



Joint Submission from Beef + Lamb New Zealand and Deer Industry  
New Zealand to:

The New Zealand Productivity Commission

on the

Low-emissions economy: Issues paper - August 2017

2 October 2017

### **About the submitters**

#### Beef+Lamb New Zealand

1. Beef+Lamb New Zealand (B+LNZ) is an industry-good body funded under the Commodity Levies Act through a levy paid by producers on all cattle and sheep slaughtered in New Zealand. Its mission is to deliver innovative tools and services to support informed decision making and continuous improvement in market access, product positioning and farming systems.

#### Deer Industry New Zealand

2. Deer Industry New Zealand ('DINZ') is a levy funded industry-good body established by the Deer Industry New Zealand Regulations 2004 under the Primary Products Marketing Act 1953. DINZ's functions (under regulation 5(1)) include the following:
  - to promote and assist the development of the deer industry in New Zealand; and
  - to monitor, and from time to time report on, the economics and efficiency of all components of the deer industry.

## Submitters position on transitioning to a lower net-emissions economy

3. B+LNZ and DINZ appreciate the opportunity to submit to the Productivity Commission on the Low Emissions Economy Issues Paper and support the Commission's intention to examine in detail:
  - a. 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.
  - b. How New Zealand's regulatory, technological, financial and institutional systems, processes and practices can help realise the benefits and minimise the costs and risks of a transition.
4. B+LNZ and DINZ are members of the Government-Primary Industry *Biological Emissions Reference Group* (BERG) and consider that the suite of reports being commissioned by BERG will have particular relevance to the Commission's review. We welcome ongoing dialogue between BERG and the Commission as report findings are published and implications for policy development are considered.
5. B+LNZ and DINZ consider that the sheep, beef and deer farming sector's contribution to a transition must be i) fair and proportionate; and ii) practical/effective and technologically feasible.
6. New Zealand agriculture has an important role in the production of emissions-efficient food and is a provider of safe and high quality food globally and we support appropriate and effective climate change mitigation. However we are opposed to additional cost liabilities that are not faced elsewhere internationally and would put the sector's export revenue (over 90% of the production is exported) and overall profitability at risk.

## Answers to specific questions raised in the issues paper

### Q1. How can the Commission add the most value in this inquiry?

7. The Commission has a prime opportunity to develop a clear, long term approach on transitioning New Zealand to a low-emissions future that can be agreed by all parties. Only with an agreed and clear pathway can the work of taking action start. Delay will only make achieving the necessary goals that much harder.
8. New Zealand has made an international commitment to decarbonise its economy (reduce CO<sub>2</sub> emissions to zero by 2100). Elimination of fossil fuel use will be a significant part of this, and will require significant changes by all.
9. Reduction in emissions from the land use sector will require a parallel but different approach given the need to address food security, the different behaviour of the gases emitted by the sector, and the potential of the sector to provide benefits such as carbon sequestration to assist in meeting the goals.
10. The Parliamentary Commissioner for the Environment's proposal to establish a climate change framework for New Zealand similar to that of the United Kingdom is supported. An

Independent Climate Change Commission that has the cross party support of all of parliament, and is tasked with establishing climate budgets and implementing a system where the Government establishes process and policies to meet these budgets, will provide the certainty and clarity needed to support the investment required to underpin a transition.

11. The listed suggestions on page 4 are all useful ways to add value, but two are of particular interest to DINZ and B+LNZ:
  - a. Developing ways to assess the benefits and costs of different pathways for New Zealand to transition to a low-emissions economy (rather than, for example, providing more or different scenarios of what the future might look like)
  - b. Describing what a low emissions economy will mean for the many different businesses and households in New Zealand
12. Often what is missing in discussing a range of scenarios or policy options is an in-depth consideration of benefits and costs (and more importantly where these are applied), particularly where the costs are correctly apportioned and if they are affordable at the personal level (e.g. household or business).
13. Implicit in these approaches is the recognition, outlined on page 2, that *“some technologies and processes may offer greater opportunities for cost-effective reductions in emissions than others – so policies need to provide incentives for businesses, households, and consumers to find these opportunities; and... actions to reduce emissions may also involve a variety of co-benefits or costs”*.

