



The Emissions Trading Scheme
– summary
information for
public entities
and auditors



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Auditor-General's overview

New Zealand's Emissions Trading Scheme (ETS) has been operating since 2008. This document provides public entities that have ETS responsibilities and my auditors with our views about accounting for and auditing of ETS matters. It also summarises how the ETS has developed, because it is hard to write about the accounting and auditing aspects without first setting out how the ETS works.

We have written this document using information that is available from the government departments that administer the ETS (their websites provide more detailed information). The later sections of this document set out how we see the ETS affecting public entities as they account for their ETS transactions. It also sets out what my auditors will be considering when carrying out their statutory audits of public entities.

This document does not provide "all the answers", as there is no authoritative guidance on how to account for emissions trading schemes. The International Accounting Standards Board and the International Public Sector Accounting Standards Board have yet to provide that guidance, so we discuss the likely accounting approaches that various sectors might need to apply when accounting for ETS transactions. Our views are not a substitute for professional advice about your ETS obligations and decision-making, but we offer an informed view for consideration.

Finally, in 2011 especially, there are critical ETS deadlines that public entities might need to factor into their financial decision-making and planning. I trust that this document will help entities, and their auditors, to be more informed about the relevant ETS obligations and opportunities.



Lyn Provost
Controller and Auditor-General

24 August 2011

List of abbreviations

AAU	Assigned Amount Unit – an international carbon credit issued under the Kyoto Protocol. New Zealand AAUs are originally issued to New Zealand under the Kyoto Protocol.
AGS	Afforestation Grant Scheme
CAA	Carbon Accounting Area
CP1	The first commitment period, from 1 January 2008 to 31 December 2012
DEF	Default emissions factor
EPA	Environmental Protection Authority
ETS	Emissions Trading Scheme
LINZ	Land Information New Zealand
MAF	Ministry of Agriculture and Forestry
MED	Ministry of Economic Development
MfE	Ministry for the Environment
NZEUR	New Zealand Emission Unit Register
NZU	New Zealand Unit
PFSI	Permanent Forest Sink Initiative
SOE	State-owned enterprise
UNFCCC	United Nations Framework Convention on Climate Change

Part 1

Introduction

The purpose of this document is to inform public entities and their auditors about how the Emissions Trading Scheme (ETS) operates and how it is likely to affect them. It summarises information about the ETS that we have gathered from the Ministry for the Environment (MfE), the Ministry of Agriculture and Forestry (MAF), and the Ministry of Economic Development (MED).

We wrote it to inform ourselves about how the ETS might affect public entities' accounting and auditing requirements. Other auditors and people working in public entities might also find this information useful. However, the information in this document is not a substitute for legal and accounting advice on how public entities should carry out their ETS obligations. For more detailed information, you need to check the extensive information provided by MfE, MAF, and MED on their websites. If you consider that you or your entity may be subject to the ETS, you may need to get professional advice.

The ETS is now operating in the forestry, energy, industrial processes, and liquid fossil fuels sectors. In future years, it is due to come into effect in the waste, synthetic gases, and agriculture sectors. This document gives an overview of how the ETS works in each of these sectors, together with any transition assistance in place (such as allocations of free New Zealand Units (NZUs)). It then covers the implications we see for public entities generally and for those that are, or will be, participants in each of the ETS sectors.

A significant number of public entities will be participants in the ETS. These are mainly public entities involved in forestry, and State-owned enterprises in areas such as electricity generation and coal production. When the waste sector enters the ETS in 2013, many local authorities will become participants in the ETS through their operation of waste disposal facilities.

In some cases, public entities need to make important decisions soon. For example, public entity landowners should consider whether they have trees that make them eligible to receive free NZUs before the cut-off date for applications.

Internationally and domestically, accounting standard setters have not provided any guidance on accounting for emissions trading schemes. Different accounting approaches can be supported under generally accepted accounting practice. This document sets out the accounting policy options available for ETS transactions. Public entities need to understand the options relevant to their circumstances and adopt appropriate accounting policies. They can discuss their options with their appointed auditors.

In 2012, we intend to provide more information about accounting and auditing requirements for public entity ETS participants. Our work will focus on case studies of public entities in the energy, waste, and forestry sectors that are participating in the ETS. Our work will be partly based on these entities' 2010/11 annual reports.

Acknowledgements

In producing this document, we have drawn extensively on publicly available information published by the administering agencies, particularly the Ministry for the Environment, the Ministry of Agriculture and Forestry, and the Ministry of Economic Development. We gratefully acknowledge them for the information available on their websites (www.climatechange.govt.nz, www.eur.govt.nz, www.mfe.govt.nz, www.maf.govt.nz, and www.med.govt.nz) and for their feedback on this document.

Part 2

Structure of this document

Because the ETS is complex and its details are still fairly new to many readers, we first provide a summary about the international agreements to reduce “greenhouse gases” (Part 3) and an overview of the ETS (Part 4). We then set out in Part 5 details about how the ETS works for various sectors, including information about:

- the forestry sector (section 5.1);
- the stationary energy sector (section 5.2);
- the industrial processes sector (section 5.3);
- the liquid fossil fuels sector (section 5.4);
- the waste sector (section 5.5);
- the synthetic gases sector (section 5.6); and
- the agriculture sector (section 5.7).

Part 6 then describes the Government’s transition assistance for various sectors.

Part 7 summarises the work done by the agencies that are responsible for administering the ETS.

Parts 8 and 9 set out our views about how the ETS will affect public entities and how the Government and various public entities will need to account for the ETS.

Finally, Part 10 outlines the issues that need to be considered when auditing public entities in relation to the ETS.

Part 3

The UNFCCC and the Kyoto Protocol

In 1992, the New Zealand Government signed the United Nations Framework Convention on Climate Change (UNFCCC). This is an international environmental agreement that aims to stabilise “greenhouse gases”. Greenhouse gases include carbon dioxide (CO₂) and methane (CH₄), which are released into the atmosphere by burning of fossil fuels or from agriculture, respectively, and from many other human-generated activities.

The UNFCCC is a broad, principles-based, agreement that aims to prevent climate change that might be caused by rising levels of greenhouse gases. Although there is still some debate about the causes of climate change, many nations are committed to reducing their greenhouse gas emissions. The UNFCCC includes provisions for binding protocols. In 1998, the New Zealand Government signed the Kyoto Protocol and it entered into force in February 2005. The ETS is the Government’s primary tool for reducing greenhouse gas emissions and for meeting New Zealand’s commitments under the Kyoto Protocol.

Part 4

Overview of the Emissions Trading Scheme

The ETS started in 2008 following an amendment to the Climate Change Response Act 2002 (the Act).¹ After the 2008 general election, a select committee reviewed the ETS with the result that it was amended by the Climate Change Response (Moderated Emissions Trading) Amendment Act 2009.

Purpose

The purpose of the ETS, as stated in the Act, is to support and encourage global efforts to reduce greenhouse gas emissions by helping New Zealand to meet its international obligations under the UNFCCC and the Kyoto Protocol, and by reducing New Zealand's net emissions below "business-as-usual" levels (which are the estimated emissions levels if the ETS had not been implemented).²

Targets

Under the Kyoto Protocol, New Zealand has agreed to reduce its net greenhouse gas emissions during the period 1 January 2008 to 31 December 2012 (the "first commitment period" or "CP1") to 1990 levels or to pay for any emissions that are in excess of its 1990 levels. There is no binding international agreement about greenhouse gas emissions beyond 2012, although New Zealand has signed up to the 2009 Copenhagen Accord³ and has submitted to the UNFCCC a conditional emissions reduction target range of 10% to 20% below 1990 levels by 2020.

In March 2011, the Government announced a long-term target of a 50% reduction in New Zealand's greenhouse gas emissions from 1990 levels by 2050.

How the Emissions Trading Scheme works

In New Zealand, the largest proportions of greenhouse gas emissions are from agriculture (46%⁴) and the energy sector (44%) (which includes transport). Under the Kyoto Protocol rules,⁵ in the first commitment period, New Zealand can offset, against its emissions, removals of CO₂ achieved by net increases in forest cover (carbon sinks).

The ETS is designed to move the cost of greenhouse gas emissions onto those who cause them. It is intended to provide incentives for managing greenhouse gas emissions, investing in clean technology and renewable power generation, and

1 Climate Change Response (Emissions Trading) Amendment Act 2008.

2 See section 3(3) of the Climate Change Response Act 2002.

3 For more information on the Copenhagen Accord, see: http://unfccc.int/meetings/cop_15/copenhagen_accord/items/5262.php.

4 Ministry for the Environment (April 2011), *New Zealand's Greenhouse Gas Inventory 1990–2008*, Ministry for the Environment, Wellington.

5 See the UNFCCC website, at www.unfccc.int, for more information about the Kyoto Protocol rules.

activities that absorb greenhouse gases (such as planting trees) in order to reduce New Zealand's net greenhouse gas emissions.

Different sectors enter the ETS at different dates. Figure 1 shows these dates.

Figure 1
Dates for different sectors to enter the Emissions Trading Scheme

2008	2009	2010	2011	2012	2013	2014	2015
January Forestry		July Stationary energy* Industrial processes Liquid fossil fuels			January Waste Synthetic gases		January Agriculture

* See section 5.2 for a definition.

Under the ETS, the primary unit of trade is a New Zealand Unit (NZU), which represents one tonne of CO₂-equivalent emissions. NZUs are sometimes called “carbon credits”. An NZU can represent one tonne of CO₂ or the equivalent of another greenhouse gas (referred to as “carbon dioxide equivalent” or “CO₂ equivalent”). The ETS covers all six types of greenhouse gas covered by the Kyoto Protocol: carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, perfluorocarbons, and hydrofluorocarbons.

Generally, each participant⁶ is required to “surrender”⁷ one NZU to match each tonne of CO₂-equivalent emissions for which the participant is liable. The ETS also allows participants to surrender certain other internationally recognised carbon credits instead of an NZU. These are:

- NZ Assigned Amount Units (AAUs), which are units originally issued to New Zealand under the Kyoto Protocol;
- Certified Emission Reduction Units, except those arising from nuclear energy projects;
- Emission Reduction Units, except those arising from nuclear energy projects; and
- Removal Units.

