

You have received submissions from individual farmers. I empathise with them. They are worried about what the ETS means for them and their businesses.

Being in the ETS will require farmers to do something new and quite foreign.

This will be very hard for many. We must provide a gentle entry to the scheme for farmers.

They will need support – through the transition to the ETS and ongoing as new mitigation methods become available.

Farmers are under pressure to reduce a number of impacts on the environment.

We know that improving environmental performance is best done farm by farm -- like other improvements in farming methods.

Imagine a new generation farm adviser giving on-the-farm advice on a range of issues.

- They could help with the administration requirements of the ETS.
- They could advise on technology and practices to reduce methane and nitrous oxide – and possibly could be certified to validate their use.
- They could provide advice on tree planting to gain carbon credits, and whether dollars are available to help from grant schemes.

And while these advisers are on the farm, they could help with other related environmental issues – like planting trees for sequestering carbon in areas that will reduce soil erosion.

Or on how to reduce wasteful use of nitrogen fertiliser – and thus decreasing the greenhouse gas nitrous oxide and nitrate pollution of water bodies.

I'm talking about taking advantage of 'economies of scope'.

A farm advisory scheme could be run by MAF in partnership with existing industry groups like Meat and Wool NZ and Dairy NZ, and/or through existing independent farm advisors.

The advisers would need both training and accreditation.

Recommendation 3:

I recommend the establishment of an ongoing farm advisory programme to support farmers to reduce greenhouse gas emissions, to deal with the administration requirements of the ETS, and potentially to provide a wide range of assistance on other matters.

6. Economic Modelling

New Zealand is an outlier. We are unique.

Our emission profile is stacked with methane and nitrous oxide.

It looks like that of a develop**ing** country.
But we are expected to pay for emissions like the develop**ed** country we are.

To understand our emissions we must understand land use in this country.

It's crucial because:
Land that is used for pasture and crops emits greenhouse gases.
Land that is used for forest sequesters carbon dioxide.

If we don't have a good understanding of land use, no one else is going to do it for us.
No other developed country cares as much.

Right now we do a very poor job of measuring and modelling how our land is used.
Yet it's critically important.

We know we do a poor job here.

Our expectation at the end of 2012, that's the end of the first commitment period – 3 years away – has flip-flopped from
selling 55 million carbon credits to the rest of the world
to
buying 20 million
to
selling 10 million
to
selling 6 million – that's from the new LUCAS report.

We don't know where we are.

This variation is almost all due to changes in predictions of land use.

It's hard to do this well.

And now we are making decisions about emission reduction targets in 2020 – 11 years away -- based on economic models that do a particularly poor job of modelling land use.

We rely on two Computable General Equilibrium Models, CGEs, to tell us what the impact on the economy will be 11 years from now.

These two CGEs are privately owned by consultants.
Consultants are hired guns. I know, I've been one myself.

The answer you get from these models depends on how the question is framed and that can depend on who is asking it.

The Infometrics/NZIER report that came out on Monday estimated the costs of various 2020 targets.

In that report, the authors say "our models do not capture the response of forestry to a price on carbon".

In other words, no one plants trees to get carbon credits, even though there is money to be made.

But they cite MAF's estimate of how forestry would respond to a carbon price of $20.

And find that it would turn a domestic deficit of 26 million carbon credits in 2020 into a surplus of 4 million carbon credits.

Surely this is good news for such a modest carbon price as $20.

But in the summary of the report they say:

A 15% reduction target will cost $26 per person per week – *this is assuming a carbon price of $100*

A 40% reduction target will cost $57 per person per week – *this is assuming a carbon price of $200*

So hang on.

The cost of achieving particular targets is based on different carbon prices of $100 and $200/tonne.

But the potential *revenue* from increased forestry is based on a carbon price of only $20 – and it's not subtracted from the cost.

What's going on here?
Is this analysis sound? Are we being misled or not?
Either way, it's not transparent.

We need a really good CGE of the NZ economy that is in the public domain, and that models land use changes over time.
This model should be freely available to accredited researchers.

The CGE model itself, and the results based on it, should be ***open to peer review***. This would give the findings international weight, so the results could be used in international fora.

