

Projected impact of the New Zealand Emissions Trading Scheme at the farm level

Farmers appear to be divided on Kyoto, green house gases and global warming etc. Whether you believe all the hype or not the policies generated are real and will have an affect on your farm business.

The Ministry of Agriculture and Forestry (MAF) recently carried out a range of analysis that looked at the potential impacts of the New Zealand Emissions Trading Scheme (NZETS) at the farm level for eight different farming enterprises. A summary of this analysis has been released and the full report can be obtained from www.maf.govt.nz/climatechange.

The study used an illustrative “static” analysis of the potential impacts of the NZETS on farms using MAF’s 2006/07 model farm budgets. In effect, the analysis reveal how some typical farm types might be affected if the NZETS, including agricultural gases, were implemented without warning on 1 July 2006.

At a high level, the results show that if the NZETS were applied to a typical farm business in 2006/07, there would be significant impacts on overall farm profitability for some farms and farm types. The relative impacts in the long term would be greater for sheep and beef, and deer farms than for dairy farms, and as expected the potential impacts increase along with the price of carbon and as the quantity of free allocations are reduced.

The table below summaries the percentage change in profit before tax for sheep and beef and dairying at 2006/07 prices.

Carbon price	Free allocation of 90% emissions			Full liability (%)		
	\$15	\$25	\$50	\$15	\$25	\$50
Sheep & beef	-4.6	-7.9	-15.9	-48.1	-80.3	-160.5
Dairying (assumes a base payout of \$4.14 per kg ms)	-12.0	-20.4	-40.7	-36.8	-61.6	-123.1

The vulnerability of these figures above can be shown in the dairy sector with last years payout at \$6.40 and the re-calculated figure with full liability and the cost of carbon at \$50/tonne would be 24.5% compared with 123.1% before tax.

The lower impacts on dairying would be brought about by the perceived potential benefits from nitrification inhibitors. It is expected that these would be of limited effectiveness on much of the hill country occupied by sheep and beef farmers, and areas with high temperatures and rainfall. For this benefit to be realised, nitrification inhibitors still require international recognition as a mitigation tool.

In reality, farm input and output prices have changed significantly since the 2006/07 period and the price per tonne of carbon will change. The equivalent carbon emission cost for the different inputs and outputs should however remain static without the introduction of any technological advances. With this in mind, individual farmers could undertake their own budget as to the effect of the NZETS on their farm business. With time we should hope to see more technological advances in areas of nitrification inhibitors and high sugar grasses that will hopefully reduce emissions.

In practice, economic impacts on the agriculture sector from the NZETS will come in two stages. The first stage begins in 2009/10 when CO2 emissions from stationary energy and liquid fossil fuels enter the NZETS. The second stage occurs in 2013 when methane and nitrous oxide from livestock and nitrous oxide from nitrogen fertilisers enters the scheme. There is also a proposal for free allocations until 2025 when they will be phased out.

Farmers can influence the impact of the NZETS on their income in several ways that include:

- ✍ Changing land use towards activities that are less-heavily impacted or positively impacted by the NZETS. An example of this may include forestry.
- ✍ Reduced rate of conversion to land uses with higher emissions (eg reliance on pumped irrigation).
- ✍ Reduced use of emission s-intensive inputs such as nitrogen fertiliser and fossil fuels.
- ✍ Disposing of non breeding livestock at a younger age when there is a lower ratio of lifetime emissions to weight.
- ✍ Hedging against adverse changes in carbon prices through off farm investment in post 1990 forests by participating in the NZETS or the Permanent Forest Sinks Initiative.
- ✍ Leasing land for wind farms.
- ✍ Endorsing technological changes such as nitrification inhibitors or high sugar grasses.

In summary the NZETS will impact upon the farm profitability and the extent of this profitability is dependent on input and output prices, the price of carbon, and the amount of free carbon emissions available. Fluctuations could vary considerably between years or even within years. The effects will not be felt at the farm gate until 2009/10 when stationary energy and fossil fuels enter the NZETS, and more fully by 2013 when the agricultural sector enters the NZETS. There are things farmers can do but the relevance and practicalness of these will vary considerably between farms.

Want to know more, check out www.maf.govt.nz/climatechange or www.landvision.co.nz.



www.LandVision.co.nz