

## **SUBMISSION TO THE PRODUCTIVITY COMMISSION DRAFT REPORT: LOW-EMISSIONS ECONOMY (APRIL 2018)**

1. Engineering New Zealand (formerly IPENZ) is New Zealand’s professional body for engineers, with more than 20,000 members - and New Zealand’s strongest and most influential voice on engineering issues.

### **SCOPE**

2. The Terms of Reference for the Inquiry ask the Commission to address two broad questions:
  - What opportunities exist for the New Zealand economy to maximise the benefits and minimise the cost that a transition to a lower net-emissions economy offers, while continuing to grow incomes and wellbeing?
  - How could New Zealand's regulatory, technological, financial and institutional systems, processes and practices help realise the benefits and minimise the costs and risks of a transition to a lower net emissions economy?

We consider the Draft Report is an accurate summary of the issues in terms of emissions, except for the built environment. Where it falls short in our view is that it is too narrow in scope and ambition. The Final Report could be bolder and broader in addressing these questions.

3. The Draft Report states “while the Commission does not explicitly address the effects of mitigation efforts on wellbeing in this report, each chapter, in its own way addresses the relevant contributors. The Commission plans to draw these together more systematically for its final report.” In our view, the Report would be strengthened from a more systematic consideration of wellbeing. For example, the Commission could seek to articulate the linkage between low-emissions, income and wellbeing to inform the policy agenda. At present the compatibility between these objectives is a matter of considerable public debate, for example in the oil and gas exploration sector. We believe there is a need to get beyond trade-offs and fully explore co-benefits, to avoid the risk of ‘stop-go’ public policy as governments change. A Climate Change Commission is a necessary part of the process of achieving greater certainty and consistency of government direction; importantly, it is not a sufficient condition for transformational change. To give effect to medium term emission reduction budgets needs more than an emissions target; it requires wider strategic direction. Long term strategic planning for sustainable growth is required for our industries to invest, innovate and succeed in creating a low-emissions economy.
4. The Draft Report indicates that the Commission has looked in detail at one side of the coin – lower emissions – but not the other – income growth and wellbeing. This seems inconsistent with the broader government direction of establishing wider measures of economic success. Carbon and emissions are output measures and we would like clearer outcome statements. We consider that the emissions lens alone does not show us what a low-carbon economy looks like or a pathway to get there. We are

seeking a transformational strategy to increase economic productivity by leveraging on New Zealand's strengths in energy, agriculture, science and technology.

5. Minister for Climate Change James Shaw says in his introduction to the Zero Carbon Bill consultation document "a new industrial revolution is taking place". We agree. The final Report could better reflect the Minister's big picture thinking and really dig into what this new revolution means for New Zealand. A clean energy, artificial intelligence and biotech led economic transformation is an opportunity with great benefits, and costs that can be avoided or mitigated. The Draft Report would be strengthened by directly facing into this transformation in responding to the broad questions.

## TECHNOLOGY MAKER

6. We challenge the face validity of the repeated comment in the report that New Zealand is a "technology taker". For example, "New Zealand will mostly continue to be a technology taker, including in low-emissions innovation" (p.110) due to the size of our economy. New Zealand has led the world in the development of its electricity and energy sectors. We led the world in geothermal power technology. Today we can launch commercial rockets. We are at the cutting edge of work on battery technology. The list goes on. As the report demonstrates, a low-emissions economy can give focus to our innovation and investment approach which has fallen short in recent decades. We have disaggregated our technology, innovation and energy sectors and have not been sufficiently bold. It is essential that we work ambitiously at the scale and scope required to enable the transfer of science into product development, manufacturing, industrial processes. Successful innovation in our education, energy, transport, agriculture, construction, waste and other sectors requires the application of science through engineering. This requires stronger government leadership to coordinate, scale up and accelerate technology transfer to industry.

## BUILDING AND CONSTRUCTION

7. We are concerned that the Draft Report does not accurately reflect the opportunities for emissions reduction and transformation in the building and construction sector. The analysis minimises the issues by focusing on the energy in building use rather than the lifecycle of the construction materials. The figure of 2% of total GHG emissions generated from using buildings is more like 20% from buildings if one takes a wider view. Whilst emissions may be embodied, buildings in New Zealand have a relatively short life span. We consider that the Commission has not calculated the potential emissions impact of transformational change in the sector. We are not convinced that "establishing an effective price on emissions is the most efficient mitigations strategy for most of the emissions generated from the built environment" (p.384). We suggest there are several effective mitigation strategies that can work in combination; a price on emissions is only part of a mix which includes regulation, procurement and innovation.
8. We note that whilst construction using wood has benefits in capturing carbon, wood is not necessarily the preferred material when all resilience and performance factors are considered. We support a performance-based building regulation system. Opportunities lie in changing some of those performance parameters and in procurement, design, technology transfer, automation of processes to reduce waste, water sensitive design and so forth. As previous Commission reports have noted, the construction industry in New Zealand (and world-wide) has not seen the productivity gains of other sectors. This is a good opportunity to take that transformation forward. The government is looking at a major scaling up of housebuilding, and we are retrofitting structural elements for seismic resilience. The co-benefit of a low emissions building and construction sector is more affordable, resilient and healthy housing. We consider this to be a national priority.

## INFRASTRUCTURE

9. Last, a considerable programme of infrastructure construction is planned. As the Office of the Auditor General has noted in its review of local government infrastructure strategies, procurement and asset management requires improvement. It makes sense to ensure that the infrastructure emissions profile is fully accounted for. It is likely that there is considerable scope to lower emissions. A more thorough analysis of the emissions impact of infrastructure construction in the Final Report could be of benefit to the sector and to government.
10. We would appreciate the chance to meet with the Commission to discuss our feedback.



Susan Freeman-Greene  
Chief Executive

### Contact:

Neil Miller, Senior Policy Advisor

[neil.miller@engineeringnz.org](mailto:neil.miller@engineeringnz.org)

P :: 04 460 3575

M :: 022 061 1507