| A Zero Carbon Act is important to me because... | Climate change, if not stopped, has the potential to destroy civilisation, and very possibly the human species. I regard that as a bad thing. |
Q1. Dated targets, typically of the form x% reduction in emissions from sector z by year yy are commonplace, and may have their place, but are not easy to enforce. I feel that such things are best treated as merely a broad framework, and that the law needs to drill down a level deeper and specify particular technologies and dates. I feel that emissions trading schemes are not the right tool for this problem, based on the performance of such things to date. The European efforts on those lines have had some good effects, but nowhere near the scale required.

Making targets “Legally Binding” is not particularly meaningful if no-one can be held to account when the targets are not met – so suing the government of the day won’t reduce the amount of petrol burnt in cars one whit – to achieve actual change, the power of the state needs to be engaged directly with individual emitters (while keeping the needs for fairness and preserving the overall social contract in mind.)

This need for state intervention is also because such a detailed schedule gives clearer guidance to the markets as to what to expect when. Saying “We will decarbonise transport by 30% by 2040” does not focus the minds of decision-makers as much as hearing something like “According to schedule C of the act (Or possibly regulations made under section z of the act), hydrocarbon fuels, including but not limited to marine bunker diesel may no longer be used to propel coastal vessels over 1,000 tons after 1 July 2025”.

That means Bluebridge and interislander and other costal shipping will know with certainly when they need to convert to ammonia fuel (There is really nothing else with the energy density, compatibility with existing engine designs, handling safety and other necessary attributes to substitute for carbon-based marine fuels), and then the ports who need to build new tankage and pipes will know when they will need to built, the people who need to build hydrogen-t-ammonia factories will know when their markets will start, and the people who will electrolyse water to make the hydrogen know when to start building, and the folk who need to supply the extra electricity know when to start building their wind farms, and so on. And that is a simple example - an ETS just won’t get all the parties involved working together constructively and to a schedule. The invisible hand of Adam Smith is too slow for this crisis, and too uncoordinated.

Similarly, there should be a definite date when Tiwai point will be barred from using carbon anodes. Then they can plan when to start licencing an inert anode process (from, e.g., Rusal although there are other companies holding comparable patents), when to start pilot production, how to capture the added green value in their international marketing, etc.

Likewise, electrifying transport requires complex and in-depth co-ordination between the electricity-supply industry (including distribution networks), the auto industry, the people who build charging networks, the ways we currently rely on petrol taxes and RUCs, etc. Even the car wrecker industry needs to change to recycle the aluminium and copper in electric cars, as well as their batteries.

In summary, the required transitions are not simple and require the sort of expert multidisciplinary teams to plan and direct that only central government can support, along with enough authority to get their results implemented.

The resulting detailed and staged direction on dates, industry by industry, must of course minimise and balance disruption to commerce and society overall – another reason why central government must drive it.

Anything less will achieve little more than greenwashing.
Q2. If the Government sets a 2050 target now, which is the best target for New Zealand?

We should aim for total net zero emissions as soon as possible, but if it becomes politically and economically viable, should aim to be net negative before 2050. (My belief is that the technology exists, or soon will exist, to go net negative slightly before 2050, but a project to implement it all may or may not be economically and politically achievable by 2050. Still, if we limit our ambitions before we start, we certainly won’t go negative. We ought to be aiming, ultimately, to remove all the carbon we have already emitted (Including the forests harvested before European settlement, although they are a tiny part of the total), so as to put the climate back the way it was before humans started to interfere.

Q3. How should New Zealand meet its targets?

Mainly, by reducing major emissions domestically – generally via regulation. Secondly, by taxing minor emitting activities at a rate that will fund enough tree planting to absorb those emissions. We should also tax imports according to their emissions content, while providing rebates on exports, so that our emissions taxes do not impact our export markets. This would be akin to the GST refunds on exports, although calculating the amount would be harder, as it wouldn’t always be a fixed percentage, but vary with the nature of the goods or services.

