

Submission to Productivity Commission

In response to Low-emissions economy: Issues paper

Wiremu Thomson 02/10/17
wiremu.thomson at gmail.com

Introduction

As a person with an interest in climate action, I welcome the opportunity to make a submission to the Productivity Commission in response to the Low-emissions economy: Issues paper.

Section 1 of this submission has my recommendations for a low-emissions economy along with some relevant comments. Section 2 is answering questions posed in the issues paper, and Section 3 has a couple of more general comments.

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Section 1: Recommendations

This section has recommendations, which are generally the solid bullet points with supporting rationale having outline bullet points. Some other relevant information or thoughts are included as non-bullet point paragraphs.

Carbon Tax or ETS

- Have an effective carbon price.

Rationale:

- Encourages carbon-efficient practices and behaviour change among consumers towards sustainability.
 - Should set it up with an intention to achieve the goal, and any technology improvements that come along are a bonus meaning less behavioural change is required.
 - Having the true cost of sustainable living taken into account allows social welfare to be set at a level that allows sustainability.
- Exclude exports from a carbon tax or ETS (the country importing them can apply their carbon price, so that a consistent price is used throughout their market). Apply NZ's carbon price to imports unless they have already been taxed in another country in which case apply the difference in carbon prices.

Exports can be excluded by allowing a tax refund if exporters can prove the goods were exported similar to UK's Value Added Tax. Alternatively for an ETS, businesses would not have to surrender units for goods that were exported, imported goods would need to be offset.

Rationale:

- Applying carbon price to imports encourages countries NZ trades with to reduce emissions.
- If our emissions faced a realistic carbon price and other countries' didn't have an effective price on their emissions then consumers would buy the cheaper product even though ours may be less emissions-intensive.
- Taxing exports would effectively be rewarding countries not taking action with a price advantage perhaps encouraging them to delay taking action.
- In taxing exports there would be a constant tension between looking after our trade position and reducing emissions, such that to achieve both might require synchronised cooperation at the global level. The price would probably stay below an effective level in order to protect NZ's trade position.
- I think some countries (possibly China) are intending to reduce their emissions without putting a price on, so our carbon price would be a large tariff on our products.
- An alternative approach of applying a general discount to trade-exposed industries might not be as good, as non-exporting companies would get the benefit and may be able to outcompete the exporters, so there would be pressure on exporters to increase prices overseas in order to reduce prices domestically.

- The consumer should be responsible for emissions and removals because they are why the product exists and are the ones seeing the benefit. As a country we are less responsible for agricultural emissions and more responsible for the emissions involved in the production of imported goods.
- Distribute all revenue minus forestry payouts back to NZers as a dividend. It would be fine to divert some of it into emission reduction projects.

Rationale:

- Returning revenue as a dividend is better than tax cuts as employment is getting harder to find.
- Softens blow of increased prices for food, etc.
- The carbon tax is effectively revenue-neutral, but people reducing emissions will be rewarded with more disposable income, rather than how it is at the moment, where that good work is entirely voluntary and often to their detriment (in increased costs and travel time).
- Treat industries the same i.e. include agriculture.

Rationale: Consumers should be able to choose what is more important to them, more carbon-intensive food or getting somewhere as fast as possible, with technology improvements allowing the best of both worlds. Excluding some and including others distorts consumers' ability to choose.

- At the moment carbon emission estimates are very general e.g. per cow, but might be good to introduce a research and certification scheme e.g. farms can be certified as using a practice that research has shown produces less emissions so they pay less tax as there are less emissions.

Rationale: Encourages more carbon efficient practices.