In this document, wherever we refer to surrendering an NZU, these other international credits are equally acceptable.

6 Businesses and individuals that have mandatory obligations or have opted into the ETS are known as “participants” in the ETS. See section 54 of the Climate Change Response Act 2002 for a definition of participant.

7 For more information about surrendering, see section 4 of the Climate Change Response Act 2002.

Entities have specified dates by which to register as participants and to report their emissions for each reporting period (generally based on calendar years). At the end of each period, participants must surrender NZUs (or equivalent units) to the Crown to cover that year's emissions. Reporting of emissions will be based on self-assessments of emissions, with the administering agencies (see section 7.1) establishing a compliance regime. There are offences and significant penalties under the Act for failing to comply with obligations.

There are also transitional provisions to ease the effect of the scheme on some sectors, including the issue of free NZUs to some parties (see Part 6).

The ETS is complex and challenging for those entities affected, as well as for the administering agencies. The detailed ETS rules for each sector are being set out in regulations, which are made under the Act.

Under the Act, the Minister for Climate Change Issues is required to begin a review of the ETS during the first commitment period and at regular periods thereafter. The first review must be completed by the end of 2011.⁸ This, together with the fact that there is no international agreement beyond 2012, means that future developments of the ETS are uncertain. This is particularly so for agriculture, the last sector to join the scheme.

Part 5 sets out the ETS requirements for each sector.

⁸ A team led by Hon. David Caygill carried out the first review and reported to the Government on 30 June 2011 as required by the terms of reference. The Minister for Climate Change Issues is due to release the report when the Government has considered the report's recommendations.

Part 5

ETS sectors

5.1 Forestry

Forestry was the first sector to come under the ETS, with disincentives to deforestation and incentives for afforestation being in effect from 1 January 2008.

Forests are New Zealand's largest potential carbon sinks. As trees grow, they absorb CO₂ from the atmosphere and store it in their trunks, branches, leaves, and roots. The amount of carbon stored in a forest depends on factors such as species, site conditions, level of cover, and how long it has been growing.

When the trees are harvested, the carbon stored in them is released as the wood decays. Under the ETS, the carbon is assumed to be immediately released back into the atmosphere from the wood taken off site as part of the harvest. Harvest residues left on site are assumed to decay over 10 years under New Zealand conditions.

Under the Act, forest species are those capable of growing at least five metres high at maturity in the place that they are growing, excluding those grown primarily for fruit and nuts.

Forest land is an area of at least one hectare with forest species that have or are likely to have:

- tree crown (the canopy of the tree) that covers more than 30% of each hectare; and
- average crown cover width of at least 30 metres.⁹

The Act classifies forests depending on whether they were first established after 31 December 1989 (these are referred to as "Kyoto Protocol-compliant forests" and "post-1989 forests") or before 1 January 1990 ("pre-1990 forests"). Under the Kyoto Protocol, 1 January 1990 is an important date because 1990 is the base year for measuring emissions reductions.

A significant number of public entities in local government and central government have interests in forests and will have to consider the effect of the ETS on their forestry operations.

5.1.1 Pre-1990 forests

Pre-1990 forests are forests that were established before 1 January 1990 and that were in exotic forest cover on 1 January 2008.

⁹ Shelterbelts and riparian strips are not usually forest land. For more information, see: Ministry of Agriculture and Forestry (November 2010), *Introduction to Forestry in the Emissions Trading Scheme*, at www.maf.govt.nz/forestry/forestry-in-the-ets and section 4 of the Climate Change Response Act 2002.

Indigenous forests established before 1990 are completely excluded from the ETS. The carbon stocks of these forests are considered to be in a steady state overall, so New Zealand does not earn carbon credits for them internationally under Kyoto Protocol rules. New Zealand does have to account for any deforestation of these forests under the Kyoto Protocol rules, but no significant deforestation of these forests is expected because of protections provided by other legislation (such as the Resource Management Act 1991 and the Forests Act 1949).

NZUs cannot be earned for an increase in the carbon stock (through forest growth) in a pre-1990 forest. However, owners of land on which pre-1990 forests are planted are mandatory participants in the ETS when more than two hectares are deforested in any five-year period from 1 January 2008.

Deforestation is forest clearance followed by a demonstrable change to another land use – such as grazing. Deforestation is deemed to have occurred four years after clearing if each hectare has not been replanted or regenerated with at least 500 stems of forest species. It is also deemed to have occurred if the crown cover does not reach specified limits within 10 or 20 years, depending on forest type.

Provided that pre-1990 forests are re-established after harvesting (by replanting or regeneration), there are no liabilities or obligations under the ETS.

Landowners of pre-1990 forests must surrender NZUs equivalent to the carbon emissions from any deforestation. The detailed rules for determining deforestation emissions are set out in the Act and regulations,¹⁰ which include tables setting out the standard tonnes of CO₂ per hectare for different tree species by age and for *Pinus radiata* by region. The Act and regulations also set out the compliance obligations of participants, including notification of deforestation, submitting emissions returns, opening a registry account (see section 7.2), and surrendering NZUs.

The first returns for deforestation emissions (for deforestation during 2008 and 2009) were due by 31 March 2010. The NZUs to meet these liabilities had to be surrendered by 31 May 2011. In future, returns for any deforestation in a calendar year will be due by 31 March of the following year. Similarly, NZUs that are required to be surrendered to meet any emissions liability must be surrendered by 31 May of the following year.

Only five entities were registered as deforestation participants and required to surrender NZUs by 31 May 2011. These included three public entities in the central government sector: New Zealand Transport Agency, Transpower, and Land Information New Zealand.

¹⁰ Climate Change (Forestry Sector) Regulations 2008.

For pre-1990 forests, the ETS participants will generally be the forest landowners, who are not necessarily the forest crop owners.

Because of the penalties for deforesting, introducing the ETS has adversely affected the value of some pre-1990 forest land. The Government is partly compensating the loss in value by providing an allocation of free NZUs to landowners of pre-1990 forests (except those who have applied for an ETS exemption – see section 6.2 for more information about the forestry allocation and exemptions).

5.1.2 Post-1989 forests

Post-1989 forests are exotic or indigenous forests established after 31 December 1989 on land that was not forest land on 31 December 1989. These forests earn credits under the Kyoto Protocol rules. Therefore, they are also known as “Kyoto Protocol-compliant” forests.

Participating in the ETS is voluntary for post-1989 forest owners. If they choose to enter the ETS, then they earn NZUs for the carbon sequestered in the forest from 1 January 2008, but will need to surrender NZUs to the Crown when the carbon held in their trees decreases, whether through harvest or natural causes (such as by fire or storm). Any liability for post-1989 participants is capped at the amount of NZUs previously claimed for that area of forest land.

The amount of carbon sequestered or released is determined using either standard tables or a field measurement approach based on measuring actual forest stock. Regulations¹¹ for the field measurement approach were finalised in June 2011 and come into force in September 2011. The field measurement approach will be mandatory for all participants with 100 hectares or more of forest in the ETS. Participants with less than 100 hectares will be required to use the standard tables.¹²

The detailed rules for determining changes in carbon stocks in post-1989 forests are set out in the Act and regulations,¹³ as are the compliance obligations of participants. These obligations include proving eligibility of the forest, opening a registry account (see section 7.2), completing emissions returns, retaining supporting records, and – when required – surrendering NZUs.¹⁴

Post-1989 forestry participants must submit an emissions return for 1 January 2008 to 31 December 2012 by 31 March 2013. Additionally, participants may

11 Climate Change (Forestry Sector) Amendment Regulations 2011.

12 Ministry of Agriculture and Forestry (23 March 2011), *Sustainable Forestry Bulletin*, Issue 25.

13 Climate Change (Forestry Sector) Regulations 2008.

14 For more information, see MAF’s May 2011 guide: *A Guide to Forestry in the Emissions Trading Scheme*, available at www.maf.govt.nz.

choose to file annual emissions returns for the change in carbon stock in a calendar year. These voluntary annual emissions returns can be filed between 1 January and 31 March of the following year.

Participants who are entitled to NZUs for a net increase in carbon stocks will usually receive them within four weeks of their emissions return being submitted.¹⁵ This is subject to any additional information requested by MAF, which may also make a site visit to ensure that the number of units claimed is correct or carry out a compliance audit of an emissions return (before or after units are issued). Participants who need to surrender NZUs because of a net decrease in carbon stocks must surrender them within 20 working days of filing their emissions return.

Foresters who own post-1989 forests and who choose to participate in the ETS should register before the end of 2012. Registrations after this date will earn credits for forest growth only from 1 January 2013.

By 30 June 2011, over 1200 foresters with post-1989 forests had registered as participants. A number of public entities have registered, including: Wellington City, Hawkes Bay Regional, Mackenzie District, Southland District, Ashburton District, Marlborough District, and Kaikoura District Councils, and subsidiaries of Dunedin City, Invercargill City, and Gisborne District Councils.

Cabinet has decided that Crown-owned post-1989 forests will not participate in the ETS. However, forests owned by State-owned enterprises (SOEs), Crown entities, or other public bodies can participate, as can forests owned by the Crown in partnership with private-sector participants.