There should definitely NOT be any way for any substantial emitter to continue emitting by buying some sort of paperwork certificate from anywhere – the idea of trading emissions rights implies that emissions are in some measure acceptable – a flawed notion, which is at heart immoral. There should be no creation of emission rights by a stroke of the government’s pen - only actual negative emissions (tree planting in New Zealand) should be able to be balanced against the inevitable residual minor positive emissions – and even that has to be limited, as we need our negative emissions to absorb net CO2, not just for balancing against positive emissions. An emissions tax should ramp up gradually, to spread economic impacts, but the ramp should be clearly signalled and ensnared in legislation, so that people can plan, and to reduce the efforts spent lobbying for delays and exemptions.

Once major emitters have been regulated away, and remaining minor emitters have started paying the matching afforestation tax, the apparatus for major state intervention can largely be dismantled, and the afforestation tax administered by IRD. Slowly increasing that tax till it funds enough afforestation to make us significantly net negative as a country could then follow after 2050.

Q4. Should the Zero Carbon Bill allow the 2050 target to be revised if circumstances change?

The notion of a target is not all that helpful. While it might be politically the best that can be achieved, the nature of the actual problem means it would be best tackled by something more resembling a war effort – working at the maximum possible pace on all possible fronts, and treating any extra progress as an opportunity to increase the rate of progress. If there is a goal, the temptation is to ease off efforts if the goal seems comfortably in sight.

It is also clear that globally, we must as a species reach zero emissions by 2050, and go negative thereafter, if we are to have much of a civilisation left by 2100.

It is also clear that any player, individual or state, in a position to make a greater or faster contribution should do so, since there will be many who can not contribute meaningfully or rapidly.

So I am happy to set an initial goal of net zero by 2050, on the basis that if we don’t manage that, its game over. But I would like there to be a mechanism for that timeline to be shortened whenever the opportunity for such shortening is identified – which will “keep the pressure on”, and let us move on sooner to the negative-emissions future we need to develop as a follow-on.
Q5. The Government proposes that three emissions budgets of five years each (i.e. covering the next 15 years) be in place at any given time. Do you agree with this proposal?

First, there is a distinction between emissions elimination by 2050 and a carbon budget – you could in theory get to December 2049 with no emissions reductions and then go to zero overnight. Or you could reduce sharply now. Or you could reduce gradually over the 30-odd years we have to go. An emissions budget should be an outcome, once the maximum rate of reduction that is technically, economically and politically achievable has been scheduled. If it’s convenient to publish that in 5-year windows, by all means – but I’d expect the planning process to know what is going to be achieved, and when, at much finer detail than that.

Second, as per my response to Q1 above, I think any overall budgets need to be broken down in a highly detailed way, both by emissions source/industry and by date, both to make sure they are practical and achievable and economically sustainable, and to make the relevant actors aware of what actions are required of them and when.

But finally, yes, the near-term parts of the plan will need to be developed in greater detail, and a 5-year horizon for the most detailed projections with a further 10-years for more broad planning seems quite appropriate.

It will doubtless be necessary to revise the schedule in light of experience, but I see no reason why a reasonably clear draft schedule for the entire period out to 2050 could not be produced within about 6 months, and then revised every few years. There would need to be consultation with industry, of course – if the planning team knows the depreciation to date and currently planned lifetime of Fontera’s coal-fired boilers, that can be taken into account when determining a regulated end-date for coal-boilers in the dairy industry – but in general, the required overall technological and economic path is, in my view, quite straightforward. (Of course, I have spent several thousand hours researching deep decarbonisation technologies – others may not yet see the path as clearly as I do.)

Q6 - Q7. Should the Government be able to alter emissions budgets?

As per Q5, I see actual emissions forecasts as falling out of a more detailed planning exercise. So I would see them changing whenever the plans are revised. The point to note is that if it’s not tied to a plan to get there, a budget is merely pious intentions, and of only political relevance. And the planet doesn’t care about our politics – it only responds to reality.

Q8. Do you agree with the proposed considerations that the Government and the Climate Commission will need to take into account when advising on and setting budgets?

