ETS: Bill to a Future Generation

Contents

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Summary: Vital Statistics

- New Zealand's gross emissions are projected to be 22% over its target for the Kyoto period from 2008 to 2012 (known as CP1), and **the total Kyoto deficit is 76 Mt. This represents a taxpayer liability of $1.6 to $10 billion**, depending on the future price for carbon credits. This is not offset by forest credits if those trees are harvested as planned – it is a debt today when account is taken of the deforestation charges that will cancel out those credits.

- **The ETS will reduce gross emissions by a negligible amount during CP1.** The current legislation will see a reduction on business as usual emissions of less than 1.5% over this period. Under proposed changes to the Climate Change Response Act, the ETS would result in a reduction of about 0.7%.

- The overall effect of the amendments for CP1 is to leave each sector paying much the same share as the existing legislation, but to **lower the total charges by 60%** with even more of the Kyoto liability falling to future taxpayers.

- **Households would bear half the total costs under the amended ETS during its first five years** (52%), while accounting for just a fifth of all emissions (19%). Together with small-medium industry, commerce and services, and transport operators, they would pay 90% of the costs resulting from the ETS during CP1 while being responsible for 30% of total emissions.

- **Pastoral farmers would gain a $1.1 billion subsidy** and pay an amount equal to 2% of their fair share of the Kyoto bill during CP1, while large industrial emitters would gain a $488 million subsidy (at a carbon price of $30/t).

- After accounting for all subsidy and compensation payments, the new ETS could not reduce the Kyoto liability by more than 16% during the Kyoto period. **84% or more of the Kyoto liability would be transferred to future taxpayers** unless other taxes are raised to fund this today.

- The Treasury's Kyoto accounts show New Zealand currently in credit. This is because they do not include the future deforestation costs of harvesting the trees currently earning credits. However, **the Treasury recently advised that it will be necessary to recognise a "contingent liability" on the Government's books to account for the forestry credits**. This would show the cost to a future generation of not making today's emitters pay today's emissions bill. The Kyoto accounts need to be updated urgently to include this correction and inform consideration of the Bill before Parliament.

- When considering the full eighty-year transition period from 2010 to 2089, **the proposed changes would deliver subsidies to agriculture and large industries with a nominal value of about $100 billion at $50/t, and $200 billion at $100/t**. Two thirds of this would be paid to pastoral farmers and one third to major industries. If the subsidies are later wound back, it is likely these groups will attempt to secure compensation, unless the law clearly precludes this.

1. Introduction: Hard Numbers

The Bill before Parliament to amend the Emissions Trading Scheme (ETS) will not just weaken an already insubstantial measure for putting a price on carbon. While the original design of the ETS aimed to face polluters with the full cost of the nation's Kyoto Protocol obligations, and the scheme legislated for in 2008 goes half way towards this, the proposed changes all but abandon the concept.

In terms of the amounts of money redistributed, the proposed changes to the ETS rank alongside its introduction last year as one of the biggest economic reforms since GST was brought in over 20 years ago. The changes are no mere tweaking: they promise in excess of $60 billion in new subsidy payments and a major reallocation of responsibility in terms of who pays the Kyoto liability. Yet the degree of disclosure as to who pays how much and on what basis, is far less than for the GST reform.

The explanatory note to the Bill focuses on comparing the additional fiscal costs of subsidies over and above those incurred under the existing legislation, rather than stating the full fiscal costs. Even the few official documents that do look at actual fiscal costs provide only a partial analysis of the total costs to the nation of the subsidy regime as they do not examine the full Kyoto liability. Overall, there is a perilous shortage of hard numbers about the total impact of the proposed changes – data required to properly evaluate them.

Although these numbers can be calculated from information in the public domain, the complexity of the ETS means only a tiny number of specialists will in practice be able to derive them. The lack of authoritative analysis of the costs to the nation in the public domain is significant given that Parliament has already completed hearing submissions, and there is less than a month before the Government plans to pass the Bill.

This document updates and builds on analysis by Geoff Bertram and Simon Terry - first presented in *The Carbon Challenge* and currently being expanded for publication in book form.[1] It draws on this work to address the following questions in particular:

- Who pays the ETS charges – what is the distribution of levies imposed;
- How big are the subsidies; and
- Who pays the ultimate bill - the Kyoto liability?

The focus is on the Kyoto Protocol period up to the end of 2012 as the legislation is likely to be changed again by that time, but the outcome of this round will largely set the terms for the Kyoto period. It does however examine the scale of subsidies proposed after 2012 and the issues this raises.

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[1] Sustainability Council, April 2008, http://www.sustainabilitynz.org/docs/thecarbonchallenge.pdf

2. Follow the Money

2.1 How Bad is the Excess?

Under the Kyoto Protocol, New Zealand must reduce its greenhouse gas emissions to 1990 levels during the first commitment period from 2008 to 2012 (known as CP1), or else purchase credits to offset any excess emissions. If gross emissions in 1990 are compared to projected gross emissions in CP1, there is a 69 megatonne (Mt) excess - a 22% overshoot. Also to be included is a liability of 7 Mt, which raises the total Kyoto deficit to 76 Mt.[2] This is the volume of emissions that credits must be obtained for New Zealand to comply with the Protocol. It represents a liability of around $1.6 to $10 billion, depending on the future price for carbon credits and exchange rates.

The Kyoto rules do allow use of the 85 Mt of credits generated by temporarily sinking carbon in new forests. However, these forests are to be chopped down in the 2020s and when their carbon is released, the Government would need to find replacement credits for any cashed up now. In other words, there would be a debt to repay.

The official Kyoto accounts do not show this. They take gross emissions in 1990 and compare them with net emissions during the Kyoto period. By comparing apples with oranges, they avoid showing lemons. Officially, the Kyoto accounts show New Zealand' emissions being 4% under its Kyoto target.

However, a complete set of Kyoto accounts must show the resulting future liabilities from harvesting the forests as planned, cancelling out the short-term gains. With this adjustment, the overall result goes back (to a first approximation) to the gross emissions position – a 22% excess over 1990 levels.[3]

The table below shows how alternative ways of treating the forestry credits can result in four different measures of New Zealand's performance. The Government has consistently chosen to report the most favourable version in its accounting. In doing so, **the Kyoto accounts have given a misleading impression of New Zealand's emissions position** that far understates the urgent need to reduce emissions.

