



Regulatory Impact Statement

Emissions Trading Scheme: Proposed changes to the
Regulations for Agriculture

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Emissions Trading Scheme: Proposed changes to the Regulations for Agriculture

Agency Disclosure Statement

This Regulatory Impact Statement (RIS) has been prepared by the Ministry for Primary Industries.

The Climate Change Response Act 2002 (the Act) requires participants in the agriculture sector of the New Zealand Emissions Trading Scheme (ETS) to report their agricultural emissions from 1 January 2012. The Climate Change Agriculture Sector Regulations came into force on 1 January 2011, which prescribe the methodologies for agricultural participants to calculate and report their emissions.

This RIS provides an analysis of problems with the current Climate Change Agriculture Sector Regulations and options that could address these problems. A number of criteria were developed to assess the options. In particular, the analysis seeks to address two major issues with the regulations namely, 1) the complexity of the approach for calculating emission factors for agriculture, and 2) inequities in the assignment of emissions to slaughtered cattle, processed milk and slaughtered sheep.

One option was identified that could address the issues above. This option differs, from the status quo, in the way in which emissions are assigned to products in the ETS. The Climate Change Agriculture Sector Regulations and the General Exemption Order (under section 60 of the Act) will need to be amended before it can be implemented.

The analysis conducted is underpinned by a range of assumptions, many of which depend on emission projections produced by various models. Furthermore the analysis has been conducted in the context of significant uncertainty, including the carbon price and how international carbon markets will involve over time. While some targeted consultation has already taken place, further consultation is recommended with the wider agriculture sector and Maori.

The preferred option addresses significant equity issues that were created under the status quo for the beef, sheep meat and dairy sectors. However in addressing these issues, this option creates a net fiscal cost to the Crown of \$2m per annum from 2015 at the earliest (at a price of carbon of \$6) relative to the status quo. This fiscal cost could be reduced if emission liabilities were placed on wool in the future (if and when a suitable point of obligation is identified for wool production).

This option will not impose any additional costs on businesses, impair market competition, or the incentives on businesses to innovate and invest.

Mike Jebson – Director Resource Policy

Signature of person

Date

Status quo

THE CLIMATE CHANGE RESPONSE ACT

The Emissions Trading Scheme (ETS) is currently New Zealand's primary tool to achieve its international climate change commitments and to transition to a low carbon economy. The ETS was designed in the context of the international framework established under the Kyoto Protocol. The Climate Change Response Act 2002 (the Act) establishes the framework for participation in the ETS.

Agriculture accounts for nearly half of New Zealand's greenhouse gas emissions. The Climate Change Response Act (the Act) requires participants in the agriculture sector to face liabilities for their emissions from 2015. Voluntary reporting of agricultural activities started on 1 January 2011 and mandatory reporting began on 1 January 2012. Note, participants must report their emissions for the 2012 calendar year by 31 March 2013.

The Act creates five categories of agriculture participants. These are persons who engage in:

1. Importing or manufacturing synthetic fertilisers containing nitrogen;
2. Slaughtering ruminant animals, pigs, or poultry who:
 - a) are the operator of a risk management programme registered under the Animal Products Act 1999; and
 - b) are not a retail butcher, as defined in section 4(1) of the Animal Products Act 1999.
3. Dairy processing of milk or colostrum.
4. Exporting from New Zealand live cattle, sheep, or pigs in accordance with an animal welfare export certificate.
5. Producing eggs by a person who is the operator of a risk management programme registered under the Animal Products Act 1999.

A policy decision was made in 2008 not to include wool production in the Act due to both administrative and practical issues.

In recognition that the agricultural sector is trade-exposed, agricultural participants will be eligible for an allocation of New Zealand units on an annual basis. In 2015, the level of assistance will be 90 per cent of an allocative baseline (for eligible activities). And for each year after 2015, the level of assistance will decrease from the previous year by 1.3 per cent. From 2015, approximately 200 agricultural participants in the ETS will be liable for approximately 10% of agricultural emissions (after the allocation of units). These participants are distributed throughout New Zealand and process product from approximately 40,000 farms. It is expected that any charges under the ETS will be passed back to farmers.

THE REGULATIONS FOR AGRICULTURE UNDER THE ETS

Climate Change (Agriculture Sector) Regulations were established in 2010 to enable participants to meet their reporting requirements under the Act. These regulations prescribe the information that participants are required to collect and the methodologies for calculating their agricultural emissions. From 2015, the emission factors in regulation will determine participant's liabilities (units to be surrendered) under the ETS. Various exemptions and thresholds for agricultural activities are outlined in the Climate Change (General Exemptions) Order 2009.

ALIGNMENT WITH THE GREENHOUSE GAS INVENTORY

New Zealand is obliged to produce an annual Greenhouse Gas Inventory (the Inventory) report under the Kyoto Protocol. The Inventory is used to measure New Zealand's progress against its international obligations (under the Kyoto Protocol and/or any successor international agreements). Overall there is good alignment between total agricultural emissions reported in Inventory and total agricultural emissions reported in the ETS under the status quo.