I agree that the Government and the Climate Commission should take the following factors into consideration when advising on and setting budgets:

- economic circumstances and the likely impact of a decision on the economy, as well as the competitiveness of particular sectors of the economy
- scientific information regarding climate change
- technology relevant to climate change
- fiscal circumstances and the likely impact of the decision on taxation, public spending and public borrowing
- social circumstances and the likely impact of a decision on fuel poverty
- energy policy and the likely impact of a decision on energy supplies and the carbon and energy intensity of the economy.
<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q9. Should the Zero Carbon Bill require Governments to set out plans within a certain timeframe to achieve the emissions budgets?</td>
<td>Yes - we must learn from the mistakes of the UK’s Climate Change Act and specify a strict time frame for producing a plan. Further, that plan needs to be seamlessly connected to actual action on the ground – the plan needs to have clear costed solutions to all the major emissions sources, along with priorities and target dates for implementation. In a similar way, we should learn from the historic failures of various market-based interventions, such as carbon prices and cap-and-trade schemes, which have not produced more than token reductions in emissions (although they have permitted certain traders to make money from operating the markets). A deeply interventionist approach is called for, with the state mandating a multitude of actions at a detailed level. An act similar in spirit and scope to the Emergency Regulations Act 1939 or the Civil Defence Emergency Management Act 2002 seems to me to be called for, albeit with different, emissions-focused, objectives.</td>
</tr>
<tr>
<td>Q10. What are the most important issues for the Government to consider in setting plans to meet budgets? For example, who do we need to work with, what else needs to be considered?</td>
<td>The Government’s policy plans to meet emission targets should be comprehensive, fair, cost-effective and environmentally sustainable. The most important issues will have to do with redistributing costs and benefits. For example, renewable electricity (wind, mainly, in NZ’s situation) is likely to be cheaper, overall, than the gas and coal it will displace, while reducing emissions from farming is likely to come at a net cost. Can these two be balanced out somehow? The overall cost of going zero-carbon may be close to zero, but there will be significant costs to particular sectors. The risk of stranded assets in various industries will be a second major consideration, requiring careful attention to timing. Consultation with industry will be vital, although avoiding industry capture will also be important.</td>
</tr>
<tr>
<td>Q11. The Government has proposed that the Climate Change Commission advises on and monitors New Zealand’s progress towards its goals. Do you agree with these functions?</td>
<td>No. Advice and monitoring are not enough. Difficult and contentious issues like this should be set up with broad policy guidelines, and then the politicians should delegate the day-to-day operations to some suitable statutory body. I like the way Pharmac works, and would love to see more like it – for example an “externalities commission” could determine if we need more or less tax on sugar, alcohol, petrol, tobacco, plastic bags, etc. to fully fund their social costs, without politicians needing to get involved in the detail. In the current context, I would give wide-ranging powers to a commission to mandate dates when particular emissions sources would become illegal and/or would need to start paying emission levies (Which would need to be enough to fund forest planting sufficient to fully offset the emissions in question). The ETS alternative opens the prospect of decades of lobbying and political wrangling as special interests try to influence the process. It’s too urgent and important to let it be constantly in the political arena.</td>
</tr>
<tr>
<td>Q12. What role do you think the Climate Change Commission should have in relation to the New Zealand Emissions Trading Scheme (NZ ETS)?</td>
<td>The NZ ETS should be abandoned in favour of direct intrusive and disruptive state regulation of individual emitting activities. The necessary bureaucracy might well be called a climate change commission. For emitters that cannot practicably be tackled by regulation, a carbon tax should replace the ETS, with the tax set sufficient to fund enough afforestation to fully offset the emissions – perhaps, after 2050, even more than a mere 100% offset to take us into negative net emissions.</td>
</tr>
</tbody>
</table>
Q13. The Government has proposed that Climate Change Commissioners need to have a range of essential and desirable expertise. Do you agree with the proposed expertise?

I agree with the following collective expertise:

- climate change policy (including emissions trading)
- resource economics and impacts (including social impacts, labour markets and distribution)
- climate and environmental science
- risk management
- engineering and/or infrastructure
- community engagement and communications.
- business competitiveness
- knowledge of the public and private innovation and technology development system.

I think expertise in public health is also important.
Q14. Do you think the Zero Carbon Bill should cover adapting to climate change?

No.

