

Submission to the NZ Productivity Commission draft report: Low-emissions economy.

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Summary

This submission is primarily concerned with the treatment of methane emissions from livestock.

In addition we make comments about the allocation of carbon credits to forestry.

Methane

The focus of the Commission's report as written in the draft report is to undertake an inquiry in to how NZ can maximize the opportunities and minimize the risks of transitioning to a lower net emissions economy.

In regards to methane the Commission should recognize that these are for the most part already at net zero. It should also acknowledge that from a scientific, environmental and fairness point of view, if it is not envisaged that CO₂ emissions will be anywhere close to net zero until 2050 or later, methane emissions from livestock should not be regarded as requiring any attention other than to maintain emissions where they are or to tolerate a small increase.

With methane emissions having increased only 4.4% since 1990 and with no recent increases at all and no evidence that these emissions will increase significantly, priorities lie elsewhere. Farmers are incentivized to increase profitability and a consequence of this has been more efficient production methods which have resulted in lower emissions per unit of output and held emission increases lower than any other sector. Agricultural emissions today, based on 1990 equivalent output, are 20% lower.

It will take NZ and the rest of the world decades to get anywhere near the low impact methane emissions have on global warming now compared to CO₂ emissions, if indeed they have any impact.

The Commission does recognize in its draft report there is a difference between long lived gases like CO₂ and short lived gases like methane. Pastural Farming Climate Research has been arguing this since 2009 but it is only recently that climate scientists and the Government have acknowledged the mistake they made in not recognizing this difference when it adopted the carbon dioxide equivalent system.

Clark and Reisinger, (1) say of the current system of carbon dioxide equivalent using GWP 100, it **“does not measure the actual warming caused by emissions and ignores the fact that methane does not accumulate in the atmosphere in the same way as CO₂”**. This is a pretty damning admission of a fairly epic fail in science and policy that has resulted in a system being adopted as the base of major economic and environmental policy which ignores fundamental properties of methane. It is hard to imagine that a 15 year old school science student would be capable of such a mistake let alone climate scientists with

university degrees. The problem is that when scientists get involved in politics, as they have done here, their work can become inept, as it has done here.

Motu,(2)2016 in their report “Cows, Sheep and Science: A Scientific Perspective on Biological Emissions from Agriculture which was written by a number of NZ climate scientists state that ***By contrast (to CO2) emissions of CH₄ and other short-lived climate forcers do not have to decline to zero for the climate to stabilise; they only have to stop increasing.*** The Productivity Commission draft report makes similar comments as this is widely accepted now, but what has not been recognized is that it is not possible to say that carbon emissions sourced from CO₂ need to reduce to net zero and that carbon emissions sourced from methane do not, because carbon is an equivalence unit. If the scientists are now correct and that carbon emissions from CO₂ need to reduce to zero and carbon emissions sourced from methane do not then the only way such a statement can stand is by acknowledging that the carbon unit is not a credible unit. Its only purpose is to be an equivalence unit and it fails miserably. The Productivity Commission I submit cannot rely on the carbon unit and promote its use if it accepts that carbon sourced from CO₂ needs to reduce to zero and carbon sourced from methane does not.

The Commission for example states that NZ’s per person carbon emissions are very high. This statement implies our level of carbon emissions are an indication of something and that because they are high it is a problem, whereas the truth is that over one third of these carbon emissions are largely fictional because the impact of methane is so overstated under the carbon dioxide equivalent system. Most if not all these methane emissions do not alter the composition of the atmosphere. NZ’s per capita emissions of greenhouse gas which actually do alter the composition of the atmosphere are about half that of Australia, UK and USA. That is the story the Commission needs to tell when comparing our emissions with other countries, not that our emissions of a politically constructed and discredited and meaningless carbon unit are comparatively high.