Thoughts on differences between a Carbon Tax and an Emissions Trading Scheme (Cap and trade):

Type	Pros	Cons
Carbon Tax	<ul style="list-style-type: none"> • Predictable price. • Less complex, so easier for businesses to manage. • Can have different prices for emissions and removals, so revenue can be directed towards funding emission reduction projects or equally distributed among NZers to ease the burden of having a price on carbon. 	<ul style="list-style-type: none"> • Government has to estimate the required price to have the desired effect. • Inflation may prevent the carbon tax from being able to reduce emissions down to the target level.
Emissions Trading Scheme	<ul style="list-style-type: none"> • Not affected by inflation, because emissions are capped. 	<ul style="list-style-type: none"> • Typical problems seen in markets e.g. vested interests driving prices higher, cornering the market. These might be

		<p>exacerbated by the necessity nature of carbon credits.</p> <ul style="list-style-type: none"> • Requires some sort of penalty system when emissions are not offset. • Businesses would have to guess what they felt was a fair price for emissions or risk extortionate prices or not operating.
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ETS credits could be created by the government paying a fixed price for removals to the forestry owner, and then the government selling the credits on the market. This would effectively remove the forestry sector's ability to drive prices higher and would also allow the revenue to be used equitably. In this scenario, exports could be excluded by exported emissions not having to be offset. Unsure about exported removals but might be better to still have the government buy and create the credits in NZ, but allow the credits to be sold to countries buying the wood. To have a transition mechanism the government would sell more units in the early years and less in later years until they reach a target level of emissions.

Alternatively the government's units could get distributed to everyone equally and to buy things requires units as well as money, and people/businesses could buy and sell their units on a market.

Regarding carbon tax when emissions get closer to net zero, the tax may not work because inflation may become popular to counter the rising costs as the price is just a number. On the other hand this might be an indication of further mitigation being too difficult. Could also change the scheme at this stage, but a 5-year window would be a long time before making changes to counter this sort of problem.

Transport

- Build more cycleways.

Example: Cycleways are important in Auckland as not long ago (before many cycleways were added in the north harbour area) my impression was that cycling from A to B in Auckland was not easy or not safe (coming from a person who's never lived there but considered it).

- Investigate multi-modal transport, such as cycling to more frequent public transport hub and parking facilities provided or taking bike on PT.

Rationale: A downside with public transport is that if you don't live near a stop it is less attractive because you have to add walking time to the stop to every trip and also the buses that go to that stop may not go very close to your final destination so there may be a long walk at the end as well as waiting for a bus to take you closer takes about the same time as walking, which is why multi-modal transport could be attractive because you can cycle at both ends with bus carrying bike, or if the other end is a short walk could park bike at stop if there is space and secure to do so.

- Ensure new multi housing developments have cycle storage provision.
- Invest in more public transport in Auckland to balance the investment in Auckland's roading infrastructure.
- Introduce a minimum vehicle emissions standard for car **imports**.

Rationale:

- Cars below the standard should still be able to be driven on roads as the vehicles may be driven infrequently and so the embodied emissions and cost of a new vehicle to replace it may be worse. On the other hand, they may be able to hire a low emissions vehicle for the infrequent times they need one.
- If it applied to whether vehicles could be on the road, it would disproportionately affect poorer households, which may be struggling at the moment.

- Move intercity freight onto rail and electrify rail.

Rationale: I doubt trucks between cities will ever be powered by batteries (maybe hydrogen). This is why I feel the Roads of National Significance are a massive wasted investment.

- Investigate whether e-bike speed limit can be increased.
- When considering options for transport infrastructure, it should have a low carbon intensity (construction and operation) and be resilient to risks of climate change.
- Infrastructure prioritisation should take into account emission reduction targets and not rely solely on cost-benefit ratios if this is not the case already.
- Consider allowing someone who owns a car and a motorbike to only have to pay the highest Road User Charge.

Rationale: They will only be using one at a time. On the other hand someone else could end up using the other vehicle at the same time, and RUC for a car is only a small part of the cost of ownership.

- Vehicle Loan Scheme: Fund a vehicle loan scheme where people can apply (or are invited) to loan an e-bike, e-scooter (or moped), or e-motorbike (or petrol motorbike) for a month for free or minimal charge, so they can get acclimatised as to what it would be like to use that instead of a car. It would also allow feedback to be gathered as to possible issues and popularity of the options. Most people without motorcycle experience would not have a license, so there would need to be support for getting basic skills at a motorcycle training school and then sitting the Basic Skills and Handling Test so they could use a learner licence to be on the road.

