

IrrigationNZ Submission for the Climate Change Commission Report



About Irrigation New Zealand

IrrigationNZ is a growing membership- based organisation that represents over 3,500 members nationally, including irrigation schemes, individual irrigators, and the irrigation service sector. Our irrigator members include a wide range of farmers and growers – sheep and beef, dairy and cropping, horticulturalists, and winegrowers as well as sports clubs and recreational facilities. Our irrigation service companies include manufacturers, distributors, irrigation design and install companies, and support services. A number of our schemes also supply drinking water and local energy as well as irrigation.

We are a voluntary-membership, not-for-profit incorporated society whose mission is to create an environment for the responsible use of water for food and fibre production, for lives and livelihoods.

As an organisation we actively promote best practice irrigation and carry out a range of training and education activities. Over the last five years we have trained over 3,000 irrigators on irrigation best practice to improve water use efficiency and better manage environmental effects and hold members to accreditation standards and codes of practice.

IrrigationNZ members share many of the same goals as other New Zealanders:

- to reduce their environmental footprints and see improvements in the health of our waterways;
- to contribute to the wellbeing of their communities; and
- to provide for a sustainable future for New Zealand.

Summary

- IrrigationNZ is supportive of the desire to reduce emissions in New Zealand, and play our part in this global issue.
- We are pleased to see a whole of country approach and the treatment of a split gas option, with reductions in both long lived and short lived gases
- We are concerned that a pathway to achieve land use change and the increased production of renewable energy has not been specified
- We see that there is an opportunity for more investment in water infrastructure, capture, storage and efficient use to encourage diversified land use, as well as an opportunity for more localised bolt-on hydro-electricity generation where there are already existing facilities, and fresh water supplies
- The cost of water and energy, and the ability to source energy closer to use (localised) are going to be key to enabling behavioural change and reducing resistance
- IrrigationNZ believes that there needs to be more government funding in R&D to quickly develop new technologies, as well as improvements in precision water and nutrient application.
- IrrigationNZ believes that there needs to be a national strategy on water, in particular in capture and storage as both an enabler for change and a mitigant against climate change. While there has been work progressed on drinking water, storm and waste water we believe that irrigation should be included as a 'fourth water' guided by a national strategy supporting emissions targets, land use change and production targets, as part of bigger picture land and water goals. A national water strategy should also include localised hydro generation.
- Our view is that zero carbon targets won't be met without investment in water storage, capture and precision use.
- IrrigationNZ also sees greater need for a more coordinated response across similar policy frameworks which lead to the same outcomes as climate change policies. For example: freshwater regulation, biodiversity enhancement, highly productive land use change, the primary production strategy 'Fit for a Better World', RMA reform, 3 waters, infrastructure development, supporting Maori agribusiness objectives and iwi rights and interests. IrrigationNZ is concerned that if there is a lack of coordination, which may lead to policy fatigue with a risk being a failure to act at all or will be inhibited by cost and red tape. There is also a risk we miss opportunities and do not identify better strategic outcomes that have long term benefits for the whole country with multiple goals.

Meeting our Emissions Targets

IrrigationNZ believes that to achieve our emissions targets as set out in the report the following is required:

1: Regional and central government policy which provides for and enables the capture, storage and efficient distribution of water will be needed for:

- Mitigating against climate change that is already occurring and impacting the primary sector and our stores of reliable drinking water – eg there are already general reductions in water body flows, and increases in droughts and weather events
- Increasing local hydro power generation and reducing transfer wastage as the need for energy increases with a reduction in fossil fuels and moves to more EVs
- Using water to enable diversifying land uses and switching some land that is currently in livestock agriculture to uses like horticulture or arable cropping
- Responding quickly to market demands for various products that have higher water use eg Medicinal Cannabis
- Transforming to alternative farming systems or mixed farm operations
- Developing training, education and skills development
- The creation of jobs
- Enabling investment in research for new farming systems and new technologies as consumer desires change

2: A more holistic approach to water storage infrastructure planning whereby planning processes enable rather than inhibit a community, iwi, social and productive approach for the capture, storage and distribution of water where it has the least impact on the environment.

