Ministry for the Environment
Manatū Mō Te Taiao

Liquidity and Prices in the New Zealand Emissions Trading Scheme: The Role of Government

Briefing for the Climate Change Leadership Forum

Prepared by the Emissions Trading Group

New Zealand Government

Published in December 2007 by the
Ministry for the Environment
Manatū Mō Te Taiao
PO Box 10 362, Wellington, New Zealand

ISBN: 978-0-478-30200-4 (electronic)

Publication number: 854

This document is available on the Ministry for the Environment's website:
www.mfe.govt.nz

Overview

The NZ ETS has been designed on the premise that the private sector is better placed than government to find the most cost-effective solutions to reducing emissions and enhancing sinks. The NZ ETS should empower New Zealand firms to operate effectively within the international carbon market, rather than relying on the government. This participation could occur through internationally-linked firms entering the carbon market through parent companies, domestic firms entering the carbon market in their own right, or domestic firms securing units through carbon market intermediaries.

Having said this, it is important to ensure that the NZ ETS operates effectively, and that price-based distortions are avoided, especially in the short run. This could warrant some role for government in the market to improve liquidity and/or influence prices, especially in its transition phase. However, there are both upsides and downsides associated with government intervention in the market. When evaluating options for government intervention, it is useful to consider three scenarios:

1. An international agreement remains in place, providing an international market and an external cap on emissions within which the NZ ETS can operate.
2. There is no international agreement providing an external cap on emissions (or there is a gap between agreements), but an international market continues to operate.
3. There is no international agreement and no international market remains in operation.

Options for government intervention can be loosely grouped into three categories:

1. Designing the NZ ETS policy and regulatory settings to facilitate international market linkages.
2. Having the government operate a commercial auction to increase the supply of international units in the domestic market.
3. Using mechanisms such as price caps, price floors, or changes to the non-compliance regime to control prices; these mechanisms would likely require changing international trading linkages and/or breaching the cap on emissions.

This paper explores these options for government intervention to improve liquidity and influence prices in each of these scenarios. Section 1 identifies factors affecting liquidity and prices in the international and domestic markets, and summarises the measures supporting liquidity in the government's proposal for a NZ ETS. Section 2 summarises price control measures used in other domestic trading schemes. Section 3 identifies policy options that could be considered in the event an international agreement succeeds the Kyoto Protocol. Section 4 identifies policy responses in the event there is no international agreement to succeed the Kyoto Protocol (or a gap between agreements).

The government seeks feedback on these issues from the Climate Change Leadership Forum prior to confirming the design of the NZ ETS for the purpose of legislation.

Contents

1 Measures Supporting Liquidity in the Government's Proposal for a NZ ETS

Context: Factors affecting liquidity and prices in the carbon market

In designing the proposed NZ ETS, the government decided in principle that the NZ ETS should be linked internationally. Such linkage would ensure that the international price of emissions was reflected in the New Zealand market and would support market liquidity, helping to moderate emission prices relative to a domestic-only scheme.

Ultimately, the benefits to New Zealand of internationally linked emissions trading are dependent on the effective operation of the international carbon market. International trading of emission units is already underway both inside and outside the Kyoto Protocol framework, and is proving viable.

However, because the international carbon market is in the early stages of development, there is still considerable uncertainty about how the market will operate in practice during the first commitment period (CP1) of the Kyoto Protocol (2008–2012) and beyond. Sources of uncertainty in the international market that could affect market liquidity and market price include the following:

(a) The **demand for Kyoto emission units**, driven by the number of Annex I (industrialised) countries that uphold their commitment to the Kyoto Protocol, their emissions compliance position during CP1, and the continuation of compliance provisions in the subsequent commitment period (which determines the cost of countries' non-compliance in CP1).

(b) The **supply of Kyoto Assigned Amount Units** (AAUs), driven by the number of countries with excess AAUs to sell, the number of countries that meet the institutional requirements to sell AAUs, countries' decisions to sell AAUs versus bank them for future commitment periods, and countries' willingness to buy AAUs given political preferences.

