Submission

to Draft Advice of Climate Change Commission

on 2nd Emissions Reduction Plan

Engineers for Social Responsibility Inc. (ESR) is an independent group of engineers who consider that being knowledgeable in the field of technology means that they also have a special obligation to the public at large in matters that relate to engineering, or that can be addressed using engineering approaches. Given the urgency of the issue, for some time now the organization has been particularly focused on how to respond to the climate crisis by reducing emissions and concentrations of greenhouse gases in the atmosphere. More information can be gained from our website www.esr.org.nz.

Comments in general

The advice document subscribes to the economic growth paradigm in assuring the economy *"would continue to grow under the recommended emissions budgets".* On the other hand, it has been established, that economic growth brings with it emissions' growth, because an absolute decoupling of the two has not been achieved yet. It is therefore timely to start a discussion of "degrowth" to make a real and required impact on gross emissions. Degrowth of the economy means a planned reduction of the material throughput through the economy and the associated emissions, while focusing on a just transition and wellbeing indicators. Worldwide there is an increasing amount of literature generated and some of our members are contributing to the domestic discussion (www.degrowth.nz).

The document uses imprecise language and accounting when talking about zero emissions in its recommendations. For example, although the term zero tailpipe emissions is used related to electric vehicles, electric vehicles are seen as a means of reducing 100% of the emissions of a fossil fuel vehicle from the transportation total. In reality, the emissions of an electric vehicle related to its materials and production are still occurring overseas and an electric vehicle is still requiring consumables made from fossil fuels like tyres. The same applies to renewable energy, where all the physical components like PV panels, windmills, dams, and geothermal plants are still containing embedded fossil fuel energy, and some geothermal heat sources also release

significant amounts of carbon dioxide earlier than if left untapped. All this means the path to zero emissions will be longer than forecast.

The climate crisis is a symptom of planetary ecological overshoot and has to be dealt with accordingly. Most climate crisis actions taken in isolation might fail, if not addressing the bigger picture. Other symptoms of ecological overshoot are biodiversity loss (6th mass extinction), phosphorus cycle overshoot and nitrogen cycle overshoot.

We agree with most of the criticism of the handling and outcomes of the ETS and the attempt to switch the focus to reductions in gross emissions, rather than net emissions. Nevertheless, we see Tradeable Energy Quota (TEQ) as the most promising tool to reduce gross emissions. Tradeable quotas have worked worldwide to reduce CFC emissions under the Montreal Protocol and a petition for TEQ is currently on the parliamentary website (https://petitions.parliament.nz/15c9b925-a23e-4a38-879e-8f514ac0c147).

The Climate Change Commission in its advice should drop the split between "domestic" targets according to the Zero Carbon Act and "global" targets made under the National Determined Contribution (NDC) and for COP. There is only one climate emergency the government requires scientific advice on and the time for semantics has passed.

The advice document comes across as quite verbose with a deficit on recommendations of precise dates and numbers. In many areas the document could state best practices from overseas in terms of end dates and standards, which are also becoming increasingly important during trade negotiations.

Comments regarding the 19 recommendations

1. The setting of a target of gross emissions for the 2nd Emissions Budget Period is appreciated. In addition, Tradeable Energy Quotas should be recommended to ensure the target is not missed.
2. "Communicate gross emissions …", a stronger wording with proposed numbers should be done.
3. Agreed to comments with regards to ETS, but TEQ should be developed and implemented.
4. "Accelerate Iwi/Maori emissions reductions by …", agreed.
5. "Ensure Iwi/Māori can drive the integration of mātauranga Māori into policy design …", agreed.
6. "Ensure Iwi/Māori can drive the integration of mātauranga Māori into policy design …", agreed.
7. " Make use of existing mechanisms to manage impacts of climate policies in the interim, rather than delaying climate action." Agreed.
8. "Enhance advisory and extension services to farmers …", agreed, but methane emissions target of -30% should be included.
9. "Advance the agricultural emissions pricing system to:" see comments made above.

10. “Implement an integrated planning system that builds urban areas upward …”, agreed, but reference should be made to a 15 minute city design and updates to the building code should be included. The building code should be brought up to the passive house standard. Zero emission buildings should not only be referred to, but be part of the standard.
11. “Incentivise comprehensive retrofits …” agreed, but updates to the building code should be included.
12. “Prohibit the new installation of fossil gas in buildings …” agreed, but an end date for gas connections should be recommended, as in Europe.
    Solar hot water heating is still ignored in line with EECA practices, but is a cost-effective current technology employed by the rest of the world.
    Vehicle to Grid technology, as an alternative to domestic batteries, requires stronger promotion and wording.
13. “Prioritise and accelerate renewable electricity generation build …” agreed, but insufficient. The current electricity pricing process of half hourly auctions and paying everyone the price of the highest bidder, which is now almost always one of the generators using fossil fuels, strongly hinders the generation of renewable electricity. More generally, a Central Regulatory Body for the electricity industry to manage distributed generation and to develop a smart grid is required. The privatised model in New Zealand is incapable of delivering an integrated system and has led to ever increasing power prices since its implementation.
    The text box on hydrogen technology is appreciated and agreed with. The direct use of electricity, where possible, is preferred for efficiency reasons.
    The text box on Carbon Capture is also agreed with, but it also has to be pointed out that, to our knowledge, no such plant operates successfully anywhere in the world at scale.
14. “Pursue more widespread process heat decarbonisation …”, agreed.
15. “Set … objectives for the role of forests with respect to emissions …”, agreed, but the recommendation lacks numbers and exotic forests should become the exception.
16. “Simplify planning and increase funding of integrated transport networks that optimise public and active transport. …”, agreed.
    Going further, an end date for fossil fuel car imports of 2030 should be set.
    New Zealand’s emissions standards also require alignment with European emission standards to avoid becoming the dumping ground for old technology in the meantime.
17. “Rapidly resolve the barriers to scaling up vehicle charging infrastructure.” Agreed.
18. “Develop incentives to accelerate the uptake of zero emissions commercial vehicles …”, agreed.
19. “Apply regulatory and policy instruments to achieve the optimal use and efficiency of landfill gas capture systems and technologies at all landfills …”, agreed.
    As far as Waste to Energy, i.e. incineration, is concerned, this technology should not be attempted in New Zealand, because it is counterproductive to a zero waste target.

The Circular Economy and Bioeconomy chapter requires stronger language and dates for the introduction of product stewardship schemes and the right to repair legislation.