ASSUMPTIONS FOR THE ANALYSIS

For the purposes of this regulatory impact analysis (RIA), the following assumptions were made:

1. Projected production levels for agriculture and projected greenhouse gas emissions for agriculture are consistent with the models developed for the climate change negotiations (in November 2011).
2. The global warming potentials for methane and nitrous oxide are 21 and 298 respectively as reported in the Intergovernmental Panel on Climate Change's second assessment report.
3. On average, 44.3 per cent of annual ETS liabilities are expected to be generated in the first half of every financial year (i.e. from 1 July to 31 December).
4. Liabilities by participants and the allocation of units are accrued in the calendar year that the activity takes place.
5. The method for calculating the allocation of units is the same as the method for calculating liabilities. The allocation is based on a 2015 baseline year.
6. A carbon price of \$6 was used to estimate the value of emission units.
7. The Act is not amended to delay the entry date for agricultural emissions in the ETS.

Problem definition

The current regulations for agriculture in the ETS give rise to the following policy problems:

1. The approach for calculating emission factors is complex, lacks transparency and relies on multiple assumptions which are difficult to follow and verify.
2. The emission factors in regulation create inequity between sectors by overcharging the beef sector and under-charging the dairy sector for emissions.
3. All emissions from sheep, including those from wool, are assigned to meat at slaughter. This places a disproportionately large amount of emission liabilities on sheep meat, which creates inconsistencies between sectors.

These policy problems have significant impacts especially at the sub-sector level (e.g. beef, dairy and sheep) as follows:

- The current approach is difficult to understand. This lack of understanding could significantly affect compliance, especially for smaller processors, increasing costs for both the participant and the Crown.
- A significant proportion of emissions (up to 2 million tonnes CO₂-e) from the dairy sector are placed on the beef sector each year under the status quo (prior to the allocation of units). At the current price of carbon, this would equate to approximately \$1 million dollars of misallocated emissions each year. This cost will be borne by the beef sector (to the dairy sectors benefit).
- All emissions from sheep are placed on lambs at slaughter and none on wool. This leads to disproportionately high emission factors for sheep meat (especially when compared to cattle). Note that sheep are as emissions efficient as cattle so their emissions charge should be similar to cattle at slaughter. Compared to cattle, sheep are assigned an extra 8.4 tonnes of CO₂-e per tonne of meat processed. Over the entire sheep kill this equates to 4 million tonnes CO₂-e per year (or \$2 million dollars at the current price of carbon, after the allocation of units).

Objectives

Amendments to the Climate Change (Agriculture Sector) Regulations 2010 are required to:

- improve the underlying methodology for calculating emission factors in regulation;
- address a misallocation of emission liabilities between the beef and dairy sectors;
- address inconsistencies with the emissions factors for sheep meat.

Ideally the approach would need to meet the following criteria, it:

- a. is transparent, robust, straight-forward, and practical,
- b. uses calculations and assumptions that are easy to follow and are robust and verifiable,
- c. is consistent with emissions reported in the Inventory,
- d. uses data that is readily available to participants,
- e. minimises the double counting of emissions,
- f. minimises perverse effects (e.g. environmental or animal welfare issues),
- g. attaches liabilities to product streams that are easily captured,
- h. avoids assigning high emissions charges to low value animals,
- i. does not create economic distortions, and
- j. minimises administration and compliance costs.

The Climate Change (Agriculture Sector) Regulations 2010 were made under section 163 of the Act and changes to these regulations can have a retrospective application. Thus, if emission factors were updated before 1 January 2013 they could be used for the first year of mandatory reporting (i.e. for the 2012 reporting year).

Regulatory impact analysis

OPTIONS ANALYSIS

Alternative options for calculating emission factors for the agriculture sector under the ETS were investigated. Besides the status quo, one other feasible option has been identified that could fulfil the objectives described above. This option differs (from the status quo) in the way in which emissions are assigned to products in the ETS. The key differences are described below.

1. The status quo uses a “bottom-up” approach to assign emissions to products. This approach estimates the emissions for each livestock class (using data from the Inventory) and assigns these to outputs (e.g. processed meat or milk). Of note, a “per head” and “per tonne” emission factor¹ are currently used to assign emissions to processed meat at slaughter. See appendix 1 for more detail.
2. Option-1 uses a “top-down” approach to assign emissions to products. This approach takes the total annual Inventory emissions from each sub-sector (e.g. dairy, beef, and sheep) and divides this amongst the outputs (e.g. meat and/or milk) that are processed each year. This option is also described in more detail in appendix 1.

Option-1 was not considered when the regulations were first developed in 2010, as it was assumed that it could lead to under and over charges to the sector if production levels changed

¹ The “per head emission factor” transfers the annual gestation and maintenance emissions of dry and breeding livestock (on-farm) onto processed meat at slaughter.