(c) The **supply of Certified Emission Reductions** (CERs) from Clean Development Mechanism (CDM) projects, which is determined by the speed of project approval processes, the lead time required to develop new projects, and policy uncertainty about the role of the CDM after 2012.

(d) The **supply of Emission Reduction Units** (ERUs) from Joint Implementation (JI) projects, whether certified through Track 1 (host country approval process) or Track 2 (the JI Supervisory Committee).

(e) The **development of standardised contracts and new financial instruments** to facilitate emissions trading.

(f) The **learning curve** of both public- and private-sector traders and financial service providers in understanding how the market operates.

(g) The **availability of transparent market information** about supply, demand, and prices.

Within the domestic market, the following factors could further influence market liquidity and market prices:

(a) The **timing of demand** for units by New Zealand producers, linked to economic growth and the rate of efficiency and technology improvements.

(b) The **demand for units by landowners** to cover deforestation emissions.

(c) **Landowners' decisions** to receive units for eligible post-1989 afforestation activities.

(d) **Recipients' willingness to sell freely allocated units** versus holding them in reserve or banking them for future commitment periods.

(e) The **development of domestic services** to link domestic sellers and buyers, particularly across the forestry sector.

(f) The **evolution of government policies and regulations** supporting the trading market.

The need to manage uncertainty and price volatility is a characteristic of every trading market, and creates opportunities as well as risks. One factor that differentiates emissions trading from trading in other commodities is that most entities participate in emissions trading in order to meet time-bound regulatory requirements to surrender units. If they fail to obtain sufficient units to cover their emissions at specified points in time, they will need to reduce their output or pay a non-compliance penalty and compensate for the unit shortfall.

Depending on how they were designed, measures permitting government intervention in the domestic market in order to address liquidity or control unit prices could have serious consequences. For example, they could:

(a) introduce a significant source of policy uncertainty that would influence market behaviour

(b) block the market from operating efficiently and finding the most cost-effective responses to emission constraints

(c) devalue free allocation, unit trades, and futures contracts that had been made prior to the intervention

(d) create vulnerability to political influence

(e) undermine the environmental integrity of the ETS

(f) constrain the ability to link the NZ ETS bilaterally to other trading schemes.

In the long run, the goal of the NZ ETS is to expose the New Zealand economy to the price of emissions. As such, measures such as price caps, price floors, or temporary constraints on international linkages are not desirable as long-run policy instruments, assuming that the international carbon market continues to operate effectively.

Government's in-principle decisions

The government's proposed NZ ETS uses the following measures to help ensure liquidity in the market and linkage to the international price of emissions:

(a) Linking the NZ ETS to the international Kyoto market by enabling points of obligation to surrender both NZUs and Kyoto units to meet their obligations, and by enabling firms to transfer NZUs offshore by exchanging them for AAUs.

(b) Placing no quantitative limit on the volume of international units that can be imported into the NZ ETS or used to meet participants' obligations under the NZ ETS.

(c) Extending the scheme to all major emitting sectors by 2013, providing for a range of market participants and emission reduction opportunities across the economy.

(d) Delaying the obligation to surrender units until April 2010 for the first two sectors to enter the NZ ETS (forestry and liquid fossil fuels).

(e) Enabling flexibility in how NZ ETS participants trade units in the market (ie, via over-the-counter trades, trading exchanges, etc).

(f) Designing the NZ ETS to permit bilateral linkages to other domestic trading schemes in the future.

The government also agreed in principle that neither a price cap nor a price floor on emission units be included in a NZ ETS at this stage, and that NZ ETS legislation contain a power to include a price cap or price floor on emission units in the scheme.

The proposed approach is designed to minimize government intervention into the trading market, but to permit such intervention if it is considered necessary, particularly given international policy developments post-2012. It should also preserve options for future bilateral linking to the EU ETS, which does not operate using a price cap mechanism and would not link to a scheme with a price cap.

Stakeholder response and analysis

During the engagement process some stakeholders have expressed concerns that there could be insufficient liquidity in the New Zealand market (especially in the first few years of the transition), and that firms could be poorly placed in the international carbon market, thus forcing New Zealand firms up towards the top of the price scale. The possible use of a price cap has been raised by some.