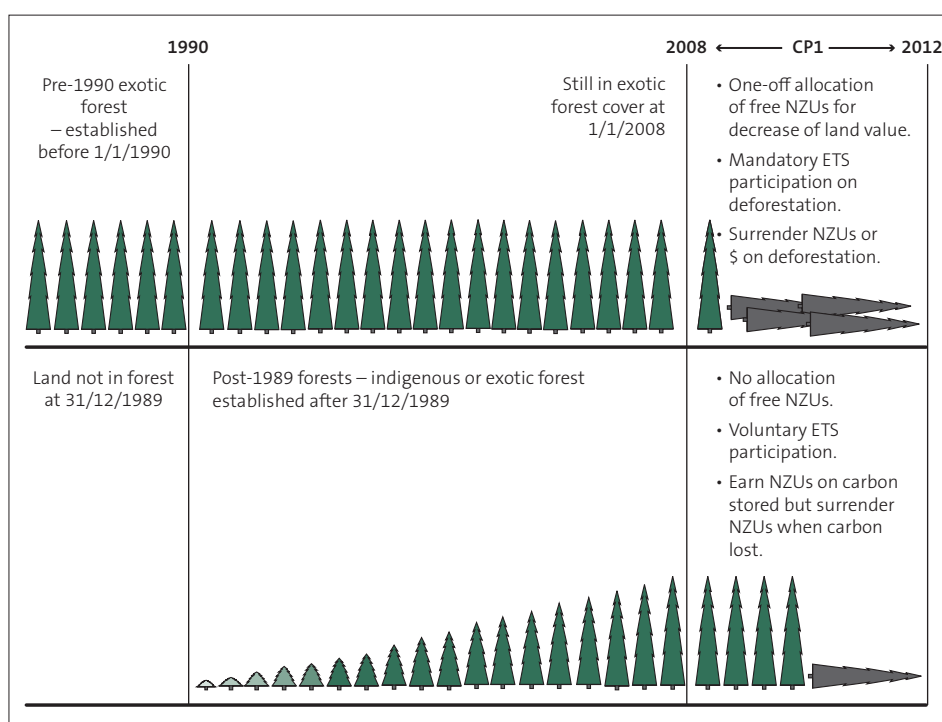
For post-1989 forests, the ETS participant will usually be the forest crop owner (because the forest sequesters the carbon). Where the forest is on land subject to a forestry right or a lease, the forest landowner will be an interested party from whom written permission is required to register as an ETS participant.

Owners of post-1989 forests do not receive any free NZUs under the forestry allocation because their participation in the ETS is voluntary.

Figure 2 summarises the significant differences between pre-1990 and post-1989 forests.

¹⁵ Ministry of Agriculture and Forestry (May 2011), *A Guide to Forestry in the Emissions Trading Scheme*, page 19.

Figure 2
How the Emissions Trading Scheme affects pre-1990 and post-1989 forests



5.1.3 Other forestry initiatives

In addition to the ETS, other complementary government programmes to encourage carbon sequestration in forests include:

- the Permanent Forest Sink Initiative (PFSI); and
- the Afforestation Grant Scheme (AGS).

The Ministry of Agriculture and Forestry is currently carrying out a review of these programmes. The review will consider performance, costs and benefits, issues, and opportunities, and will recommend future options.¹⁶ The review was expected to be completed by late June 2011.

Permanent Forest Sink Initiative

The PFSI is designed to promote the establishment of permanent forests on previously unforested land. It offers landowners an opportunity to earn credits for carbon sequestered in eligible permanent forests – that is, forests established after 1 January 1990 on land that was not forest land at 31 December 1989.

¹⁶ For more information, see: Ministry of Agriculture and Forestry (December 2010), *Review of MAF Afforestation Schemes discussion document 2010*.

The eligible forest will be an exotic or indigenous forest that is established through direct human activity, either by planting or by facilitating natural regeneration.

Under the PFSI, forest owners will receive all the New Zealand Assigned Amount Units (AAUs) and associated liabilities associated with this forest land since 1 January 2008. As with the post-1989 ETS, forest owners are obliged to take responsibility for the ongoing net changes in the carbon stocks of their forests. They receive AAUs if those stocks increase as a result of tree growth and are required to surrender units if those stocks decrease as a result of activities or events such as harvesting or fire.

Owners of eligible forests have the choice of entering either the ETS or the PFSI. Major differences between the PFSI and the ETS are:

- the PFSI creates a permanent forest sink with harvesting restrictions and limits on when a landowner can exit from the scheme;
- the PFSI requires a covenant¹⁷ to be registered on the land for at least 50 years;
- the ETS has no harvesting restrictions, and landowners can enter and leave at any time provided they pay back any NZUs received; and
- post-1989 forestry participants in the ETS earn NZUs while PFSI participants receive AAUs.

By December 2010, 20 covenants, covering 5319 hectares, were registered under the PFSI initiative.¹⁸ The 2010 Budget included an appropriation of \$7.5 million¹⁹ in Vote Climate Change for the PFSI. The 2011 Budget had an appropriation of \$10.0 million.

Afforestation Grant Scheme

The AGS is designed to encourage new Kyoto Protocol-compliant forests (see section 5.1) to increase greenhouse gas absorption. Landowners can receive a grant for establishing a new forest on land that was not forested on 31 December 1989. Land that has entered the ETS or the PFSI is not eligible. Grant recipients own the new forests while the Crown retains the carbon credits generated during the 10-year period of the grant agreement. The amount of a grant is determined by the carbon sequestration rate of the proposed forest.

There are two pools of funding, one administered by MAF and one administered by participating regional councils. The grant pools are limited. The administrator

¹⁷ A covenant is a contract between the landowner and the Crown. For more information on these covenants, see: Ministry of Agriculture and Forestry (July 2008), *Permanent Forest Sink Initiative Guidelines*, available at www.maf.govt.nz.

¹⁸ Ministry of Agriculture and Forestry (December 2010), *Review of MAF Afforestation Schemes discussion document 2010*, page 9.

¹⁹ As adjusted by the Supplementary Estimates of Appropriations for the year ended 30 June 2011.

has discretion about accepting grant applications. Preference is given to applications that meet the scheme's other environmental objectives (reduce risk of soil erosion, improve water quality and indigenous diversity).

The 2010 Budget included an appropriation of \$5.8 million²⁰ in Vote Agriculture and Forestry for the AGS. The 2011 Budget had an appropriation of \$7.0 million.

The PFSI and the AGS both encourage the establishment of new forests. The main differences are:

- the PFSI forester fully funds the forest and retains the carbon credits generated;
- the Crown retains the carbon credits generated from AGS forest, having subsidised the forest establishment through the grant fund;
- the length of obligations (50-year covenants for PFSI forests, 10-year periods for AGS forest); and
- the AGS has broader environmental objectives than absorbing carbon.

5.2 Stationary energy

“Stationary energy” is the term used in the Act for the sector that includes all fuels used in generating electricity, generating industrial heat, and refining petroleum. It does not include energy used for transport, emissions from industrial processes, or heating used in commercial or residential facilities.

The main ETS participants in this sector will be those that:

- import coal or natural gas;
- mine coal or natural gas, unless for export;
- use geothermal fluid to generate electricity or industrial heat;
- burn waste oil, tyres, or general waste for generating electricity or industrial heat; and
- refine petroleum (applicable only to Marsden Point, which is New Zealand's only oil refinery).

The ETS targets those that produce or import the raw materials that are later used to generate energy. The ETS obligations do not necessarily sit with the end user of the materials who actually generates the emissions. However, the Act provides for businesses to voluntarily opt in to the ETS for activities that use energy if they buy more than 250,000 tonnes of coal a year from coal mining participants, or buy more than 2 petajoules of natural gas a year from gas mining participants. Once they become a participant, all of the requirements of the ETS are mandatory for them.

²⁰ As adjusted by the Supplementary Estimates of Appropriations for the year ended 30 June 2011.

Public entities that have registered as ETS participants in the stationary energy sector include the following SOEs or their subsidiaries: Solid Energy (for mining coal), Genesis Power (for importing coal, purchasing coal, and mining natural gas), and Mighty River Power (for purchasing natural gas and using geothermal fluid).

Emissions are generally calculated using “default emissions factors” (DEFs)²¹ for each activity (for example, per terajoule of a class of coal or gas). However, in some circumstances, participants can apply to use unique emissions factors to more accurately calculate their specific emissions. The criteria for unique emissions factors are fairly onerous, including a prescribed sampling and testing regime with results verified by a recognised verifier. Using default emissions factors minimises the transaction costs for ETS participants.

The detailed rules for determining stationary energy emissions are set out in the Act and regulations,²² as are the compliance obligations of participants once they have applied to join the ETS. These obligations include registering as a participant, opening a registry account, completing annual emissions returns, retaining supporting records, and, when required, surrendering NZUs.

The stationary energy participants have been required to report emissions since 1 January 2010. For 2010, they were required to surrender NZUs to the Crown only for emissions occurring between 1 July and 31 December. From 2011, surrender obligations apply to emissions for the full year. Participants are required to submit an emissions return for each calendar year by 31 March of the following calendar year. NZUs must then be surrendered by 31 May of that year.

The first date that the participants were required to surrender NZUs was 31 May 2011.

No free NZUs will be allocated to stationary energy participants, because they are able to pass on the cost of their ETS obligations to their customers.

5.3 Industrial processes

Industrial process emissions occur when materials are changed from one substance into another in an industrial setting. Chemical reactions involved in these processes cause emissions.

The ETS covers the CO₂ emissions generated by producing iron, steel, aluminium, cement clinker, burnt lime, glass, and gold. It also covers perfluorocarbons generated by producing aluminium. Companies that produce any of these substances are mandatory participants in the ETS.

21 For more information on DEFs, see: Ministry for the Environment (October 2009), *Emissions trading bulletin No. 13: Climate Change (Stationary Energy and Industrial Processes) Regulations 2009*. This is available at: www.mfe.govt.nz/publications/climate/emissions-trading-bulletin-13/.

22 Climate Change (Stationary Energy and Industrial Processes) Regulations 2009.

No public entities have registered as ETS participants in the industrial processes sector.

There are detailed and complex rules for determining emissions for each of the industrial processes covered by the ETS. These are set out in the Act and regulations,²³ as are the compliance obligations of participants once they have applied to join the ETS. These obligations include registering as a participant, opening a registry account, completing reporting requirements and annual emissions returns, retaining supporting records and, when required, surrendering NZUs.

Participants from the industrial processes sector have the same reporting and surrender obligations as apply to stationary energy sector participants (see section 5.2). The first date for surrender of NZUs for industrial processes participants was 31 May 2011.

Free NZUs will be allocated to those entities that qualify as emissions-intensive and trade-exposed (see section 6.4).

5.4 Liquid fossil fuels

Most forms of travel burn liquid fossil fuels, such as petrol and diesel. Using these fuels results in emissions of greenhouse gases.

Suppliers (for example, BP and Mobil) that take fuel from the refinery or that import it, are required to participate in the ETS and surrender NZUs to cover the emissions that result from the fuel they buy. Individual vehicle users are not directly involved in the ETS.

