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An abstract graphic on the left side of the cover. It features a solid blue background with a complex network of thin, dark grey lines crisscrossing it. Scattered throughout this network are several dark grey circles of varying sizes, some of which are connected to the lines, resembling nodes in a network or data points.

# Evolution of the New Zealand Emissions Trading Scheme: Linking

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## **Abstract**

The New Zealand Emissions Trading Scheme (NZ ETS) was conceived as New Zealand's gateway to the international carbon market, with two objectives: assisting New Zealand to meet its international climate change obligations; and reducing domestic net emissions below business-as-usual levels. Underlying these objectives was the principle of least-cost compliance for both the New Zealand government and NZ ETS participants. Uniquely among emissions trading schemes (ETSs) to date, from 2008 through mid-2015 the NZ ETS operated with buy-and-sell linkages to the Kyoto market that did not constrain domestic emissions and were used to set the domestic price. As international Kyoto unit prices plunged from 2011 onward, so did New Zealanders' incentives to invest in higher-cost domestic mitigation. Instead, NZ ETS participants complied by purchasing large numbers of Kyoto units. In November 2012, the government announced it would take its post-2012 commitment under the United Nations Framework Convention on Climate Change (UNFCCC), not the Kyoto Protocol. NZ ETS participants responded by surrendering low-cost Kyoto units and banking New Zealand Units (NZUs), which were expected to remain usable in the longer term. In mid-2015, the NZ ETS delinked from the Kyoto market. As of 2017, the NZ ETS operates as a stand-alone system, with a substantial participant-held NZU bank largely as the unintentional legacy of past linking. The government now faces important decisions about the future of unit supply in the NZ ETS and linkages to international markets.

This paper examines New Zealand's experience with linking and delinking its ETS to capture lessons that could be of value to policy makers in New Zealand and other countries. It finds that the considerable opportunities to a small ETS market from linking can be negated if the environmental, economic, and political risks are not managed strategically. It also highlights some of the technical and political challenges of negotiating bilateral linking agreements. New Zealand's future policy on ETS linking, and more generally its support for international mitigation as part of its global contribution, need to ensure the integrity of the country's contribution to global mitigation and support strategic domestic decarbonisation in the longer term.

## **JEL codes**

Q50, Q54, Q58, N5, N57

## **Keywords**

Emissions trading, environmental economics, climate change, greenhouse gases, linking emissions trading schemes, environmental public policy, history, New Zealand

## **Summary haiku**

Cooperation

Lowers mitigation costs

But linking is hard

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# 1 Introduction

Emissions trading systems (ETSs) are an effective mechanism to assist jurisdictions to reduce their greenhouse gas (GHG) emissions and combat climate change. By the end of 2017, 19 emissions trading systems will have been implemented across 35 countries, 15 provinces/states and 9 cities. They will regulate 7 billion tonnes of emissions in economies encompassing 15% of global emissions and close to half of global GDP (International Carbon Action Partnership 2017a). These systems all differ in their level of emission reduction and price ambition, the sectors and gases they cover, the activities that are covered within each sector, how emissions units are allocated, and how they link with other sources of emission units (Partnership for Market Readiness and International Carbon Action Partnership 2016).

Reflecting New Zealand's national context, the New Zealand Emissions Trading Scheme (NZ ETS) was launched in 2008 with a number of innovative design features that differ markedly from many other ETSs under operation or consideration. This is one of a series of research papers by Motu analysing the key design features of the NZ ETS. These papers are intended to help both New Zealand and international researchers and stakeholders understand the broader conceptual framework for ETS design, how the NZ ETS operates today and how this has changed over time, the rationale for the design choices that have been made, and what can be learned from practical experience with implementation. It is hoped that the findings can be applied to inform and improve the future development of the NZ ETS and ETSs in other jurisdictions.

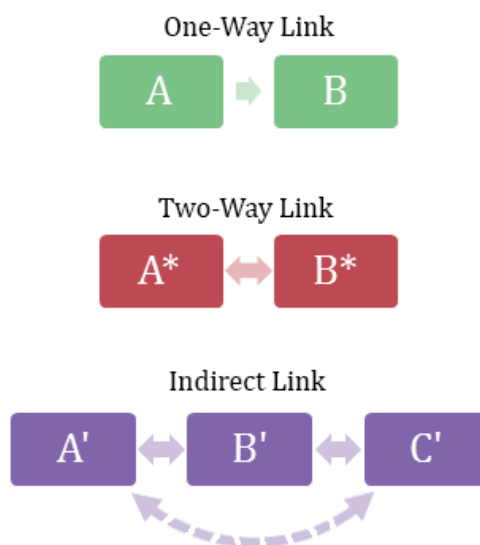
This paper focuses on the history of the linkages between the NZ ETS and the international carbon market. The fundamental design decision for the NZ ETS to rely on the global Kyoto market as the predominant source of units and to set the domestic emission price without constraining domestic emissions has proven to be one of the most uniquely defining and contentious aspects of the scheme. Section 0 provides a conceptual overview of the consequences, advantages, and challenges of linking ETSs. Section 3 examines the conception of the NZ ETS as an internationally linked system and traces the legislative evolution of the system's linking provisions. Section 4 reviews the history of exploring bilateral linkages. Section 5 presents commentary on New Zealand's practical experience with linking and its domestic impact. Section 6 concludes with reflections for the near-term future of the NZS ETS in the absence of international linkages. Whereas this paper focuses on the policy history of linking, a companion paper (Kerr and Ormsby 2016) presents a more detailed evaluation of the observed effects of linking and delinking on emission prices and unit surrenders in New Zealand's carbon market.

## 2 Conceptual design considerations on linking

### 2.1 What is linking?

An ETS becomes “linked” when emission units (sometimes referred to as allowances, permits or credits) originating in one or more external systems can be used for compliance. The external system can be another ETS, or a domestic or international mechanism producing tradeable offset units (e.g. on the basis of projects, programmes, or sectors outside of an ETS). Under a one-way (or unilateral) link, units may flow between systems in only one direction. Under a two-way (or bilateral) link, units can be bought and sold in both directions. Under a multilateral link, units can be bought and sold in all directions across the ETSs in multiple jurisdictions. Linking can occur directly between two systems through mutual recognition of units, or indirectly when two systems enable mutual recognition of units from a third system (see Figure 1: Different types of linking for a graphical illustration). In this paper, the definition of linking applies to unit transfers between systems for ETS operation,<sup>1</sup> and not to unit transfers across system registries for other reasons.

Figure 1: Different types of linking



### 2.2 The benefits of linking

When designed and managed effectively, ETS linkages can support least-cost mitigation across combined systems, reduce price volatility, increase market liquidity and depth, prevent market manipulation, reduce emissions leakage, and increase administrative efficiency (Partnership for Market Readiness and International Carbon Action Partnership 2016). The discussion of these benefits, below, is framed in terms of linkages between ETSs, although similar benefits can be

<sup>1</sup> This could include compliance trading activity by private ETS participants and/or government bulk purchases or sales of units associated with ETS operation.

achieved by linking an ETS to an external offset mechanism. A presumption underlying the discussion is that linked ETSs are designed with binding caps and adequate monitoring, reporting, verification, and registry systems that are enforced, thereby safeguarding the environmental integrity of trading transactions and ensuring the desired emission outcome across the linked system as a whole.

### *2.2.1 Supporting least-cost mitigation*

Linking enables gains from trade – lowering economic costs by mitigating where it is cheapest – without affecting the aggregate emission outcome. When two systems with different marginal abatement costs become linked, the system with higher prices will seek to buy lower-priced units from the other system until prices equalise. The buyers will benefit from lower compliance costs, and the sellers will benefit from higher unit prices than would have occurred in a domestic-only market. The market will be able to discover the least-cost mitigation opportunities across the linked system as a whole. The greater the difference in initial prices between the systems, the greater will be the gains from trade. Reducing emissions at least cost can save resources that can be used for other purposes, increase the political acceptability of emissions trading, and encourage jurisdictions to take on more ambitious mitigation targets.

### *2.2.2 Reducing price volatility*

While emission price signals are intended to change in response to supply and demand in order to drive efficient mitigation, high levels of price volatility – short-term variation in unit prices – can deter investment. Creating a larger market by linking ETSs can reduce price volatility, which helps with building market confidence, managing compliance costs, and encouraging low-emission investment. Linking two ETSs always reduces the volatility of at least one system and it can often reduce the volatility of *both* systems. This is because a larger system reduces uncorrelated shocks by spreading them out over both regions (Pizer and Yates 2013). It is still possible, however, to increase price volatility by linking if one ETS links to an especially volatile system, particularly if the volatile system is relatively large. Linking systems may result in exchange rate volatility being introduced to the local unit price, particularly for a smaller partner. For a small country like New Zealand, currency volatility could impact on whether ETS linking reduces emission price volatility from other drivers.

### *2.2.3 Increasing market liquidity and depth*

A larger market can be expected to have more liquidity and greater volumes of trading transactions, making it easier for participants to buy and sell emission units and for the market to establish emission prices.<sup>2</sup> This reduces “search costs” for participants and also reduces the

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<sup>2</sup> Exchange-based trading and the development of futures markets, which can support price discovery, are likely to develop only in markets of sufficient size.

risk to individual firms (whose emissions are uncertain) of not being able to buy enough units to satisfy compliance needs or of not being able to offload surplus units.

#### *2.2.4 Preventing market manipulation*

Having a larger aggregate trading market can provide a safeguard against market manipulation by participants with market power.<sup>3</sup> A manipulated price results in some least-cost mitigation opportunities being missed or in excessive mitigation, and hence reduces the efficiency of the ETS.

Market power in emissions trading can arise in one of two ways. First, it can occur directly in the unit market when the initial allocation of units is concentrated (Böhringer and Löschel 2003; Hahn 1984; Misiolek and Elder 1989; Tietenberg 2006). Here, a firm with a large allocation that far exceeds its needs has an incentive to sell less than would be optimal (in the sense of realising least-cost abatement opportunities) in order to drive up the price it receives for emission units. To take a specific example, Hahn (1984) uses empirical estimates from the Los Angeles sulphate emissions trading scheme, and shows that the monopolist would need to be allocated more than 40% of units for the efficiency loss due to market power to be of significant size. Market power can also arise if one firm needs to buy a very large percentage of the units. In this case, it has an incentive to buy fewer units and overmitigate in order to lower the emissions price.

It seems that market power so far has not been, and is unlikely to be, an issue in the NZ ETS. No individual firm receives a large enough allocation to distort prices in the emissions market and no single firm dominates the demand for units. In New Zealand, ongoing free allocation to the emissions-intensive, trade-exposed industrial sector is only a small percentage of total compliance demand.<sup>4</sup> A more likely problem is that, with thin markets, some firms have more information or bargaining power in specific trades and there is not one market price. An interesting consideration in the New Zealand market is that compliance buyers have to buy units to meet their obligations but sellers are not obligated to sell units. Forestry participants hold a significant number of units and their interest in selling them will be driven by a range of factors both inside and outside the NZ ETS, such as log prices.

By increasing the size of the emissions market, linking can decrease the likelihood of any one participant being large enough to manipulate the unit price. For linking to improve market competitiveness, two minimal conditions must be met: there must already be a problem with market competitiveness (either at present, or foreseen as a potential problem in the future); and no better solutions are available. Linking can also increase the depth of the market and provide access to stronger market institutions that can improve liquidity and market efficiency. In

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<sup>3</sup> Throughout our discussion of market power, we talk about a monopolist firm acting in its own interest rather than a cartel of firms acting in the group's best interest. Cartels can be thought of as behaving (as a group) similarly to a monopolist, with the difference that each individual member of the cartel has some incentive to "cheat" the other members. Collusion among firms is also illegal.