However, other stakeholders have expressed concern that government intervention – or the possibility of government intervention – could introduce significant uncertainty, distort the competitive operation of the market and threaten trading opportunities. Their view is that the government should establish a sound framework for the market and then allow it to operate.

The potential supply of Kyoto units is extremely large relative to demand from the NZ ETS and some of the nervousness expressed at this stage reflects a lack of familiarity with the Kyoto markets. Net demand from the NZ ETS in the first commitment period could be as high as 10-50 million units depending on the extent to which post-1989 foresters choose not to opt into the NZ ETS (there could also be demand for NZUs for those with obligations in 2013, such as the agricultural sector). Over the same time period, anticipated global supply of Kyoto units (excluding AAUs) is 1.7 billion units. If AAUs are included, the potential supply is 7.1 billion units.[1] It should also be noted that the first date of surrender of units in the NZ ETS will not be until April 2010 so there is time for New Zealand companies to become familiar with the operation of the international carbon market before they face the prospect of non-compliance penalties.

If the international market operates as expected, there still remains some risk that New Zealand firms could have difficulty accessing units at internationally competitive prices. Sustained domestic emission unit prices either significantly above or below anticipated international prices could adversely affect New Zealand's economy.

If the international market fails to operate as expected, which could result if major emitting parties were to join or withdraw from the Kyoto Protocol or if there was no successor international agreement post-2012, then there could be an even more substantial impact on liquidity and prices in the New Zealand market. In those circumstances, it might be necessary to implement more significant measures to adapt the NZ ETS accordingly.

[1] World Bank, *State and Trends of the Carbon Market 2007*.

2 Price Protection Measures in Other Emissions Trading Schemes

Emissions trading schemes in other countries have considered the use of price protection measures in the form of linkages to other trading schemes, the use of offsets, and price caps.

The **European Union Emissions Trading Scheme** (EU ETS) permits firms to use CERs and ERUs to meet a percentage of their allowance obligation. This percentage is capped by each Member State individually in its National Allocation Plan. The EU ETS contains no further price protection measures, and is not intended to link to trading schemes that use price caps or similar mechanisms.

In **Australia**, the proposal from the Prime Ministerial Task Group on Emissions Trading includes the use of an "emissions fee" as a safety valve if participants cannot surrender sufficient permits to meet their obligations. This would be set at a relatively low level in the initial phase of the scheme, and would diverge from expected permit prices over time to create a greater compliance incentive. The task group recommended considering constraints on banking during the initial phase, and noted that the "emissions fee" mechanism would likely limit options for linking with other schemes in the short term.

In the **Regional Greenhouse Gas Initiative** (RGGI) among the northeastern US states, firms can access offsets, but the quantity is capped. There is an initial limit of 3.3 per cent on offset use. If the price exceeds US$7/t CO_2, then the percentage increases to 5 per cent. At US$10/t CO_2, the percentage of offsets increases to 10 per cent and CDM units are accepted into the scheme.

In **California,** the emissions trading scheme being designed under AB 32 supports the use of banking, offsets and linking with other schemes, but does not support borrowing or price safety valves.

At the **US federal** level, the Bingaman-Specter Low Carbon Economy Act of 2007 (S.1766) includes a price safety valve that starts at US$12/t CO_2 in 2012 and grows 5 per cent per year on a real basis. This act also allows offsets for agriculture and carbon capture and storage activities. A proposal being developed by Lieberman and Warner includes the use of offsets up to 15 per cent of emissions and a cost containment mechanism that creates a "Federal Reserve" for CO_2 emissions.

In **Canada**, the proposed GHG Regulatory Framework under development would enable industrial firms to meet emission targets defined using a declining intensity baseline through a combination of in-house reductions, investment in a Climate Change Technology Fund, unlimited access to domestic offsets, and trading.

It is important to note that the schemes listed above that operate with price caps lose the certainty of their environmental outcome with regard to emissions.

3 Policy Options under an International Agreement

Measures to improve liquidity

The government is of the view that, provided an international agreement remains in place, the proposed features of the NZ ETS, combined with the small demand for Kyoto units in New Zealand relative to the international supply, should be sufficient to ensure liquidity in the domestic market. These features are summarised in Section 1 above.