Table 1: Measures of NZ's Emissions Position Between 1990 and Kyoto Period

Measure	Description	Change 1990 to CP1
Gross Emissions	Total greenhouse gas emissions counted under the Kyoto Protocol	+22%
Net Emissions	Gross emissions less the carbon absorbed by forests.	+36%
Kyoto Accounts (2008 to 2012)	Uses a gross figure for 1990, and a net figure for the Kyoto period.	-4%
Kyoto Accounts Including liabilities	Uses a gross figure for 1990, and a net figure for the Kyoto period, but includes liability for harvesting of forests providing credits in CP1.	+22%

[2] MFE, *Net Position Report 2009 – New Zealand's Projected Balance of Kyoto Protocol units during the first commitment period, April 2009*. The 7 Mt liability is from the PRE scheme.

[3] All trees may not be harvested but are a contingent liability unless under a long run scheme.

2.2 Does the ETS Produce Meaningful Emission Reductions?

Using generous assumptions about the effect of the existing 2008 ETS, the scheme seems likely to reduce emissions by less than 6 Mt during CP1 - about 1.5% of projected gross emissions. This estimate is similar to the 1% reduction estimate provided in August 2008 by then Climate Change minister David Parker.[4] For the proposed 2009 ETS, **the reduction from the same business as usual projection would be about 2.6 Mt or 0.7%** of gross emissions.[5]

Table 2: Order-of-Magnitude Changes in CP1 Gross Emissions due to ETS

Sector	Projected Emissions for CP1 under BAU without ETS[6] (Mt)	Reduction due to 2008 ETS (Mt)	Reduction due to proposed 2009 ETS (Mt)
Agriculture	184.0	0	0
Transport Fuels	72.1	0.2	0.1
Non-transport Liquid Fuels	14.0	0.2	0.1
Electricity	36.2	3.3	1.5
Stationary Energy from non-liquid fuels	37.2	1.1	0.5
Industrial Processes	21.4	0.6	0.3
Waste, Solvent and Other	9.0	0	0
Fugitive emissions	10.7	0.3	0.13
Total	**384.3**	**5.7**	**2.6**

The projected 22% overshoot of the Kyoto target allows for the expected effects of the existing ETS. For the period after 2012, New Zealand has set a highly conditional "responsibility target" of between 10% and 20% below 1990 levels by 2020. It has yet to enter into a commitment for the period but any target in line with the commitments proposed by other developed nations will open up a huge gap to be filled with emission reductions and/or purchases of carbon credits.

4 Hansard, Questions for Written Answer, Question No 7848(2008), 29 August 2008.

5 This measure excludes reductions in deforestation as these are not counted as gross emissions.

6 BAU emissions have been estimated by marking-up MfE's projected emissions, since these already incorporate the Ministry's estimate of ETS-induced abatement. Hence total emissions in this table are 5.8 Mt greater than the 378.7 of projected emissions in the ministry's most recent net position report.

2.3 Who Pays the ETS Charges?

90% of the costs resulting from the ETS during CP1 are paid by those responsible for only 30% of total emissions. The costs, including higher charges for renewable electricity, dominantly fall on the small guys – households and small-medium businesses. This general picture changes only slowly after 2012 due to the very long phase out period for subsidies.

- **Households** (including private road users) would bear half the total costs resulting from the proposed 2009 ETS (52%), while accounting for just a fifth of all emissions (19%).
- **Small-medium industry, commerce and services, and transport operators**, account for 11% of emissions and face 38% of the costs under the 2009 ETS.
- **Combined,** these sectors account for 30% of emissions but would carry 90% of the total costs.

On the other side of the divide:

- **Large industrials** that account for 15% of emissions would pay just 1% of costs under the 2009 ETS.
- **Agriculture**, with 49% of emissions would pay only 3% of the 2009 ETS costs.

Proportionate shares between sectors would remain much the same from the 2008 scheme to the proposed 2009 ETS. However, **the total charges would be reduced to 39% of the previous level** if carbon prices were $30/t. (See appendix 1 for details.)

Table 3: ETS Charges for CP1[7]

		2008 ETS		Proposed 2009 ETS	
	Share of total CP1 emissions %	Costs of ETS at $30/t $ mill	Share of total costs %	Costs of ETS at $25/t $ mill	Share of total costs %
Households	18.7	1,498	48	637	52
Large industry	14.8	114	4	14	1
Other industry	3.7	412	13	167	14
Transport	4.2	220	7	109	9
Commerce and services	2.8	530	17	185	15
Agriculture	48.5	111	4	39	3
Fishing	0.4	25	0.8	0	0
Waste and solvents	2.3	0	0	0	0
Coal, gas & oil producers	2.7	190	6	66	5
Total (excluding deforestation)	**98.1**	**3,101**	**100**	**1,218**	**100.0**
Pre-Kyoto forest owners	1.9	0	0	0	0
Total	**100**	**3,101**	**100**	**1,218**	**100**

[7] Assuming a $30/t carbon price for the 2008 scheme, and $25/t for 2009 due to price cap.

2.4 How Big Are the Subsidies?

The table below shows how much each sector is paying over or under its "fair share", when this is assessed relative to the polluter-pays principle. If the nation as a whole must meet the charges for the 76 Mt Kyoto liability, at the current price for credits of $30/t this would be a cost of about $2.3 billion. If that bill is split according to projected emissions during the Kyoto period, and relevant ETS charges under the proposed changes are compared to that fair share, then:

- **Pastoral farmers would gain a $1.1 billion subsidy** and pay the equivalent of 2% of their fair share of the Kyoto bill.

- **Large Industrial Producers would gain a $488 million subsidy**, much of it delivered as "compensation for higher electricity prices", a form of corporate welfare not available to other electricity users. Looking just at fair emissions charges and the subsidies the ETS provides, major industrial emitters would pay the equivalent of -42% of their fair share of the Kyoto bill – they get paid, as officials confirmed to Parliament.[8]

- **All other sectors except fishing would pay roughly the equivalent of their fair share** of the Kyoto bill – with none paying more than 11% above this.[9] An undeclared design intention of the proposed amendments appears to be putting other sectors on a fair share contribution basis for CP1.