The Commission should acknowledge that it accepts that carbon is not a credible unit and measure of an activity’s or country’s impact on global warming. The UNFCCC definition of an anthropogenic activity is set out in the original convention document as one that alters the composition of the atmosphere (3). Emissions which the Commission should focus on should be derived from activities which fit within the UNFCCC definition of an anthropogenic emission and alter the composition of the atmosphere. Activities which do not increase the concentration of atmospheric methane are outside the scope of the UNFCCC definition.

The Commission’s report is contradictory because it refers to carbon emissions as if they have some integrity as an equivalence unit while also stating that one carbon emission is not the same as another, which is a statement that can only be made when it is accepted that carbon is not a credible equivalence unit.

The report should instead base all its comments and recommendations in terms of individual greenhouse gas emissions.

The draft report makes the case for reducing methane emissions. This is in contrast to Motu (2) who conclude that methane emissions do not need to reduce and only have to stop increasing to achieve climate stability. Motu also state that there is no scientific consensus among NZ scientists that there need be any action taken on methane emissions other than continuing to improve emissions intensity.

The global warming industry sets great store on consensus and there is no consensus of scientific opinion to support the Commission's draft report conclusions that methane emissions should reduce.

The three reasons the Commission gives to reduce methane emissions are

- To allow further increases in CO2 emissions
- To signal the need to transition to lower emissions
- Because in a personal communication Andy Reisinger believes that there are slight ongoing warming effects after CH4 atmospheric concentrations have stabilized.

To allow further increases in CO2 emissions

This reason lacks from scientific, environmental and justice perspectives. The Commission stated that its report would not question the veracity of the science. Motu(2) are clear in a report written by a number of scientists that investigated the known scientific evidence in regard to enteric methane emissions, found there is no scientific consensus to support this position by the Commission. The Commission should not question the veracity of the science as articulated by Motu in a report written by prominent NZ climate scientists. Motu also are clear that environmentally methane emissions need do no more than stop increasing in order to stabilize the climate. Again the Commission should not question this.

Notwithstanding the dubious nature of the science the Commission relies on to claim that reducing methane emissions can allow more CO2 emissions, if the benefit of reducing methane emissions is to CO2 emitters then it is CO2 emitters who should pay, not farmers. Farmers should not be penalized for not reducing emissions, instead they could be paid for any methane reductions they make. Methane should be regarded in the same way trees are because there are similarities. If the starting point is to ignore the scientific consensus and conclude that reducing methane could cause a temporary reduction in atmospheric greenhouse gas and provide an interim solution to allow further CO2 emissions, then the similarities with trees should be realized as trees also provide only a temporary and interim solution at best. People who plant trees are paid for the atmospheric CO2 reduction they cause. People who cut down trees pay for the increase in atmospheric CO2 they cause and people who do neither are neither paid nor charged. Methane should be treated similarly, with emitters who reduce emissions paid, people who increase methane emissions charged (once CO2 emissions have reached net zero) and farmers who maintain emissions should neither pay nor be paid. There is no moral justification to charge farmers for emissions just so that they can be incentivized to reduce them. If an incentive is deemed desirable that incentive should be in the form of payments for methane reductions. A capped trading scheme for methane may be a suitable vehicle but farmers should receive full allocations to allow them to emit at current levels with no penalty.

To signal the need to transition to lower emissions

There is no justification for this. The only justifiable signal is that farmers need to stop or reduce further emission increases at some point in the future when CO2 emitters are close to achieving net zero. A transition to lower methane emissions is not justified scientifically, environmentally nor ethically, so there is no signal to do so needed.

Because in a personal communication Andy Reisinger believes that there are slight ongoing warming effects after CH4 atmospheric concentrations have stabilized.

The Commission cannot question the veracity of established science as it is doing by regarding this personal communication. Reisinger is outside the scientific consensus on this. If there are slight ongoing warming effects after CH4 atmospheric concentrations have stabilized and this is a big 'if' these are likely to be residual and not problematic and are more than likely going to apply to CO2 as well. If there is no intention of taking CO2 emissions to below net or absolute zero then neither should there be any intention to do so with methane.