Option 1: Government auction on a commercial basis

If liquidity proved to be problematic, the government could support domestic liquidity, and thereby influence domestic prices, by purchasing additional international Kyoto units and allocating them via commercial auction. Such powers are already provided under the NZ ETS design. Such powers would be constrained by the requirement that at the end of the true-up period under international agreements (CP1 under the Kyoto Protocol), all NZUs issued by the government in that period must be matched by international units (Kyoto units in CP1). This provision protects the environmental integrity of the scheme. A special appropriation potentially would be required to enable the government to purchase international units and resell them.

When carried out on a commercial basis, such an auction would not distort domestic prices or require any changes to international linkages. If the government wished to ensure that auctioned units remained in the domestic market, it could impose the condition at auction that such units be transferred directly to participants' surrender accounts.

Some stakeholders have expressed concerns that by preserving the right to buy units internationally and auction them into the NZ ETS, the government may undermine the operation of private-sector carbon market intermediaries. The government considers that this risk is likely to be small so long as the government runs any auctions it carries out on a fully commercial basis, as the ability of market participants to sell units internationally (or alternatively to bank units) will ensure that increases in the supply of NZUs will not unduly depress the market price.

Option 2: Bilateral linkage

The government could also help to ensure liquidity by linking the NZ ETS bilaterally with the EU ETS during the first commitment period. The European Commission has expressed concerns about linking to the NZ ETS if it remains open to "hot air" AAUs and potentially some sources of CERs. To simplify the negotiation of the linkage agreement, the government could propose a "buy only" link such that AAUs tied to EUAs could be imported into the NZ ETS but NZUs (in the form of AAUs) could not be exported into the EU ETS. It is not clear how such a proposal would be received by the European Commission (and member states).

Essentially, under a bilateral linkage, the market price in the EU ETS would serve as a ceiling on the price in the New Zealand market. As noted earlier, the price of units in the EU ETS is expected to be higher than in the international market, given its additional trading constraints. However, it may also be subject to less uncertainty than the international market.

The government sees both Options 1 and 2 as viable approaches to improving liquidity in the domestic market. However, these options would not provide price control in the domestic market.

Measures to control price

If the government wished to intervene in domestic unit prices, it would need to block international trading linkages (in at least one direction) and stand in the market to maintain price control and prevent arbitrage at taxpayer expense. Depending on how such measures were implemented, they could breach the cap on emissions or eliminate the 1:1 relationship between NZUs and international units. They could affect the environmental integrity, market credibility and reputation of the NZ ETS.

The government strongly recommends against price control measures provided an international agreement remains in place. If the government were to exercise this option or to suggest publicly that it was considering exercising this option, it would need to provide a very clear rationale. This practice could create great market uncertainty and compromise New Zealand's ability to link to the EU ETS and other schemes.

Despite the drawbacks listed above, if the government wished to reserve the option to intervene in market pricing while an international agreement was in place, then it would need to consider what circumstances would justify intervention, and what mechanisms would be used to make the intervention. One option would be to delegate authority to a designated Minister (such as the Minister of Finance) to determine when intervention was warranted. It would be difficult to predict the circumstances under which this might occur, so it may not be possible to prescribe specific criteria for such interventions. The Reserve Bank Act could provide a useful model for this approach.

For the purpose of discussion, four price-control mechanisms are elaborated further below.

Option 3: Price cap via government auction

The government could purchase international units and resell them at a subsidised or fixed price. This would require blocking offshore transfers (sales) of such units – but not domestic purchases of international units – to prevent arbitrage at taxpayer expense. This might also require blocking banking of such units. The price differential between the government's purchase price and the resale price at auction would accrue to the taxpayer. As long as auctioned units were matched with international units by the end of the true-up period, then the environmental integrity of the scheme would be maintained. However, this approach could devalue unit holdings, earlier trades and contracts for future trades.