<sup>4</sup> In 2015, the government freely allocated 4.3 million NZUs to the industrial sector, compared to the total surrender volume (from non-forestry sectors) of 20.4 million units (Environmental Protection Authority 2016).

addition, linking can introduce further risks regarding market manipulation. Ensuring adequate market oversight can become even more challenging when multiple jurisdictions are involved and units cross national borders easily through electronic registries. Close cooperation between jurisdictions' financial regulatory bodies is required to help prevent fraudulent transactions. Introducing government auctioning would be an alternative way to reduce the potential for market manipulation of prices because it would improve price discovery and liquidity.<sup>5</sup>

#### *2.2.5 Reducing emissions leakage*

Emissions leakage occurs when production shifts from a jurisdiction operating under an ETS to one without comparable emission pricing or alternative regulation. In this case, emission gains under the ETS are offset by emission increases outside of the system. Firms will have less incentive to shift production from one jurisdiction to another if both are subject to converging emission costs under an ETS linking agreement. It is, however, the convergence of emission costs with those of major trade competitors that reduces potential leakage, rather than the ability to trade units, and this can be achieved in other ways.

#### *2.2.6 Improving administrative efficiency*

Linking ETSs with strategic harmonisation of key operating and reporting systems can help to reduce administrative burdens for both regulators and participants once the initial extra costs of negotiating an agreement between the systems have been covered. For example, firms operating across linked systems can benefit from common emission reporting requirements and managing their emission liabilities jointly across both systems. These common reporting requirements could be created without linking – for example, New Zealand and Australia harmonised many aspects of their ETSs without having a linking agreement in place. The linking agreement between the ETSs in California and Quebec enables the operation of a joint auctioning mechanism (Environmental Defence Fund, CDC Climat Research, and International Emissions Trading Association 2015). Again, there is not necessarily any barrier to one ETS using another's auction mechanism even if the systems are not linked, but clearly the auctions would be separate for each system's units.

### **2.3 The challenges of linking**

While offering the types of benefits discussed above, linking ETSs can also introduce many challenges that pose risks across linked systems. These can include managing the distribution of winners and losers; reconciling different levels of mitigation ambition; harmonising key design

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<sup>5</sup> Another potential cause of problems associated with market power is imperfect competition in the product market (Misiolek and Elder 1989). The New Zealand emission market includes a variety of different sectors that are not competing with each other and hence gain little from increasing other firms' costs of doing business, so this is implausible in the NZ ETS.

features that affect unit supply, price and integrity; increasing exposure to risk; and managing policy risk and sovereignty.

### *2.3.1 Managing the distribution of winners and losers*

While both jurisdictions may receive net benefits from linking due to the gains from trade, those benefits will be distributed unevenly.<sup>6</sup> Furthermore, there will be both winners and losers within each country (Jaffe et al. 2009; Pizer and Yates 2013). A firm selling units in the higher-priced market will be made worse off by the lower price in the linked system. Conversely, a firm buying units in the lower-priced market will be made worse off by the higher price in the linked system. While the government could, in theory, redistribute the gains from trade from the “winners” to fully compensate the “losers”, this is unlikely to happen in practice.

For example, if New Zealand linked to an ETS with a relatively lower price, then fossil fuel consumers in New Zealand would benefit from system convergence toward lower prices while foresters looking to sell afforestation units would be disadvantaged. The opposite would be true if New Zealand linked to an ETS with a higher price.<sup>7</sup>

### *2.3.2 Reconciling different levels of mitigation ambition*

Gains from trade in mitigation between countries arise from differences between systems’ mitigation opportunities and costs. Successful linking requires two systems to have mutually acceptable levels of mitigation ambition;<sup>8</sup> those levels need not be the same. A richer country with relatively few mitigation opportunities might accept a lower level of ambition from a poorer country with large mitigation potential. The greater the difference between the countries, the greater are the gains from trade.

However, linking systems with strongly divergent levels of mitigation ambition that are not mutually acceptable can create political risks and affect mitigation outcomes. Consider the case of two systems with different ETS prices reflecting different levels of cap ambition.<sup>9</sup> When the systems are linked, the higher-priced system with greater cap ambition will buy units from the lower-priced system, reducing its domestic mitigation effort and compliance costs, and

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<sup>6</sup> The party with the more sensitive marginal abatement cost curve can expect to benefit the most from linking (Flachsland et al. 2009). This will tend to be the smaller system, in which the volume traded will be a relatively larger percentage of emissions.

<sup>7</sup> The degree to which a low (high) emissions price benefits (harms) producers of emission-intensive goods (such as transport fuel suppliers) versus consumers of emission-intensive goods (such as drivers) depends on the degree of emission price pass-through from producers to consumers. Standard economic theory predicts that, in the long run, assuming all producers face the same emissions cost (e.g. across international competitors), the full cost of emissions will be borne by consumers, although in the short run it is possible that producers will carry more of the burden.

<sup>8</sup> Mitigation ambition can be defined in different ways, referring to the amount of mitigation (e.g. on an absolute or percentage basis) and/or the total cost of mitigation. Emission prices can be a good indicator of marginal abatement costs within an ETS, and therefore a useful indicator of a jurisdiction’s total mitigation cost. Very low ambition is likely to produce a low emission price. However, a country with low-cost abatement opportunities may be able to achieve large amounts of mitigation for only a relatively small price. Thus, the emission price in an ETS should be seen as an *indicator* of mitigation ambition, but a low emission price should not be seen as either a necessary nor sufficient condition for low mitigation ambition.

<sup>9</sup> In the context of this paper, an ETS cap is the maximum limit placed on units issued by the government for free allocation or auctioning.

transferring mitigation investment to producers in the other jurisdiction. If the two countries have similar incomes, transfer of resources from one country to another is likely to be unpopular. The higher-ambition system also loses the co-benefits of local investment and earlier adoption of more advanced low-emission technology and infrastructure (Flachsland et al. 2009; Helm 2003). The potential for linking can allow an increase in the mitigation ambition in the country that buys, because it lowers the cost of that ambition. However, it also creates an incentive for both the buyer and seller to accept a lower level of ambition in the seller country.

### *2.3.3 Harmonising key design features that affect unit supply, price, and integrity*

Linking two ETSs requires harmonisation of key design features that affect unit supply and prices in the market. These include the type of cap (e.g. absolute versus intensity); rules for banking or borrowing; rules on access to external offset units; and the operation of any price management mechanisms like unit reserves, price ceilings, or price floors. For these types of features, the outcomes of rules operating in one jurisdiction will spread automatically to the other. For example, if one ETS places no limits on third-party offset units, this will affect overall unit supply and prices across the linked system, even if the second jurisdiction refuses to allow offset units to enter directly into its registry.

As with other aspects of ETS operation, linking requires mutually acceptable safeguards on the environmental integrity of emission units – driven by the design and enforcement of monitoring, reporting, and verification systems – and on the integrity of market transactions – driven by the operation of sound registries and market oversight measures. Harmonisation may not be required but it may prove politically necessary regarding other aspects of ETS design, such as sector coverage and free allocation. For a more thorough discussion of which features need to be harmonised in order for two ETSs to link, see Goers and Pflüglmayer (2012), Partnership for Market Readiness and International Carbon Action Partnership (2016), and Ranson and Stavins (2015).

### *2.3.4 Managing policy risk and sovereignty*

Increasing policy certainty on emission pricing is key to building market confidence in low-emission investment. When two jurisdictions commit to harmonise key features of their ETSs and allow mutual recognition of units under a linking agreement, the agreement itself may enhance policy certainty by clarifying and documenting shared intentions, expanding vested interests in the policy, and raising the procedural and political hurdles for changing course. However, all policy decisions are subject to change by future governments. Linking exposes ETS regulators and participants to policy uncertainty in both jurisdictions. It may also complicate future domestic decision-making on ETS policy and impinge on domestic policy sovereignty. Ideally, both jurisdictions should agree in advance on how they will manage future changes to

domestic policy that could affect the terms of a linking agreement, and what process they would use to delink should that become necessary in the future.

### **3 Linking the NZ ETS to the Kyoto market**

This section details the policy history of New Zealand's experience with linking its ETS to the Kyoto market. It first examines the conception of the NZ ETS as a linked system and the government's initial policy decision to link the NZ ETS to the Kyoto market. It then traces the subsequent legislative history of linking.

#### **3.1 Conception of the NZ ETS as a linked system**

Formal design of the NZ ETS began in early 2007, following the government's decision in December 2005 to abandon the carbon tax proposed in 2002 and extensive public consultation on alternative mitigation policies. The decision by Cabinet in August 2007 to proceed with designing an ETS built on more than a decade of domestic consideration of emissions trading, as well as preparatory work to implement the proposed carbon tax in the energy and industrial sectors. After further public consultation on the proposed framework and legislative deliberation with public submissions, the NZ ETS passed into law in September 2008 (Leining and Kerr 2016).

Uniquely among ETSs developed globally to date, the NZ ETS was designed to operate without a limit on domestic emissions. From 2008 to mid-2015, the NZ ETS essentially was nested within the Kyoto cap through buy-and-sell linkages and had no quantitative limits. This enabled the global Kyoto market to serve as the dominant source of unit supply in the NZ ETS and set the domestic emission price based on global supply and demand. To date, no cap has applied to the issuance of domestic units, and the domestic sources of unit supply have consisted of fixed free allocation to the forestry and fishing sectors; output-based free allocation to emissions-intensive, trade-exposed industrial producers;<sup>10</sup> and issuance for forestry and industrial removals. Other ETSs that have linked to external markets have imposed constraints on overall unit supply to maintain some degree of autonomy over domestic emissions and emission prices (Partnership for Market Readiness and International Carbon Action Partnership 2016).

There were three key drivers for the pivotal decision by the New Zealand government to link the NZ ETS internationally without quantitative limits: access to an existing framework for international emissions trading; growing support for international emissions trading; and New Zealand's policy objectives for its contribution to global climate change mitigation.

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<sup>10</sup> Activities generating biological emissions from the agriculture sector would be eligible to receive free allocation if that sector assumed unit obligations under the system; in the 2012 amendments, this was deferred indefinitely.

### *3.1.1 Access to an existing framework for international emissions trading*

The 1997 Kyoto Protocol provided an overarching legal framework for international emissions trading to help Annex B (industrialised) countries meet part of their emission-reduction commitments. The three Kyoto “flexibility mechanisms” were the Clean Development Mechanism (CDM),<sup>11</sup> Joint Implementation (JI)<sup>12</sup> and International Emissions Trading (IET).<sup>13</sup> The Kyoto framework included rules intended to ensure the environmental integrity and comparability of units issued under the different mechanisms, and established the International Transaction Log for managing unit transfers between parties and for compliance with Kyoto obligations.

The New Zealand government had anticipated participating in the Kyoto flexibility mechanisms long before conception of the NZ ETS. In principle, the government considered that participation in such mechanisms reinforced multilateral cooperation on climate change mitigation. There were also potential financial benefits. At the time of Kyoto ratification in 2002, the government had projected a unit surplus for the first commitment period of 2008–12 (CP1) as a result of forestry removals (Hodgson 2002c), and under Article 17 this surplus could have been sold overseas for financial gain. The Climate Change Response Act 2002 established a domestic emission unit registry and granted powers to the Minister of Finance to buy and sell units, including overseas, on behalf of the Crown. Under the 2002 climate change policy package, the government provided for private-sector participants in Projects to Reduce Emissions (PRE),<sup>14</sup> Negotiated Greenhouse Agreements (NGAs),<sup>15</sup> and the Permanent Forest Sink Initiative (PFSI)<sup>16</sup> to receive and trade New Zealand Assigned Amount Units (AAUs) and/or Emission Reduction Units (ERUs) with potential sales overseas (Hodgson 2002a,b). The Climate Change Response Amendment Act 2006 included provisions for applicants to open holding accounts in the registry and trade units both domestically and overseas.