The fuels covered by the ETS include petrol, diesel, aviation gasoline, jet kerosene, light fuel oil, and heavy fuel oil. Biofuels are specifically excluded. Fuel used for international aviation and for international marine transport is exempt from the ETS, in line with the Kyoto Protocol.

No public sector entities are mandatory participants in the liquid fossil fuels sector. However, entities that use large quantities of jet fuel can also choose to become participants in the scheme. Air New Zealand and its subsidiary airlines have registered.

Emissions must be calculated using default emissions factors for each type of fuel (although there is provision to apply for a unique emissions factor in limited circumstances). The detailed rules for determining liquid fossil fuel emissions are set out in the Act and regulations,²⁴ as are the compliance obligations of participants once they have applied to join the ETS. These obligations include

²³ Climate Change (Stationary Energy and Industrial Processes) Regulations 2009.

²⁴ Climate Change (Liquid Fossil Fuels) Regulations 2008.

registering as a participant, opening a registry account, completing annual emissions returns, retaining supporting records and, when required, surrendering NZUs.

The same reporting and surrender obligations apply to liquid fossil fuel participants as for stationary energy and industrial processes participants (see sections 5.2 and 5.3). The first date for surrender of NZUs for liquid fossil fuels participants was 31 May 2011.

Free NZUs will not be allocated to suppliers of liquid fossil fuels because they are able to pass on the costs of their ETS obligations to their customers.

5.5 Waste

The solid waste disposal sector enters into the ETS from 1 January 2013. Under the Act, the operator of a waste disposal facility is a mandatory participant in the ETS. A disposal facility is defined as:

any facility, including a landfill, —

- (a) at which waste is disposed; and*
- (b) at which the waste disposed includes waste from a household that is not entirely from construction, renovation, or demolition of a house; and*
- (c) that operates, at least in part, as a business to dispose of waste; but*
- (d) does not include a facility, or any part of a facility, at which waste is combusted for the purpose of generating electricity or industrial heat.*

It is expected that most, if not all, solid waste disposal facilities operated by local authorities will meet this definition. Given the 2013 entry date, no participants in this sector were registered in the New Zealand Emission Unit Register (NZEUR) at 30 June 2011.

In September 2010, regulations²⁵ providing much of the detail about how the ETS will apply to waste disposal were finalised, so it is now clearer how the ETS will apply.

Disposal facilities create methane emissions by breaking down of organic waste. In recent years, these methane emissions have been reducing because operators have been implementing landfill gas collection systems. Some of these systems destroy the methane by “flaring”, other systems use the methane to produce energy.

Any methane emissions from waste disposal facilities that are no longer receiving waste are not covered by the ETS.

²⁵ Climate Change (Waste) Regulations 2010.

Operators of waste disposal facilities will be required to surrender one NZU for each tonne of CO₂-equivalent emissions. Emissions will be calculated by applying either the default emissions factor or a unique emissions factor to the tonnage of solid waste disposed of at the facility for a particular period.

Operators can apply to use a unique emissions factor for the following:

- site-specific analysis of waste composition – this favours those landfills that have a lower proportion of organic material in either their total waste or certain classes or sources of waste; and
- landfill gas collection – which favours those operators that collect their landfill gas.

There are detailed regulations on how to determine the unique emissions factors.²⁶

The Act and regulations also set out compliance obligations for participants once they have applied to join the ETS. These obligations include registering as a participant, opening a registry account, completing annual emissions returns, retaining supporting records and, when required, surrendering NZUs.

For operators of waste disposal facilities, the deadline for registering as a participant is 31 January 2012.

Emissions are reported yearly. Operators may voluntarily report their emissions for the 2011 calendar year. For the 2012 calendar year, there is mandatory reporting but no requirement to surrender NZUs for the emissions. For the 2013 calendar year, operators must report their emissions by 31 March 2014 and surrender NZUs equal to their emissions by 31 May 2014.

Operators already have to report their waste tonnage to the Ministry for the Environment to determine the waste disposal levy under the Waste Minimisation Act 2008. Therefore, additional compliance costs should be minimal to meet the reporting requirements of the ETS, particularly if the default emissions factor is used.

Participants from the waste disposal sector will not be allocated free NZUs because they are expected to pass on the cost of their ETS obligations to their customers.

The ETS is expected to cost landfill operators about \$27.50 per tonne of waste, based on a price of \$25 per NZU and using the default emissions factor.²⁷

²⁶ Climate Change (Unique Emissions Factors) Regulations 2009.

²⁷ Ministry for the Environment (2011), *Emissions Trading Scheme Review 2011: Issues statement and call for written submissions, March 2011*, Emissions Trading Scheme Review Panel, Wellington, page 22.

5.6 Synthetic gases

The synthetic gases sector is due to enter into the ETS on 1 January 2013. Under the Act, the importers of certain synthetic gases (and most goods containing them) are mandatory participants in the ETS. The synthetic gases included in the ETS are:

- hydrofluorocarbons – used in refrigeration, air conditioning, aerosols, fire protection, and foam blowing;
- perfluorocarbons – used in refrigeration and air conditioning; and
- sulphur hexafluoride – used as an insulator in high-voltage electrical generation, transmission, and distribution equipment.

Synthetic greenhouse gases are often released slowly into the atmosphere because of consumption or leakage, or on disposal at the end of the life of the product that they are in (such as when cars are dumped).

They have very high global warming potential compared with CO₂. A kilogram of sulphur hexafluoride, for example, has the effect of almost 24 tonnes of CO₂. Consequently, in the bulk gas market, it is expected that the ETS will noticeably increase the price of synthetic greenhouse gases.

Few public entities are expected to be ETS participants in the synthetic gases sector. However, given their use in electrical equipment, some public entities in the electricity sector may be affected, as will any that import fire protection or air conditioning equipment, including equipment in motor vehicles. Given the 2013 entry date, no participants in this sector were registered in the NZEUR by 30 June 2011.

Importers of these synthetic gases will have obligations to report their activities under the ETS. Voluntary reporting began on 1 January 2011, with mandatory reporting from 1 January 2012. From 1 January 2013, participants must surrender NZUs to match their emissions.

Businesses that export (or destroy) synthetic gases (in bulk or in products) can voluntarily register as participants in the ETS. From 1 January 2013, they will be eligible to receive NZUs for reducing CO₂-equivalent emissions within New Zealand from the synthetic gases that they export.

The detailed rules for determining synthetic gas emissions and removals are set out in the Act and regulations,²⁸ as are the compliance obligations of participants once they have applied to join the ETS. These obligations include registering as a participant, opening a registry account, completing annual emissions returns,

²⁸ Climate Change (Stationary Energy and Industrial Processes) Regulations 2009 and Climate Change (Other Removal Activities) Regulations 2009.

retaining supporting records and, when required, surrendering NZUs. The deadline for synthetic gas participants to register is 31 January 2012.

The regulations²⁹ exempt:

- goods for personal and non-business use;
- goods that have medical use necessary for human health (for example, inhalers);
- aircraft and ships passing through New Zealand that contain these gases in their refrigeration systems;
- a person's first 100 tonnes of emissions from importing each of motor vehicles, ships, or aircraft; and
- goods that contain synthetic gases because the product consumed the gas when it was made (for example, insulation foam).

There will be no allocation of free NZUs to participants in the synthetic gases sector because they are expected to pass on the cost of their ETS obligations to their customers.

The terms of reference for the first statutory review of the ETS require the review team to give particular attention to certain issues, including: "the inclusion of synthetic greenhouse gases within the ETS, taking into account alternative approaches to reducing such emissions." The Review Panel's issues statement³⁰ discusses a range of other policy measures that could potentially be used to reduce synthetic gas emissions either instead of or in conjunction with the ETS.

5.7 Agriculture

The agriculture sector is to be the last to enter the ETS (on 1 January 2015).

However, as consumers of products of other sectors, farmers will see increases in input costs at earlier dates.

Agriculture emissions are non-CO₂ emissions from agricultural production. About two-thirds of these emissions are methane from ruminant livestock such as cows. The remaining one-third is nitrous oxide from animal excrement and nitrogen fertiliser applied to pasture.

Agriculture sector participants will be:

- those who process meat from ruminant animals, pigs, or poultry;
- exporters of live cattle, sheep, or pigs;
- milk processors;

²⁹ Climate Change (General Exemptions) Order 2009.

³⁰ Ministry for the Environment (2011), *Emissions Trading Scheme Review 2011: Issues statement and call for written submissions, March 2011*, Emissions Trading Scheme Review Panel, Wellington.

- egg producers; and
- nitrogen fertiliser manufacturers and importers.

There are some exemptions and thresholds below which registration is not required. In general, individual farmers (except larger-scale egg producers) will not need to register and directly participate in the ETS.

A small number of public entities operate farms, but because the participants are processors, few if any public entities are expected to be participants in the agriculture sector. Given the late entry of agriculture into the ETS, there were no agriculture sector participants registered in the NZEUA at 30 June 2011.

Under the ETS, participants from the agriculture sector will be required to surrender NZUs for emissions from the listed activities. Emissions are calculated by applying default emissions factors to the quantity of product.

Agriculture sector participants will have obligations to report their activities under the ETS. Voluntary reporting began on 1 January 2011, with mandatory reporting from 1 January 2012. Participants do not need to surrender NZUs to match their emissions until the period starting 1 January 2015.

The detailed rules for determining agricultural emissions are set out in the Act and regulations,³¹ as are the compliance obligations of participants once they have applied to join the ETS. These obligations include registering as a participant, opening a registry account, completing annual emissions returns, retaining supporting records and, when required, surrendering NZUs. The deadline for agriculture sector participants to register is 31 January 2012.

There will be an allocation of free NZUs to the agriculture sector from 2015, as partial compensation for the increased costs the sector will face under the ETS. This is discussed further in Part 6.

31. Climate Change (Agriculture Sector) Regulations 2010.

Part 6

Transition assistance and allocations of free NZUs

6.1 Transition phase

For a transition period from 1 July 2010 to 31 December 2012, participants in the stationary energy, industrial processes, and liquid fossil fuels sectors will be required to surrender only one NZU for every two tonnes of emissions. That is, in the transition period, these participants are paying for only half of their emissions.