The following table shows each sector's allocated share of the 76 Mt of excess emissions, with negative numbers indicating net profits or subsidies to the sector. It quantifies the implicit financial transfers – what the Kyoto accounts would reveal if not moved off-balance-sheet by the device of printing and distributing NZUs.

Table 4: Payments and Subsidies Relative to Fair Shares

	Sector's share of excess (Mt)	Share of Kyoto bill ($ mill)	Net cost proposed 2009 ETS ($ mill)	Excess payment relative to fair share ($ mill)	Payment relative to fair share (%)
Households (including private transport)	14.4	434	452	18	104
Large industry	11.4	343	-145	-488	-42
Other industry	2.9	86	96	10	111
Transport	3.3	98	102	5	105
Commerce and services	2.0	64	65	1	102
Agriculture	37.5	1,123	17	-1,106	2
Fishing	0.5	14	-4	-17	-25
Waste and solvents	1.8	54	0	-54	-
Coal, gas and oil producers	2.1	62	66	4	106
Totals (excluding deforestation)	**75.9**	**2,277**	**649**	**-1,628**	-

[8] Emissions Trading Group to Finance and Expenditure Committee, ET/ETG/41, 30 May 2008.

[9] Fishing appears set to profit since its fuel use has dropped by a third since the 2005 base year.

2.5 Who Pays the Kyoto Bill?

The great majority of the Kyoto liability will be put on the credit card to be paid by future taxpayers. Today's polluters will pay nothing like today's emissions bill. Furthermore, most of the levies charged under the ETS will end up paying not for the country's Kyoto overshoot, but for wealth transfers to other parties.

As well as requiring polluters to surrender emission units, the ETS facilitates the distribution of significant volumes of units to emitters as rebates, gifts and compensation payments. Of the 102 million emission units required to be surrendered to the Government under the existing legislation, nearly half are to be rebated by way of "allocations" – subsidies delivered in the form of 50 million NZUs. Compensation payments are also being made in NZUs to pre-1990 forest owners as a part of establishing the ETS and this reduces the net volume the Government is set to receive to 35 million units. Under the proposed changes to the ETS, only 28 million emission units would need to be surrendered after taking account of "allocations", and just 12 million net after also allowing for the forestry compensation.

While it is difficult to predict what mixture of emission units will be surrendered to the Government, there is a simple truth at the bottom of the equation. After accounting for all subsidies and compensation liabilities, the amended ETS could not reduce the Kyoto liability of 76 Mt by more than 16% (12/76 Mt) during the Kyoto period.[10]

84% or more of the Kyoto liability would be transferred to future taxpayers unless current taxes are raised to fund this. On current plans, those in the 2020s will pay – making it a massive intergenerational wealth transfer. The full Kyoto liability of 76 Mt has a value of $2.3 billion at $30/t, increasing to $3.8 billion at $50/t, and $7.6 billion if carbon prices rise to $100/t by the Kyoto settlement date of 2015.

Table 5: Units to be Surrendered (Net) and as a Proportion of Kyoto Liability

	2008 ETS	2009 ETS
Gross number of units required to be surrendered (mill)	102	54
NZUs issued as rebates (allocations) (mill)	31	16
NZUs for power price compensation (allocations) (mill)	20	10
NZUs for pre-1990 forests compensation (mill)	16	16
Net number of units required to be surrendered (mill)	35	12
Proportion of Kyoto liability this represents (%)	47	16

[10] The 12 Mt of net emission units to be surrendered could be made up of any combination of Kyoto currencies (principally CERs) and NZUs. Kyoto currencies can be used to meet the Kyoto liability directly, while NZUs sold into the market by Kyoto foresters relieve the Government of a later deforestation liability (and so reduce the net Kyoto liability if this is met in part with RMUs). If Kyoto forest owners provide so few NZUs to the market (due to non-participation, banking of NZUs or their export), and CERs trade above the price cap of $25/t, then the Government may sell additional NZUs at $25/t to enable emitters to obtain units at the capped price. At that point, the proportion of the liability the ETS could meet would be lower than 16% as there would be a gap between the NZU and market prices.

2.6 When Will the Kyoto Accounts be Changed to Reflect Reality?

Since May 2005, the Treasury's website has carried regularly updated estimates of New Zealand's financial position under the Kyoto Protocol. These official Kyoto accounts take gross emissions in 1990 and compare them with projected net emissions during the Kyoto period. The most recent estimate of June 30 2009 shows New Zealand being 9.6 Mt ahead of its Kyoto target and the Treasury values this "position" as a credit to the nation worth $207 million (based on a carbon price of 10 Euros/t or NZ$21.61/t).[11]

As noted above, these official accounts show no contingent liability for the costs the Government will face in the 2020s when purchasing credits to cover the felling of the Kyoto forests that are earning the credits counted in these statements.[12] However, if the Treasury is to maintain consistency, that will need to change at the time it updates the estimate.

When in August 2009 the Government was deciding on an emissions reduction target for 2020, the Treasury produced a series of briefings warning ministers against relying on forestry credits when target setting and stated: "for every tonne of carbon absorbed by forestry there is an associated future liability. In the long term the forestry sector is essentially a zero sum game".[13]

The Government meanwhile was pressing ahead with plans to amend the ETS and to rely absolutely on forest credits to cover excess gross emissions out until 2020. It approved the drafting of amending legislation within a fortnight of receiving the above Treasury advice,[14] cutting ETS requirements on emitters such that it implicitly treated the forest credits as net income to cover the nation's Kyoto liability.