Rationale:

- The vehicles are more efficient than single occupancy cars.
- More people will be familiar with them, so word of mouth can promote their use.

- Reduces risk in purchasing decision from getting more of a feel as to what it would be like before buying.
- Increased visibility would encourage more people to consider them as an option.
- Feedback can be gathered as to any infrastructural issues and which option is likely to be popular.
- Someone told me the other day that in Italy, Germany and some other countries they'd found that if 10% of traffic is motorcyclists, traffic flows 40% faster.
- Encourages their use when people are less familiar with them than cars. Cars are versatile, they've been around for years so you know most issues such as infrastructure have been resolved, and people are familiar with them, which gives the perception of a safe investment in a gig economy.

General comments on electric vehicles:

Regarding page 53 (An adaptive system), a while back I was under the impression that it wasn't the cost of lithium-ion batteries that was the problem but the limited supply of lithium that slows growth, so clarification would be good. Also, I think the lithium-ion batteries used in electric vehicles (used because of the high performance/capacity requirement) have a short lifetime compared to the batteries used in hybrids (I vaguely remember 2 years vs. 10 years).

Regarding emission reductions from uptake of electric cars, there is still a lot of embodied emissions from the production process. Here is a quote from Wikipedia's 'Energy efficiency in transport' page:

"Hybrid and electric cars use less energy in their operation than comparable petroleum-fueled cars but more energy is used to manufacture them, so the overall difference would be less than immediately apparent. Compare, for example, walking, which requires no special equipment at all, and an automobile, produced in and shipped from another country, and made from parts manufactured around the world from raw materials and minerals mined and processed elsewhere again, and used for a limited number of years. According to the French energy and environment agency ADEME, [\[19\]](#) an average motor car has an embodied energy content of 20,800 kWh and an average electric vehicle amounts to 34,700 kWh. The electric car requires nearly twice as much energy to produce, primarily due to the large amount of mining and purification necessary for the rare earth metals and other materials used in lithium-ion batteries and in the electric drive motors. This represents a significant portion of the energy used over the life of the car (in some cases nearly as much as energy that is used through the fuel that is consumed, effectively doubling the car's per-distance energy consumption), and cannot be ignored when comparing automobiles to other transport modes."

Also, on the page: "On a percentage basis, if there is one occupant in an automobile, between 0.4-0.6% of the total energy used is used to move the person in the car, while 99.4-99.6% (about 165 to 250 times more) is used to move the car."

This is why I feel there is a lot of potential in e-bikes, because smaller batteries are required as you don't have as much chassis weight. There would also be less embodied carbon due to less materials. Also, e-bike manufacturing is an industry NZ could get into as it seems less complex than car manufacturing.

Having said this, there's always the possibility of improvements in car manufacturing or batteries that could change all this. Regular bikes will remain popular as you get some exercise while travelling.

My current perspective on electric vehicles is:

e-bikes

- 30-35km/hr speed limit makes a car more attractive for cross-town trip.
- Likely carried by public transport easier than other options because of slim frame, which also reduces space required for compact parking/storage.
- Worried about security of bike and parts because bikes seem to be easy to steal and probably has some expensive parts.

e-scooter

- Can go faster than e-bikes but sometimes seen as a lame form of transport.
- Not sure about security or top speed.

e-motorbike

- Seems expensive.
- Think motorbikes are less safe than cars.
- Requires specific license.
- Not sure about security.

All of them could be cold in winter compared to a car. Also have to pay Road User Charges on motorbikes and scooters so slight disincentive to using a motorbike day-to-day and only using a car when needed, but cost probably isn't too bad compared to savings.