If the Commission is going to receive personal communications on methane research they could also include research which shows methane has no impact on global warming because it absorbs radiation in wave lengths that are overlapped and therefore swamped by H2O. All the radiative warming has already been absorbed in these wave lengths by H2O.(4) The Commission should recognize there is more not known about methane than there is known and that it is not able to make the conclusions it has. There is a reason there is no scientific consensus.

Fairness and environmental integrity

If net zero or absolute zero CO2 emissions is the goal, then fairness dictates that this goal applies to methane emissions as well. The Commission should not require any more from methane than it does CO2. Fairness dictates that farmers should be required to stop increasing methane emissions at the time when CO2 emissions achieve net zero and from that point maintain them at that level. If there is any tradeoff between methane and CO2 the science has to better develop to ensure this is environmentally sound and the CO2 emitters should pay all costs of this. If farmers are to be incentivized to reduce methane emissions this should be done by reward payments and not through penalties for not reducing emissions as would apply in an ETS.

The Commissions draft report states that pricing of emissions should reflect the costs of emissions arising from their causal link to global warming. The intent of this statement is good as long as a legitimate causal link is established. The climate scientists and the Government tell us that enteric methane emissions make up 35% of our carbon emissions and that these emissions are causing global warming but carbon emissions do not represent a causal link to global warming because the carbon emissions are not real and are calculated using a system that 'misrepresents' the impact of methane emissions. David Frame 2018 (5). Global warming can only be caused by real greenhouse gases and the direct consequence of any methane emission that attracts a 'price' should be an increased concentration of atmospheric methane. The Commission should ensure that whatever they recommend will result in only emissions for which the empirical evidence exists that they cause an increase in atmospheric real greenhouse gas attracting a price.

With food production of greater importance than transport and acknowledged so in the Paris Agreement, the correct trade off would in fact be the reverse of what the Commission proposes and that is that methane emissions should be allowed to increase and these emissions offset with CO2 reductions because of the importance of food production and because CO2 is the problem. The Commission should consider the devastation and hunger caused by the adoption of biofuels before pushing too hard for land use change away from food production. Biofuel has been labelled one of the

greatest crimes against humanity ever. What will a push to convert food production land to forestry be called?

Trees

The carbon look up tables estimate the amount of carbon dioxide sequestered by forestry but these calculations ignore albedo and soil carbon losses. Simon Upton the Parliamentary Commissioner for the Environment 2016 (6) calculated albedo negated 20% of the CO₂ sequestered. Agresearch 2009 (7) calculated soil carbon losses of 46.5 tonnes of carbon (real atomic carbon) per hectare which equates to 170 tonnes of carbon dioxide equivalent (or carbon) per hectare in first rotation forestry. Because both albedo and soil carbon losses are ignored a substantial environmental and financial fraud is committed with close to half the carbon credits produced by new plantings being fraudulent. The Commission must include these forestry emissions when determining the benefits of forestry. Forestry is also an example of kicking the can down the road and dumping the problem on our children. It is a fool's paradise to think we can address CO₂ emissions this way. Simon Upton has raised similar concerns and believes that CO₂ emissions should not be offset with forestry. (6) The Commission should also determine the importance of food production is greater than is recognized in a policy of mitigating CO₂ emissions by converting food production land to forestry. This is likely to be a greater threat to humanity through food insecurity than global warming. The forestry solution is not a sustainable nor desirable solution as it provides only temporary relief and involves taking more and more land out of food production every year. With some CO₂ emissions lasting for hundreds of years it is untenable to conclude that our CO₂ emissions today will inflict land use dictates for hundreds of years. Who knows whether wood will even be needed then?

Greater atmospheric concentrations of CO₂ and a warmer planet are not threats to global food production with both being growth enhancers. There are a number of benefits of global warming and these should not be ignored. Food production threats identified by global warming such as drought and flood are regional at most and more than offset by increasing agricultural opportunities globally that are occurring in a warmer and CO₂ enriched world. (8). So threats to food supply are more likely to come from a misguided policy to convert food production land to forestry than the consequences of global warming.