IrrigationNZ believes that the Government can support alternative farming systems to reduce emissions by:

1. Accelerating investment in high resolution, consistent, publicly available, nationwide, land and climate information and decision-making tools and processes, to better inform local and national land use decisions.
2. Supporting deployment of the systems and infrastructure needed for alternative farming systems and products - including water storage
3. Supporting the implementation of localised solutions to hydro-generation for communities on a smaller scale that also have community and production benefits
4. Prioritising initiatives including provenance marketing to reduce barriers and enable international market access for proven low emissions food and fibre products.
5. Supporting the sensible use of irrigation in New Zealand and the benefits for precision water application to ensure better public understanding of good use, rather than a negative story that is often left unfettered. As an example, converting 20% (200ha) of dairy farming into high value horticulture and 5% conservation land results in reduction in GHG of 19%- 22% (Leftfield Innovation) but requires a significant amount more water per hectare.



A: Submission on the report's approach and emissions budgets

2.2 Principles:

Principle 1: Align with 2050 targets

IrrigationNZ agrees with the aspect of this Principle which encourages a long-term view of investments and infrastructure developments to meet targets. "Assets and investments with long lifetimes will need to be transformed, and planning for and developing new low emissions infrastructure will take time."

IrrigationNZ believes that investment in long term water capture, storage and efficient use, is key to achieving our zero carbon targets in generating local power supply and improving climate mitigation as well as for land use change

Principle 2: Focus on decarbonising economy

IrrigationNZ agrees that forest sequestration should not displace making gross emissions reductions.

IrrigationNZ is also keen to see an increase in hydro generation in small localised units to reduce transmission wastage, and provide a multi use option for stored water when solar and wind are not as readily available. Price of electricity will be keen to decarbonising the country

Principle 3: Create options

IrrigationNZ agrees that while a range of options must be kept open and assessed that it will be essential to "take advantage of key windows of opportunity, where making significant investments in key technologies could ultimately make the transition to low emissions cheaper and faster". In this instance IrrigationNZ believes that there could be more government R&D, investigating possible genetically modified solutions for the agricultural sector, supporting adoption of new precision water and nutrient application techniques etc. And there could be further research into irrigation technologies and more understanding of precision agriculture at important growing times for the improvement in size and quality of fresh produce, as well as investment in satellite and long range forecasting for better application options.

Principle 6: Increase resilience to climate impacts.

IrrigationNZ believes that there is opportunity with the country's approach to reducing emissions that can also create resilience to climate change. This can be done through more investment in localised capture and storage of water as well as investment in additional multi use water schemes for hydro electricity, drinking supply and farm application.

There are already good examples of a multiuse Irrigation Scheme. The Rangitata Diversion Race is one such example of multiuse water distribution infrastructure that provides for efficient irrigation of 104,000 ha and includes two hydro stations (Montalto and Highbank) that produce an average of 106GWh annually. There are further plans and consents for development of a large storage facility to maintain reliability in the face of future uncertainty on availability of water due to other policy setting changes as well as climate change impacting the actual river flow regime over time.



B: Submission on the report's enabling recommendations

Chapter 2

2.6.2 Cross-party support and coordinate efforts

IrrigationNZ supports the need for cross-party support for our country's climate change response and that coordinated efforts across Government are essential to the success of that response. However, IrrigationNZ would like to add that for the response to be successful, there also needs to be co-ordinated response across other policy setting which lead to the same outcomes as the climate change policies. For example: freshwater regulation, biodiversity enhancement, highly productive land, primary production strategy 'Fit for a Better World', RMA reform, three waters, the water services bill etc. IrrigationNZ is concerned that if there is a lack of co-ordination people will get policy fatigue and will fail to act or will be inhibited by cost and red tape as well as miss opportunities for a more strategic long term outcomes.