Regarding rail freight, here is a quote from IPENZ submission to the Green Growth Advisory Group (20/09/11 pg. 8), which I'm including because it mentions possible rail projects and the benefits of rail freight over road freight:

"IPENZ has concerns the Government's current emphasis of [road] over [rail], as alternative modes of moving freight, will not achieve the best environmental outcomes. Current proposals include the closure of at least two major North Island lines, and upgrading State Highway 1 when for a much lesser cost the North Island Main Trunk Rail line can be opened up to high cube containers. Environmental outcomes might also be enhanced if the North Island Main Trunk, the Tauranga line, the South Island Main Trunk, and the New Plymouth and Kawarau lines were electrified.

Trains can move the equivalent freight of 40 or more trucks, diesel electric motors use approximately 25 per cent of the fuel that trucks use per tonne-mile, electric motors are more efficient again and roads require considerably more maintenance than roads per tonne-mile of goods moved."

Urban Planning

- Encourage recreational entertainment venues such as cinemas, tenpin bowling, laser strike, etc to be easily accessible by public transport and within walking distance of other attractions. I'm not sure how to do this: maybe cheaper rates for recreation near transport hubs, grants to relocate businesses, or considered in consenting.

Example: I didn't know pre-quake Christchurch very well but they had a cinema and tenpin bowling spread out from one another and on the south side of Moorhouse Ave (the southern avenue of the four avenues enclosing the CBD), so to me it felt like the best way to get to them was via car; you could take public transport to get to

one of them, but they were sort of by themselves so if you wanted to do anything else you'd be waiting for another bus or facing a reasonable walk. It also seems like it would be easier for public transport planning if they were closer to a transport hub and other attractions.

Coastal Relocatability

- Promoting structures that are easier to move in areas likely to be affected by rising sea levels would likely have future productivity gains, if allowing building there at all.

Public Sector Procurement

- The public sector spends a lot of money and their decisions should be steered towards desired outcomes in the wider economy if not already doing this.

Education

- Improve visibility of emission reduction progress and information for the general public (e.g. a website similar to my one www.climatedash.nz).

Rationale: Burn-down chart showing progress against target emissions might be useful for gaining support/motivation for emission reduction efforts.

Buildings

- Promote and do research into wooden buildings because harvested wood needs to be stored somewhere and timber requires less carbon emissions than other building products. I vaguely remember the University of Canterbury doing research into using wood in larger structures.

Section 2: Answers to questions

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

My barriers: lack of money, long transit distances and lack of familiarity with options.

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

A vehicle loan scheme mentioned above. Providing information as to fuel economy, embodied energy and costs.

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

Using rail and coastal freight rather than road freight. Also see transport recommendations above.

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

An effective carbon price. Lack of knowledge of viability.

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

An effective carbon price.

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

More of a focus on quality, repair and the circular economy rather than the buy cheap and throwaway that is sometimes popular.

Promoting recycling and research and capability to recycle.

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

Could consider bringing back the maximum distance protection regulation from the Transport Licensing Act 1931 limiting long-distance truck freight distances, which effectively meant that long-distance freight went by rail or shipping.

Maybe labelling goods and courier/freight services to provide customers with an estimate of the total number of kms travelled from production to destination by road, rail/coastal, and air. Or, labelled with estimated CO2 emissions.

Minimum vehicle emission standards for imports.

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?

See Carbon Tax or ETS recommendations above, basically:

- Have an effective carbon price.
- Exclude exports.
- Imports required to be offset.
- Government pays a fixed price for removals to forestry owner, and then sells credits on the market.
- Distribute all revenue minus forestry payouts back to NZers as a dividend. It would be fine to divert some of it to emission reduction projects.
- Treat industries the same i.e. include agriculture.
- Introduce a research and certification scheme so farmers pay less to match their emissions if they're using carbon-efficient practices.
- Have a transition mechanism where the government sells more units in the early years and less in later years until they reach a target level of emissions.

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

Either a carbon tax or ETS.

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?

Vehicle loan scheme mentioned above.