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<sup>11</sup> Under Article 12 of the Kyoto Protocol, the CDM enabled developing (non-Annex I) countries to undertake mitigation projects contributing to sustainable development, and to trade the resulting Certified Emission Reductions (CERs) to Annex B (industrialised) countries to help them meet part of their quantified emission limitation or reduction commitments (QELRCs).

<sup>12</sup> Under Article 6 of the Kyoto Protocol, JI enabled Emission Reduction Units (ERUs) generated by projects in Annex B countries to be traded to other Annex B countries to help meet part of their QELRCs. The issuance of each ERU required the cancellation of an Assigned Amount Unit (AAU) held by that country in line with its target for the commitment period.

<sup>13</sup> Under Article 17 of the Kyoto Protocol, Annex B countries could trade Kyoto units to help meet part of their QELRCs.

<sup>14</sup> The PRE initiative enabled New Zealand firms to undertake domestic projects that reduced emissions beyond business as usual and to earn tradeable emission units. The policy was discontinued in 2005, but previously approved projects received units during CP1. See <http://www.mfe.govt.nz/climate-change/reducing-greenhouse-gas-emissions/former-government-initiatives>.

<sup>15</sup> NGAs enabled emissions-intensive, trade-exposed firms to receive an exemption from the carbon tax in return for achieving an emission-reduction pathway that was negotiated with the Crown. Firms received tradeable units if they overcomplied with their pathway, and could purchase units domestically or overseas to compensate for a performance deficit. Only two NGAs were agreed before the policy was discontinued in 2005. See <http://www.mfe.govt.nz/climate-change/reducing-greenhouse-gas-emissions/former-government-initiatives>.

<sup>16</sup> Under the PFSI, participants can enter into a covenant with the Crown to receive tradeable units in exchange for establishing post-1989 forests and maintaining them under forest cover with limited harvesting. See <https://www.mpi.govt.nz/funding-and-programmes/forestry/permanent-forest-sink-initiative>.

### *3.1.2 Growing support for international emissions trading*

During the initial design phase of the NZ ETS, emissions trading was rapidly gaining prominence as a market-based mitigation instrument supporting least-cost mitigation. The release of the Stern Review (Stern 2007), the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Intergovernmental Panel on Climate Change 2007), and other studies reinforced important messages about the need for mechanisms supporting cost-effective mitigation investment in developing countries in order to stabilise global emissions (Cullen and Parker 2007). The European Union Emissions Trading System (EU ETS) operated its pilot phase over 2005–07 and planned for full operation over 2008–12 (CDC Climat Research, Environmental Defense Fund, and International Emissions Trading Association 2015). ETSs were under active consideration or development in the United States and Australia. International capacity-building on emissions trading was getting underway, including through new initiatives like the International Carbon Action Partnership (ICAP).<sup>17</sup> These developments suggested that international emissions trading was likely to become an enduring part of the global mitigation response, and New Zealand potentially could access an expanding field of lower-cost mitigation opportunities overseas than appeared readily available domestically (Ministry for the Environment and The Treasury 2007).

### *3.1.3 New Zealand's policy objectives for its contribution to global mitigation*

The NZ ETS was designed as the government's primary policy tool for achieving its emission-reduction commitments under the Kyoto Protocol. New Zealand had assumed an emission reduction "responsibility target"<sup>18</sup> to stabilise net average annual emissions (including forestry) at gross 1990 levels (excluding forestry) over CP1. By 2005, when the government decided to abandon the carbon tax, it had become clear that New Zealand faced a looming Kyoto deficit for CP1 (Ministry for the Environment 2005). As of the end of May 2007, the government projected a mid-range deficit of 45.5 million units<sup>19</sup> over CP1, valued at more than NZ\$700 million<sup>20</sup> (Ministry for the Environment 2007b, 2015b; The Treasury 2007). The expectation was that, with or without a domestic emission price, New Zealand would need to purchase a substantial number of overseas Kyoto units in order to comply with its target cost-effectively, and the government would need to decide the distribution of the associated costs across taxpayers versus producers and consumers (e.g. see Infometrics (2007)).

When Cabinet approved the core design features of the NZ ETS in August 2007 as the basis for public consultation, it defined a dual objective for the system: "reducing New Zealand's net

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<sup>17</sup> See <https://icapcarbonaction.com/en>.

<sup>18</sup> Under the Kyoto framework, Annex B (industrialised) countries could meet their targets through a combination of domestic effort and the purchase of overseas Kyoto units, representing additional mitigation investment in other countries.

<sup>19</sup> One unit equals one metric tonne of carbon dioxide equivalent (CO<sub>2</sub>eq).

<sup>20</sup> This value assumed an emission price of NZ\$15.48 per tonne CO<sub>2</sub>eq based on international emission prices and linking within the Kyoto framework.

emissions below business-as-usual levels; and complying with our international obligations, including our Kyoto Protocol obligations; while maintaining economic flexibility, equity, and environmental integrity at least cost in the long term” (Cullen and Parker 2007). When explaining the rationale, the accompanying paper indicated:

The proposed objective does not specify a preference for domestic emission reductions relative to reductions supported overseas in the form of units purchased from other Kyoto parties. There is no greater reduction to global ambient emissions concentrations from reducing emissions in New Zealand as opposed to another location. If we did specify a level of domestic emissions reductions, the scheme could have larger price impacts where this prevents firms from supporting less costly emissions reductions offshore, with no commensurate environmental benefit. (Cullen and Parker 2007)

This neutrality about the balance between domestic and international mitigation effort was underpinned by the government’s recognition that effective multilateral action was required to reduce global emissions, its preference for least-cost compliance with its “responsibility target” under the Kyoto Protocol, and its expectation that New Zealand’s domestic emissions would need to decrease “on the long path towards a sustainable future and carbon neutrality”. Ministers wrote, “Taking effective domestic action needs to be seen both as shouldering responsibility for managing the reduction of emissions, and as creating the platform upon which New Zealand can contribute internationally to achieving a broad and effective global action” (Cullen and Parker 2007).

### **3.2 The initial policy decision to link the NZ ETS internationally**

In August 2007, Cabinet decided in principle, subject to further consultation, to include international linking as a core design feature of the NZ ETS. This decision was justified on the grounds that linking would reinforce New Zealand’s commitment to multilateral cooperation on mitigation; broaden participants’ access to least-cost abatement options in a manner consistent with the objectives of the Kyoto Protocol; support market liquidity; and ensure that the price of emission units in the NZ ETS was determined by the international market, thereby providing a price “safety valve”. Using linking to align domestic emission prices with international prices was identified as a strategic advantage of the NZ ETS relative to the previously considered carbon tax, where prices would have been set by the government and could have fallen out of step with international prices, at a cost to the New Zealand economy (Cullen and Parker 2007). Although this was not stated in Cullen and Parker (2007), in practice Cabinet’s decision essentially devolved from the government to NZ ETS participants the primary responsibility for purchasing overseas units to overcome New Zealand’s projected CP1 Kyoto deficit. By aligning domestic and international unit prices, NZ ETS participants would pay no more for overseas units than the government, had it retained unit-purchasing responsibility.

In September 2007, the government released a public consultation document on its proposed framework for the core NZ ETS design (Ministry for the Environment and The Treasury 2007). This document presented its position on linking and addressed the near-term linking opportunities for the NZ ETS. The government indicated that opportunities to link bilaterally to other ETSs would be limited in the pre-2012 period. Design differences were considered likely to preclude linking to the EU ETS, and Australia had not ratified the Kyoto Protocol and was progressing slowly with its consideration of a national ETS. The New Zealand government therefore determined that linking to the Kyoto mechanisms would be the more promising option for safeguarding domestic liquidity and emission prices in the pre-2012 period.

The government outlined its intentions for ETS participants' use of the Kyoto mechanisms. For compliance purposes, New Zealand Units (NZUs) and Kyoto units would be interchangeable. NZUs could be exchanged for Kyoto units for sale overseas. The government did not signal any quantity constraints on international trades, with the exception of complying with the Kyoto Commitment Period Reserve (CPR).<sup>21</sup> It did signal the potential to limit the types of CERs<sup>22</sup> and ERUs,<sup>23</sup> but not AAUs<sup>24</sup> or Removal Units (RMUs),<sup>25</sup> to be approved for ETS compliance.<sup>26</sup> The government felt confident enough in international unit supply under the Kyoto mechanisms that it did not propose to include a price floor or price ceiling in the NZ ETS, at least pre-2012. This form of linking constituted an indirect linkage between the NZ ETS and other ETSs that also accepted such units (notably the EU ETS). However, prices were expected to diverge across systems, because unlike the NZ ETS, other ETSs limited participants' use of Kyoto units for compliance (Ministry for the Environment and The Treasury 2007).

During public consultation on the proposed framework of the NZ ETS, some respondents had raised concerns regarding adequate liquidity in the domestic market; the ability of New Zealand firms to engage effectively in the international market; the possible need for a price cap to guard against international price volatility; and the environmental integrity and reputational risks of allowing use of "hot air" AAUs<sup>27</sup> from Russia, Ukraine, and eastern European countries, as well as CERs from hydrofluorocarbon (HFC)-23 projects (Ministry for the Environment 2007a).<sup>28</sup> Other

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<sup>21</sup> The sale of Kyoto units from NZ ETS participants to overseas buyers was subject to the Kyoto CPR, which applied to the whole of New Zealand. The CPR was designed to prevent overselling by Annex B (industrialised) countries participating in the Kyoto flexibility mechanisms. It required them to hold units equivalent to 90% of their initial Assigned Amount in their registry. This did not prove binding to ETS trading activity.

<sup>22</sup> CERs are the units generated by CDM projects.

<sup>23</sup> ERUs are the units generated by JI projects.

<sup>24</sup> Restrictions on imported AAUs were later applied under the 2008 legislation.

<sup>25</sup> RMUs result from net forestry removals in Annex B countries.

<sup>26</sup> Pursuant to the Climate Change Response Act 2002, the government had already placed restrictions on CERs and ERUs associated with nuclear projects, as well as forestry CERs (tCERs and ICERs), and these restrictions were automatically carried over into the NZ ETS. However, the government signalled the potential to prohibit other types of CERs and ERUs, such as those associated with HFC-23 projects.

<sup>27</sup> "Hot air" is the term popularly applied to surplus emission units (AAUs and ERUs) that resulted from weak targets and economic downturn in Russia, Ukraine, and eastern European countries, rather than "additional" mitigation investment.

<sup>28</sup> Projects involving the destruction of HFC-23, a by-product of manufacturing HCFC-22 (an ozone-depleting refrigerant), had integrity concerns because of perverse incentives to increase production of the gas in order to

respondents countered that AAUs were acceptable under the rules of the Kyoto Protocol, and that it would be hard to distinguish and exclude CERs from HFC-23 projects when buying bundled units in the secondary market. Respondents asked for policy certainty on unit eligibility and for lenient non-compliance penalties in the initial transition to overseas trading to help build market confidence.

### **3.3 Legislative evolution of linking**

This section tracks the legislative and regulatory evolution of the linking provisions in the NZ ETS across the founding legislation in 2008 and legislative amendments in 2009, 2012, and 2014.

#### *3.3.1 Climate Change Response (Emissions Trading) Amendment Act 2008*

Following public consultation on the proposed NZ ETS framework, the government introduced the Climate Change (Emissions Trading and Renewable Preference) Bill in Parliament in December 2007. Its initial position on linking remained broadly consistent with the framework proposal. ETS participants in all sectors could use overseas Kyoto units to comply with their obligations, with no quantitative limits, and could exchange NZUs for NZ AAUs for sale overseas. To ensure unit comparability and to align ETS allocation with the government's international obligations, each NZU issued by the government would be matched by a Kyoto unit held in a Crown account by the true-up for each commitment period.<sup>29</sup> The government would have the power to add or restrict sources of approved overseas units through regulations. The international market would set the domestic emission price. A new provision enabling the government to sell NZUs by public tender was also included.