The “per tonne emission factor” assigns an animal’s life-time emissions onto its meat at slaughter (on a per tonne basis).

dramatically from year to year. However, officials have also found that this is an issue with the status quo. For option-1, this issue was minimised by using 6-year averages (from 2004 to 2009) for all calculations to factor-in as much year-to-year variation as possible.

Ideally, when developing a methodology for the ETS, the emission factors should be consistent with New Zealand's international liabilities for agriculture. These liabilities are based on the national Greenhouse Gas Inventory. Overall there is good alignment between total agricultural emissions reported in Inventory and total agricultural emissions reported in the ETS under the status quo and option-1. However at the sub-sector level (e.g. for beef, cattle and sheep), the alignment between the inventory and the status quo is poor. Option-1, by design, should more closely reflect Inventory emissions at this level.

Beef and dairy cattle

Figure 1 below shows the alignment between the Inventory, the status quo and option-1 for beef and dairy cattle. It assumes that liabilities are not factored into sale prices when prospective bulls, heifers and steers are sold between the dairy and beef herds. Option-1 aligns more closely with the inventory than the status quo.

Under the status quo, the beef sector would be over-charged for emissions by approximately 2 million tonnes of CO₂-e per year and the dairy sector under-charged for emissions by approximately 2.6 million tonnes CO₂-e per year (prior to any allocation of units).

Furthermore, based on projected growth in the dairy sector, this under-charge to the dairy sector would grow to approximately 3.4 million tonnes per annum by 2020. This issue is not evident under option-1.

Goats, deer, poultry and pigs

There is also good alignment between option-1 and the inventory for goats, deer, pigs and poultry. In April 2012, total greenhouse gas emissions from pigs and poultry halved when the Greenhouse Gas Inventory was up-dated with New Zealand specific data. These reductions have been incorporated into option-1.

Sheep

Figure 2 below shows the alignment between the Inventory, the status quo and option-1 for sheep. The status quo over-estimates emissions for sheep by approximately 1 million tonnes per annum.

Two alternatives are provided under option-1 for sheep, either:

- 1a) all emissions are assigned to meat at slaughter; or
- 1b) the emission factor for sheep meat is the same as that for cattle, with the remaining emissions being assigned to wool.

Option-1 (both 1a & 1b) aligns more closely with the inventory than the status quo.

Under option-1a, all sheep emissions are placed on sheep meat at slaughter. With this approach, the emission factors for sheep meat are almost double those for cattle meat. As a result, sheep meat is assigned an extra of 8.4 tonnes CO₂-e per tonne of meat processed compared to cattle meat. The high emission factor for sheep meat is inconsistent with the findings from recent greenhouse gas foot-printing studies, which show that sheep are as emissions efficient as cattle (per kilogram of meat produced).

The alternative is Option-1b, which assigns the same emission factor to sheep meat as for cattle meat. It assumes the remaining sheep emissions are associated with wool production. This is similar to the approach used for dairy cattle, where a proportion of emissions are assigned to meat and the rest to milk. It recognises that meat; milk and wool production are

separate industries and source their product from different farms. This option would fail to account for approximately 4 million tonnes of sheep emissions each year, unless a suitable point of obligation is found for wool in the future.

Figure 1. Emission liabilities for beef and dairy cattle under the status quo (NZ ETS); option-1 (NZ ETS) and the New Zealand Greenhouse Gas Inventory.