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?

Public sector considering emission reductions in addition to cost-benefit ratios when deciding on spending.

Councils encouraging urban planning to make public transport planning easier.

Fixing NZ's social problems,

Housing: so people can transit efficiently and all the other benefits to productivity and innovation from stable, adequate housing.

Employment: so people have the money to invest in low-emissions technology.

Welfare support: to reduce risk to finances of losing job.

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?

Carbon revenue going back to people as a dividend. Fine to divert some of it to practical measures that will reduce future reduction requirements.

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?

Carbon price needs to be brought in for all emissions but at a progressive rate with a timeframe to reach a specific emissions target.

Focus on achieving goal first, prioritising behaviour change, with support to encourage R&D so that less behaviour change is required.

Regarding the issues paper introduction to this question, I think there is some urgency in the timeframe on reducing emissions and we may have missed the early stages of the transition, which should have happened in the early 2010s. Having said that, poorer households have had it tough in recent years, and not supporting them or applying a raft of expensive measures could see a backlash.

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?

- Reducing money spent on fossil fuel imports, if this is replaced with expensive car imports then not as valuable.
- Maintaining NZ's knowledge and skills base e.g. how to build and fix railway carriages as this allows homegrown industries to get a slice of economic booms and keeps prices competitive. Also, allows NZers to identify opportunities for reductions in areas relevant to them, e.g. repairing items rather than sending to landfill.
- Biodiversity.
- Water quality.
- Less waste.

I don't think diversifying NZ's export mix is that important, and this is related to maintaining NZ's knowledge and skills base in that you maintain the ability to change.

I don't think cost-benefit analysis alone gives social and environmental factors enough visibility in the final decision making, and so the impact on these should probably be included in the final decision making step.

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

At the moment the most important player is the government as without an effective carbon price there is little for businesses and individuals to gain from reducing emissions. Also, government websites on climate change seem a bit confusing (e.g. the old climatechange.govt.nz. The MfE site isn't bad, but there could be room for improvement to make it more general public friendly), and then there is the clarity of NZ's emissions target which people might misunderstand.

Next tier is KiwiRail as they need to be making good decisions given they are a railway monopoly. Alongside KiwiRail are councils due to infrastructure and interest in urban planning.

Next is probably consumers in purchasing decisions, and finally businesses as they respond to costs and demand. However, businesses and individuals are important as they are affected by the changes.

Informing people is important as it is easier to make changes if people are asking for them.

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?

Returning carbon revenue as a dividend as this reduces the impact on households.

I'd like to point out that risk is a normal part of business, e.g. look at what happened to video rental stores. Also, people have known about climate change for a while now.

Progressively increasing the price does give businesses some time to adapt.

Should promote re-training programmes.

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

Carbon price mentioned above where exports are excluded and imports taxed to match NZ carbon price. Redistributing revenue back to people. Progressively increasing the price.

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?

I don't know the science very well but I'm assuming the issue is that 1 tonne of CH₄ breaks down to 1 tonne of CO₂ so they are effectively equivalent, but in international accounting 1 tonne of CH₄ counts for more CO₂e because of the warming impact, so net zero in UN accounting is actually a decrease in CO₂.

Ultimately the goal is for the planet to stay at a stable temperature (i.e. a stable level of GHG), so in the long-term we should account for the emissions differently to how we are now. However, in the short term I think we should focus on the warming impact as my understanding is that exceeding a temperature causes irreversible effects and positive feedback that will cause temperatures to rise even if we cut emissions. Given that a reduction of 1 tonne of CO₂e methane has the same cooling effect as a reduction of 1 tonne of CO₂, I think they should be treated the same until warming is under control, but if you can convince the UN to change their accounting then it would be acceptable for NZ to adopt the two basket approach. If on the other hand burning methane at the source to

convert it to CO₂ has the same warming effect as methane in the atmosphere, then they probably should be treated differently, as otherwise people would be encouraged to capture and burn the methane for no good reason (I don't know the science to know if burning methane has the same warming effect as leaving it to float in the atmosphere).

