



Determining Farmer Liabilities under ETS



The Government forced the Climate Change Response (Emissions Trading) Amendment Act 2008 through at the end of September. As a result the Emissions Trading Scheme (ETS) is now operative. What are the implications to the agricultural sector?

The ETS is the price-based mechanism for greenhouse gases and is a key part of overall climate change policy. It involves all significant greenhouse gases and all sectors. There is a phase-in period with different sectors entering at different stages. The forestry sector has already entered whilst the agricultural sector does not enter until January 2013.

The ETS (Agriculture) includes greenhouse gases from pastoral agriculture, horticulture and arable production – methane from livestock emissions and nitrous oxide from animal urine and dung and synthetic fertiliser.

Although the agricultural sector is not brought into the ETS until 2013, impacts of other sectors being brought in earlier will increase operational costs for farmers. The costs of liquid fuels, power, fertiliser, steel and concrete will increase and be passed on to the agricultural sector as early as 2010.

It is still not certain where the point of obligation lies – at the farm gate or with the processor. The Act sets the point of obligation for agricultural emissions at the processor level. This means meat and dairy processors and fertiliser companies will be responsible for the emissions that occur on farm. But the Act also allows the Government to change this to the farm level before a cut off date of 30 June 2010. A technical advisory group for MAF is currently working through this issue and is due to report back to Government within the next month.

When the agriculture sector enters the scheme in 2013 it will only have to pay for 10% of its emissions. This will remain the situation until 2018 when there will be a constant increase in liabilities until 2030 when the sector will pay 100% of its emissions.

If the obligations lie at the farm level then there are a couple of “ball park” tools available to determine your liabilities. The first is a web based ETS calculator found on www.carbonfarming.org.nz put out by the Carbon Farming Group (CFG) – a charitable trust working directly with and transferring information to land based sectors of New Zealand.

With the CFG calculator you input your stock figures and any areas of forestry (planted after 1990) into the model, and adjust the price per tonne of carbon. Hit the calculate button which generates your total emissions, total sequestrations, net emissions, and total liabilities for your farming operation.

The CFG calculator also allows you to calculate emissions from energy use or other purchases (such as fertiliser) for which their emissions would be accounted in the retail costs.

Another option for calculating your emissions is from the “Overseer Nutrient Budget” model developed by AgResearch. This model can be downloaded from the net for free from www.agresearch.co.nz/overseerweb/download.aspx. With the Overseer model you input your nutrient blocks, detail about the topography, soils, climate, drainage etc, fertiliser inputs and timings, detailed stock figures, and addition or removal of supplements etc. The latest version of Overseer also allows you to input information about the usage of nitrification inhibitors.

With regards to your emissions, Overseer generates your total emissions in either CO₂ equivalents (kg/ha/yr) or petrol equivalents (l/ha/yr). The total emissions are a combination of animal methane, N₂O emissions (directly or indirectly from N fertiliser, excreta and effluent), CO₂ emissions (from lime, N fertiliser, fuel and electricity use, and other), and emissions from capital fertiliser. Overseer will also determine for you what area of forestry (pine or native) you require to offset all of your emissions.

All farmers should be using the Overseer Nutrient budget as it is the best nutrient budgeting tool around. It uses common sense approach of addressing the farm in blocks with similar stocking and fertiliser policies. With regards for



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determining your emissions liabilities, Overseer includes all emissions, some which farmers will not potentially be the point of obligation.

What does all this mean at the farm gate? Roughly speaking from the easiest side, 1000 stock units have about 330 t CO₂ equivalent of total emissions (excludes energy use and other purchases such as fertilisers). Based on \$25/tonne the total liabilities will be \$8250 per year (but remember it will be 2030 when this total amount is the liability). If the price of carbon goes to \$75 per tonne the liabilities will be approximately \$25K. To offset these "point of obligation" emissions will require about 15 ha of post 1990 pines.

From the conservative point, if all emissions are taken into account (including those from fuel and purchases that would be beyond the point of farmer obligation), you can just about double your total emissions and the amount of forestry needed to offset your emissions.

Whether you believe in global warming and whether the country can afford the emissions trading scheme or not, we are in it and you should be preparing yourself. One thing you can do now is to document on a map what your 1990 vegetation covers were. This is important for offsetting your emissions in the future.