The following graph produced by the Government around that time illustrates the two conflicting views.[15] Ministers are planning on the basis of exploiting the short-term advantage available through thinking in terms of what was labelled a "net emissions" path. Treasury is accounting on the basis of gross emissions - the "total emissions" line on the chart - with an eye to the huge payments that would be necessary in the 2020s if the so called "net emissions" trajectory were followed. That the "net emissions" line is nothing like a representation of net emissions, but simply gross emissions less annually-accruing forest credits, is made clear by the common starting point of the two lines - at the gross 1990 level. True net emissions are projected to be 36% above 1990 levels for CP1, and 87% above 1990 levels by 2020.[16]

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11 http://www.treasury.govt.nz/government/kyotoposition

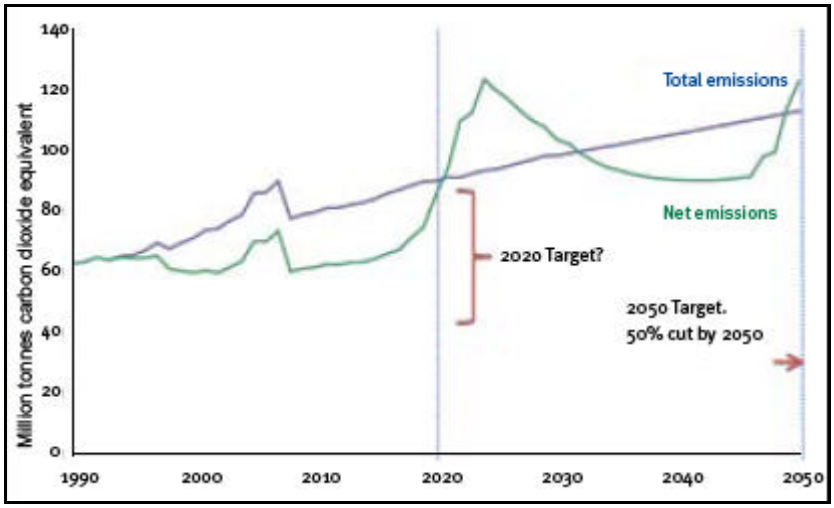
12 The Treasury states on its website that: "The quantum of the emission units position represents ed net balance of greenhouse gas emission units over the First Commitment Period of the Kyoto Protocol (2008-12) relative to 1990 baselines (the "net position")". Ref: http://www.treasury.govt.nz/government/kyotoposition/calculation.

13 Emphasis as per original. The Treasury, *Aide Memoire: Further Analysis on 2020 Targets*, Note to the Minister of Finance, SH-10-8-4-6-0, 28 July 2009, p 2.

14 Minute of the meeting of the Cabinet Economic Growth and Infrastructure Committee, 10 August 2009.

15 This diagram formed a part of the Government's 2020 target consultation document.

16 Ministry for the Environment, *New Zealand's Greenhouse Gas Emissions Projections to 2020*, 10 June 2009, which estimates net emissions in 2020 at 80.4 Mt.



Faced with ministers wishing to treat forestry credits as net income rather than credit, and unable to persuade them to adopt a target that it considered fiscally appropriate, the Treasury dramatically abandoned its previous stance of not recognising any contingent liabilities associated with the Kyoto Protocol or expected successor agreements.[17] The new advice was that:

> Treasury considers that **it will be necessary to recognise a contingent liability on the Government's books**, associated with the forestry credits that will be used to meet the countries [sic] international commitments between 2008-2020. … At a price of $100/unit, this contingent liability could be as much as $18 billion for the period 2008-2020.[18] (Emphasis added.)

Having itself used forestry credits to square off the gross emissions overshoot in the Kyoto accounts presented on its website for over four years, and having promoted the NZU mechanism that removes considerable carbon accounting from the Crown balance sheet, **the Treasury abruptly signalled that it would draw a line under its foray into accounting for carbon off the balance sheet**.[19] If the Treasury could not persuade ministers to refrain from overcooking the forestry credits story that it had helped support, the Treasury would let the rating agencies in on the problem and let them contribute to reasserting reality.[20]

The Kyoto accounts need to be updated urgently to include a contingent liability for future deforestation charges, so as to inform consideration of the Bill before Parliament.

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17 New Zealand Treasuy, *Budget Economic & Fiscal Update 2009*, 28 May 2009, p 109.

18 New Zealand Treasury, *2020 Emissions Reduction Target: Further Analysis*, T2009/1811, 31 July 2009, p.7.

19 The Treasury has acknowledged previously that forest credits are "a zero sum game" but has not incorporated this into the accounts. In particular, Treasury stated in February: "While the government will also receive RMUs we have not assumed any revenue from these, as over longer time periods the credits received also result in an equal liability (assuming the rules for forestry stay as they are)." MFE and Treasury, Emissions Trading Scheme Legislative Review: Fiscal Neutrality, 13 February 2009, p 4.

20 See also: Simon Terry, *Government waving the plastic for Kyoto*, New Zealand Herald 23 September 2009, http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10598960&pnum=0

3. Big Subsidies, Big Future Compensation Claims

3.1 How Big Are the Subsidies After 2012?

The proposed ETS changes incorporate 76-year "transition" periods for large industrials and agriculture, which amount to the granting of near-perpetual subsidies on a grand scale. These are to be provided on a so-called "intensity basis" which means that with each expansion of production, the emitter will receive extra free emission units such that the following year, the proportion of its emission charges met by the Government will be that it would have been without the extra emissions.

The following table sets out the implicit costs arising from each major subsidy, under two carbon price scenarios, from 2010 to the end of the subsidy period. The first assumes a price of $50/t from 2013, as used by the Government when projecting the impacts of the ETS.[21] The second uses $100/t, also employed by the Government at times. In both cases, emissions are simply held static when official forecasts show both groups rising, and major industry emissions rising fast enough that the volume of gifted NZUs actually rises – meaning our estimates understate the level of subsidy.[22]

The results are that the current legislation implies subsidies totalling $38 billion over the twenty years 2010-2029 at a price of $50/t, or $76 billion at $100/t. The proposed 2009 amendments would increase the total subsidy over eighty years 2010-2089 to $99 billion at a price of $50/t, or $193 million at a $100/t.[23] In broad terms, **the nominal value of the proposed subsidies is $100 billion or more**.[24] This is equal to eight years total government spending on health, or 75 years worth of policing.