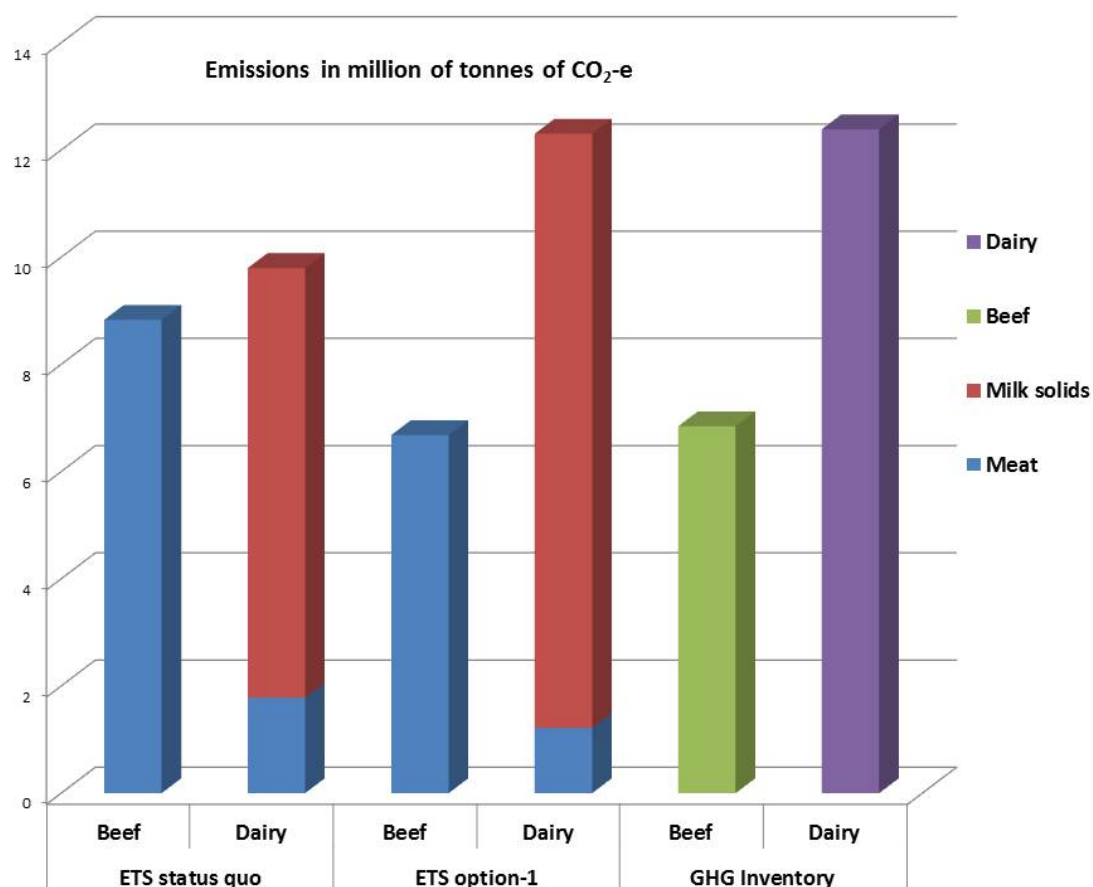
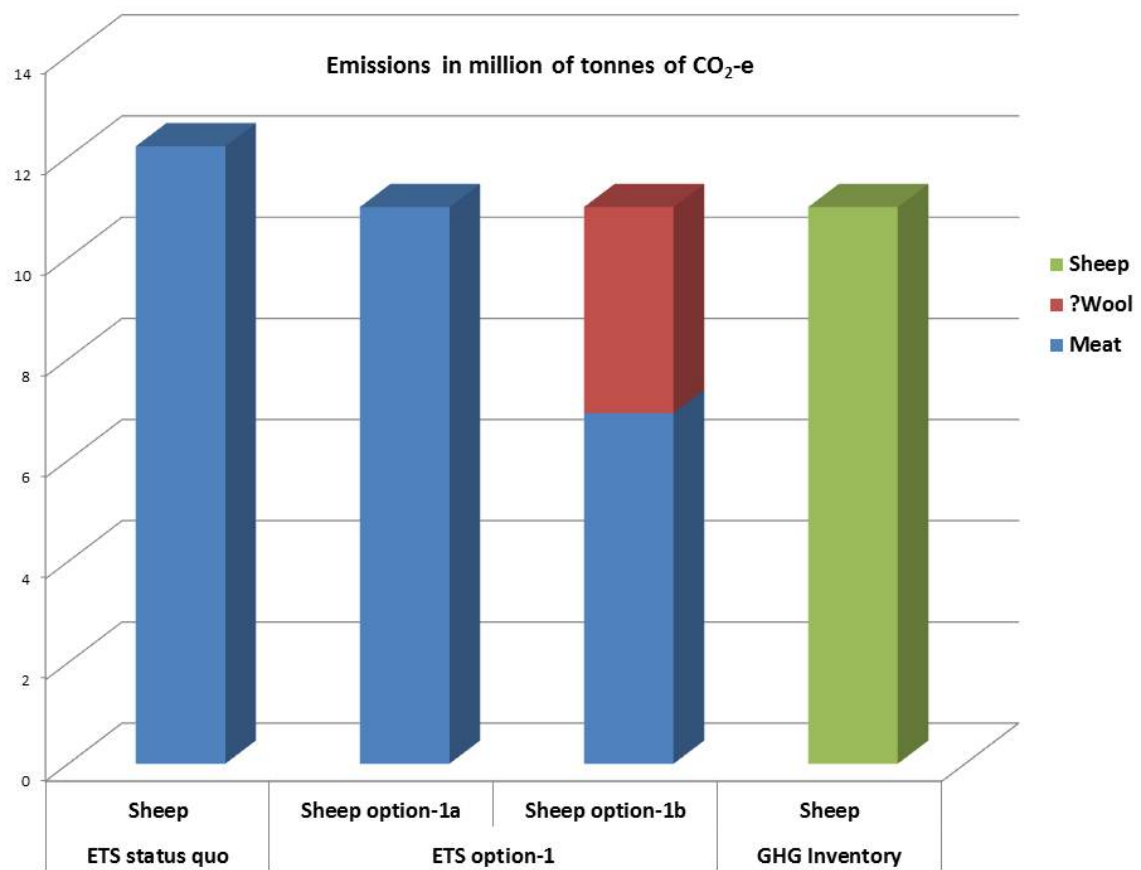


Figure 2. Emission liabilities for sheep under the status quo (NZ ETS); option-1 (NZ ETS) and the New Zealand Greenhouse Gas Inventory.