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

Excluding exports from the carbon price when the country they're going to does not have an effective carbon price, as this would encourage consumers to not choose NZ exports even though they may be less emissions-intensive.

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

1. Avoiding costs and disruption of climate change.
2. Reducing oil imports (tradeable deficit).
3. Maintaining NZ's reputation, so tourists don't feel guilty visiting the country and the same for consumers of our products.
4. We'll be producing goods that are in demand in the new economy and won't have to source everything from overseas.
5. Pride, Mana.
6. Given our renewable energy ability, we're well placed for low-emissions manufacturing.
7. Less waste (another environmental problem).

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?

Transport

- Goods will be transported between cities via rail or shipping and distributed locally by small trucks made up of a mix of petrol, hybrid, fully-electric or potentially hydrogen (or another fuel cell).
- Cycleways, electric motorbikes, and public transport will make up a significant part of the transport mix.
- Heated clothing may be popular in Winter.
- Tradies and farmers will have vehicles run on a mix of petrol, hybrid, fully-electric or hydrogen.
- Most recreational entertainment places (i.e. cinemas, tenpin bowling; not necessarily local parks or gyms, where active transport would be popular) will be closer to hubs accessible via public transport so that cars are not required to get to them and then around town.
- Taxis could be more popular or will have been replaced by ride-share, car-share or autonomous vehicles.
- Tourists will be hiring electric vehicles to either roadtrip around the country or see the sights in an area after arriving via public transport.
- Petrol cars may appear en masse for holiday roadtrips.

Electricity/Technology

- NZ electricity may be converted into fuel for transport or industrial heating purposes.
- There may be technology that converts CO₂ similar to photosynthesis that means less change is required.

Food/Farming

- People will be paying higher prices for carbon-intensive food. Less food will be wasted because of this.
- Most farmers will be using low-emission farming practices.

- Farmers might have structures to catch and burn cow emissions.

Forestry

- There will be more flora.

Buildings

- Buildings will be better insulated.
- Buildings in areas susceptible to climate change will be able to be shifted relatively easily.
- More buildings will be made of wood.
- More solar cells/heating on buildings particularly ones far from generators to reduce energy distribution losses. On the other hand, Australia could probably do with all the solar cells it can get.

Manufacturing

- Industrial heating will mostly use electricity or wood.
- NZ will be manufacturing and repairing a lot of vehicles (especially two-wheeled variety) rather than importing so much due to I'm guessing less materials and complexity of electric two-wheeled vehicles.

Waste

- There will be more of a focus on quality, repair and the circular economy rather than the buy cheap and throwaway that is sometimes popular.

International Situation

- NZ will be donating money to other countries to help them in emission reduction projects.
- Other countries will have significantly cut their energy sector emissions in small part from NZ's focus on repairing and recycling rather than replacing.

Could a shared vision for New Zealand be created, and if so, how?

Meetings around the country where the general public can ask questions and get answers regarding climate change policy and feedback is taken on board. Possibly Share an Idea type thing similar to Christchurch rebuild.

Section 3: General comments

At end of page 44, I'd like to add to the Potential Barriers to technology uptake 'risk or uncertainty'. E.g. I have the capital to buy an electric vehicle but my job is unstable and I could have trouble paying rent. Or I could invest heavily in this new technology, but a better technology may come along and sink my investment.

On page 60, 'It will also be important that the system focuses on most effectively reducing New Zealand's largest sources of emissions over the long-term,...'

I'd like to point out that a lot of the agricultural products will be exported so agriculture may not be the largest source of emissions on an incl. imports excl. exports basis. My point is that NZ is a food-exporting nation and it sucks if other countries reduce their agricultural emissions by offloading the job to us and so have more capacity in their carbon budgets than we do. Having said that we also export logs, and I feel the consumer using the logs in a long-term carbon storage situation should be the one who gets to account for the carbon removals.