Table 6: Value of Subsidies to Large Industry and Agriculture – 2010 to 2092

Carbon Price and Sector Subsidy	2008 ETS ($ bill)	2009 ETS Proposed ($ bill)
Assuming emission unit price 2013-2091 is $50		
Large Industry non-electricity allocations	6.5	17.3
Electricity price compensation to industry	4.8	12.7
Agriculture late entry and NZU allocations	26.8	69.0
Total value of subsidies	**38.1**	**99.0**
Assuming emission unit price 2013-2091 is $100		
Large Industry non-electricity allocations	13.0	34.2
Electricity price compensation to industry	9.7	25.0
Agriculture late entry and NZU allocations	53.6	134.2
Total value of subsidies	**76.3**	**193.4**

21 Climate Change Response (Moderated Emissions Trading) Amendment Bill, Notes p 33. The price before 2013 is $30/t for the 2008 scheme and $25/t for the 2009 scheme due to price cap.

22 MFE, *ETS Legislative Review: Fiscal Neutrality*, 13 Feb 2009, p 8; and related updates.

23 These nominal values can be present valued through discounting.

24 The Government implies the increase in subsidies from the current to the new scheme through to just 2050 will cost $100 million. Hon Dr Nick Smith, *ETS Briefing*, 9 Oct 2009, p 11, 12.

3.2 Where is the Evidence in Support of Such Large Subsidies?

One of the most worrying aspects of the proposed subsidy regime is the certified absence of adequate analysis in its design. "Certified" in the sense that the Tre Regulatory Impact Analysis Team is uncompromising in its critique of the Regulatory Impact Statement accompanying the proposed amendments, given the descriptors available to officials.[25]

- When Treasury says: "The level and quality of analysis presented is not commensurate with the significance of the proposals", it means the proposals carry risks nobody has properly investigated.

- When it says: "there is no clear analytical basis for the proposal to align some key design elements of the New Zealand ETS with those in the currently proposed Australian Carbon Pollution Reduction Scheme (CPRS)", it means that many of the provisions in the Bill that are said to be driven by this goal have no adequate foundation.

- When it says: **"the RIS does not provide an adequate basis for informed decision-making"**, (emphasis added) it is clear that the Bill should not have been brought before Parliament. If the officials charged with making such assessments do not have the information at hand to undertake this, Parliament cannot compel it from them and so it too cannot have an adequate basis for decision-making.

The explanatory notes to the Bill amending the legislation do not even provide adequate detail as to the level of fiscal costs. The table on page 33 compares only the new costs to those under the existing scheme, when official estimates of the total costs to the nation of this are not publicly available to the best of our knowledge. Other references are cast only in high-level terms.

The absence from the official record of estimates of any economic losses the recipient sectors might actually experience is a further staggering omission.[26] Adding to the perception that the allocations are based on favour and not demonstrated need is the parallel failure to present any financial and commercial analysis of how the 65 large emitters to be assisted under the 2009 ETS are expected to fare without corporate welfare. While it can in some circumstances be in the national interest to grant subsidies during a transition period, if those proposed are for the benefit of the nation then it is a government's duty to demonstrate that the proposed level of subsidy would provide such a net benefit.

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25 Climate Change Response (Moderated Emissions Trading) Amendment Bill, Explanatory Note, p 12.

26 No estimates appear in the extensive series of cabinet papers and briefing notes released by the Government that concern the development of policy for assisting major emitters. See: http://www.mfe.govt.nz/cabinet-papers/topics/advice-on-a-moderated-nz-ets.html

3.3 What Will Future Compensation Claims Be Based On?

The extent of the subsidies proposed will inevitably be wound back by future governments changing the legislation. They are inconsistent with a responsible level of taxpayer transitional assistance to large industry and farmers. However, some major emitters and Federated Farmers have already signalled that they view carbon charges as an attack on their claimed property rights – as though they had ownership to, or rights to perpetual use of, the atmosphere's limited ability to absorb pollutants (by virtue of past use). They further claim that measures infringing their claimed rights are "takings" and require compensation.[27] Given this background, if subsidies specified in legislation are later removed, it is very likely these groups will attempt to secure compensation at least with respect to the level of subsidies promised, unless the law clearly precludes this at the time the subsidies are set down.

The review provisions in clause 38 of the Bill do not adequately protect against this and the Regulatory Impact Statement states (p.28) "any significant changes to the provision of free allocation will require a 5-year notice period". The prospect of litigation will rise further if the Regulatory Responsibility Bill is passed with a provision against governmental "takings"; the withdrawal of subsidies, however economically indefensible and fiscally unsustainable those subsidies may be, will inevitably be cast as a "taking" by the subsidised parties.

[27] Federated Farmers for example has stated that it wants no "appropriation of landowner carbon rights without fair compensation". Federated Farmers, *2008 General Election Manifesto: New Zealand's Economic Backbone*, November 2008, p 13.

Appendix 1: Distribution of ETS Charges

Table A1: Impacts of ETS Prior to Renewable Electricity Price Changes

	Existing 2008 ETS							ETS with Proposed 2009 Amendments						
	ETS-liable emissions Mt	Free NZUs grandfathered, million	NZUs gifted to compensate for electricity price rise and fall in pre-Kyoto land value, million	Emission units to be purchased (+) or sold off (-)	Payments by sectors with net purchase obligations, @$30 per unit, $m	% of total payments	Profit for sectors with surplus units to sell, @30 per unit, $m	Emission units required, million	Free NZUs grandfath-ered, million	NZUs gifted to compensate for electricity price rise and fall in pre-Kyoto land value, million	Remaining liable emissions	Payments by sectors with net purchase obligations, @$25 per unit, $m	% of total payments	Profit for sectors with surplus units to sell, @25per unit, $m
Households	32.19			32.19	966	53	0	18.08			18.08	452	57	0
Large industry	33.56	25.00	20.0	-11.44	0	0	343	14.14	9.93	10.00	-5.79	0	0	145
Other industry	7.3	0.45		6.85	205	11	0	3.82			3.82	96	12	0
Transport	6.6			6.65	199	11	0	4.08			4.08	102	13	0
Commerce and services	6.2			6.21	186	10	0	2.60			2.60	65	8	0
Agriculture	1.6			1.62	49	3	0	0.69			0.69	17	2	0
Fishing	0.9	0.19		0.69	21	1	0	0.54	0.70		-0.16	0	0	4
Coal, oil and gas producers	6.34			6.34	190	10	0	2.6			2.65	66	8	0
Waste and solvents	0.00			0.00	0	0	0	0.0			0.00	0	0	0
Totals excluding deforestation	**94.74**	**25.64**	**20.00**	**49.11**	**1,816**	**100**	**343**	**46.59**	**10.63**	**10.00**	**25.96**	**798**	**100**	**149**
Forest owners (assumed all pre-Kyoto forests)	7.3	5.00	16.0	-13.70	0	0	411	7.3	5.00	16.00	-13.70	0	0	343
Totals	**102.0**	**30.6**	**36.0**	**35**	**1,816**	**100**	**754**	**53.9**	**15.6**	**26.0**	**12.3**	**798**	**100**	**491**

a. Innovation Fund
b. Including forest weed exemptions

Table A2: ETS charges after exemptions, grandfathering, electricity price changes and NZU rebates to large industrials