Exemptions

Under option-1 a number of exemptions are required for practical reasons and to minimise perverse effects (see appendix 1). As the emissions are captured elsewhere, the exemptions do not undermine the environmental integrity of the ETS and there is no fiscal cost associated with the exemptions.

Table 1 below provides a qualitative assessment of the status quo- and option-1 using the criteria identified in the objectives section. Option-1a and Option-1b fulfil six of the ten criteria to a greater degree than the status quo. For the other four criteria option-1 is no better or worse than the status quo.

Table 1. Qualitative assessment of the status quo and option-1 (a & b)

Criteria	Status quo	Option-1a	Option-1b
It is transparent, robust, straight-forward, and practical	X	✓✓✓	✓✓✓
It uses calculations and assumptions that are easy to follow and are robust and verifiable	X	✓✓✓	✓✓✓
It is consistent with emissions reported in the Inventory	✓ Not consistent at the sub-sector level (i.e. for beef, sheep meat & the dairy sectors)	✓✓✓ Consistent at the sector & sub-sector levels – except no charge on the wool sector	✓✓ Under-charge to the sheep sector unless a point of obligation is found for wool in the future
It uses data that is readily available to participants	✓	✓	✓
It minimises the double counting of emissions	✓	✓	✓
It minimises perverse effects	X Creates a perverse incentive to cull bobby calves rather than raise them in the beef herd ¹	✓	✓
It attaches liabilities to product streams that are easily captured	✓	✓	✓
It avoids assigning high emissions charges to low value animals	✓	✓	✓
It does not create economic distortions	X The beef & sheep meat sectors are over-charged for emissions & the dairy sector is under-charged	✓ The sheep meat sector pays more per kg than cattle meat	✓✓ The sheep meat sector pays the same per kg as cattle meat
It minimises administration and compliance costs	✓	✓✓	✓✓

¹ Under the status quo, bobby calves receive no charge at slaughter; but if they are raised in the beef herd they carry a charge (from the dairy herd) of two tonnes of CO₂-e per animal to slaughter.

A summary of the impacts under the status quo and option-1 are presented in table 2 below.

Table 2. Summary of impacts for the status quo and option-1 under the NZ ETS

Status quo	<p>ECONOMIC: Agricultural processors will be required to purchase units (either in New Zealand or overseas) to cover ETS liabilities. Participants' net liabilities after the allocation of units equate to approximately 10 per cent of agricultural emissions in 2015.</p> <p>ENVIRONMENTAL: Minimal impact in 2015.</p> <p>FISCAL: If agriculture enters the ETS in 2015, net liabilities from the agriculture sector will equate to 10% of agricultural emissions.</p>
Option -1	<p>ECONOMIC: Option-1 addresses inequities in the assignment of emission liabilities between the beef and dairy sectors in the ETS. Under option-1, net liabilities for the beef sector reduce by 25%, while net liabilities for the dairy sector increase by 30%. Under option-1b only, net liabilities for the sheep meat sector also reduce by 38%.</p> <p>The net liabilities for producing eggs, slaughtering pigs, goats and/or poultry reduce by 50% (due to updates to the Inventory in April 2012). But as these sectors contribute to less than 1% of agricultural emissions, their impact is minor.</p> <p>In total, participants' net liabilities (in 2015) after the allocation of units equate to approximately 10% of agricultural emissions for option-1a and approximately 9% of agricultural emissions for option-1b.</p> <p>ENVIRONMENTAL: Minimal impact in 2015.</p> <p>FISCAL: Option -1a is fiscally neutral. Under option-1b, fewer units would be captured under the ETS, this would equate to a net fiscal cost of \$2 m per annum (on average) in foregone emissions revenue (over 2015 to 2024) to the Crown. This fiscal cost could be reduced if emission liabilities were placed on wool production in the future.</p> <p>COMPLIANCE: Compliance and administration costs could be reduced, due to this option approach being simpler and easier to follow.</p>

Consultation

The RIA was informed by discussions between officials and stakeholders; and consideration of the recommendations of a technical group² which was established to address the issue.

To date, the Meat Industry Association, Beef + Lamb New Zealand, DairyNZ, and the Dairy Companies Association of New Zealand have been broadly consulted on the proposed changes to the ETS methodology (i.e. option-1) and the updated emission factors for beef and dairy. All four industry bodies agree with the proposed changes to the methodology and have indicated they would like the beef and dairy emission factors in the regulations updated before 1 January 2013 (so they can be used for the first year of mandatory reporting). The Meat Industry Association and Beef + Lamb New Zealand do not support an option whereby all sheep liabilities are placed on meat at slaughter and none on wool.