In its response to submissions accompanying the new Bill, the government explained that the Bill imposed no restrictions on eligible sources of Kyoto units, leaving any such restrictions for future regulations, but it signalled its openness to further consideration of whether to allow imported AAUs to meet ETS unit obligations. It wrote, "Relevant factors include estimates of possible price effects, reputation of the NZ ETS, consistency with the spirit of the Kyoto Protocol, effects on options for linking with other trading schemes, and possible behaviour by other nations vis-à-vis AAUs." The government stated that its preference was for ETS participants – rather than the government – to engage directly in the international market or indirectly via intermediaries. However, it acknowledged the potential benefits of enabling the government to acquire international units and then sell them domestically by commercial auction if this was

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generate more units. HFC-23 has a very high global warming potential, enabling such projects to generate a large number of units, with significant profits to producers.

<sup>29</sup> Exceptions included NZUs converted to AAUs for sale overseas (such NZUs were automatically paired with AAUs), NZUs issued during the first commitment period in respect of post-2012 free allocation to the forestry sector, or NZUs transferred to a cancellation account. The final exception is significant in that entities that voluntarily cancelled NZUs (e.g. for their own offsetting purposes) did not automatically cancel corresponding Kyoto units, and therefore the NZU cancellation may not have resulted in emission reductions beyond New Zealand's international target.

needed to improve functioning of the NZ ETS market. Using commercial auctions alongside linking would ensure the government did not manipulate the domestic price (Ministry for the Environment 2007a).<sup>30</sup>

The question of whether to restrict the quantity and/or sources of imported Kyoto units eligible in the NZ ETS remained controversial during legislative deliberation and ongoing stakeholder consultation (including with the Climate Change Leadership Forum<sup>31</sup>). Submitters expressed a range of views, with several energy- or emissions-intensive firms and affiliated associations calling for broad inclusion of imported Kyoto units, and others such as forestry interests and environmental non-governmental organisations (NGOs) calling for exclusion of imported Kyoto units with environmental integrity concerns. For officials, the perceived trade-offs were between lowering compliance costs for ETS participants and retaining future linking options with systems that barred such units. In their departmental report on the Bill, officials recommended against restricting the sources or quantity of imported units and against imposing a price cap. Officials considered that trading in Kyoto units was legitimate under the Kyoto Protocol, and any future integrity concerns could be addressed either internationally or through regulations. While unlimited imports could be a barrier to linking, a price cap could also be a barrier to linking, especially to the EU ETS. Officials did wish to signal the government's intention to preserve linking options, and recommended that participants should not be allowed to use CP1 AAUs to meet their ETS obligations after CP1. They also noted the potential for the government to "establish bilateral linkages in order to facilitate acceptance of the type of units permitted to be surrendered" (Emissions Trading Group and Ministry of Economic Development 2008).

To mitigate the risks to future linking from imported units, the Finance and Expenditure Committee adopted a "firewall" provision to block the use of imported AAUs issued during CP1 to meet ETS participants' obligations after 31 December 2012. A similar restriction was extended to the Crown's use of imported CP1 AAUs to meet its international obligations after 2012. Otherwise, the committee did not place restrictions on imported Kyoto units in the NZ ETS. In its minority statement, the Green Party objected to allowing unlimited unit imports and recommended targets for reducing domestic emissions. Other minority parties did not note objections to the linking provisions in the committee's report. The committee did remove the provision for the government to sell units by public tender, on the grounds that it was preferable to rely on the broad powers already contained in the Climate Change Response Act 2002 for the

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<sup>30</sup> In the government's view, government intervention to manage liquidity or manipulate domestic emission prices could reduce efficient and cost-effective market operation, devalue unit holdings and futures contracts, introduce policy uncertainty and political influence, undermine the environmental integrity of the NZ ETS, and affect linking prospects (Ministry for the Environment 2007a).

<sup>31</sup> The Climate Change Leadership Forum (CCLF) brought together 33 stakeholders and officials across diverse sectors for discussions on the NZ ETS from September 2007 to September 2008. Officials prepared briefings for the CCLF on units of trade in the NZ ETS and the treatment of "hot air" AAUs (Emissions Trading Group 2007). The group did not reach consensus on this issue (Emissions Trading Group and Ministry of Economic Development 2008).

Crown to sell units rather than specify the method in legislation (Finance and Expenditure Committee 2008).

Lacking sufficient votes to pass the Bill, the Labour-led government entered into intense negotiations with the Green Party and New Zealand First. This resulted in a series of supplementary order papers (SOPs) with amendments to the Bill. SOP239 reversed the treatment of imported AAUs during CP1, so that they would not be accepted in the NZ ETS by default unless this was changed by future regulation.<sup>32</sup> The AAU “firewall” provision was still retained in the event imported AAUs became eligible in the future (Parker 2008b). The Bill was passed by a vote of 63 to 57, with support from the Labour, Progressive, New Zealand First, and Green parties, and opposed by the National, ACT, Māori, and United Future parties (Cameron and Rive 2011).

In retrospect, it is interesting to note that the restrictions adopted in the 2008 Act to block imported “hot air” AAUs from the NZ ETS were not extended to imported ERUs from JI projects in “hot air” countries.<sup>33</sup> At the time, JI was a new and relatively uncharted mechanism, and it was being implemented more slowly than the CDM (World Bank 2008). Kyoto parties had provided rules to safeguard the environmental integrity of ERUs through two mechanisms: requiring the issuance of each ERU to be accompanied by the cancellation of an AAU; and creating a “two-track” mechanism for JI project verification and certification.<sup>34</sup> To address potential reputational concerns associated with the “hot air” surplus, several eastern European countries were developing “Green Investment Schemes” to direct unit revenues to emission reduction or other environmental investments. It was not clear to the market whether large “hot air” players like Russia and Ukraine would choose to sell surplus units or bank them for future compliance and to keep market prices high, whether such units would be sold in the form of AAUs or ERUs under Track 1 or Track 2, and whether trades from those countries would occur between governments only or could also involve the private sector (Emissions Trading Group and Ministry of Economic Development 2008; World Bank 2007, 2008). The documented history of the legislative process suggests that imported ERUs initially were not perceived by decision-makers as posing a risk to the price stability or integrity of New Zealand’s ETS market or to future linking opportunities to the same extent as imported AAUs.

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<sup>32</sup> Imported AAUs have never been accepted into the NZ ETS by regulation.

<sup>33</sup> JI projects were intended to produce emission reductions that were additional to a country’s Kyoto target. For ERUs to be issued for a JI project, an equivalent number of the host country’s AAUs had to be cancelled to ensure their additionality relative to the target. In this regard, the same concerns raised internationally about trading surplus AAUs from countries with “hot air” targets were also relevant to ERUs sold by those countries; however, as discussed above, such concerns about ERUs were intended to be addressed under the Kyoto framework.

<sup>34</sup> In compliance with their inventory and reporting requirements, host countries could self-certify ERUs (Track 1), whereas for those countries at risk of non-compliance or seeking the market value from additional assurance, JI projects had to undergo independent verification and certification following a procedure similar to that under the CDM (Track 2).

### 3.3.2 Climate Change Response (Moderated Emissions Trading) Amendment Act 2009

#### 2009 NZ ETS review by a special select committee

Eight weeks after that passage of legislation for the NZ ETS, a general election brought a National-led government to power in coalition with supporting parties. The new government immediately launched a review of the NZ ETS, a requirement of its confidence-and-supply agreement with the ACT Party,<sup>35</sup> and appointed a special select committee, which reported on its deliberations at the end of August 2009 (Leining and Kerr 2016).

The select committee recommended linking the NZ ETS to Kyoto-compliant schemes that would “lower the overall cost of abatement with environmental integrity and deliver economic transformation more efficiently”. However, the committee did note the potential need to restrict international linkages “to facilitate bilateral linking, to achieve domestic abatement, or in the interests of environmental integrity.” It also indicated, “There may also be good reason to limit international linkages in the short term while the New Zealand emissions trading market matures” (Emissions Trading Scheme Review Committee 2009). Regarding the strategic implications of domestic versus overseas mitigation, the committee wrote:

There is an argument for promoting higher-cost domestic abatement in New Zealand by restricting international linkages, since it is likely that our international obligations will become more stringent over time. Domestic investment in emissions reductions should produce long-term domestic dividends. However, we consider that the choice to invest domestically should lie with businesses, since they are better-placed to assess the short- and long-term costs and benefits on their businesses of domestic versus international investment in emissions reductions. The overriding concern should of course be New Zealand’s long-term interests. It is in the global interest to reduce emissions as much as possible for a given level of investment, and this purpose is supported by linking trading schemes internationally. (Emissions Trading Scheme Review Committee 2009)

The committee also considered the potential introduction of a price cap and its interaction with linking. Some members saw merit in a short-term price cap with export restrictions, as a safeguard against price volatility and upside price risks, but there were also concerns about the implications for the forestry sector of lowering market prices and restricting unit exports. The committee recommended measures to improve investment certainty for forest planting and suggested that any short-term price cap should be accompanied by a clear exit strategy (Emissions Trading Scheme Review Committee 2009).

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<sup>35</sup> The ACT Party platform called for abolishing the NZ ETS. In its agreement with the National Party, ACT stated, “ACT is not opposed to New Zealand adopting responsible climate change policies. What it opposes is an ETS that was never adequately justified. If a rigorous select committee inquiry establishes a credible case that New Zealanders would benefit from action by New Zealand, in conjunction with other countries that are important to us, ACT would be prepared to support legislation giving effect to such action.” In its proposed terms of reference for the review, the ACT Party recommended, *inter alia*, that the committee “hear competing views on the scientific aspects of climate change from internationally respected sources and assess the quality and impartiality of official advice”; however, this was not adopted in the final terms of reference issued by the government (National Party and ACT Party 2008; Smith 2008).

### **Cabinet's in-principle decisions on the 2009 amendments**

While the select committee was deliberating, the government began to assess options for moderating the impact of the NZ ETS and increasing harmonisation with the Australian Carbon Pollution Reduction Scheme (CPRS), which was under development at that time.<sup>36</sup> A key objective was reducing the economic impact and leakage potential of the NZ ETS at a time of recession under the global financial crisis and uncertainty about the future international climate change agreement (Ministry for the Environment 2009). The government's objectives regarding harmonisation with Australia's scheme are discussed further below.

By early August 2009, Cabinet had taken in-principle decisions to continue using the international market to set the domestic emissions price but reduce the exposure of NZ ETS participants to the international price. First, Cabinet agreed to introduce a "one-for-two" unit obligation to limit exposure of non-forestry sectors to half of the international emissions price through 2012.<sup>37</sup> Second, Cabinet introduced a price ceiling of NZ\$25 per tonne CO<sub>2</sub>eq through 2012, accompanied by prohibition of unit exports from non-forestry sectors. Third, for the industrial and agricultural sectors, Cabinet removed the previously established limit on free allocation (originally set at 90% of 2005 emission levels by eligible recipients) (New Zealand Cabinet 2009a; Smith 2009a). This series of changes substantially muted the emission price incentive to change behaviour. They also shifted more of the responsibility for, and cost of, reducing emissions to help meet New Zealand's international obligations from NZ ETS participants to the government, and hence taxpayers. These decisions were confirmed in September 2009 after the select committee reported back (New Zealand Cabinet 2009c).