If a specific budget allocation is made to Vote Climate Change, then IrrigationNZ would like to ensure that funding for policies which sit outside specific new climate change mitigation and adaptation activity policies but which contribute to emissions reductions (such as the ones described above) are not adversely impacted by this new budget allocation, and that any policy settings take into consideration the others in a co-ordinated approach as part of the budget.

In short, IrrigationNZ would like to see a more coordinated and strategic approach between environmental and primary industries policies and any new climate change mitigation and adaptation activities. A holistic approach driving for one multi beneficial outcome is much easier to progress and achieve than many policies being issued which ultimately seek the same end-goal.

2.6.4 Central and local government working in partnership

IrrigationNZ strongly supports the importance of coordination between central and local government, particularly in regard to policy alignment. Funding will be important for delivering low emissions outcomes. IrrigationNZ has repeatedly communicated its concern regarding capability and capacity constraints in territorial authorities to implement new regulations, particularly relating to freshwater. Another overlay of policy will add to this pressure. IrrigationNZ urges that this issue is carefully considered and resources and funding be applied accordingly and not through provision of additional local taxes but through redistribution of the central budgets.

Chapter 3: The report's path to 2035

IrrigationNZ supports that lower emissions practices and technologies should enable us to achieve our emissions targets, rather than a reduction in production and that a focus purely on net emissions reductions will fail to drive meaningful change and will use up land resources for the purpose of offsetting avoidable emissions. In other words, IrrigationNZ agrees that we need to reduce emissions rather than take a short cut approach by using pine forest offsets. We encourage long term solutions that have a positive economic outcome for the rural communities impacted, and investment in water will be required to support that.

3.3 Burden on Future Generations

IrrigationNZ agrees that there is scope to **Build a long-term carbon sink large enough to offset residual long-lived gas emissions without ongoing land use conversion by** growing new native forests on less productive land so that carbon removals can be used to offset the remaining long-lived gas emissions from 2050 onwards. However, IrrigationNZ believes that current carbon containing soils and wetlands on farmland should be better accounted for as suitable offsetting options and encourage reviews of the current modelling to incorporate the latest thinking and incentivize farmers and growers to invest in these areas

3.5.2 Scenarios for Biogenic methane

IrrigationNZ would like equitable, strategic, effective and efficient water capture and distribution recognised as a necessary pathway along with adopting new technologies to reach the more ambitious end of the 2050 methane target range through careful land-use change.

3.8.6 A path to 2035 for Agriculture

Support for farmers to reduce emissions on their farms, including the precision use of water is needed through a coordinated approach with other policy setting and farm environment planning – which should also include any water supply requirements. Water at the right time and the right amount can have a significant impact on production and improve farm systems outcomes. Instead of irrigation being seen as an intensification approach, irrigation can be seen as a mitigator and improver of productivity which can support the reduction in stock numbers and improve marginal land which can increase ability for mixed use systems and reduced wastage. Water is a key enabler in the systems change recommendations in this report. It reduces the need for imported feed, increases the production of the land, and supports healthy herds while also enabling land use change to horticulture in marginal places

3.8.7 A path to 2035 for Forestry

IrrigationNZ agrees with some increase in new native forests established on less productive land. However, IrrigationNZ believes that current carbon containing soils and wetlands on farmland should be better accounted for as suitable offsetting options.

Chapter 5 The impacts of emissions budgets on New Zealanders

5.2 How Aotearoa creates a fair, equitable transition for people

IrrigationNZ believes that lack of clarity around policy is a significant destabiliser for the irrigation sector because of the level of cost and long term nature of the investment in water and irrigation infrastructure. Sending clear and stable policy signals with sufficient consultation as part of the process and sufficient time to plan for the policy change is essential. Ensuring aligned policy frameworks across multiple policy settings from different government departments is also key to ensuring clarity and consistency

5.5.1 Food and fibre production

New Zealand commands a premium for its exports, as being one of the safest food production countries with high quality produce. Consumers will continue to demand ongoing improvements in quality and nutritional value, and therefore the move to a lower emissions outcome and continuing to be ahead of the world in our production will be something to keep us ahead of the consumer needs. Further land use into crops that can be used for alternative proteins is an option for more marginal land – however, again, water is key to being able to grow these alternatives and investment in infrastructure for capture and storage will be needed.