Recommendation 4

I recommend that a Computable General Equilibrium model of the New Zealand economy be developed, and that it be dynamic, able to deal adequately with land use, and held in the public domain.

7. Climate Change Research

The 7th term of reference is to "**consider the case for increasing resources** devoted to NZ specific climate change research".

The officials' report does not address this Term of Reference. It only describes what is currently being done.

There is a very strong case for increasing resources for NZ climate change research.

Specifically, we need to establish and support research capability integrating **science, economics and policy**. This is probably best located in a hub at a university, perhaps like the McDiarmid Institute for Advanced Materials and Nanotechnology.

This would be the home for the CGE model I am recommending.

There are some hard questions that need a New Zealand answer.

This is recognised on the science side. It's great that government will establish a Centre for Agricultural Greenhouse Gas Research.

This will put us at the forefront of the drive to understand agricultural emissions. And this will produce knowledge that we may be able to market to developing countries.

We are putting all this effort into the science – yet what about translating this into sound policy, both international and domestic?

There are enormously important research questions and they are not being answered, because right now we just don't have the capability.

Here is an example of such a question -- a question that is really hard, but very important for New Zealand.

That is, the global warming potential of methane.

Why does this matter?

Countries with high agricultural emissions – like us - need to be able to trade off emissions of one gas with another. It is cheaper if we can.

But greenhouse gases do not have equal potential to warm the atmosphere.

Finding the best mixture of reductions, that is how much methane versus nitrous oxide versus carbon dioxide to reduce, is actually very difficult.

It is like choosing the best mixture of apples and oranges.

If I am a trucking firm, I care about the weight and volume of the fruit.
If I am a nutritionist, I consider vitamin content and fibre.
If I am a grocer it is the profit margin which matters.

Finding the best mixture depends on your purpose.

So, what is our purpose? Or rather the world's purpose?

To stabilize greenhouse gas concentrations.

The UNFCCC target is avoiding dangerous climate change at least cost.

This means, more or less, limiting global warming to 2 degrees. This is the target the G8 adopted recently at a meeting in Italy.

Right now, under Kyoto, we use global warming potentials to determine the best mixture of gases to reduce.

Just to remind you: one tonne of methane is taken as equivalent to 21 tonnes of carbon dioxide. A global warming potential is an *equivalence metric*.

But there are two problems with global warming potentials.

First, they are not consistent with the target of avoiding dangerous climate change at least cost. They are not the best equivalence metric to ***stabilize*** concentrations.

Second, global warming potentials are transparent, simple, and based on robust science. Except for one factor that is not science.

They rely on an arbitrary time horizon. Under Kyoto that has been chosen as 100yrs, but it there is just as much (or as little) justification for any other period.

The problem for us is that the global warming potential of methane – and thus our emissions liability - is ***very dependent*** on whatever time period is chosen.

Other develop**ed** countries don't care much about how good these equivalence metrics are, for the same reason they don't care so much about land use.

But we do. It's our big problem: methane and nitrous oxide are half of our emissions.

A better metric than global warming potentials, one with greater environmental integrity - that is, linked to the purpose of avoiding dangerous climate change at least cost -- could well go in our favour. But it may not.

Not knowing is risky.
But if we do work on this, we might be able to go into international negotiations with the basis for a better metric.

A metric that helps both us and the world.

Like with agricultural emission mitigation technologies. We could offer a global solution to a global challenge.

This is an example, a very big one, of a question that needs analysis integrating **science, economics and policy**.

How would we get such questions answered?

I cannot be prescriptive. But I can offer some thoughts on this.

Firstly, such research should not be funded through FoRST. The process is too slow and identifying appropriate research requires a range of specialist knowledge.

It should not be carried out by officials or consultants. The research must be transparent and subject to rigorous criticism.

As I mentioned earlier, the hub should be based in a university.

It will require seed funding and support to build initial capability.

And dedicated long-term funding to attract and retain very good people.

Recommendation 5:

I recommend the establishment of independent climate change research capability that integrates science, economics, and policy, so that significant and complex issues like the global warming potential of methane can be addressed.