The decision on whether to allow exports of forestry NZUs under the price ceiling (both freely allocated for pre-1990 forests and issued for post-1989 forestry removals) was given careful consideration (New Zealand Cabinet 2009a). Cabinet received further advice on four issues: potential fiscal risks to the Crown; economic impacts on post-1989 forest owners; implications for future linking with the Australian CPRS; and stakeholder acceptance. Fiscal risks arose from the potential for exports of forestry NZUs to reduce the domestic unit supply, which under high international prices could increase participant demand for fixed-price units under the price ceiling. Demand for fixed-price units would require the government to purchase more units to meet its CP1 Kyoto obligations. This additional risk from allowing foresters to export units was determined to be low because, like other participants receiving free allocation, forestry participants could choose to bank units if exporting was denied, producing a comparable fiscal outcome for the government. The Cabinet paper suggested that the fiscal risk of allowing exports

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<sup>36</sup> The Australian CPRS was under development at the same time as the NZ ETS. The Australian government had released a green paper (Australian Department of Climate Change 2008b) on the system in July 2008 and a white paper (Australian Department of Climate Change 2008a) in December 2008. The proposal was for a cap-and-trade system covering the stationary energy, transport, fugitive emissions, industrial processes, waste, and forestry sectors, and all six Kyoto GHGs. The system was intended to support international linking. Ultimately, it did not secure support from the Australian Senate and was later replaced by the Australian Carbon Pricing Mechanism (CPM).

<sup>37</sup> Participants from non-forestry sectors were required to surrender one unit for every two tonnes of emissions.

would increase in the near term if more post-1989 foresters opted into the system.<sup>38</sup> A further consideration was that an export ban could discourage post-1989 forestry investment and impose a longer-term economic cost.<sup>39</sup> With regard to the Australian CPRS, future linking could require harmonisation with Australia's price ceiling and ban on unit exports, and it could be problematic to first allow and then deny exports of forestry units from New Zealand. Importantly, forestry stakeholders could be expected to object strongly to a ban on exporting forestry units (New Zealand Cabinet 2009b). On balance, given the political risks, the government chose to allow ongoing exports of forestry units while the price ceiling was in place (New Zealand Cabinet 2009c).

### **Parliamentary deliberation on the 2009 Amendment Bill**

The government introduced the Climate Change Response (Moderated Emissions Trading) Amendment Bill to Parliament in September 2009. The Finance and Expenditure Committee failed to reach agreement on the Bill. Key points of contention by the Labour and Green parties included changing the exposure of ETS participants to the international emission price (i.e. through the "one-for-two" unit obligation, price ceiling, and uncapped output-based industrial free allocation) and prioritising harmonisation with the Australian CPRS at the expense of other potential linking opportunities (e.g. the EU ETS and a national US ETS). The Māori Party raised concerns about managing the economic cost of the NZ ETS and its impact on vulnerable communities and business interests, as well as ensuring appropriate recognition of the Treaty of Waitangi. The ACT Party advocated for delaying the system until there was more certainty about the outcome from the 2009 United Nations Climate Change Conference in Copenhagen and the policy responses in Australia and the United States (Finance and Expenditure Committee 2009). The government negotiated a compromise agreement with the Māori Party, and the amending legislation was passed in late November 2009 without changes to the core transitional measures to moderate participants' exposure to the international price of emissions.

### *3.3.3 2011 NZ ETS Review and Climate Change Response (Emissions Trading and Other Matters) Amendment Act 2012*

#### **2011 NZ ETS review**

The government had a statutory requirement to review the NZ ETS before the end of CP1, and to that end appointed the independent ETS Review Panel in December 2010. The Climate Change Response Act 2002 required that the review panel consider, among other issues, which overseas units should be eligible for compliance in the NZ ETS and the potential for linkages to other schemes. After public consultation, the review panel reported its findings to the government in June 2011. With regard to linking-related provisions, it recommended that:

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<sup>38</sup> The Cabinet paper also suggested the fiscal risk could increase if global emission prices were expected to fall in the second Kyoto commitment period (CP2, 2013–20), creating an incentive for foresters to export more units in CP1.

<sup>39</sup> The fixed-price option could also discourage all other low-emission investments.

- The New Zealand government should work internationally to advance carbon market development and enable New Zealand to buy and sell units overseas.
- While harmonisation with the Australian Carbon Pricing Mechanism (CPM)<sup>40</sup> could be desirable, “we should not be bound by the features of any particular overseas scheme”.
- The price ceiling should be retained but the level increased by NZ\$5 per year from 2013 through 2017, at which point it should be reviewed again.
- A full (one-for-one) unit obligation should be implemented progressively by 2015 for all sectors except agriculture, for which a full obligation should apply by 2019.
- Non-forestry sectors should be allowed to export NZUs once the price ceiling was removed or sooner if the international price was well below the price ceiling, minimising arbitrage risks.
- No price floor should be introduced.
- The government should urgently consider whether to regulate to restrict the surrender of HFC CERs in the NZ ETS, as these units were banned from the EU ETS and could potentially flood into the New Zealand market (Emissions Trading Scheme Review Panel 2011).

When the review panel’s report was released publicly in September 2011, the government responded in a media release, stating that the report affirmed the need to slow the removal of transitional measures and that the government would work through the recommendations and make policy decisions (Smith 2011).

### **Consultation on banning imported CERs from industrial gas-destruction projects**

Two weeks after the public release of the review panel’s report, the government launched consultation on whether to regulate to ban CERs from industrial gas-destruction projects involving HFC-23 and nitrous oxide (N<sub>2</sub>O). This followed directly from the recommendation of the review panel. The government noted three rationales for the proposal: concerns about the environmental integrity of these units; the potential for a “global oversupply” of these units to affect prices in the NZ ETS; and the value of preserving options to link to other schemes that prohibited these units (e.g. the EU ETS and Australian CPM) (Ministry for the Environment 2011). Although the government noted that bans in other schemes also included ERUs associated with these projects, the government consulted on CERs only. Following the November 2011 general election,<sup>41</sup> the government proceeded to ban CERs from industrial gas-destruction projects involving HFC-23 and N<sub>2</sub>O. As of 23 December 2011, when the Climate Change (Unit Register) Amendment Regulations 2011 took effect, participants could no longer surrender those units for NZ ETS compliance unless the units were already held in the registry before 24 December 2011 or had been acquired under a forward contract entered into before 23 December 2011 (in which case the units had to be surrendered before 1 June 2013).

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<sup>40</sup> The Australian CPM was the successor to the CPRS, which had failed passage by the Australian Senate. It was first announced in February 2011 and the detailed plan was issued in July 2011 (Australian Department of Climate Change and Energy Efficiency 2011). It was passed by the Australian Senate in November 2011 and repealed in 2014.

<sup>41</sup> This election returned a National-led government to power.

### **Cabinet's in-principle decisions on the 2012 amendments**

In March 2012, Cabinet agreed in principle to a suite of changes to the NZ ETS as the basis for consultation. By this point, the Australian CPM had entered into law (November 2011) and the United Nations Climate Change Conference held in Durban had produced a positive outcome (December 2011).<sup>42</sup> Cabinet affirmed that the policy goals of the NZ ETS were to: “(1) help New Zealand to deliver its ‘fair share’ of international action to reduce emissions, including meeting any international obligations; (2) deliver emission reductions in the most cost effective manner; and (3) support efforts to maximise the long term economic resilience of the New Zealand economy at least cost” (New Zealand Cabinet 2012b). With regard to linking, the government's key proposals were to:

- Introduce government auctioning under a cap on overall units issued (for both auctioning and free allocation to sectors except forestry<sup>43</sup>), and consult on whether to limit the surrender of overseas units for compliance.
- Remove the requirement to back NZUs with Kyoto units if auctioning within a cap was implemented.
- Extend the price ceiling through 2015 and retain the ban on exporting non-forestry NZUs while the price ceiling remained in place.
- Introduce a power for the government to align the price ceiling after 2015 with the level of any fixed-price option in the Australian CPM if linking had occurred.
- Accept the recommendations from the ETS Review Panel to phase in a one-for-one unit obligation.
- Build in flexibility for the NZ ETS to continue to operate effectively in the event there was no agreement to a Kyoto CP2 or New Zealand chose not to join that agreement (New Zealand Cabinet 2012b).

The rationale from the Minister for Climate Change Issues for introducing auctioning under a cap included five main points. First, while allowing unlimited access to overseas units reduced participants' compliance costs, sending cash offshore to acquire Kyoto units represented a loss of domestic spending.<sup>44</sup> Auctioning would provide a new option for unit supply that would generate revenue within New Zealand. Second, as ETS surrenders accumulated over time, the government was expecting to receive more overseas units than it needed to meet its

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<sup>42</sup> The Durban Platform, the negotiated outcome from the December 2011 conference, laid the groundwork for negotiation of a new legal instrument or outcome with legal force applicable to all parties, which would take effect from 2020. This was accompanied by an agreement for a core group of industrialised countries to proceed with a second commitment period (2013–20) under the Kyoto Protocol.

<sup>43</sup> The Cabinet paper did not mention treatment of NZUs issued for non-forestry removals.

<sup>44</sup> The Cabinet paper stated, “Overseas purchasing is reflected as a loss to New Zealand's real gross national disposable income (GNDI), a measure of economic welfare. The impact on real GNDI varies according to the level of overseas purchasing and the prevailing carbon price” (Smith 2012). This conclusion would apply if New Zealand was not planning to comply with its Kyoto obligations. However, if New Zealand was intending to comply with its Kyoto obligations, then investing in overseas units would increase domestic economic welfare because those units would cost less than domestic reductions.

international obligations, but it could not resell those units overseas for procedural,<sup>45</sup> political, and market reasons. Third, introducing auctioning under a cap (under conditions where the international unit supply was limited by the market or by government policy) would give the government more flexibility to adjust the ambition of the NZ ETS as New Zealand's international obligations changed. Fourth, there was considerable uncertainty about how the international carbon market would operate after 2012, and having a domestic supply of units could help to manage associated risks. Fifth, it would be easier to link the NZ ETS to the Australian CPM if both allowed auctioning under a cap.

Importantly, across all of these considerations the government's focus was on ensuring continuity of unit supply, not manipulating domestic prices relative to international prices. At this point in the process, the Minister believed that a limit on surrendering overseas units might be necessary to ensure that participants used the government's auction mechanism and to facilitate future linking. The Minister also indicated that setting an overall limit on domestic emissions through a domestic cap and a limit on surrendering overseas units could strengthen the environmental integrity of the system. The Minister did not support a complete ban or propose a specific limit on surrendering overseas units, but proceeded with consultation on the basis that a future limit could be set by regulations (Smith 2012).

The decision to remove the NZU backing requirement was related in part to introducing a cap on auctioning which would at least partially constrain unit issuance by the government. As explained in Smith (2012), the NZU backing requirement had been intended to align the NZ ETS with New Zealand's Kyoto commitments and to safeguard environmental integrity by limiting NZU issuance by the government. By this point in CP1, it was clear that New Zealand would meet its CP1 target, so the Minister suggested that there would be no further gains in environmental integrity by retaining the backing requirement. Furthermore, although it was in compliance with its CP1 target, the government would have to purchase additional Kyoto units to cover NZU issuance for free allocation and forestry and industrial removals, at a potential cost projected up to NZ\$260 million over 2012/13 through 2015/16. The Minister argued that introducing a future cap on NZUs would ensure some degree of environmental integrity by limiting government issuance, and that this could be enhanced by limiting future surrenders of overseas units. Therefore, the recommendation was to remove the NZU backing requirement retrospectively for CP1 and for the future (Smith 2012).

This change to the backing requirement did not receive much attention but actually had two important implications. First, it meant that the government could issue NZUs independently of

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<sup>45</sup> Before the 2012 amendments to the Climate Change Response Act 2002, any Kyoto units surrendered to the government could be transferred only to a retirement or cancellation account, or to a participant's holding account in the event of reimbursement. This issue was solved in the 2012 amendments by enabling the New Zealand government to re-sell surplus Kyoto units received through the NZ ETS.

its international unit holdings, although differences could have fiscal implications.<sup>46</sup> And second, it meant that any bank of NZUs carried over by NZ ETS participants post 2012 would not have to be matched by surplus Kyoto units carried over in parallel at the international level by the Crown. This meant that the government would have to cover the future liability under New Zealand's international targets for future emissions covered by banked NZUs but not by internationally recognised units.