Additional support for farmers and growers will be needed in adopting change and incentives and support from MPI extension services and catchment based initiatives will be key to ensuring we are creating the right behaviour. Investment in extension services to support member based bodies such as IrrigationNZ will be key to help transition and improve practices to reduce laggards and achieve the outcomes we collectively want.

As will development of new technologies that are currently unavailable.

5.8 Environmental impacts

Moving to low emissions technologies and changing land practices to meet our proposed emissions budgets would also bring broader environmental impacts.

IrrigationNZ believes that additional equitable, strategic, effective and efficient capture, storage and distribution of water is necessary to enable land-use change and if best practice water and nutrient efficiency methods were applied this would not lead to over dependence on water. As an example, converting 20% (200ha) of dairy farming into high value horticulture and 5% conservation land results in reduction in GHG of 19%- 22% (Leftfield Innovation)

5.10 Ensuring an inclusive, equitable and well-planned transition

IrrigationNZ believes that as part of this New Zealand needs to increase its capacity and capability in educating and training in best practice efficient irrigation practices. Developing skills and training in this sector will create further jobs and can be a pathway to tangata whenua developing previously underdeveloped land through prudent utilisation of the most up-to-date irrigation methods. Water use will continue to be a growing concern for New Zealand, and ongoing development of standards, codes of practice and tools and support will be required as more growers need more water for land use transition, and as a mitigator to existing changes in climate.

6 Direction of policy in the Government's emissions reduction plan

6.1.3 Agriculture

- IrrigationNZ believes that there should be more government R&D, funding in new technological solutions for the agricultural sector, and in further technologies around precision water and nutrient application.
- IrrigationNZ believes that we need further investment in local water storage and capture to achieve the targets set out by the commission.
- IrrigationNZ encourages the co-ordinated response across similar policies which lead to the same outcomes as climate change policies. For example: freshwater regulation, biodiversity enhancement, highly productive land, primary production strategy 'Fit for a Better World', RMA reform. IrrigationNZ is concerned that if there is a lack of co-ordination people will get policy fatigue and will fail to act or will be inhibited by cost and red tape.
- There needs to be further discussion and analysis around small hydro generation as part of new water investments and a wholistic approach encompassing the community and iwi

Create options for alternative farming systems and practices

IrrigationNZ believes that to achieve our emissions targets the following is required:

1: Regional and central government policy which provides and for and enables more capture storage and efficient use of water will be needed for:

- Diversifying land uses and switching some land that is currently in livestock agriculture to uses like horticulture or arable cropping. As an example, converting 20% (200ha) of dairy farming into high value horticulture and 5% conservation land results in reduction in GHG of 19%- 22% (Leftfield Innovation)
- Responding quickly to market demands for various products
- Transforming to alternative farming systems
- Developing training, education and skills development
- The creation of jobs
- Enabling investment in new farming systems

2: A more holistic approach to water storage infrastructure planning whereby planning processes enable rather than inhibit equitable, strategic, effective and efficient capture and distribution of water where it is needed and where it has the least impact on the environment. This planning must take into consideration iwi rights and interests, community outcomes – including drinking water, and the productive economy and where possible local hydro generation

IrrigationNZ agrees that the Government can support alternative farming systems to reduce emissions by:

1. Accelerating investment in high resolution, consistent, publicly available nationwide land and climate information, and decision-making tools and processes, to better inform local and national land use decisions.
2. Supporting deployment of the systems and infrastructure needed for alternative farming systems and products - **including water storage**
3. Prioritising initiatives to reduce barriers and enable international market access for proven low emissions food and fibre products