All issues raised during consultation to date have been taken into consideration in the design of option-1a and option-1b. One outstanding issue is the assignment of sheep emissions to wool. Due to practical difficulties in identifying an appropriate point of obligation, activities related to the production of wool are not captured under the Act. Currently there is no obvious fix to this problem.

² The technical group included representatives from the red meat and dairy sectors, the pastoral science sector and the Ministry for Primary Industries.

Conclusions and recommendations

Given the policy issues associated with the status quo, option-1 is preferred as it provides a simpler, more transparent and equitable approach for calculating emission factors for the agriculture sector under the ETS. In particular, option-1 addresses significant equity issues that were created under the status quo for the beef and dairy sectors, and the sheep meat sector (option-1b only).

Under option-1, several exemptions are necessary for practical reasons and to minimise perverse effects (see appendix 1). The emissions from these animals will be captured elsewhere under option-1. The proposed exemptions will not materially undermine the environmental integrity of the ETS.

Option-1a is fiscally neutral. Option-1b will create a net fiscal cost to the Crown of \$2m per annum (on average) in foregone emissions revenue over 2015 to 2024. Option-1b directly benefits the sheep meat sector, which would have borne this cost under the status quo. Option-1 (1a and 1b) also benefits the beef sector which would have borne additional costs under the status quo (to the value of \$1 million per annum). These costs are placed on the dairy sector under option-1.

On balance option-1b is recommended, it addresses all of the issues identified in the RIS (both now and in the future) for the sheep, beef and dairy sectors based on current and future projections. It also meets all of the criteria identified in the objectives. At the present time this option would come at a fiscal cost to the Crown of approximately \$2 million per annum (in foregone emissions revenue) from 2015. However, if a suitable point of obligation is found for wool in the future this cost could be reduced.

Implementation

Option-1 would be implemented through amendments to the emission factors in the Climate Change (Agriculture Sector) Regulations 2010. These regulations are made under section 163 of the Act and changes can have retrospective application for the 2012 reporting year. In addition, changes would be required to the General Exemption Order under section 60 of the Act for practical reasons and to minimise perverse incentives. These are explained in more detail in appendix 1. These exemptions would take effect from 2013.

Option-1 will have a minimal effect on compliance costs under the ETS relative to the status quo. The Environmental Protection Authority already has systems in place for agricultural sector participants to report their emissions under the ETS and these will not change significantly. No other changes to existing processes are required.

Monitoring, evaluation and review

Agricultural participants are required to report their emissions over the next three years. This will provide time for the preferred option to be implemented, monitored and assessed before participants are required to face any surrender obligations (from 2015).

The Act also requires the Minister to conduct regular reviews of the operation and effectiveness of the ETS. In addition, there will be a review of agriculture in the ETS in 2014 (prior to agriculture facing any liabilities for agricultural emissions).