**Q2. Chapter 3 of this issues paper mostly looks at ways to reduce emissions directly at their source. What other approaches would help identify opportunities to effectively reduce emissions?**

14. DINZ and B+LNZ share and note other primary industry groups’ concerns regarding exporting products and using derived demand. However we also note that derived demand could be useful to provide an indication of impact (e.g. as a monitoring tool – if there are more hybrid cars, does fuel consumption reduce or do people drive more; if meat has emissions included in price, do consumers buy less meat or buy imported meat?)
15. Recognition of the significant contribution to emissions reductions that the sheep and beef sector has already made, with its emissions currently 19 % below 1990 levels, is perhaps due. This has been achieved through additive productivity improvements including improved feed and feeding, improved growth rates, increased reproductive rates, improved animal health and changes in management. Improved genetics has also contributed to improvements in performance, so that when improved genetics for methane reduction become available, these can be readily introduced into the national sheep flock. Similar genetic improvements and productivity gains have been made in deer farming.
16. Improvements in productivity in sheep, beef and deer production have resulted in continuous improvement in emissions intensity (the level of emissions per kg of product), making the sector one of the most emissions efficient in the world, notable for the fact that

this level of production is achieved under free-range, pasture-fed, extensive farming conditions.

17. Sheep, beef and deer farmers are significant contributors of carbon sequestration, with significant areas of woody vegetation present on farms. Some of it is under formal protection such as Queen Elizabeth II National Trust covenants with sheep and beef farmers the biggest group of covenantors according to recent research undertaken for the QE II National Trust.
18. B+LNZ is undertaking an assessment of just how much woody native vegetation is present on sheep and beef farms, with preliminary indications that it is in the millions of hectares. The value of this for carbon sequestration is significant, whether or not it is in contiguous areas that will meet current ETS qualification rules.
19. Currently available mitigations for the sheep, beef and deer farmers are limited. Use of nitrogen fertiliser is typically very low, offering little opportunity to reduce nitrous oxide emissions from the current low levels. Low nitrogen feeds offer some potential opportunities, however the predominance of pasture based feed and low levels of supplements restrict the potential impact of this option.
20. The sheep, beef and deer sector is working to determine the emissions profile of the sector to establish current emissions levels at a farm level to provide benchmarking of performance, alongside nutrient loss benchmarks, to match the sector's long standing economic and productivity benchmarking.

**Q3. To what extent is it technically and economically feasible to reliably measure biological emissions at a farm level?**

21. There are currently no tools available to accurately and reliably measure actual biological emissions at farm level. The best tools available are models, and in particular the nutrient budgeting modelling tool OVERSEER which *estimates* rather than measures emissions. The quote 'all models are wrong but some are useful' is appropriate in this instance.
22. As recent experience with the use of OVERSEER for nutrient modelling in regulatory settings has amply shown, it should not be used to determine real time emissions, whether nutrients or GHGs, as it models long term steady states based on long term averaged inputs and not the real-time variation that is found in dynamic biological systems such as sheep, beef and deer farming.
23. That said, OVERSEER has the potential to be useful as part of a tool that allows farmers to estimate their emissions and model changes to their farm systems and indicative changes in emissions that would be likely to occur. Work is needed to improve OVERSEER as an emissions modelling tool as it does not currently reflect the full range of on-farm actions that can be taken to reduce emissions, including an assessment of whether they can even be modelled.