A further point worth noting is that since the 2008 legislation put the NZU backing requirement in place, the government has never been required to cancel Kyoto units when participants voluntarily cancelled NZUs. With the 2012 removal of the backing requirement and the 2015 delinking from the Kyoto market, the cancellation of NZUs still does not have a corresponding impact on the accounting for New Zealand's international target. This potentially makes it difficult for domestic firms or individuals to deliver on "carbon neutrality" claims by cancelling NZUs alone, since the associated emission reductions may be double-counted under New Zealand's overarching international target.

After public consultation, Cabinet agreed on a package of proposed legislative amendments that softened some of the previous proposals (New Zealand Cabinet 2012a). Provisions relevant to linking were:

- The government would introduce the power to regulate for auctioning under a cap, but the cap would not bind free allocation or removal units and no limit would apply to the surrender of imported units for compliance. This would ensure the international market would continue to set the domestic price.
- The Kyoto unit backing requirement for NZUs would be removed regardless of whether auctioning under a cap was actually implemented.
- The one-for-two unit obligation for non-forestry sectors, NZ\$25 price ceiling, and NZU export ban for non-forestry sectors would be extended indefinitely.
- The proposed power for the Minister to align the future price ceiling with the Australian CPM was removed, ensuring that such a change would need to be made by amending primary legislation.
- Amendments would enable the NZ ETS to continue to operate effectively post 2012 independently of whether there was a Kyoto CP2 or New Zealand chose to join Kyoto CP2.<sup>47</sup>
- Given expectations for ongoing low international emission prices, the government would investigate options for other measures outside the NZ ETS to support New Zealand's transition to a low-emission economy.

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<sup>46</sup> Under Section 68 of the Climate Change Response Act 2002, when issuing NZUs the Minister must still have regard to the number of units received by New Zealand under an international agreement and New Zealand's international obligations.

<sup>47</sup> In retrospect, the amendments did not provide for a smooth transition through the delinking process, given the arbitrage opportunities that arose.

The issue of whether to limit the surrender of imported units was still controversial during the consultation preceding those decisions. Substantially more submitters supported a limit on surrendering imported units; most of these believed this would raise domestic unit prices and increase the mitigation impact of the system. This contrasted with the government's rationale of limiting surrenders of imported units to encourage participants to use a domestic auction, which otherwise would not change domestic prices. The new Minister for Climate Change Issues argued that the government's objective was still to reflect the international price in the domestic market, and that if the auction was designed and operated effectively, participants would choose to use it. Therefore, the Minister recommended against a limit on surrendering imported units, and this became Cabinet's decision (Groser 2012a; New Zealand Cabinet 2012a).

### **Parliamentary deliberation on the 2012 Amendment Bill**

The Climate Change Response (Emissions Trading and Other Matters) Amendment Bill was introduced to Parliament in August 2012. Views on whether to limit the surrender of imported units were prominent in public submissions. Twelve submitters supported the government's position not to limit the surrender of imported units, compared to 28 who opposed that position. Those opposed argued that a limit would help to raise unit prices and incentivise domestic emission reductions and other co-benefits, address integrity and reputational concerns, and preserve linking options. Nevertheless, the government maintained its position of reflecting the international price in the domestic market (Ministry for the Environment and Ministry for Primary Industries 2012).

During the select committee process, officials identified a potential risk if foresters chose to export large numbers of NZUs as NZ AAUs, forcing the government to purchase Kyoto units to help meet its Kyoto CP1 target. The solution was to specify that the exchange of NZUs for NZ AAUs would take place only if there were surplus NZ AAUs in a holding account, rather than a retirement account,<sup>48</sup> and that the Crown could substitute other Kyoto units for NZ AAUs if necessary to meet demand. The select committee also added a provision enabling PFSI participants who might receive NZUs rather than NZ AAUs in the future (if this were the outcome of future regulations) to convert those NZUs to another unit type for export, ensuring they would be treated comparably to ETS forestry NZUs (Finance and Expenditure Committee 2012; Ministry for the Environment and Ministry for Primary Industries 2012).

Submitters also commented on the extension of transitional measures limiting exposure to the international emission price. Although relatively more submitters opposed the indefinite extension of the one-for-two unit obligation and NZ\$25 price ceiling because of the implications for emissions and taxpayer costs, the government considered that this was justified while the economy was still recovering. Most of those who submitted on the proposed auction mechanism

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<sup>48</sup> In other words, the government would not have to remove NZ AAUs from its retirement account used for Kyoto compliance and replace them with other Kyoto units to satisfy demand for conversions to sell forestry NZUs overseas.

were supportive, although several commented on design issues (Ministry for the Environment and Ministry for Primary Industries 2012).

During the select committee process, Australia and the European Union (EU) announced an agreement to link their ETSs (discussed further below). Regarding linking the NZ ETS to other systems, New Zealand officials wrote, “The Government remains interested in pursuing potential links with other trading schemes. Bilateral discussions with Australian and Korean officials are underway, and New Zealand continues to engage with those developing schemes in the wider Asia Pacific region.” Officials noted that the Climate Change Response Act 2002 already enabled the government to link the NZ ETS by approving unit exports to approved registries and recognising new sources of overseas units. Officials concluded that linking the NZ ETS to another ETS was not likely before 2015, and could be addressed in a 2015 review of the system (Ministry for the Environment and Ministry for Primary Industries 2012).

In its report back to Parliament, the Finance and Expenditure Committee supported the government’s recommendations related to linking. The committee noted that it had considered limiting the surrender of imported units, including whether to follow the Australian CPM’s restriction of 50% of a participant’s obligation, but had concluded that the government could use its existing regulatory authority to enact future restrictions if desired. Opposing minority views were submitted by the Green, Labour and New Zealand First parties, the first two on the grounds that low domestic prices resulting from unlimited imports would not incentivise domestic mitigation, and the third on the grounds of the adverse effects of sending New Zealand wealth offshore (Finance and Expenditure Committee 2012). On 8 November 2012, the Bill passed its third reading in Parliament; it received royal assent five days later.

### **Regulations on banning additional sources of imported ERUs and CERs**

In October 2012, the government signalled to the domestic market that officials were considering two issues relating to rules for international units in the NZ ETS. The first was rules for the potential carry-over of imported Kyoto units within the NZ ETS after the first Kyoto commitment period ended in December 2012. The government noted that it had never been decided how international rules for carry-over would be reflected in the NZ ETS. The second was rules to impose further restrictions on sources of imported Kyoto units in the NZ ETS (Groser 2012b).

On 13 November 2012, the day of royal assent for the Amendment Act, the government launched consultation on whether to exclude two additional categories of Kyoto units from the NZ ETS: ERUs associated with industrial-gas destruction projects involving HFC-23 and N<sub>2</sub>O, and both ERUs and CERs associated with large-scale hydropower projects. The grounds for the proposed exclusion were similar to those applied to CERs from industrial-gas destruction projects a year earlier: concerns about environmental integrity, New Zealand’s reputation, and future linking. The government proceeded with the ban, which took effect on 18 December 2012.

The ban did not apply to such units already held in the New Zealand Emissions Unit Registry (NZEUR) or for which forward contracts were already in place (Groser 2012e).

### **Regulations on delinking the NZ ETS from the international Kyoto market**

On 9 November 2012, the day after the Bill's successful third reading, the government announced that New Zealand would take its emission-reduction commitment for the period 2013–20 under the United Nations Framework Convention on Climate Change (UNFCCC), not CP2. This decision meant New Zealand's commitment would not be legally binding internationally. The government pledged to uphold its obligations for CP1 and to continue to apply the Kyoto rules to its new commitment (Groser 2012f).<sup>49</sup>

In December 2012, at the United Nations Climate Change Conference held in Doha, party decisions clarified that countries not taking a commitment under CP2 would lose access to the Kyoto carbon market after the conclusion of the true-up for the first period in mid-2015.<sup>50</sup> The New Zealand government had advocated in Doha to retain that privilege but was not successful. In a media release, Ministers noted that the future of carbon markets under the new international agreement had yet to be decided and would progress alongside efforts to build regional linkages between systems (Groser and Bridges 2012). The Environmental Protection Authority (EPA) assured users of the NZEUR that they would still be able to access the overseas Kyoto market through the conclusion of the true-up period in 2015 (Groser 2012c).

In February 2013, the government began consultation on the carry-over rules for imported Kyoto units in the NZ ETS.<sup>51</sup> The international rules would apply across the whole register regardless, but the government wanted to clarify the treatment within the NZ ETS specifically. Its identified options were to reflect fully the international restrictions in the NZ ETS or to apply separate domestic rules. The government's preferred position was to prohibit carry-over of CERs and ERUs but not AAUs by NZ ETS participants, as this would minimise the risks to NZ ETS participants from any future mandatory cancellation at the international level of CERs and ERUs above the government's quota. The consultation document did not address the potential implications for carry-over rules from New Zealand's decision not to take its mitigation target for 2013–20 under CP2 (Ministry for the Environment 2013).

In December 2013, the government announced its policy decisions regarding delinking the NZ ETS from the Kyoto market. NZ ETS participants would be allowed to surrender imported Kyoto units through 31 May 2015, after which they would become ineligible under the NZ ETS.

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<sup>49</sup> Under the Kyoto rules, the carry-over of Kyoto units between commitment periods is intended to support compliance with the next period's Kyoto target. Although New Zealand does not have a target under CP2, it is still planning to use surplus Kyoto units carried over from CP1 to help meet its commitment under the UNFCCC for the 2013–20 period.

<sup>50</sup> See Decision 1/CMP.8, Section IV in United Nations Framework Convention on Climate Change Secretariat (2012).

<sup>51</sup> Under the Kyoto Protocol, Annex I (industrialised) countries could carry over (bank) CERs and ERUs post 2012 equivalent to up to 2.5% of their initial Assigned Amount (applied to each unit type separately). In contrast, AAUs could be carried over without restrictions. RMUs could not be carried over.

NZ AAUs<sup>52</sup> would remain eligible in the NZ ETS (Bridges 2013). These changes were operationalised by the Climate Change (Unit Register) Amendment Regulations in December 2014 (see below). Since 18 November 2015, New Zealand's register has not been internationally linked (Environmental Protection Authority 2015).<sup>53</sup>

### *3.3.4 Climate Change Response (Unit Restriction) Amendment Act 2014*

In May 2014, the government amended the Climate Change Response Act 2002 to limit the surrender of imported Kyoto units by post-1989 forestry participants to meet deregistration obligations. This was intended to prevent an arbitrage opportunity created when post-1989 forest participants deregistered their land from the NZ ETS, cleared their deregistration liabilities using low-cost Kyoto units while banking the higher-value NZUs they had earned, and then re-registered their land and received further NZUs from the government. Through May 2015, post-1989 foresters could continue meeting their harvesting and deforestation liabilities using either NZUs or Kyoto units. All NZ ETS participants could continue to resell Kyoto units overseas.

To manage the fiscal risks to the Crown, the amendment was introduced under the Budget Measures (Miscellaneous Fiscal Matters) Bill without prior notification, consultation, or consideration by a select committee. The Climate Change Response (Unit Restriction) Amendment Act took effect on the day after introduction of the Bill (16 May 2014), and received royal assent on 19 May 2014. The government was criticised by stakeholders for amending the legislation without consultation, for disadvantaging foresters who wished to exit the NZ ETS in good faith and not to re-register, and for addressing the Kyoto unit arbitrage opportunity only for post-1989 foresters and not also for other ETS participants (e.g. see Fallow (2014)). Analysis of the scale and cost of re-registration arbitrage by post-1989 forest owners in the NZ ETS is provided in Carver, Dawson and Kerr (forthcoming).<sup>54</sup>

## **4 Exploration of bilateral linkages for the NZ ETS**

Starting from the earliest stages of design, enabling bilateral linkages between the NZ ETS and other systems was identified as a desirable long-term outcome for both New Zealand's international positioning as a supporter of multilateral cooperation on mitigation and for efficient operation of the NZ ETS. Key decisions were made at each stage of legislation to preserve future linking options. During the initial development and operation of the NZ ETS, the

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<sup>52</sup> These were issued to participants in the PFSI, NGA, and PRE initiatives.