In addition, participants in these sectors, as well as the forestry sector, have the option of buying NZUs from the Government at a fixed price of \$25 per NZU to meet their obligations during this period. For sectors other than forestry, this is in effect a price cap of \$12.50 per tonne of CO₂-equivalent emissions during the transition phase when only one NZU is required for every two tonnes of emissions.

The export of NZUs will not be allowed during this transition phase. Therefore, conversion of NZUs to Assigned Amount Units (AAUs) and sale on the international carbon market is prohibited. This ban is intended to limit arbitrage opportunities that may arise because of the \$25 fixed price. However, the ban on exports will not apply to forestry-related units.

After the transition period, participants will need to surrender one NZU for each tonne of emissions and the fixed-price option will stop.

6.2 Forestry allocation

The requirement to surrender NZUs when pre-1990 forest land is deforested means reduced flexibility for using the land (for example, by affecting the economics of dairy conversion). This is expected to cause some pre-1990 forest land to lose value.

In partial compensation for this loss in value, the Government is providing a one-off allocation of free NZUs to forest landowners of pre-1990 forests (except those who have applied for an ETS exemption, as explained below).

Generally, owners of pre-1990 forest land that was bought before 1 November 2002 will receive 60 NZUs per hectare and those who bought their land after this date will receive 39 NZUs per hectare (as these landowners could have taken into account the Government's announced intention to introduce deforestation restrictions when determining the price to be paid for the land). There will be an allocation of 18 NZUs per hectare for pre-1990 forest land that was Crown

forest licence land³² on 1 January 2008 and that was or will be transferred to an iwi under a Treaty of Waitangi settlement after that date. The NZUs will be transferred in two parts – the first when the application process is complete and the second in 2013.³³

These allocations are not automatic so need to be applied for. Applications for these allocations close on 30 November 2011. The Government's original forecast was that it would issue 55 million NZUs with a value of \$1.375 billion³⁴ to compensate for pre-1990 forest land.

By 30 June 2011, over 1000 forest landowners had applied for an allocation and 6.9 million NZUs had been allocated (for the first part of the allocation only).³⁵

There are exemptions from the ETS (available by application) for landowners who own less than 50 hectares in total of pre-1990 forest land, and for tree weeds (to ensure clearing of listed tree weed species is supported under the ETS). Applications close on 30 September 2011 for those applying for the less-than-50 hectares exemption. Applications for the second round of tree-weed exemptions closed on 31 March 2011.

Landowners of pre-1990 forests who are eligible for these exemptions have to make a choice between applying for the free NZUs or applying for an exemption from the ETS. If they choose to apply for the free NZUs, they will then have ETS obligations if they deforest. If they apply for one of the exemptions, they will then not be eligible for the free NZUs, but can deforest without ETS liabilities.

Cabinet has decided that no applications will be made for NZUs under the forestry allocation for pre-1990 forests on Crown land. This does not include forests owned by SOEs, Crown entities, or other public bodies.

6.3 Commercial fishing allocation

The commercial fishing sector is not a sector within the ETS and commercial fishers are not participants in the ETS. However, commercial fishers are expected to suffer a significant increase in their input costs through the effect of the ETS on fuel costs. To compensate for these cost increases on the value of fishing quota, the Government provided a one-off allocation of 700,000 NZUs. Owners of fishing quota on 24 September 2009 were eligible for this allocation. Commercial fishers

32 Crown forest licence land is eligible land subject to a Crown forestry licence under section 14 of the Crown Forest Assets Act 1989.

33 Ministry of Agriculture and Forestry (December 2010), *A Guide to the Pre-1990 Forestry Allocation and Exemptions*, page 6.

34 Value has been calculated based on a carbon price of NZ\$25/tonne. See: Regulatory impact statement for Climate Change Response (Emissions Trading Forestry Sector) Amendment Bill, June 2009.

35 Ministry for the Environment (2011), *Report on The New Zealand Emissions Trading Scheme: 30 June 2011*, pages 11 and 19.

received a share of this allocation based on the weight of their fishing quota as a proportion of the total weight equivalent of all quota for all fish stocks.

Applications for NZUs under the fishing allocation closed on 30 July 2010 and the NZUs were allocated in September 2010. Very few public entities were eligible for an allocation.

6.4 Allocation of NZUs to emissions-intensive and trade-exposed industry

From 1 July 2010, the surrender obligations under the ETS apply to the stationary energy and industrial processes sectors. Therefore, participants in these sectors have obligations and are subject to a price on emissions. This may be passed on to other businesses through the pricing of their products.

The industrial allocation is intended to support a smooth transition to an economy with a price on carbon and to help prevent losing the competitiveness of emissions-intensive, trade-exposed businesses. The Government is allocating free NZUs to partially offset cost increases resulting from the ETS.

To qualify for the industrial allocation, activities must be moderately or highly emissions-intensive (based on thresholds of tonnes of emissions per million dollars of revenue) and satisfy the following trade exposure test:

- there is international trade of the output of the activity across oceans; and
- it is economically viable to import or export the output of the activity.

Businesses that carry out an eligible industrial activity are eligible to receive an allocation of free NZUs. Allocation is on an “intensity” basis. This means that participants will receive an allocation that is linked to, and varies with, their output. Allocation for a specific activity is based on the industry-average emissions per unit of output.

The rate at which a business carrying out an eligible industrial activity will receive units depends on two factors: the activity’s emissions-intensity classification and the “allocative baseline”. The Act prescribes initial levels of assistance of 90% for highly emissions-intensive activities and 60% for moderately emissions-intensive activities.

The regulations³⁶ prescribe the eligible industrial activities, their emissions-intensity classifications, and allocative baselines (for example, emissions per tonne of product) calculated from data submitted by businesses for this purpose.

A business’s actual annual allocation is developed by using the allocative baseline for the activity and multiplying it by the amount produced from the specified activity and by a declining rate of assistance.

³⁶ Climate Change (Eligible Industrial Activities) Regulations 2010.

The number of NZUs allocated during the transition phase (from 1 July 2010 to December 2012) will be reduced by 50% because of the reduced obligations on participants during that period. The first allocations are for the six months commencing 1 July 2010. The allocation is uncapped, meaning that there is no set limit on the number of units that may be allocated. The level of freely allocated NZUs will phase out at a rate of 1.3% a year beginning in 2013.

The industrial allocation must be considered in an allocation review³⁷ to be completed at least once every five years. Regulations that remove activities from the list of eligible industrial activities require a five-year notice period.

Certain eligible activities were proposed by the Government (after considering the work done for the proposed Australian scheme) and included in the consultation documents for industry. A range of other New Zealand-specific activities were proposed by submitters in response to the consultation. To determine eligibility, intensity classifications, and allocative baselines, significant data has been collected from relevant businesses and analysed. Figure 3 lists the eligible industrial activities for which regulations have been finalised.

Figure 3
Eligible industrial activities for which regulations have been finalised.

Production of:		
Aluminium	Methanol	Iron and steel
Burnt lime	Newsprint	Gelatine
Carbamide (urea)	Packaging paper	Protein meal
Cartonboard	Tissue paper	Fresh capsicums
Caustic soda	Carbon steel	Fresh cucumbers
Ethanol	Glass containers	Cut roses
Hydrogen peroxide	Cementitious products	Fresh tomatoes
Market pulp	Clay bricks and field tiles	Reconstituted wood panels
Lactose	Whey powder	

Businesses may apply for a provisional allocation between January and April of each year, based on the previous year's output. If a provisional allocation is made, an adjustment is made the following year to determine the final allocation based on the actual output from that year.

Based on the above eligible activities, few public entities are expected to be eligible for the industrial allocation, although the published provisional industrial allocation decisions include an allocation to the New Zealand Railways Corporation for producing carbon steel.

³⁷ See section 160(3) of the Climate Change Response Act 2002.

6.5 Agriculture allocation

From 2015, agriculture sector participants will be eligible to receive an allocation of free NZUs to help offset the cost of participating in the ETS. Allocation will be on an “intensity” basis, meaning participants will receive an allocation that is linked to, and will vary with, their output. A participant’s allocation will be determined by multiplying the number of units they produce by the baseline emissions per unit of output and applying a declining assistance level.

The assistance level will start at 90% of an emissions baseline and will phase out at 1.3% per annum from 2016. The baseline is yet to be determined but will likely be the industry average of emissions per unit of output in a chosen year or years. The baseline and allocation process will be considered further in 2012 and will be subject to consultation as part of the process for setting regulations.

The allocation will be uncapped, meaning that there will be no set limit on the number of units that may be allocated.

Part 7

ETS administration

7.1 Administering agencies

Responsibility for implementing and operating the ETS is split between three government departments: the Ministry for the Environment (MfE), the Ministry of Agriculture and Forestry (MAF), and the Ministry of Economic Development (MED).

These three departments, together with the Treasury, have signed a memorandum of understanding setting out their roles and responsibilities under the Act, and how they will co-operate to achieve these responsibilities.

Because of the devolved responsibilities, the governance and management arrangements in place between the agencies are crucial to ensure effective administration of the ETS. Major aspects of these arrangements are:

- the Memorandum of Understanding;
- the ETS Operational Executive Group, with senior representatives from MfE, MAF, and MED;
- the ETS Co-ordinators Group of key ETS operational managers from MfE, MAF, and MED; and
- a detailed ETS Operations Manual setting out agreed responsibilities and setting expectations about how relationships between the agencies will operate.

The following paragraphs outline the main responsibilities of the three departments and the Environmental Protection Authority (EPA).

Ministry for the Environment

- Administers the Climate Change Response Act 2002 (the Act).
- Responsible for climate change policy development, including developing the regulations and emission unit allocation plans under the Act, except for those relating to the forestry and agriculture sectors.
- Processes allocations of NZUs to emissions-intensive and trade-exposed entities, fisheries, and (at a later date) agriculture.
- Administers Vote Climate Change, which for 2011/12 includes departmental appropriations for “domestic climate change programme” (\$7.5 million) and “administration of the emissions trading scheme” (\$0.5 million), as well as non-departmental appropriations for the issue of AAUs to participants in the Permanent Forest Sink Initiative (\$10.0 million) and allocating NZUs to all ETS sectors (\$909.0 million).