24. The sector is exploring ways in which OVERSEER, as the current best modelling option, can be integrated with other management tools to develop a tool for farmers to assess the impacts of changes in their farming practices and systems on emissions at the farm level.
25. Such a tool will need to include carbon sequestration present on a farm such as regenerating gullies, shelter belts and other areas of trees to give a farm specific carbon balance. It will also need to provide for practices that are known to reduce emissions that cannot currently be included in OVERSEER. Only when farmers can actively see what impact their activities have on emissions will they be able to make positive changes.

#### **Q4. What are the main opportunities and barriers to reducing emissions in agriculture?**

26. Reducing methane while continuing to farm ruminant animals remains the main barrier to reducing emissions in agriculture.
27. Sheep, beef and deer farmers are committed to doing their bit to reduce greenhouse gas emissions and in particular biological emissions from livestock, and have made significant investment into research to modify the relationship between ruminant animal production and methane emissions.
28. Developing an on-farm management tool for farmers is one of the first steps in being able to manage and reduce emissions, as without farm by farm emissions modelling there can be no management. Such a tool does not need to be precise to be effective and work is underway within the sector on this. Cross party support for this would assist in development and uptake.
29. While there is the potential to make reductions in biological emissions from livestock, at present these are small and incremental. The sector continues to support research into emissions reduction technologies, however even the most optimistic scenarios show these are some way off. It would be unwise to rely on the emergence of a 'magic bullet' solution, particularly for sheep, beef and deer systems (in which there are relatively few opportunities to interact with animals).
30. Farm systems are not readily changed as they are based on biological and natural systems, and planning is necessarily much longer term than typical industrial or manufacturing processes. Added to the mix are variables such as weather which can substantially alter management needs. Droughts for example require alteration of stocking policies and feed management in order to ensure the welfare of animals. In addition, droughts are recognised as a source of carbon loss from soil to the atmosphere, a process over which farmers have no control.
31. Any approach that proposes reducing livestock numbers will need to be thoroughly analysed for the likely impact on the economy at all levels, national, regional and farm, given that the Paris agreement specifically provided for the continuation of food production. It would also need to assess the risk of carbon leakage whereby reduced production from highly emissions efficient sources such as New Zealand will move to less emissions efficient producers, generating a worse outcome for the world

**Q5. What are the issues for government to consider in encouraging alternative low-emissions land uses?**

32. Enabling flexibility and removal of barriers to optimal land use are key to enabling low-emissions land uses. Care needs to be taken that encouragement of low-emissions land uses does not generate the sort of damaging distortions that have typified historical efforts to promote particular policies or pick winners in isolation from the wider impacts. Land Development Encouragement Loans, which ceased in the 1980's, are a case in point.
33. Land use decisions must consider not only low emissions potential but also impacts on environmental, economic, social and cultural sustainability. Use of valuation systems that include all forms of capital are needed in any analysis and planning.
34. The ability to change land use also needs a level of certainty against which investment decisions can be made, in the knowledge that the land will be able to generate a financial return to meet any costs of borrowing.

**Q6. What are the main barriers to sequestering carbon in forests in New Zealand?**

35. B+LNZ and DINZ defer to the Forestry Reference Group that has the expertise to identify issues but notes that on-farm recognition of small woodlots and retired areas is an issue that is raised by farmers and forestry interests alike.
36. A policy environment that is constantly changing and lacks certainty on which to make land use decisions that have long time frames e.g. the rotation period for a commercial forest, discourages investment. Stable, cross-sector policy will do much to address this issue.
37. Currently, there is no recognition of the carbon sequestration value contained in small woodlots, amenity planting, shelter belts, space planting for erosion control and other myriad trees found on farms.
38. Sheep, beef and deer farmers are also concerned that where they have forest carbon sinks, or land that others deem appropriate for permanent carbon sink afforestation to offset others emissions that they will be the subject of compulsory protection or planting orders, with no compensation for loss of land, production or earning potential.