<sup>53</sup> In 2016, the NZEUR was replaced by the New Zealand Emissions Trading Register (NZETR).

<sup>54</sup> A similar arbitrage opportunity could arise in the future if the domestic emission price reaches the level of the fixed-price option (NZ\$25 per tonne CO<sub>2</sub>eq). It appears possible that post-1989 foresters could choose to deregister from the NZ ETS, used fixed-price units to meet their deregistration obligations while banking their NZUs, and then re-register to obtain further NZUs from the government. Under current settings, this would not relate to NZ ETS linking arrangements but would still represent an important fiscal risk to the government and could necessitate additional purchasing of international mitigation by the government to achieve target compliance.

most obvious candidates for bilateral linking were the EU ETS and a national system in Australia. Over time, prospects emerged to link the NZ ETS to systems under development in other jurisdictions. While none of these possibilities had come to fruition as of 2017, it is valuable to review the history of bilateral linking discussions involving the NZ ETS against the backdrop of early global exploration of linking possibilities.

## **4.1 EU ETS**

Given its early start, its multinational scale, and its influence over the global Kyoto carbon market, the EU ETS was the “big kid on the block” as far as international linking prospects were concerned. The system started its pilot phase over 2005–07, assumed full force in Phase II over 2008–12, and is operating Phase III over 2013–20. As of 2017, it encompassed 28 EU member states, plus Iceland, Liechtenstein, and Norway.<sup>55</sup> Coverage began with the stationary energy sector and some industries, and was expanded to include aviation and further industries over time.<sup>56</sup> The option to link the EU ETS to other ETSs bilaterally and to the Kyoto mechanisms was included in the founding directive for the EU ETS in 2003, and reinforced the following year in a further directive on linking. In the EU context, ETS linking was conceived as two-way trading with mutual recognition of units, rather than one-way trading (European Parliament and Council of the European Union 2003, 2004).

On the international stage, the EU was a strong advocate for linking. It served as a staunch supporter of market mechanisms in the international climate change negotiations, and provided extensive capacity-building support to countries with developing and transitional economies seeking to participate in climate change market mechanisms. In January 2009, when the European Commission announced its proposals for the Copenhagen agreement to be concluded later that year, it made linking ETSs one of its key pillars:

The EU should seek to build, by 2015, an OECD-wide carbon market by linking the EU ETS with other comparable cap-and-trade systems in order to mitigate and to raise funds to fight climate change. The market should be expanded to include major emerging economies by 2020 with a view to building a global carbon market.

The Kyoto Protocol’s Clean Development Mechanism should be reformed. For advanced developing countries and highly competitive economic sectors, the CDM should be gradually replaced by a sectoral crediting mechanism and cap-and-trade systems. (European Commission 2009)

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<sup>55</sup> As of March 2017, the EU and Switzerland had concluded negotiations for an ETS linking agreement but it was not yet operational (International Carbon Action Partnership 2017c).

<sup>56</sup> Industrial producers covered in Phase I included oil refineries, coke ovens, iron and steel plants, and production of cement, glass, lime, bricks, ceramics, pulp, paper, and board. Domestic and international aviation was added at the end of Phase II, but obligations for international aviation emissions were suspended pending the outcomes of international negotiations under the International Civil Aviation Organization (ICAO). In Phase III, the system was expanded to include Carbon Capture and Storage (CCS) installations, and production of petrochemicals, ammonia, non-ferrous and ferrous metals, gypsum, aluminium, and nitric, adipic, and glyoxylic acid (International Carbon Action Partnership 2017b).

When designing the NZ ETS, officials and stakeholders studied the experience of the EU ETS closely and engaged with EU policy makers and market participants to explore a range of issues around ETS harmonisation and linking. However, several key design differences proved to be barriers to linking in the near term for technical, political, and cultural reasons. As discussed in Section 2, linking ETSs requires alignment of design features that affect unit integrity, supply, and price. The EU ETS was designed with an absolute cap on European Union Allowances (EUAs), quantitative limits on imported CERs and ERUs,<sup>57</sup> and no price control measures (e.g. price ceiling/floor). Imported AAUs were not recognised for EU ETS compliance. In contrast, the NZ ETS started in 2008 with no clearly defined cap on NZUs<sup>58</sup> and no quantitative limits on imported Kyoto units, and in 2009 added a “one-for-two” unit obligation, a price ceiling, and uncapped output-based free allocation for industrial producers. The NZ ETS had retained a regulatory option to accept imported AAUs (although this was never applied), and lagged behind the EU ETS in excluding CERs and ERUs from industrial-gas destruction projects and setting criteria regarding acceptable units from hydropower projects.<sup>59</sup> The political and cultural barriers to linking related largely to the relative scope of coverage. Although harmonising sectoral coverage is not a technical requirement for linking, EU ETS regulators were not inclined to accept units from the forestry and agriculture sectors given their concerns about the relative integrity of monitoring, reporting, and verification; the potential effects of large volumes of forestry units on market function; and the EU’s dominant strategic interest in driving low-emission transformation in the energy and industrial sectors (European Commission 2008; Flaschland et al. 2008; Schule and Sterk 2008 ). New Zealand presented a case for the environmental integrity of its forestry units and the value of forestry activities for supporting global mitigation, but this was not sufficient to sway strongly held views by EU ETS regulators.

New Zealand officials had additional reservations about linking to the EU ETS. Because the EU ETS was a large and firmly entrenched system negotiated between member states, New Zealand officials anticipated that New Zealand would have limited influence over future rule-making in the EU ETS and would become a “policy taker” as well as a “price taker” under any linking agreement. Because of limits on imported units, the EU ETS was anticipated to drive higher emission prices than the international market. This ran counter to the New Zealand government’s policy objective of achieving least-cost compliance with international obligations.

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<sup>57</sup> For Phase II, EU ETS participants could use CERs and ERUs up to 13.4% of the total EU cap for 2008–12, with country-specific limits prescribed by each member state. For Phase III, a cumulative limit was set on CERs and ERUs over 2008–20 at a level of 50% of projected abatement required over the period 2008–20. This was distributed with different rules for existing operators, new operators, and aviation (Alberola et al. 2015). In Phase III, CERs issued after 2012 could be sourced only from CDM projects in least-developed countries.

<sup>58</sup> Under the 2008 legislation, the NZ ETS provided a fixed pool of free allocation to each eligible sector. The Minister of Finance had broad powers to issue and sell units, which left open the option to issue and auction further NZUs.

<sup>59</sup> CERs and ERUs associated with industrial gas-destruction projects were banned from the EU ETS from 1 January 2013 under regulations passed in June 2011 (European Commission 2011). CERs from large hydropower projects were restricted in the 2004 linking directive (European Parliament and Council of the European Union 2004). As discussed in Section 3.3, the New Zealand government made comparable policy decisions in December 2011 and December 2012.

New Zealand officials also had concerns about potential price volatility in the EU ETS and its impact on the New Zealand market under linking.

From a technical standpoint, it would still have been possible to link the NZ ETS and the EU ETS in the near term despite these design differences. New Zealand could have started with a buy-only link, enabling the EU ETS to safeguard liquidity in the New Zealand market. While this approach could have built experience with linking and served as a bridge to two-way linking in the future, it could also have tightened the EU ETS cap and raised prices for EU ETS participants. It would not have guaranteed two-way linking compatibility in the longer term; both governments felt strongly committed to their conflicting positions on coverage and access to international units. As noted above, the concept of linking under the EU ETS was two-way recognition of units, and this option was not developed further. To help leave future linking options open, as discussed above, the New Zealand government provided a “firewall” under the 2008 Amendment Act that blocked the carry-over of imported AAUs post 2012 by both NZ ETS participants and the Crown.

Through diplomatic as well as public channels, New Zealand officials continued to communicate to individual EU member states and the European Commission their interest in longer-term linking to the EU ETS. For example, during the EU’s rule-making process for Phase III of the EU ETS, New Zealand officials made a written submission to the House of Lords in the United Kingdom in June 2008 and gave testimony by video conference in October 2008 (New Zealand Government 2008; UK House of Lords 2008).<sup>60</sup> They advocated for broader coverage of sectors and gases in the EU ETS and a more liberal approach to accepting Kyoto units. They also emphasised their interest in linking. The opening statement by Dave Brash, manager of the Emissions Trading Group,<sup>61</sup> highlighted the key issues from New Zealand’s perspective:

Our domestic response is quite appropriately tailored to the New Zealand situation, including our unique emissions profile, and we can go into that later, but in particular agriculture and forestry are unique. In some areas of climate change in emissions trading policy we may lead; in many others we draw off lessons from others such as yourselves in the UK and in the EU. We are confident our initiatives are appropriate to our given circumstances. The key points from our submission are that both internationally and in our domestic ETS legislation New Zealand advocates the use of emissions trading with as broad a coverage of sectors and gases as is practically possible; secondly, New Zealand encourages the EU ETS to continue to be outward-looking and encourages the liberal use of the Kyoto Protocol flexibility mechanisms in order to support the international carbon market in the uptake of the least cost abatement options. Finally, looking to the EU ETS, we are interested in linking two

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<sup>60</sup> Note that this represented input to deliberations on the EU ETS by one member state, whereas decisions on EU ETS policy are made collectively by all member states.

<sup>61</sup> The Emissions Trading Group was a team of officials seconded from relevant government departments which was tasked with the initial design of the NZ ETS. It was housed at The Treasury and led by the Ministry for the Environment.

schemes together. This is an option New Zealand would very much like to further explore with the UK Government. (UK House of Lords 2008)

Discussions among officials and stakeholders about leaving New Zealand's options open for future linking to the EU ETS continued to evolve during the 2009 review (Emissions Trading Scheme Review Committee 2009). However, the government moved further from this possibility through its 2009 amendments by retaining its earlier decision not to limit imports of Kyoto units and imposing a progressive unit obligation for non-forestry sectors and a price cap. By the time of the 2011 review and 2012 amendments, the New Zealand government's primary interest in bilateral linking was focused on Australia rather than the EU.

The EU has continued to explore options for bilateral linking to other systems. It reached a linking agreement with Australia but this was terminated when the CPM was abolished (see below). It has engaged with United States policy makers on ETS developments at the state and national levels, and along the way considered options for linking to the United States as a non-Kyoto party (for discussion, see Schule and Sterk (2008) and Sterk et al. (2009)). By early 2017, the EU had concluded negotiations for a linking agreement with Switzerland. It has contributed to multilateral capacity-building initiatives on emissions trading such as the World Bank's Partnership for Market Readiness and ICAP. It has also engaged bilaterally to support ETS development, particularly in China and the Republic of Korea. To facilitate future linking, the EU has encouraged emerging ETSs to standardise key features in alignment with the EU ETS. Its key conditions for linking are "system compatibility (the systems have the same basic environmental integrity, and a tonne of CO<sub>2</sub> [carbon dioxide] in one system is a tonne in the other system); the mandatory nature of the system; and the existence of an absolute cap on emissions" (European Commission 2016).