- Responsible for financial forecasting and reporting of ETS transactions in Vote Climate Change, including management of expenditure appropriations. These ETS transactions include expenditure from issuing NZUs (all sectors) and revenue from surrender of NZUs to the Crown (all sectors). Vote Climate Change transactions and balances are reported in MfE's annual report.

Ministry of Agriculture and Forestry

- Responsible for developing regulations and emission unit allocation plans for the forestry and agriculture sectors.
- Responsible for processing participant applications and emissions returns for the forestry sector, as well as applications for NZUs under the forestry allocation plan.
- Administers the Permanent Forest Sink Initiative and the Afforestation Grant Scheme.
- Compliance and enforcement agency for the forestry sector.
- Administers Vote Agriculture and Forestry, which for 2011/12 includes departmental appropriations for "implementation of the emissions trading scheme and indigenous forestry" (\$12.5 million) and "climate change policy advice" (\$10.7 million). This Vote also includes non-departmental appropriations for "climate change research" (\$9.2 million), and "afforestation grant scheme" (\$7.0 million).

Ministry of Economic Development

- Maintains the New Zealand Emission Unit Register (NZEUR).
- Responsible for processing participant applications and emissions returns for all sectors other than forestry.
- Compliance and enforcement agency for sectors other than forestry.
- Administers Vote Energy, which for 2011/12 includes departmental appropriations for "emissions trading implementation" (\$4.8 million) and "provision of climate change unit register and information" (\$1.6 million).

Environmental Protection Authority

The Environmental Protection Authority (EPA) was established in May 2011 by the Environmental Protection Authority Act 2011. The EPA is a Crown entity with board members appointed by the Minister for the Environment. From 1 July 2011, the EPA took over environmental regulation functions from MfE, MED, the Ministry of Foreign Affairs and Trade, and the Environmental Risk Management Authority.

From 1 January 2012, among its other responsibilities, the EPA will manage the ETS, except for the forestry sector. The EPA will:

- administer the NZEUR;
- administer applications for allocations;
- issue NZUs in keeping with Ministerial directions;
- transfer NZUs in keeping with chief executive or Ministerial directions;
- process emissions returns;
- carry out compliance and enforcement activities; and
- make emissions rulings.

Therefore, the EPA will carry out functions that are currently carried out by MED and MfE, while continuing to work with MAF in the forestry sector.

7.2 New Zealand Emission Unit Register

Until January 2012, MED administers the NZEUR.

As a party to the United Nations Framework Convention on Climate Change (UNFCCC), New Zealand is required to have a national registry to track its holdings of, and transactions of, Kyoto Protocol units and to exchange information with overseas registries and the international transaction log maintained by the Secretariat to the UNFCCC. The NZEUR is our national registry.

Under the Act, a further purpose of the NZEUR is to track holdings of, and transactions of, NZUs, including the conversion of NZUs to AAUs.

The Act provides for the Registrar to allocate unique account numbers to each account holder, unique serial numbers to each AAU and NZU, unique transaction numbers for transfers, and electronic notification of transactions to the transacting parties.

The NZEUR is like an online banking system because it contains multiple accounts and allows the transfer of units between those accounts. It also links to other registry systems of other parties to the UNFCCC and allows transfer between New Zealand accounts and accounts in those other registries. Each registered participant has their own account within the NZEUR and is able to log in to manage their units.

Registering with the NZEUR as a participant has several stages. A prospective participant is first required to become a registered user, which allocates a user name and password. A holding account (for emissions units) can then be applied for. This allows the participant to trade units.

MED verifies the identity of the person or entity applying to open a holding account. The applicant is then assigned a unique account number that is to be used for all further transactions.

To become a participant under one of the sectors, the administering agencies carry out checks to validate the participant's application. These checks differ for the different sectors, and in some cases are not yet in place because the sectors are not yet active.

Part 8

Implications for public entities

8.1 General implications

Most, if not all, public entities will be affected by increased input costs because of the ETS.

Implementing the ETS in the stationary energy and liquid fossil fuels sectors from 1 July 2010 was expected to cause electricity price increases of 5% and petrol and diesel price increases of 3.5 cents per litre during the transition phase (from 1 July 2010 to the end of 2012).³⁸ After that, the increases are expected to double as the full obligation starts (compared with one NZU for every two tonnes of emissions in the transition phase).

In practice, the actual effect of the ETS has not been clear. Fuel prices are influenced by many factors, particularly exchange rates and international oil prices, and electricity prices are determined by the complexities of the electricity market.

In its 2010 annual report, Mighty River Power stated:³⁹

Like all energy producers, Mighty River Power is now affected by the Emissions Trading Scheme (ETS). The ETS has a whole-of-market effect, as there is no means of distinguishing “green” electricity from electricity generated from fossil fuels. Forward-looking wholesale prices have therefore increased under the scheme, resulting in greater costs for electricity retailers. Mercury Energy has chosen to be transparent about passing this cost on to the consumer and implemented an average 3.3 percent price increase for all customers from 1 July 2010, when the ETS came into effect.

Other input cost increases may occur from the effect of the ETS in other sectors (for example, the industrial process sector will add a carbon price to steel production), or the flow-on effects of the ETS on other industries (for example, energy-intensive products such as clay bricks). Although at first mitigated through the industrial allocation, the cost increases will grow as the transition help is phased out.

Few public entities will be eligible for the allocation to industry that is intended to compensate for ETS-driven cost increases. Therefore, public entities will need to manage these input cost increases in a period of public sector financial constraint.

³⁸ Ministry for the Environment (September 2009, updated November 2009), *Emissions trading bulletin No 11: Summary of the proposed changes to the NZ ETS*, available at www.mfe.govt.nz/publications/climate/emissions-trading-bulletin-11/index.html.

³⁹ Mighty River Power Limited (2010), *Annual Report*, page 7.

Mandatory or voluntary participants in the ETS will incur further costs in terms of the direct cost of emissions and the compliance costs to meet their ETS obligations.

Cost increases, responses to them, and specific ETS transactions for participants, will need to be factored into public entity planning documents, particularly those that extend over the full implementation period, such as local authority long-term plans.

Additionally, public entities will need to consider the cost implications of the ETS for their communities and whether this will affect the demand for, or affordability of, their services. The ETS has been estimated to have increased national average household expenditure on fuel and electricity by \$133 per year,⁴⁰ with further increases to come after the end of the transitional phase.

8.2 Implications for foresters (or potential foresters)

The ETS is already operating in the forestry sector. The many public entities that have forestry activities should already be considering and responding to the ETS, as should public entities that have land with trees planted for other reasons, such as recreational purposes (for example, reserves, botanic gardens, parks, town belts) or environmental reasons (for example, soil stabilisation).

The large Crown-owned forests (managed by MAF and the Department of Conservation) will not participate in the ETS as post-1989 forests and will not apply for pre-1990 forestry allocations. Therefore, the local authority sector may be the main public entity grouping affected by the forestry ETS.

The first step for public entities considering the implications of the forestry ETS, is to understand what forests they own, when they were established, and their size and type. This will enable entities to determine whether their forests are pre-1990 or post-1989 and whether they qualify for the ETS (for example, whether they meet area, width, and tree crown requirements), or are eligible for exemption (because of tree weeds, or the total size of their forests being less than 50 hectares – see section 6.2).

Once the forest holdings are understood, there are important decisions for public entities to make, including:

- for post-1989 forests, whether to opt into the ETS to receive NZUs for sequestered carbon as well as obligations to return NZUs for emissions on harvest; and
- for pre-1990 forests, whether to apply for free NZUs under the forestry allocation, or, where eligible, to apply for an exemption from the ETS.

⁴⁰ Ministry for the Environment (2011), *Emissions Trading Scheme Review 2011: Issues statement and call for written submissions, March 2011*, Emissions Trading Scheme Review Panel, Wellington, page 17.

Some of these decisions have deadlines that are fast approaching and need to be considered urgently, if opportunities are not to be missed.

If a public entity has more than 50 hectares of pre-1990 forest land, then it is already captured within the ETS. The forestry allocation provides some compensation for this, but will only be received if applied for before the close-off date.

If a public entity has less than 50 hectares of pre-1990 forest land, then there is a choice to be made between applying for an exemption from the ETS or applying for free NZUs under the forestry allocation. If the intention is that the land will continue as forest land indefinitely (allowing for possible harvest and replanting), then the forestry allocation is likely to provide more value than the exemption. If a change in land use is possible in the future, then applying for an exemption may be more beneficial. Not applying for either the free allocation or the exemption would appear to be an opportunity lost.

Public entities with forests should consider the implications of the ETS before entering into transactions such as sale or purchase of a forest or being a party to a forestry right or lease. Guidance on issues that can arise is provided in MAF's May 2011 publication *Forest Land Transactions in the Emissions Trading Scheme*.

Those public entities that have land (for example, town belts or reserves) that may be suitable for new forests (indigenous or exotic) may want to consider whether the NZUs earned by the potential forest – under the ETS or the Permanent Forest Sink Initiative – make new forests a more economic proposition.

All public entities with pre-1990 forests (not subject to exemption) will be captured by the deforestation rules and will need to consider the implications, particularly in terms of emissions liabilities, of any activities or public works (such as roading and power infrastructure) that may require removal of trees. This could be in terms of direct ETS liability for the public entity or possible compensation to a third party.

8.3 Implications for waste disposal facility operators

Many councils operate waste disposal facilities and will be required to report and pay for emissions under the ETS. Mandatory reporting obligations start in 2012 and emission obligations will start on 1 January 2013.

The main implication for waste disposal operators will be the cost of emissions. The ETS is expected to cost landfill operators about \$27.50 per tonne of waste, based on a carbon price of \$25 per tonne and the use of the default emissions factor.⁴¹

41 Ministry for the Environment (2011), *Emissions Trading Scheme Review 2011: Issues statement and call for written submissions, March 2011*, Emissions Trading Scheme Review Panel, Wellington.

These costs are likely to be passed on to customers through increased charges for refuse collection and using landfills, and will be additional to the cost of the existing waste levy (\$10 per tonne as at July 2011).