**Q7. What policies, including adjustments to the New Zealand Emissions Trading Scheme, will encourage more sequestering of carbon in forests?**

39. B+LNZ and DINZ defer to the Forestry Reference Group that has the expertise to identify issues but notes that on-farm recognition of small woodlots and retired areas is an issue that is raised by farmers and forestry interests alike.
40. Significant areas of carbon forest exist on farm land, particularly hill and high country land, yet do not qualify as forest under the ETS because of the low resolution of satellite imagery current in 1990. A work around for this issue is needed internationally. In the interim, domestic policy should be designed to recognised and credit such carbon storage.

41. The ability of farmers to earn carbon credits on native regeneration that equal or exceed the financial returns of that land for other uses will support the increase the area managed for regeneration and carbon storage.
42. Retention of native forest in perpetuity is currently undertaken for a range of reasons, few of them economic and many depending on good land management practices and ethical investment in environmental and cultural benefits. Economic incentives or recognition of the wider values that are associated with trees could also be an option, including additional financial support of the covenanting work undertaken by the QE II National Trust. This could include greater assistance with the costs of fencing and pest control.
43. Catchment groups based on for example Fresh Water Management Units could provide the basis of a shared investment in native forest regeneration with links to water quality and biodiversity benefits, with the right incentives through the ETS.

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

44. Waste is the third largest emitter of GHGs on a world scale and offers the potential to reduce significantly the level of emissions through improvements in production, along the food chain and at the point of consumption.
45. On-farm waste management opportunities to reduce emissions will be through improved productivity (e.g. faster growth rates and better utilisation of feed) and animal health (reduced mortality before slaughter, higher conception and birthing rates). Other more limited opportunities could include general waste management around wool sheds, deer sheds and yards where stock is concentrated for periods of time leading to accumulation and disposal of dung or effluent.
46. Barriers include the lack of support for recycling particularly materials made from fossil fuels e.g. (baleage wrap, agrichemical containers).

**Q18. Policies to lower emissions from particular sources, technologies and processes can have interactions with emission sources in other parts of the economy. What are the most important interactions to consider for a transition to a low emission economy?**

47. Methane is a short lived gas which offers the potential to manage it differently to long lived gases. For example, stabilising methane production levels will result in its contribution to increasing global temperatures being halted after about 12 years. Reductions in methane levels such as those already contributed by the sheep, beef and deer sector are already assisting in reducing harm.
48. Land use change from agriculture to large scale forestry and the impacts it will have on the economy, the environment and communities.

**Q22. What type of support for innovation and technology would best help New Zealand transition to a low-emissions economy?**

49. The sector supports working jointly with government and the private sector on research and development that will benefit transition to low emissions. This includes both research and

development into novel technologies as well as supporting on-farm cumulative improvements.

50. Government support for the development of a tool allowing farmers to model their emissions and the impact of changes in systems will help farmers start making changes.

**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?**

51. Voluntary agreements that provide for land use flexibility and the tailoring of emissions reduction strategies to optimal for the particular farm are supported. Primary Growth Partnerships such as the deer industry *Passion 2 Profit* (which is highly regarded by deer farmer participants) and the Red Meat Profit Partnership which is due for roll-out soon are prime examples of a voluntary process which results in significant on-farm practice change.

**Q29. Does New Zealand need an independent body to oversee New Zealand's domestic and international climate change commitments? What overseas examples offer useful models for New Zealand to consider?**

52. The development of a stable, agreed approach to transforming the economy to a low emissions future would be of considerable benefit in allowing certainty for farmers looking to adapt their farm systems to reduce biological emissions from livestock.
53. As identified by the Parliamentary Commissioner for the Environment, the UK model may be adaptable to meet New Zealand's needs.

**Q30. How can adaptability best be incorporated into the system supporting New Zealand's low-emissions transition?**

54. For agriculture and particularly mixed livestock farming, adaptability and flexibility are essential features for farms to remain viable (by adjusting land use in response to product price signals) at one end and highly profitable (through innovation) at the other. Since a "low-emissions transition" is by default a change from business as usual adaptability across the board will be a requirement. Examples of this could include easy/rapid access to new technologies; increased on-farm emission accounting tools that have a high level of detail to cover all farm operations and land use; access to expertise and advisory services that can assist farmers to identify practical and affordable changes and adaptations to current their business models.