Adaptation to climate change is a quite different thing to emissions reduction, and should be covered by quite separate measures. It may be that a distinct adaptation bureaucracy is not needed, and it can be layered into other government organisations.

The key differences as I see them:

1. Different Constraints.
   Emissions Reduction will be limited mainly by political will – it is very hard to make even small demands of New Zealand people when the benefit will accrue to the entire global population, and not immediately, but some years down the track. They will not see the point in personal change “No one raindrop ever feels responsible for the flood”.
   Adaptation will be mainly limited by the requirements – until we know if we are heading for 3 degrees or 5 degrees by 2100, for example, we won’t know what to plan for. Even then, the actual outcomes are not at all well understood as yet – the IPCC reports have such heavily political documents that much of the truth is filtered out. It would be unwise to plan based on either the deliberately understated IPCC data or the worst-case scenarios put about by climate alarmists.

2 – Different time-frames.
   Reduction activity needs to ramp up immediately, limited mainly by how fast capital can be deployed, and the political will. Adaptation is pretty pointless until climate change effects really start to bite. We may need to abandon South Dunedin, much of the Miramar peninsular and various other low-lying places by about 2070, but at the moment the only action needed is to stop pouring new capital into those places, and local bodies and ordinary good business judgement already have that one mostly in hand. Serious capital won’t be needed for decades, and the emission-reduction battle will have been won or lost well before then. Until then, a little PR/advice is really all that is needed - if people knew that sea-level rise estimates in the IPCC reports exclude Antarctic melting because those figures are deemed too uncertain, but that an extra 2 meters by 2100 due to that cause is quite possible, maybe Foodstuffs wouldn’t have built the pack-n-save in Petone. Similarly, the fact that things will keep on getting worse after 2100 is not often publicised – but CO2 takes many decades to work up to it’s full effect. But in general, adaptation is not the most urgent problem.

3 – Political flavour.
   Emissions reduction involves making demands on people. The politics will be about standing up to special pleading for exemptions and delays. Adaptation involves resourcing people to make changes that, by then, they will clearly see the need for. The political flavour will be for extra handouts for people who knowingly made bad decisions and want to be compensated for their stranded assets. I believe the policy and institutions needed to deal with these different situations are distinctly different.

4 – Scale
   Emissions reduction is typically estimated as very much cheaper that adaptation in most global studies. I don’t have any NZ-specific numbers, and our geography seems to indicate that impacts (and so presumably costs) here will be less than in many places. Nevertheless, it seems likely that the adaptation effort, when it comes, will need to be several times larger than the reduction effort, and require correspondingly large capital commitments. Probably a quite different organisation will be needed to control and/or coordinate it, because of that alone.
Q15. The Government has proposed a number of new functions to help us adapt to climate change. Do you agree with the proposed functions?

As per Q14, I don’t think adaptation is an urgent issue. While the proposals
(• a national climate change risk assessment
• a national adaptation plan
• regular review of progress towards implementing the national adaptation plan
• an adaptation reporting power)

seem unobjectionable, I don’t see them as crucial at this time. Pursuing them may divert energy from the important task of reducing emissions, however, so I definitely think that, if they are to be pursued, it should be by some other arm of government.

Q16. Should the Government explore setting up a targeted adaptation reporting power that could see some organisations share information on their exposure to climate change risks?

I believe all central and local government organisations should analyse and report their climate risks annually. But I would not mandate that on the private sector. (The stock exchange may well make it a listing requirement someday, of course. And/or the accountants might eventually require something in annual accounts – but I think this can be left to the private sector.)

Further comments

As you can see, I favour highly interventionist direct action by the state, not namby-pamby emissions trading schemes that, historically, have achieved little or nothing. It is too easy for powerful vested interests to first influence the rules and then game such schemes, or for governments to back off when the economic impacts in some sector become politically painful. I’d like my daughter to have a viable planet to live out her life, and I see no other way to achieve that than attacking climate change urgently with the full resources of the sovereign power.

While a full-on attack on NZ’s emissions may not make much global difference directly, the moral power of our example may ultimately inspire more action in other countries, and so repay NZ’s investment handsomely. But speed is of the essence.