	2008 ETS					2009 ETS				
	Cost (+) or profit (-) from ETS, $ million	Cost of increased renewable electricity price, $million	Overall financial cost (+) or profit (-) of the ETS with exemptions and NZU grants, $million	Payments by sectors with net overall cost of ETS, $m	% of total cost burden	Cost (+) or profit (-) from ETS, $ million	Cost of increased renewable electricity price, $million	Overall financial cost (+) or profit (-) of the ETS with exemptions and NZU grants, $million	Payments by sectors with net overall cost of ETS, $m	% of total cost burden
Households	966	532	1,498	1,498	48.3	452	185	637	637	52.3
Large industry	-343	458	114	114	3.7	-145	159	14	14	1.2
Other industry	205	207	412	412	13.3	96	72	167	167	13.7
Transport	199	21	220	220	7.1	102	7	109	109	9.0
Commerce and services	186	344	530	530	17.1	65	120	185	185	15.2
Agriculture	49	62	111	111	3.6	17	22	39	39	3.2
Fishing	21	4	25	25	0.8	-4	1	-3	0	0.0
Coal, gas and oil producers	190		190	190	6.1	66		66	66	5.4
Waste and solvents	0		0	0	0.0	0		0	0	0.0
Totals excluding deforestation	**1,473**	**1,628**	**3,101**	**3,101**	**100.0**	**649**	**566**	**1,215**	**1,218**	**100.0**
Pre-Kyoto forest owners	-411		-411	0	0.0	-343		-343	0	0.0
Totals	**1,062**	**1,628**	**2,690**	**3,101**	**100.0**	**307**	**566**	**873**	**1,218**	**100.0**

Table A3: Overall Costs of ETS During CP1, by Sector

	2008 ETS				2009 ETS			
	Emissions attributable to the sector during CP1, Mt	Share of total CP1 emissions, %	Costs of ETS, $million	Share of total costs, %	Emissions attributable to the sector during CP1, Mt	Share of total CP1 emissions, %	Costs of ETS, $million	Share of total costs, %
Households	72.2	18.7	1,498	48.3	72.2	18.7	637.2	52.3
Large industry	57.0	14.8	114	3.7	57.0	14.8	14.3	1.2
Other industry	14.3	3.7	412	13.3	14.3	3.7	167.5	13.7
Transport	16.2	4.2	220	7.1	16.2	4.2	109.3	9.0
Commerce and services	10.6	2.7	530	17.1	10.6	2.7	184.8	15.2
Agriculture	186.8	48.4	111	3.6	186.8	48.4	38.9	3.2
Fishing	2.2	0.6	25	0.8	2.2	0.6	0.0	0.0
Waste and solvents	9.0	2.3	0	0.0	9.0	2.3	0.0	0.0
Coal, gas and oil producers	10.3	2.7	190	6.1	10.3	2.7	66.1	5.4
Totals excluding deforestation	**378.7**	**98.1**	**3,101.1**	**100.0**	**378.7**	**98.1**	**1,218.1**	**100.0**
Pre-Kyoto forest owners	7.3	1.9	0.0	0.0	7.3	1.9	0.0	0.0
Totals	**386.0**	**100.0**	**3,101.1**	**100.0**	**386.0**	**100.0**	**1,218.1**	**100.0**

Appendix 2 Paying the Kyoto Bill from Kyoto Forest Sinks

Over the five years of CP1, the growth of exotic forests planted since 1989 is projected to absorb 92.3 Mt of carbon dioxide. After subtracting 7.5 Mt of deforestation, New Zealand expects to be credited with 85 million RMUs. The Kyoto Protocol rules allow these to be counted as offsets against gross emissions and these are included in the nation's Kyoto accounts to show an apparent "surplus".

The essential problem with using credits from production forests in this way is if the trees are to be harvested as planned, the carbon in the trees will then be counted as being emitted. Under the Kyoto Protocol accounting procedures this creates a requirement for a matching number of Kyoto emission units to be surrendered (through equivalent carbon being sequestered, or other emissions reduced in a manner that frees up other Kyoto compliant credits). The carbon accumulated in a mature tree will have earned RMU credits over the life of the tree, which means that if the RMU credits have been "banked", New Zealand's Kyoto forests can be harvested without cost, since the necessary RMUs will be in hand to be surrendered and cancelled at the time of harvest. But if RMUs are instead used to cover today's emissions, they will not be available to cover deforestation charges.

The Government has been careful to allow for this when designing the local rules that it will apply to Kyoto forest owners under the ETS[28]. Once a forest owner has signed up to join the ETS, then as that owner's trees grow, a matching number of NZUs are to be issued when applied for. When the trees are harvested however, the same number of emission units must be paid by the forest owners. If the forest owner banks the NZUs until harvest time comes, then harvesting carries no cost. If the forest owner opts to sell the NZUs for short-run cash, then this is effectively taking out a loan that will have to be repaid when the trees are harvested, since alternative emission units will then have to be purchased to cover the resulting emissions.