**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?**

55. While it is speculative to determine mix and importance of different policy approaches in the absence of any cost benefit analysis, R&D support has a key role to facilitate transition. R&D is largely responsible for major efficiency gains made in the sheep industry and its overall reduction of emissions. Similar support in other industries and collaboration of R&D effort

could provide gains for other primary industries, particularly over the 2030 and 2050 target timeframes.

**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?**

56. For drystock farms, co-benefits from moving toward low emissions may be seen in other environmental areas such as soil health and conservation, reduced loss of contaminants to waterways and increased on-farm biodiversity. Where on-farm actions/requirements to reduce emissions have such co-benefits they should be valued and incorporated into decision making – both from a farm management perspective (where it is preferable to do one activity rather than several to provide several benefits) and from social service perspective (and where this can be defined then recognition for social services can be attributed to the farmer/land owner).
57. Development of the likes of a quadruple bottom line reporting framework (natural, economic, social and cultural capitals) would add significant value and allow for better balanced decision making.

**Q34. What are the essential components of an effective emissions-mitigation strategy for New Zealand that will also be economically and politically sustainable?**

58. Any strategy must value all forms of capital (economic, environmental, social and cultural), and retain flexibility and adaptability that allows tailored approaches to meeting emissions reduction targets.

**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?**

59. Methane as a short lived gas presents opportunities for different management approaches to the long lived gases. The long term view of the IPCC that CO<sub>2</sub> emissions must be reduced to net zero, whilst methane can be stabilised and then reduced to sustainable levels recognises that methane is a natural part of the environment and ruminant livestock.
60. DINZ and B+LNZ believe that the physics and chemistry of short-lived gasses are fundamentally different to CO<sub>2</sub> from fossil fuels and if the world wants the most efficient and effective response to climate change, they should be treated separately.
61. DINZ and B+LNZ strongly support the two baskets approach as it recognises that biological emissions are an integral part of a ruminant livestock industry that is a major part of the country's economy. The need to provide for food security is recognised in the Paris agreement.

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

62. If a two baskets approach is adopted then the extent of leakage can be specifically be assessed and measures that do not undermine exporters' competitive advantage can be identified. Two baskets may help reduce perceptions that trade exposed industries are

being subsidised by other sectors by i) exposing the differences between the types of emissions and the realities that these industries have to manage and ii) allowing these industries to internalise costs as appropriate.

63. New Zealand is already one of the most emissions efficient producers of red meat, and the transfer of production to less emissions-efficient producers will not result in a benefit to global emissions reductions, and will adversely impact the national economy for no net gain.

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

64. In terms of a low fossil fuel emissions this may result in improved health outcomes (e.g. as a result of less vehicle emissions in total) or more secure and stable energy supplies less subject to international pricing volatility from energy suppliers (depending on the reliability of hydropower generation).

65. New Zealand has a reputation for the production of free range, pasture fed, sustainable beef, lamb and venison. Being able to demonstrate emissions efficiency and emissions reductions in the red meat sector far earlier than other countries, has the potential to provide a market edge.

66. Transition to a low emissions economy is essential in order to keep global climate change to below 2 degrees warming, or more responsibly to 1.5 degrees in support of Pacific neighbours.

**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?**

67. New Zealand has a clear and stable pathway mapped out for transition to a low emissions future. It sees all parties playing their part in ways that reflect the differing approaches that are needed depending on circumstances.

68. Agriculture is a key part of this future as it moves to emissions efficient, low emission products, while also contributing to carbon sequestration where this is the optimal land use. Flexibility and adaptability are corner stones in agriculture's approach, which provides leadership to the rest of the world as a result of early attention to how food security and a low emissions future can be achieved

## **Contacts**

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