Councils will need to accurately forecast the ETS cost implications to determine the required increase in user charges. They will need to consider the appropriate mechanism to increase the charges. These financial implications should be included in their 2012 long-term plans.

Councils will also need to decide whether they will determine their emissions and obligations using the default emissions factors, or whether it will be to their advantage to apply for unique emissions factors in relation to:

- site-specific analysis of waste composition (for which a unique emissions factor will be advantageous for those landfills that have a lower proportion of organic material in either their total waste or certain classes or sources of waste); and
- landfill gas collection (for which a unique emissions factor will be advantageous to those operators that collect their landfill gas).

When considering whether to apply for a unique emissions factor based on site-specific analysis, councils will need to consider the costs of the required analysis, which may be significant. The Regulatory Impact Statement for the Climate Change Response (Disposal Facilities) Regulations 2010 suggests an amount of \$50,000 per test for the costs of sampling and weighing. It also states that at least two tests will be required for a unique emissions factor application.

Compliance costs in relation to reporting emissions are unlikely to be a major factor, as councils already have reporting obligations in relation to their landfill under the Waste Minimisation Act 2008.

The ETS provides a further incentive for councils to consider landfill gas capture or diversion of organic waste in order to reduce methane emissions and the resulting ETS liabilities.

8.4 Implications for participants in other sectors

Only a few public entities will be directly affected by implementing the ETS in the other sectors.

In the stationary energy sector, Solid Energy has registered as a coal miner (mandatory participant), Genesis Power has registered as a natural gas miner (mandatory), a coal importer (mandatory) and a coal purchaser (voluntary), and Mighty River Power has registered as a user of geothermal fluid (mandatory) and a natural gas purchaser (voluntary). Meridian Energy does not own coal- or gas-powered power stations and so is not a direct participant in the ETS. In the

liquid fossil fuels sector, Air New Zealand has registered as a jet fuel purchaser (voluntary participant).

Although the effect of the ETS on the above entities will be complex and significant, they are well placed to respond to the challenges because they are large SOEs. Mostly, it is expected that ETS costs will be passed on to their domestic customers (noting that coal exports and fuel for international air travel are exempt from the ETS). However, the effect of the ETS is significant and is likely to have significant implications for business cases (for example, thermal versus renewable electricity generation) and business strategies. For example, Solid Energy states in its 2010 annual report:⁴²

From 1 July 2010, under the Emissions Trading Scheme (ETS), Solid Energy is liable for greenhouse gas emissions associated with coal sold in New Zealand and for fugitive emissions of methane from all coal mined in New Zealand regardless of where it is sold. Our emissions liability must be calculated for each tonne of coal sold depending on the type of coal, its source (opencast or underground mine), whether it is blended with other types of coal, and who it will be sold to. Until 31 December 2012 the cost of an emissions unit (tonne of CO₂) in New Zealand is capped by the Government at \$25, and only one credit must be surrendered for two tonnes of emissions, so that the effective emissions cost is \$12.50 per tonne of CO₂. The average cost of coal to those of our New Zealand customers who continue to use coal will increase by 17 to 40%. We cannot pass these ETS costs to international customers. The fugitive emissions of methane charge will have a significant financial impact on Spring Creek Underground Mine and this remains under review.

In the synthetic gases sector, it is possible that some public sector entities could be required to register as participants through importing the gases within other goods. Entities in the electricity sector are most likely to fit this situation because gases are used as insulators in high-voltage electrical equipment. However, it is possible that other public entities could be subject to the ETS, when importing other goods such as motor vehicles, ships, or aircraft that may contain the gases. Given the exemptions for the first 100 tonnes of emissions from importing each of these, it is likely that very few public entities could become subject to the ETS in this way. However, public entities that do import such goods need to ensure that they consider the implications of the ETS.

In the agriculture sector, few public entities are expected to be participants because the point of obligation lies at the processor level. However, those public entities in the wider agriculture sector will be subject to further increased costs because of the ETS from the date that agriculture comes into the scheme

42 Solid Energy New Zealand Limited (2010), *Annual Report 2010*, pages 9-10.

(currently 1 January 2015). It is not yet clear whether the sector will be able to pass on these increased costs to their customers.

8.5 Taxation implications

Public entities will also need to consider the taxation implications of their ETS involvement. Public entities that are exempt from income tax will still need to consider the goods and services tax (GST) consequences and obligations arising from their ETS involvement.

Transactions in NZUs will generally be zero-rated for GST purposes (that is, GST applies at 0%). Therefore, GST input tax incurred in supplying associated goods and services is fully claimable. However, GST will apply at 15% to the total value of barter transactions, for example when an energy supplier charges its customers a dollar price plus a number of NZUs.

In relation to income tax, for ETS sectors other than forestry, the broad concepts are:

- all transactions are on the revenue account;
- accrual accounting applies;
- purchase of NZUs is deductible (stock on hand at year end to be adjusted for as an asset at cost);
- sale of NZUs (bought or allocated for free) is taxable;
- emissions liabilities are deductible on an accruals basis; and
- income from allocation of free NZUs is recognised as the associated costs are incurred (generally, as emissions liabilities are recognised).

The income tax rules for the forestry sector are different from those applying in the other ETS sectors. The rules vary depending on the type of ETS forest (post-1989 or pre-1990) and whether the forest land is held on capital account or revenue account.

In most cases, pre-1990 forests will be held on capital account and there will be no tax implications for receiving a pre-1990 forestry allocation or selling the allocated NZUs. Similarly, surrendering NZUs to the Crown and any purchase of NZUs to meet deforestation liabilities will not be tax deductible.

For post-1989 forests, income tax generally applies on a cash transaction basis. The allocation of NZUs has no tax consequences, but the sale of allocated NZUs leads to assessable income. Any NZUs bought to meet a surrender obligation for a post-1989 forest will be tax deductible.

Part 9

Accounting and valuation matters

There is no authoritative guidance on how to account for emissions trading schemes by either participants or governments. Previously, the International Financial Reporting Interpretations Committee (IFRIC) issued *Emission Rights* (IFRIC 3), but this was withdrawn by the International Accounting Standards Board (IASB) in July 2005. At that time, the IASB affirmed that IFRIC 3 *Emission Rights* was an appropriate interpretation of the relevant existing International Financial Reporting Standards (IFRSs), but also acknowledged that it led to unsatisfactory measurement and reporting mismatches.

The IASB was working on a project to produce authoritative guidance on accounting for emissions trading schemes. However, the project has been deferred to allow the IASB to focus on other projects. It is unclear when the IASB will complete its work in this area. The International Public Sector Accounting Standards Board (IPSASB) is currently considering whether to include on its work programme a project to develop guidance on accounting for emissions trading schemes. In the meantime, public entities (and the private sector) in New Zealand will have to account for their ETS transactions without specific guidance.

For the public sector, the accounting issues can be split into those that are relevant to the Government as the administrator of the ETS, and those that are relevant to public entities as participants in the ETS. Below, we set out our current views on these accounting issues. These views may be subject to change should authoritative guidance be issued by the IASB, the IPSASB, or the New Zealand standard setter.

9.1 Accounting for the ETS by the Government

In summary, the Treasury has adopted the following approach for accounting for the Government's ETS transactions.

From the Government's perspective, NZUs can be considered a medium of exchange backed by the Government (like currency). Alternatively, they can be considered intangible assets at the time that they are issued by the Government. NZUs have a market value and the issue of NZUs without charge to participants is an expense to the Government and creates a liability, which, at a minimum, represents an obligation to swap the NZUs for Kyoto AAUs if the participant asks for this.⁴³

For NZUs issued as one-off compensation (such as the pre-1990 forestry allocation), the timing of the expense will be at the point that the participant has provided all relevant information to the Government to show that they have met the criteria and rules for the issue of NZUs and are entitled to them under the ETS.

⁴³ During the transitional period to 31 May 2013, only NZUs received for forestry removal activities or under the forestry allocation plan are permitted to be exchanged for AAUs.

For NZUs issued for carbon sequestration (such as post-1989 forestry) or as annual compensation for ETS costs (such as the industrial allocation), the timing of the expense will generally be as the carbon is sequestered (based on forecasts) or as the emissions compensated by the industrial allocation occur.

When ETS participants surrender NZUs to the Government to satisfy ETS obligations, receipt of the NZUs is revenue for the Government and reduces the ETS liability.

The timing of the revenue recognition will be based on when the activity giving rise to the emissions and ETS liability occurs. If it is not possible to reliably forecast some emissions, then revenue recognition will be delayed until an emissions return is received and the Government has assessed the obligation to surrender NZUs. Under the ETS, the actual surrender of NZUs to the Government may occur later.

For both the issue and surrender of NZUs, the revenue and expense transactions are measured at the fair value of the NZUs at the time of the transaction. In practice, it will not be practical to determine a fair value every day, and a monthly (or similar) price is likely to be used as a reasonable proxy to the daily fair value.

On each balance date, the Government's ETS liability is revalued based on the current carbon price.

The Auditor-General has considered and agreed that the above approach is appropriate and meets the requirements of the New Zealand equivalents to International Financial Reporting Standards (NZ IFRS). The approach was used in the 2010 Financial Statements of the Government although, at that time, the Government had issued NZUs only to post-1989 foresters and no ETS revenue had yet been recognised. For the 2011 Financial Statements of the Government, other sectors will be active in the ETS, and participants will also have started surrendering NZUs to the Government to meet their obligations under the ETS.

9.2 Accounting for the ETS by public sector participants

Accounting for the ETS by public sector participants is expected to be broadly the same as the accounting that will be applied by private sector participants. Those entities that are classified as profit-oriented entities⁴⁴ under NZ IFRS are required to comply with NZ IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*, whereas entities classified as public benefit entities must not. However, we do not expect this to cause significant divergence in accounting practice for ETS transactions between these two types of entities.

44 NZ IFRS defines "public benefit entities" as "reporting entities whose primary objective is to provide goods or services for community or social benefit and where any equity has been provided with a view to supporting that primary objective rather than for a financial return to equity holders". Profit-oriented entities are all entities other than public benefit entities.