Options

The Commission proposes options which include an ETS type system that includes methane. Any system that trades in carbon is not going to succeed simply because of the failures of the carbon unit. There is no agreed way to measure or manage methane emissions and to seek to find such a way should be the Commission's recommendation. You cannot manage what you cannot measure and until such time as methane emissions can be quantified in an equivalence type system it cannot be traded against other gases. The world has been striving for a credible equivalence system and so far has not discovered one. There is little chance they will. If real environmental impacts are the goal, short lived and long lived gases require different policies and tools.

Including methane in the current ETS is not a credible option. A two basket ETS is sub optimal because while the gases are separated and the problems of the carbon unit are less significant a trading scheme is not likely to work for emissions that have quite different goals. Nitrogen caps exist in some regional council plans already and they are also effective in dealing with nitrous oxide emissions. Methane

similarly could be managed this way once CO2 emissions are at net zero and if it is still deemed necessary.

The Commission needs to consider very carefully that there is no scientific consensus that anything need be done about methane emissions other than continuing to improve emission intensity. It should also note that of all the gas emissions, methane has increased the least and is almost static and that is being achieved without it being in an ETS or facing any sanction.

The other factor the Commission should consider is that unless the obligation is at farm level it will not be credible and that the use of programmes like Overseer to guess methane emissions on farm will not be accurate enough to be fair. Adopting dodgy programmes like Overseer or placing obligations at processor level because there is no way to do it on farm, just so that we can say we are doing something, is not the option the Commission should take. If it cannot be done properly it should not be done.

The New Zealand Government made the mistake of signing us up to international agreements and setting targets based on emissions calculated using the discredited carbon unit. We taxpayers and consumers should not bear the cost of this by being forced to reduce methane emissions which do not need to be reduced and nor should we have to. The Government must acknowledge its mistake and re adjust its commitments based on no reduction at all of methane emissions. It should also adjust its targets downwards rather than use fraudulent forestry carbon units created by ignoring albedo and soil carbon losses and commit to reductions of real long lived greenhouse gases based on what is achievable.

What sort of target is achievable under the Paris climate agreement once we remove fraudulent forestry emissions and methane I have not calculated. One problem is that the target is deliberately misleading to give the impression of a reduction when in fact it is an increase. The Paris agreement target emissions are set using 2005 gross emissions and we meet it with net emissions. The target statement fudges this dishonesty and as a result is grammatically challenged. The target is stated on the Ministry for the Environment website as 'to reduce greenhouse gas emissions by 30% below 2005 levels by 2030'. A percentage such as 30% is a percentage of something which must be stated in order to give the statement meaning. This is not done and thus the statement can have no meaning. It is not grammatically correct to say you are going to reduce anything by 30% below something.

The Commission could suggest that as well as re adjust our target we could express it in more honest terms.

The question the Commission needs to ask itself when preparing its report is ***Are we wanting to save the planet or do we just want to beat our chest and pretend we are doing something with international agreements that are based on meaningless discredited carbon reduction targets.***

I hope the Commission takes the view that it is what we do with real greenhouse gases and how we manage the real impacts they have to real atmospheric greenhouse gas concentrations that matter.

References

- (1) Clark and Reisinger How much do direct livestock emissions actually contribute to global warming?
- (2) Motu, Cows, Sheep and Science
- (3) United Nations Framework Convention on Climate Change 1992
- (4) The Irrelevant Greenhouse Gas, Dr Tom Sheahen
- (5) Frame/ Shine, A solution to the misrepresentation of CO2 equivalent emissions of short lived climate pollutants under ambitious mitigation.
- (6) Simon Upton 2016 Managing Biological Sources and Sinks in the Context of NZ's Response to Climate Change
- (7) Agresearch 2009 A literature review of soil carbon under pasture, horticulture and arable land uses
- (8) Fisher J(2014) Global Agriculture Trends