Option 4: Changing the non-compliance regime

The government could waive the requirement for participants to "make good" any shortfall in the surrender of emission units, and simply charge a monetary penalty for non-compliance. This option has a similar outcome to Option 1, but operates within the non-compliance penalty regime instead of at the point of auction. This might require blocking banking of units, and changing the nature of international linkages. If national emissions were matched by the government's holding of international units by the end of the true-up period, then the environmental integrity of the scheme would be maintained. However, this could devalue unit holdings, earlier trades and contracts for future trades. If the government did not match national emissions with international units, then environmental integrity would be breached. The money collected could be invested in emission reduction activities or recycled to the economy in other ways.

A different non-compliance option that would moderate the impact of non-compliance measures on firms but maintain environmental integrity would be to waive the monetary penalty for non-compliance for a limited period of time (such as the first year of entry into the scheme), while maintaining the make-good requirement for a unit shortfall. The government seeks views from the Climate Change Leadership Forum on this option.

Option 5: Deferring the "make good" requirement

Another option that could affect domestic liquidity and prices would be to allow participants to "roll forward" a percentage of their surrender obligation to the next compliance period without a penalty. Such a provision could be standard, or could be triggered by a period of sustained high prices in the market. This has the potential to compromise the environmental integrity of the scheme, depending on compliance provisions in future commitment periods. The government does not support this approach.

Option 6: Price floor

The government does not recommend further consideration of a price floor on emission units. Under such a mechanism, the government would attempt to ensure a minimum sale price for domestic units, enabling investors to maintain the value of their investments should there be an oversupply of units relative to demand. Under one option, the government could offer to purchase an unlimited number of units at a guaranteed minimum price. It would need to block further domestic purchases from the international market to prevent arbitrage at taxpayer expense. This mechanism would be difficult to implement in practice.

The government generally does not support such price control measures in the event that an international agreement remains in place. If the government wished to intervene in the market in response to price spikes, or because it had an opportunity to use its buying power to purchase and resell lower-price units than New Zealand firms could obtain directly from the international market, then it would need to develop an administrative policy on when such actions would be appropriate. To avoid uncertainty in the market, the government would need to provide public advice on when these types of options would be exercised.

4 Policy Options Under No International Agreement

The NZ ETS is designed to operate within an international cap on emission units. If there were no successor agreement to the Kyoto Protocol post-2012, or a delay in implementing a successor agreement, then the NZ ETS would need to be modified to operate without an international cap. Note that in the event there was no broad international agreement but New Zealand entered into a regional or plurilateral trading arrangement that set an external cap on emissions, then the measures proposed in this section need not apply.

In order to provide some level of certainty to NZ ETS market participants and investors, the government intends that the NZ ETS legislation will signal how the government would proceed under such circumstances. The appropriate government response will depend on whether or not an international market remains in place without an international agreement.

With no agreement but an international market

In the event there is a gap in international agreements but an international market remains in place, then the government could continue to issue NZUs at an agreed level and establish domestic rules for the trading of international units meeting sufficient quality standards. The government is considering specifying an emission level in legislation to provide some level of certainty for business. This level would need to ensure a short market, but help to support market liquidity given uncertainties about how the international market would operate under such circumstances.

One option would be for the government to allocate (through both free allocation and sale) units equivalent to average annual net emissions reported in the New Zealand greenhouse gas emissions inventory for the last five years in which an international agreement remained in place prior to setting the new cap. In addition to that number, the government would continue to issue emission units for eligible sink activities. The government's view is that within this total allocation, the level of free allocation to eligible firms should continue at the prescribed rate of decline agreed in legislation.

With no agreement and no international market

In the event there was no successor agreement to the Kyoto Protocol (or a gap in agreements) and there was no functional international market post-2012, the government could maintain the NZ ETS by auctioning an unlimited number of NZUs at fixed price. This auction would function similarly to a carbon tax, but would still enable the surrender and trading of emission units by participants to meet their obligations. It would not place an absolute cap on emissions, but would maintain an emissions price in the marketplace.

The government would need to determine the specified price. One option would be the monthly average of the international spot price for the two years prior to the end of the first commitment period. However, if it was not possible for the government to determine an international spot price, then the government would need to specify a price.

The government is interested in receiving views from the Climate Change Leadership Forum on these approaches to adapting the NZ ETS should there be no international agreement, or a gap in such agreements, post-2012.