The calculation facing the forest owner, in deciding (a) whether to join the ETS at all, and (b) whether to sell the earned NZUs now or hold them until harvest, is complex and overhung by uncertainty about three issues:

- Will the cost of emission permits at the time of future harvest be higher or lower than the income from selling units today, and by how much? If carbon prices rise at a rate that is less than the interest rate the forest owner can get on money, then selling today and buying in future makes sense, and vice versa;
- If the local market price is capped, will the opportunity to export NZUs by converting them into AAUs (currently available) remain in place under those circumstances?; and
- Will Kyoto forest owners be forced to pay deforestation charges, even if they have not taken up NZUs? There is "regulatory uncertainty" about this, because future Governments (or more strictly, Parliaments) are not bound by promises made today.

[28] Howard B. Moore, "The Reforest Trust: addressing the issues of carbon forestry in New Zealand", *New Zealand Journal of Forestry* (2008) **53(2):** 17–19; Andrew Caddie and Craig Nelson, "Forestry and Climate Change" *New Zealand Journal of Forestry* (2008) **53(2):** 32–34.

The same issues apply to the Government with respect to the RMUs it receives from the UNFCCC. When the Government opts to take the RMUs earned by growing forests and "spend" them today to cover gross emissions from energy use and production processes, it is in effect pushing the cost of today's emissions onto future taxpayers and/or emitters. While a future government could protect its fiscal position by forcing Kyoto forest owners to pay deforestation charges (or even banning harvesting), this would expropriate the wealth of forest owners, relative to the commitments made to date.

The bottom line is that using forestry credits today inescapably incurs a future contingent liability of some kind, which has not been accounted for in the New Zealand Government's public statements to date. The issue is well understood, however, within Government. Treasury has spelled it out as follows (in the context of its instinctive institutional opposition to any strong target for cutting emissions):[29]

> *Using credits generated by forestry*
>
> 7. The Minister's proposed target takes into account the credits that will be generated by forests in 2020…. Using these credits means a more ambitious target can be announced, for a similar level of cost in 2020. However, the majority of these credits have an associated liability that must be paid back when the forest is harvested…
> 8. Treasury recommends you propose that the credits generated by forestry should not be used when setting a 2020 target. Further, we consider it appropriate that upon signing a new international agreement the Crown should recognise a contingent liability associated with these forestry credits (see Annex 1 for further information).

Annex 1 duly expands:[30]

> 25.… Treasury considers that it will be necessary to recognise a contingent liability on the Government's books, associated with the forestry credits that will be used to meet the countries [sic] international commitments between 2008-2020. The assumption that is made in calculating the current Kyoto position (9 million units) and the projected liability for the period 2013-2020 (80 million units) is that 180 million forestry credits will be used in the two commitments. The majority of these credits will need to be repaid when the forests are harvested. While some of the forests may never be harvested, the Crown should recognise the potential harvesting liabilities associated with these forests. At a price of $100/unit, this contingent liability could be as much as $18 billion for the period 2008-2020.

[29] New Zealand Treasury, *2020 Emissions Reduction Target: Further Analysis*, T2009/1811, 31 July 2009, p.4.

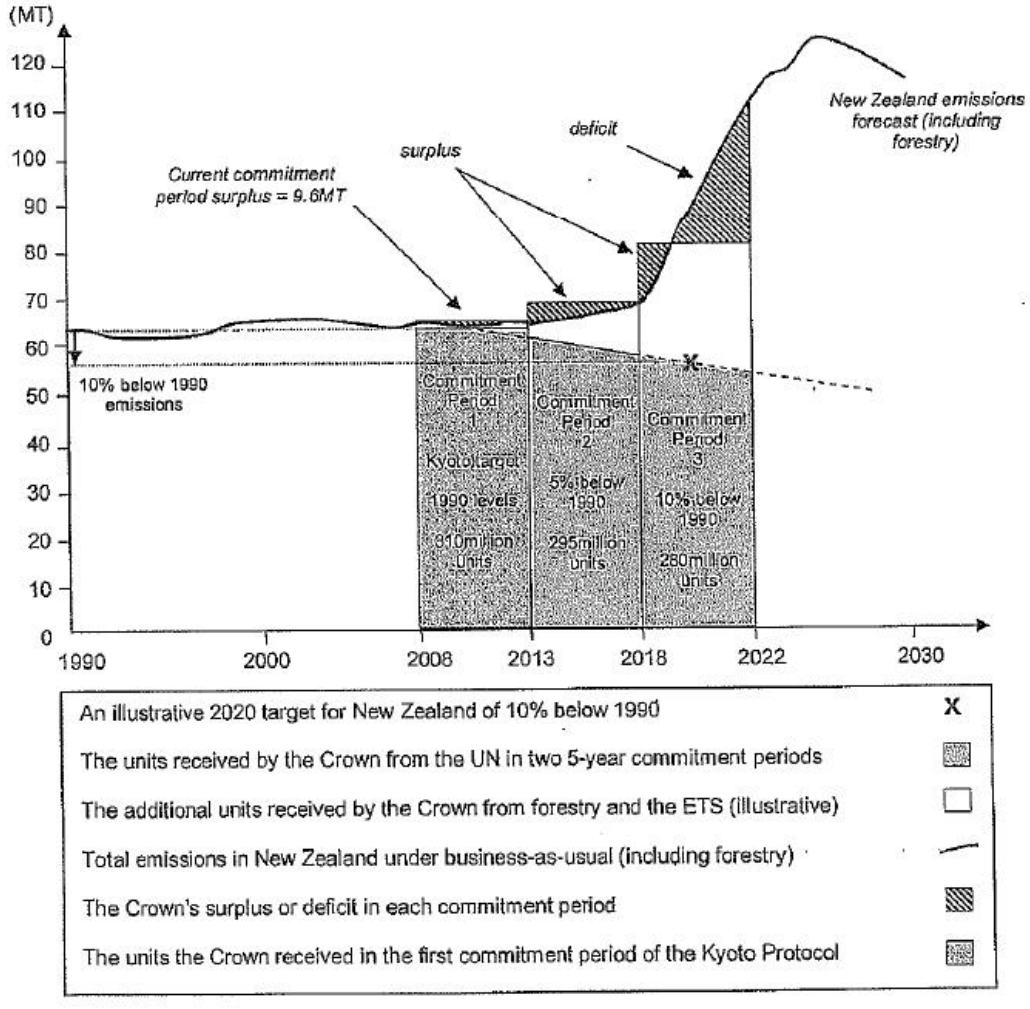
[30] New Zealand Treasury, *2020 Emissions Reduction Target: Further Analysis*, T2009/1811, 31 July 2009, p.7.