At this stage, we have seen little in the way of real-life examples of ETS accounting by participants, as only the forestry sector was participating in the scheme before 1 July 2010.

There are a number of alternative accounting approaches that entities in other jurisdictions have adopted for accounting for emissions trading schemes. These provide some insight into the likely accounting approaches that entities will adopt in New Zealand. However, the New Zealand ETS has some significant differences from some of the major overseas emissions trading schemes. In particular, many participants in the New Zealand ETS do not get an allocation of free NZUs and many entities that do get an allocation of free NZUs are not participants in the ETS. In addition, there is little overseas precedent on how to account for forestry in an emissions trading scheme.

NZUs are intangible assets and the accounting issues are based on when to recognise receipt of the intangible asset, at what value to measure the asset initially and subsequently, when to recognise a liability to surrender NZUs to the Crown, and at what value to measure this liability.

One overseas accounting approach for an entity that makes emissions and receives an allocation of free carbon units is to recognise the free units received as intangible assets and revenue measured at fair value, with the revenue recognition spread over the compliance period. Actual emissions give rise to expenses and a surrender obligation liability (measured at the current carbon price) as the emissions arise. This accounting is consistent with the withdrawn IFRIC 3.

The perceived problem of IFRIC 3 was in relation to subsequent measurement of the intangible asset and surrender obligation liability. The liability was required to be re-measured based on current carbon prices at each balance date, with the change in value going to the income statement. The revaluation of intangible assets (the carbon units) to fair value is an accounting option, the alternative being to keep the carbon units at their initial recognition amount (subject to review for impairment). If the revaluation option was chosen, the revaluation movement would go to a revaluation reserve (in other comprehensive income) rather than to the income statement. Therefore, as carbon unit prices change, there is potentially a mismatch of accounting treatments, with changes in the asset value going to a reserve and changes in the liability value going to the income statement.

The most common alternative accounting option to the IFRIC 3 approach is to account for carbon units at their cost (which, for free credits from the Government, is nil) and to measure the surrender obligation liability and emissions expense at the carrying amount of carbon units on hand (which may be nil if the cost was nil), plus the fair value of any additional units required to cover excess emissions. This approach avoids the income statement mismatch noted above.

Because there are possible alternative accounting approaches for ETS transactions, it is important that entities disclose the accounting policies that they have adopted in relation to the ETS.

Entities that are part of the government reporting group will need to comply with the Treasury's accounting requirements for reporting ETS transactions for consolidation into the Government's financial statements.

Below, we consider likely accounting approaches for different scenarios under the New Zealand ETS.

9.2.1 Participants in sectors other than forestry

For a participant that does not receive any free allocation of NZUs, our view is that an expense and surrender obligation liability should be recognised as the "emissions" occur – which is as the participant carries out the activity that leads to the ETS surrender obligation. For example, for a council operating a landfill, this will be as waste is put into the landfill. The expense and liability should be measured at the best estimate of the expenditure required to settle the obligation, which is likely to be the quantity of emissions at the market price of NZUs. The liability will need to be re-measured based on updated NZU pricing at balance date.

For a participant that receives an annual industrial allocation of free NZUs, the international approaches discussed above are more directly relevant and there are accounting options to choose. These include:

- whether to recognise the free NZUs and associated revenue at cost of nil or at the fair value of the NZUs; and
- whether to recognise the surrender obligation and expense at the fair value of the full obligation amount or at the carrying amount of NZUs on hand (which could be nil for free NZUs) plus the fair value of the excess NZUs required to meet the obligation.

Entities also need to decide on an accounting policy for subsequent measurement of any NZUs on hand at balance date. The two options are the cost model and the revaluation model. Under the cost model, the NZUs will continue to be measured at their initial recognition amount (which could be nil for free NZUs). Under the revaluation model, the NZUs will be revalued to fair value at each balance date with the movement going to a revaluation reserve.

Under NZ IFRS, the revaluation model for intangible assets can be applied only if there is an active market for the asset. NZ IFRS have specific requirements to be met before a market is considered active. There are currently different views as to whether the NZU market is an active market. Considering the NZU market and other international markets for carbon units together, we will accept public

entities assessing the market as active and adopting the revaluation model for NZUs.

9.2.2 Post-1989 forestry

For post-1989 forestry, the accounting is slightly different because it must deal with carbon sequestration and then emissions as trees are harvested. The NZUs are received after carbon has been sequestered and we would expect an asset and revenue to be recognised once an emissions return has been filed and an entitlement to NZUs is confirmed by the Crown. Again, there are accounting options to consider. In particular, whether to recognise the free NZUs and associated revenue at cost of nil or at the fair value of the NZUs received.

As trees are harvested (or carbon stocks decrease through events such as fire or storm), a liability and expense should be recognised for the NZUs to be surrendered to the Crown. If the entity has NZUs on hand at the time of harvest, then there is an option to recognise the liability and expense at the fair value of the full surrender obligation amount or at the carrying amount of NZUs on hand (which could be nil for free NZUs) plus the fair value of the excess NZUs required to meet the obligation.

However, the post-1989 forestry accounting is further complicated by the requirement to measure the forest asset at fair value. Currently, there is no authoritative guidance on how forestry valuations should take into account the ETS. We understand that MAF has commissioned the New Zealand Institute of Forestry to develop guidance material in this area, although the timeframe for this is unclear.

In most cases, we would expect a forest's fair value to be determined by forecasting the future cash inflows and outflows from the forest. This valuation should therefore incorporate expectations of future NZU entitlements, as well as the obligation to return NZUs to the Crown on forest harvest. To the extent that actual NZUs are received during an accounting period, that entitlement should be removed from the forest valuation calculation.

There are other accounting approaches that could be adopted for post-1989 forestry. Some have suggested that, on receipt of NZUs for forest growth, the accounting should be to recognise the NZUs as an asset and a corresponding liability for the return of the NZUs to the Crown on forest harvest. Our view is that, if such a liability was recognised, it would need to be discounted for the time period until the forest is expected to be harvested. In establishing such a liability, it is also necessary to consider future harvest and replanting patterns and the extent to which any NZUs received may be considered risk-free (that is, unlikely to be required to be surrendered to the Crown under the forecast harvesting and re-planting plan).

If a separate liability to surrender units on harvest is established, then it is important that this is excluded from the forest valuation calculation to avoid double counting.

Where a post-1989 forester has received NZUs for forest growth and has accounted for the future surrender liability within the forest valuation rather than as a separate liability, our view is that the amount of NZUs received and the requirement to return them on forest harvest should be disclosed as a contingent liability that will crystallise on forest harvest.

For guidance on measurement of NZUs at subsequent balance dates, see section 9.2.1.

9.2.3 Recipients of one-off allocations (pre-1990 forestry and fisheries)

For those public entities that are entitled to a one-off allocation of free NZUs as compensation for loss in value (pre-1990 foresters) or future expense increases (fishing quota owners), we would generally expect an asset and revenue to be recognised when an entitlement to NZUs was confirmed by the Crown.

As discussed above, there is a choice between recognising the asset at cost (nil) or fair value on receipt. For those entities intending to sell their allocation soon after receipt, a pragmatic solution may be to recognise initially at nil and then recognise revenue at the transaction price when the units are sold.

For pre-1990 foresters, the allocation will be received in two parts, with the second part to be transferred in 2013. Our view is that the entitlement to both parts can be recognised once the Crown has made its formal allocation decision, as legislative change will be required to amend the allocation of the second part.

For guidance on measurement of NZUs at subsequent balance dates, see section 9.2.1.

Pre-1990 foresters will need to consider the valuation implications for their forests and forest land. The ETS is not expected to significantly affect the value of the actual forest because no NZUs will be received for forest growth and no NZUs need to be surrendered on harvest (as long as the forest is replanted). However, the ETS is likely to have reduced the value of some land on which pre-1990 forests stand, because the ETS imposes a financial penalty on deforestation and land use change.

It may be appropriate for a pre-1990 forester to disclose in their financial statements that certain land contains pre-1990 forest and that, under the ETS, they will incur financial penalties should the land be deforested.

Part 10

Implications for public entity audits

The ETS is a new and complex scheme with significant implications for many public entities. As statutory auditor of public entities, the Auditor-General must consider:

- the effect of the ETS on operations, costs, and revenues of public entities;
- the systems and processes that public entities have in place to ensure that they comply with the Act and its regulations;
- the systems and internal controls in place to ensure accurate measuring and reporting of emissions;
- the systems and internal controls in place to ensure accurate recording of ETS-related financial transactions;
- the appropriateness of the accounting policy selected for ETS transactions, and the compliance of financial reporting with that policy;
- applying the ETS accounting policy, including, for example, how public entities have determined the fair value of their NZU holdings given the immature state of the NZU market; and
- the effect of the ETS on asset valuations, particularly of forests and forest land, but also of assets such as electricity generation facilities that are valued based on future cash-flow models.

For our audits of the ETS administering agencies, the audit issues include:

- the robustness of their processes and internal controls over:
 - the issuing of free NZUs to ensure that only those parties entitled to receive a free allocation do so; and
 - the processing of emissions returns to ensure that liabilities to surrender NZUs for emissions and entitlements to NZUs for carbon removals are accurately assessed;
- the security of the NZEUR to ensure that only authorised transactions can occur;
- the processes to ensure that all required emissions returns are received (including for activities where reporting is not regular, such as deforestation); and
- the audit, compliance, and enforcement programmes and the extent to which these programmes are risk-based (that is, focus on areas of greatest risk).

The Auditor-General also audits local authorities' long-term plans. Some of the above points are relevant to long-term plan audits but, additionally, our audits of these plans will need to consider:

- a council's forecasts of the effect of the ETS in the waste sector, including forecast emission costs and changes to user charges;
- for councils with forestry holdings, the council's forecasts of the effect of implementing the ETS in the forest sector, including consideration of forest type (pre-1990 or post-1989) and the forecast receipt and surrender of NZUs;
- a council's forecasts of the effect of the ETS on its input costs over the 10-year period of the long-term plan; and
- a council's consideration of how the ETS will affect its community over the 10-year period of the long-term plan (for example, to what extent the ETS is expected to affect the local economy, or whether ETS-driven fuel price increases are expected to change land transport use).