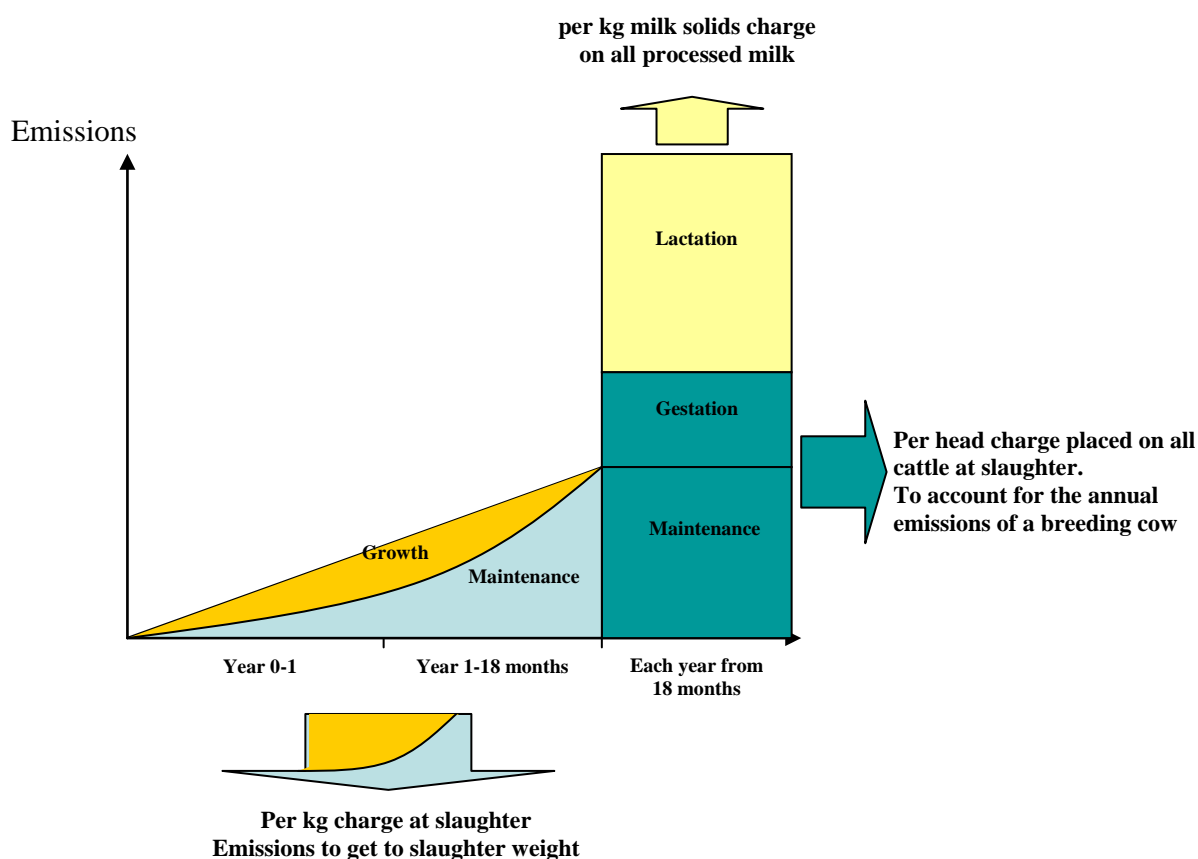
Appendix 1

The status quo: the current bottom up approach

Beef and Dairy cattle

1. Emissions for dairy and non-dairy cattle are currently split between:
 - a. a per head charge (that accounts for the annual gestation and maintenance emissions of all mature milking cows and heifers and all breeding beef cows);
 - b. a per kg charge (that accounts for emissions to get to slaughter weight over a 1-2 year period) and;
 - c. a milk solids charge (that accounts for the annual lactation emissions of a dairy cow).
2. Figure 1 shows how these emissions are assigned to meat and milk products under the ETS. Note the figure is not to scale, but lactation emission represent approximately 47% of the annual emissions of a dairy cow, and the remaining 53% of emissions are due to gestation and maintenance.

Appendix Figure 1 – The flow of emissions charges for cattle (not to scale)



3. The per head and per kg charge are assigned to animals at slaughter (via meat processors) and the milk solids charge is assigned to processed milk (via dairy processors).
4. The milk solids charge (i.e. 6.14 tonnes of CO₂-e per tonne of milk solids processed) accounts for the annual lactation emissions for all mature milking dairy cows and heifers.

5. The per kg charge accounts for all emissions to get to slaughter weight. This charge varies depending on whether the animal is a vealer, heifer, cow, steer or bull.
6. The per head charge (i.e. 1.98 tonnes of CO₂-e per animal) consists of maintenance and gestation emissions for all mature milking dairy cows and heifers and all breeding beef cows (and is placed on all cattle at slaughter).

Sheep, deer, pigs, poultry and poultry

A similar approach was used to assign emissions to all other livestock in the ETS.

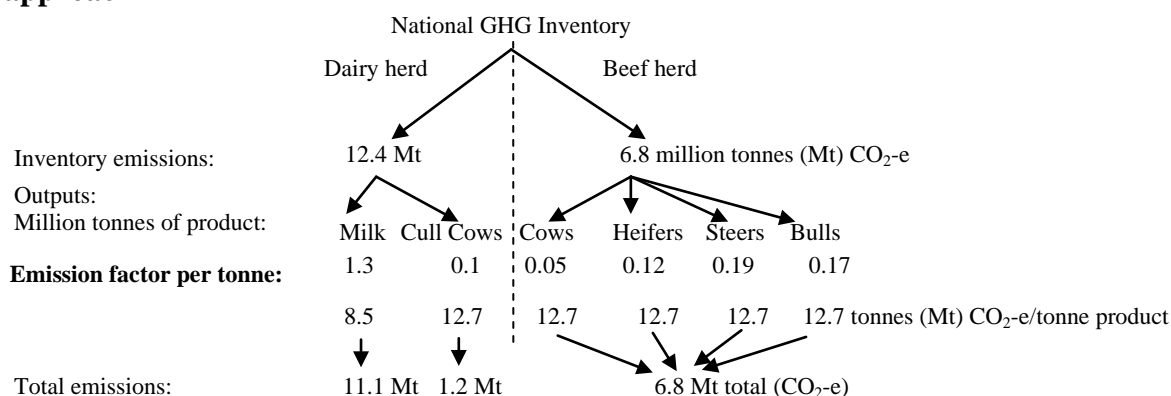
Option-1: A top down approach

2. The method for reporting emissions from slaughtering ruminant animals, pigs, or poultry was amended to a single charge (per tonne of carcass weight) rather than a two part-charge (one per animal and the other per tonne of carcass weight).

Beef and Dairy cattle

3. Figure 2 below outlines a simple top-down approach for calculating agricultural emissions from beef and dairy cattle; how milk and meat emission factors are determined; and how emissions are assigned to products from the beef and dairy sectors.