The Treasury's qualification in the above quote that the contingent liability would need to be recognised "upon signing a new international agreement" is redundant in terms of accounting for the Kyoto Protocol. A contingent liability should have been on the Kyoto accounts from the outset as one clear "contingency" is the planned successor agreements to the Protocol that would register the deforestation costs.

Another Treasury document prepared in July 2009 includes a helpful diagrammatic presentation of the problem that results from treating exotic forestry as a credit card to buy the groceries today, as shown below.[31]

The Treasury's View of the Forest Credits Issue

Figure 1: an illustrative example of the factors which determine the Crown's deficit/surplus



T2009/1695 Copenhagen International Climate Change Agreement: potential economic and fiscal impacts Page 5

[31] New Zealand Treasury, *Copenhagen International Climate Change Agreement: Potential Economic and Fiscal Impacts*, T2009/1695, 17 July 2009, p.5.

The downward-sloping dotted line in this diagram represents the emissions path that would be consistent with reducing domestic emissions sufficiently to meet a target of 10% below 1990 by 2020. In fact the Government is not planning to bring domestic emissions down to anywhere near this, and its proposed 2020 target will be only a "responsibility target"[32] that determines the cost of paying for above-target emissions. The shaded grey area is the Assigned Amount that the nation would be allowed to emit free of penalty, and the solid line shows projected net emissions, on the assumption that today's production forest plantations are allowed to be harvested at maturity in the 2020s. The projections show a so-called "fiscal surplus" until 2020, which in fact is nothing of the sort – the "surplus" is simply the result of treating carbon absorption by forests as income rather than credit. The fact that in terms of the Crown Financial Statements it can be so recorded is evidence of the inadequacy of prevailing accounting treatments of the nation's Kyoto obligations.[33]

After 2020, if the trees are cut down, total emissions assessed under the Protocol are projected to rise to double 1990 levels for five years and to remain high into the 2030s. With an Assigned Amount conservatively projected by the Treasury to fall below 50 million units per year and total emissions running at 100 Mt per year or more, the annual cost of making up the difference at $100 per unit would be $5 billion.

Turn now to consider the situation from the point of view of a Kyoto-forest owner. Expenditures undertaken today on planting and managing exotic plantation forests will result in three future streams of income and costs, if NZUs are taken up under the ETS. As the trees grow, NZUs accumulate, which can provide an income stream if they are sold. If and when the trees are harvested, there will be income from the timber, but costs of covering the deforestation emissions. Calculations conducted for the Ministry of Agriculture and Forestry suggest that at a carbon price of $20/tonne the net present value of timber from a hectare of forest in 30 years' time is $15,000-20,000 against an emissions cost of harvesting of $10,000; at that carbon price, harvesting is profitable. At a carbon price of $100/tonne, however, equal to that assumed in Treasury's analysis just quoted,

> the NPV of harvest liabilities rise to around $48,000 per hectare. Timber revenues would not come close to offsetting this cost, leaving a net loss from harvesting of $28,000 to $33,000 per hectare. At the same time the NPV of not harvesting and leaving the trees to sequester carbon rises to $26,000 per hectare. We would therefore expect few if any forests in the ETS to be harvested (or at least clearfelled) if the carbon price is around $100/ tonne CO_2[34]

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32 This refers to the notion of New Zealand being responsible for covering all of its emissions above the target by means which include purchasing emission units from other countries.

33 The full Budget statements warn only that: "Changes in these forecasts and assumptions may mean that the Government will have to purchase Kyoto Protocol emission units before 2015". There is no consideration of the future deforestation liability associated with the Kyoto forests. NZ Treasuy, *Budget Economic & Fiscal Update 2009*, 28 May 2009, p 109. http://www.treasury.govt.nz/budget/forecasts/befu2009

34 Ministry of Agriculture and Forestry, *New Forest Planting and Harvesting Intentions under High Carbon Prices*, released under the Official Information Act, downloaded from http://homepages.inspire.net.nz/~idiot/PDF/forestplanting.pdf .

The outcome of this discussion is that relying upon forestry credits to cover emissions during CP1 is a high-stakes gamble that can turn out in Government's favour only if the future carbon price is high enough to deter harvesting - and if the bulk of the exotic forest estate has joined the ETS and is thus faced with the deterrent effect of having to surrender emission units when forests are harvested. This makes clear that the willingness of Kyoto forest owners to join the ETS and continue to claim NZUs is a first key test of the scheme's integrity with respect to avoiding passing debt to future generations.

As at mid 2009, only 8% of the Kyoto forest area (53,000ha) had been subject to claims under the ETS.[35] Forest owners have until the end of 2012 to decide whether or not to enter the ETS, and there is at this point no way to predict what proportion of the forests will eventually be included. A forest owner who opts to stay out will receive no carbon credits for growing trees, but has a promise from the Government that there will be no emissions charge imposed when the trees are harvested. Given the history to date of policy regarding forests, it would be unwise to treat that promise as genuinely binding, since as circumstances change the exemption of non-ETS trees from emission charges at harvest could be abandoned. Against this, a cap on the price of the NZU lowers the return on carbon forestry that forest owners can collect for their carbon-sinking activities if exports are also restricted.

Both of these risks – future imposition of a deforestation charge that would expropriate the value of non-ETS forests, and a price cap on NZUs that would reduce the benefits of joining the ETS - represent potentially strong disincentives for forestry as an investment. While Government has been quick to respond to demands from large industrial operations for subsidies under the ETS on grounds of "competitiveness at risk", the forestry sector - which holds the real key to balancing the country's future carbon budgets - faces uncertainty and potential retrospective taxation.

The ETS has not been designed to promote economically-efficient abatement. It has been designed to protect and promote the position of vested interests that are unwilling to shoulder the asset write-downs required to recognise a price on carbon, and to transfer the costs of this to future generations.

[35] Information provided June 2009 by Stephen Ladányi, MAF Implementation Manager, Emissions Trading Scheme (Forestry).