Appendix Figure 2: Assigning emissions to milk and meat with a simple top-down approach



Total emissions = emission factor x tonnes of milk solids or meat processed

4. In assigning emissions to meat and milk, the emission factor for cull dairy and beef cows should be the same. The simplest way of doing this, is to first calculate an emission factor for all meat (on a per tonne basis), and then calculate the emission factor for milk based on the total dairy sector emissions less the emissions charges on cull cows. Note 6-year averages were used for all calculations.
5. Notably, the top-down approach:
 - a. is dependent on only one assumption (being the ratio of dairy cow meat to beef cow meat at slaughter), which can be easily monitored;
 - b. the per animal emission factor is removed, leaving a single per tonne emission factor for all products; and

- c. No perverse incentives or economic distortions were evident using this approach.
 - d. It more closely matches the national greenhouse gas Inventory.
6. In addition to dairy and beef cattle, the top-down approach was also used to calculate emission factors for sheep, deer, pig and poultry.

Emission factors for slaughtering sheep

- 7. Sheep are grown for both meat and wool (the volume of each, and the value of the wool, varies depending on the breed).
- 8. A policy decision was made in 2008 not to include wool production in the Act due to both administrative and practical issues. Currently the only activity that captures sheep emissions in the ETS is the slaughtering of ruminant animals.
- 9. There are two sub-options provided for sheep, option-1a and option-1b.
- 10. If all emissions for sheep are placed on slaughtered livestock (mainly lambs), the emission factors for sheep meat are nearly double that of cattle (option-1a). This places a disproportionately large amount of emission liabilities on sheep meat (when compared to cattle).
- 11. This relativity is inconsistent with findings from recent greenhouse gas foot-printing studies, which have shown that sheep are as emissions efficient as cattle. Suggesting, emission factors for sheep meat should be comparable to cattle on a per kilogram basis.
- 12. There are two main reasons for the high emission factor, namely; slaughter lambs carrying a high proportion of emissions from hoggets and adult sheep on-farm; and secondly, no emissions are assigned to wool under the ETS.
- 13. Greenhouse footprints developed in New Zealand generally assign between 15-25% of sheep emissions to wool (although it can be as high as 60% for some breeds).
- 14. Under option-1b, the emission factors for slaughtering sheep were the same as for slaughtering cattle (per tonne of carcass weight).
- 15. A proportion of emissions could be placed on wool in the future under option-1b, if and when a suitable point of obligation is identified for wool production.

Pigs and Poultry (meat and layer hens)

- 16. The Emission factors for pig and poultry were calculated using the same top-down approach that is described above for cattle. Note that Inventory emissions for pigs and poultry halved when the Inventory was up-dated in April 2012. This was due to the inclusion of New Zealand specific data in the Inventory for both pig and poultry. These reductions have been incorporated into the proposed changes to the emission factors.

Live animal exports

- 17. Emission factors were also calculated for live animal exports using a top-down approach. The emission factors were calculated on a per animal basis, with fewer categories, for ease of reporting but are comparable to the per tonne emission factors for slaughter.

The emission factor for synthetic fertiliser containing nitrogen

18. The emission factor for synthetic fertiliser containing nitrogen remains unchanged.

Proposed Amendments to General Exemptions Order regulations

19. Under option-1, several exemptions are required for practical reasons and to minimise perverse effects. These exemptions could be promulgated through an amendment to the existing Climate Change (General Exemptions) Order 2009 under section 60 of the Act. The proposed exemptions will not materially undermine the environmental integrity of the ETS. There is no fiscal cost associated with the proposed exemptions

20. The proposed exemptions cover persons who undertake the:

- a. slaughtering of calves (including but not limited to bobby calves),
- b. slaughtering of vealers,
- c. dairy processing of milk or colostrum from goats, and
- d. dairy processing of milk or colostrum from sheep.

21. Emissions from these animals are captured elsewhere, namely in the emission factors for meat (from cattle, goats and sheep) and in the emission factors for dairy milk.

Calves and vealers

22. Calves and vealers produce little or no emissions, but any emissions that they do produce are spread across slaughtered adult cattle and processed milk under the proposed top-down approach. The exemption of calves and vealers from an ETS charge at slaughter avoids any perverse incentive to cull these animals on-farm. Bobby calves are already exempt from an emissions charge at slaughter (under the current Exemption Order) but vealers are not.

Goat and sheep milk

An exemption for processing goats and sheep milk or colostrum is recommended due to a lack of data on the volume of sheep and goat milk processed each year. Without this data, it is difficult to recommend a fair and transparent approach for apportioning emissions to goat and sheep milk using a top-down approach. Instead it is recommended that all goat and sheep emissions are assigned to processed meat and/or wool. This would remove two emission factors from the current ETS regulations, i.e. an emission factor for goat (per tonne milk solids) and an emission factor for sheep (per tonne milk solids).