## **4.2 Australia**

The potential for ETS harmonisation and linking with Australia was part of the New Zealand government's vision for the NZ ETS from conception. The parallel development of ETSs in both countries unfolded through a "leapfrog" process that added an element of credibility, collaboration, and political reinforcement to the ETS policy-making process in New Zealand. The process toward achieving an ETS union between New Zealand and Australia gained momentum through 2012, up to the point where Australia chose to link to the EU ETS under conditions that proved a barrier to New Zealand following suit.

Although Australia did not ratify the Kyoto Protocol until 2007, it had a head start on ETS development compared to New Zealand. In 2003, Australia had pioneered the world's first mandatory GHG emissions trading system at the state level through the New South Wales

Greenhouse Gas Abatement Scheme (GGAS).<sup>62</sup> In 2004, lacking support from the Commonwealth Government, the First Ministers of state and territory governments launched the National Emissions Trading Taskforce to develop a model for a national ETS. In August 2006, the taskforce recommended a cap-and-trade system covering the stationary energy sector that could start as early as 2010 (National Emissions Trading Taskforce 2006). In December 2006, the Howard administration launched the Prime Ministerial Task Group on Emissions Trading. In May 2007, the month after the New Zealand government established its Emissions Trading Group, Australia's task group recommended that Australia adopt an emissions constraint ahead of a global agreement and implement an ETS that was as comprehensive as possible but did not harm the competitiveness of its emissions-intensive trade-exposed (EITE) industries (Australian Government Prime Ministerial Task Group on Emissions Trading 2007). In November 2007, the Australian federal election brought a change of government. The new Prime Minister, Kevin Rudd, ratified the Kyoto Protocol on 3 December 2007, his first day in office – and the day before the New Zealand government introduced the Climate Change Response (Emissions Trading and Renewable Preference) Bill to Parliament.

New Zealand and Australian officials had started discussions on ETS harmonisation and linking while Australia was still outside of the Kyoto Protocol. A Joint Officials Group on Emissions Trading Design, chaired by the heads of the Prime Ministers' departments, was launched in June 2007 and continued work through August 2008 (Smith 2009d). Given their countries' strong economic and diplomatic linkages, officials could see potential benefits from ETS harmonisation to facilitate compliance for firms operating in both countries, and to manage the relative trade, competitiveness, and political impacts from introducing emissions trading. However, linking ETSs would be complicated by Australia's position outside the Kyoto Protocol. New Zealand officials had briefly explored options for linking to an Australian ETS through a "gateway" mechanism that would allow trading of ETS units across the Kyoto divide without a net loss of Kyoto-compatible emission units from New Zealand (Ministry for the Environment and The Treasury 2007). In some regards, this early thinking mirrored options that the EU had considered for linking to the United States as a non-Kyoto Party (see Schule and Sterk (2008)).

#### *4.2.1 Australian CPRS*

Once Australia joined the Kyoto Protocol, it rapidly advanced the design of a national ETS. It released its green paper for a CPRS in July 2008, a month after the New Zealand Parliament's Finance and Expenditure Committee released its final report on the Climate Change Response (Emissions Trading and Renewable Preference) Bill. The CPRS was intended to begin operation

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<sup>62</sup> Started as a voluntary system in 1997, GGAS (later renamed the Greenhouse Gas Reduction Scheme) set per capita emissions benchmarks for the electricity sector that were allocated to generators on the basis of percentage of sales. Obligations could be met by reducing emissions or by surrendering two kinds of tradeable offset units. In 2005, this was expanded to include the Australian Capital Territory. GGAS ended in mid-2012 with the introduction of the Australian CPM (Independent Pricing and Regulatory Tribunal 2016; Stockholm Environment Institute and Greenhouse Gas Management Institute 2011).

in 2010. It had broad coverage of sectors and GHGs, but excluded deforestation emissions<sup>63</sup> and provided that agriculture would not enter before 2015 at the earliest, with the timing to be confirmed in 2013. It had an absolute cap on emissions set on a rolling basis for five years in advance and guided by a 10-year trajectory. It allowed banking and limited borrowing. It included a price ceiling for the period 2010–11 to 2014–15. It was designed to transition to 100% auctioning over time, and provided two tiers of output-based free allocation to EITE industrial producers as well as direct financial assistance to coal-fired electricity generators. The CPRS was intended to support international linking, but the initial proposal limited the use of overseas units for ETS compliance and prohibited exports of Australian Kyoto units (Australian Department of Climate Change 2008b).

This proposal clearly left the door open to linking to the NZ ETS in the longer term, but Australia's treatment of imported Kyoto units, exported Australian units, and price control posed complications in the near term. In its earlier minority statement opposing the Climate Change Response (Emissions Trading and Renewable Preference) Bill, New Zealand's National Party had expressed its preference to wait to see Australia's ETS proposal before finalising legislation on the NZ ETS, and a similar view had been expressed by the ACT Party (Finance and Expenditure Committee 2008). Once the details were revealed, the New Zealand government was quick to welcome Australia's CPRS proposal and suggest its broad compatibility with linking to the NZ ETS (Parker 2008a). Facing a national election in November 2008, the New Zealand government proceeded to pass the founding legislation for the NZ ETS in September 2008.

Following public consultation on the green paper and the release of *The Garnaut Climate Change Review: Final Report*<sup>64</sup> in September 2008, the Australian government released its white paper for the CPRS in December 2008. This occurred the week after New Zealand's new, National-led government launched its special select committee process to review the NZ ETS. The core features of the CPRS remained largely unchanged. It would have a price ceiling for the first five years set at A\$40 per tonne CO<sub>2</sub>eq (carbon dioxide equivalent) at commencement and increasing by 5% (real) per year. Assistance to businesses and households would be based on an assumed price of A\$25 per tonne. The government retained its plans for output-based free allocation to EITE producers and financial assistance to coal-fired generators.

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<sup>63</sup> Forest owners could opt in to receive units for afforestation recognised under the Kyoto rules in return for accepting liabilities for net reductions.

<sup>64</sup> The Australian economist Ross Garnaut released *The Garnaut Climate Change Review: Final Report* (2008) with the objective to "examine the impacts of climate change on Australia and to recommend policy frameworks to improve the prospects of sustainable prosperity". The review also included commentary on the proposed CPRS. The report was an influential underpinning for the government's ongoing commitment to climate change mitigation supported by an ETS. It called for "a judicious and calibrated approach to linking with international schemes". Garnaut wrote, "Given Australia's close economic links with New Zealand, and common interests on greenhouse gas mitigation, linking or even deeper integration may make sense if the New Zealand scheme is judged to be of sufficient integrity. The Review suggests that, before the indelible conclusion of scheme design in either country, the Australian and New Zealand governments meet at ministerial level to discuss linking, and to identify any impediments to linking that may warrant adjustment to one or other or both scheme designs."

In a notable change from the green paper, the Australian government removed the quantity limit on surrenders of overseas Kyoto units. Exports of Australian units still were not allowed, but this could be changed at five years' notice, or in a shorter period in the case of a bilateral linkage that was not expected to change prices significantly. The government expected that Australia would be a net buyer internationally and that prohibiting exports would keep Australian prices below overseas prices if domestic mitigation proved less expensive (Jotzo and Betz 2009). The proposal reaffirmed the government's interest in linking bilaterally to other ETSs, provided they met the following criteria: "an internationally acceptable (or, where applicable, a mutually acceptable) level of mitigation commitment; adequate and comparable monitoring, reporting, verification, compliance and enforcement mechanisms; and compatibility in design and market rules" (Australian Department of Climate Change 2008a). However, key CPRS design features around unit imports and price controls were obvious barriers to linking to the EU ETS or the NZ ETS (Jotzo and Betz 2009). A month later, the EU announced its proposal for linking of ETSs across member states of the Organisation for Economic Co-operation and Development (OECD) by 2015.

In March 2009, following a meeting between the prime ministers in both countries, Nick Smith, New Zealand Minister for Climate Change Issues, and Penny Wong, Australian Minister for Climate Change and Water, jointly announced the launch of a Trans-Tasman Officials Group (TTOG) to work on assessing the costs and benefits of harmonising the ETSs in New Zealand and Australia (Smith 2009b). The supporting New Zealand Cabinet paper identified a range of possible benefits from harmonisation: protecting the competitiveness of New Zealand firms relative to Australian firms by aligning ETS requirements and costs; reducing trans-Tasman ETS transaction costs; and providing "insurance" against a breakdown of the international Kyoto market. The paper identified three possible degrees of harmonisation: "voluntary adoption of key design elements, but without mutual recognition of each other's domestic units; mutual recognition of each other's domestic units, which would allow trading between the two schemes; and full harmonisation, where the two schemes would effectively become one". For New Zealand, the priority areas for discussion on harmonisation included unit import/export rules, price caps, free allocation for EITE producers, administrative systems (e.g. monitoring, reporting, and verification), and sectoral coverage and point of obligation. The New Zealand Cabinet hoped to convince Australian officials to leave options open for accelerated linking to the NZ ETS. They expected that a treaty-level arrangement could take from six months to two years to agree (Smith 2009d).

While this collaboration was underway in 2009, the New Zealand government was preparing new policy proposals for amending the NZ ETS and waiting for outcomes from the special select committee's review. In August 2009, the New Zealand Cabinet agreed in principle to moderate the price impacts of the NZ ETS. Three of the key changes that were more harmonised with

Australia's approach included the price ceiling (set at NZ\$25, considerably below Australia's starting level at A\$40), output-based free allocation for EITE industrial producers modelled closely on the CPRS methodology, and deferral of unit obligations for agriculture until 2015 (New Zealand Cabinet 2009a). The government introduced the Climate Change Response (Moderated Emissions Trading) Amendment Bill in September 2009, and it was passed in November 2009.

Meanwhile, in Australia, the government repeatedly tried and failed to secure legislation for the CPRS. In August 2009, the Australian Senate rejected the Carbon Pollution Reduction Scheme Bill 2009 by a vote of 40 to 32 (Coorey 2009; Parliament of Australia 2010). In December 2009, the Australian Senate rejected the Carbon Pollution Reduction Scheme Bill 2009 (No.2) by a vote of 41 to 33, and the government signalled it would try again in February 2010 (Australian Associated Press and Davis 2009; Parliament of Australia 2010). In April 2010, the government decided to suspend its efforts for a period of three years because it lacked political support for the policy (Taylor 2010).

The failure of the CPRS created an immediate backlash from some New Zealand stakeholders against the NZ ETS on the grounds that New Zealand was getting ahead of its trading partners and its competitiveness could therefore be damaged (Young 2010). The government responded by assuring the market that it would proceed with the NZ ETS under the newly moderated price settings, and stating that the energy and industrial sectors would assume unit obligations from 1 July 2010 as scheduled. However, the government qualified its commitment. Nick Smith, Minister for Climate Change Issues, wrote: "The Government is cognisant of international developments and ensuring New Zealand businesses remain competitive. We have scheduled a review in 2011 and will not be proceeding with full obligations and additional sectors unless progress is made by New Zealand's trading partners" (Smith 2010b). This extended the sense of policy uncertainty that had hung over the system's future throughout the 2009 review.

The failure of the CPRS also created a major political backlash in Australia. It contributed to a change in prime ministerial leadership from Kevin Rudd to Julia Gillard in June 2010, and a close federal election in August 2010 that extended the Gillard administration in coalition with Green and independent Members of Parliament. It also contributed to the earlier December 2009 change in opposition leadership from Malcolm Turnbull to Tony Abbott (Holmes and Fernandes 2012).

In November 2010, the governments of New Zealand and Australia recommitted to cooperation on climate change issues. Australia's Minister for Climate Change, Greg Combet, said, "The Australian Government is strongly supporting clean energy development, the promotion of energy efficiency in households and industry, and working towards the introduction of a carbon price into our economy. I am keen to learn from New Zealand about their experiences in these areas" (Smith 2010a).

#### *4.2.2 Australian CPM*

In February 2011, two months after the New Zealand government launched its 2011 review of the NZ ETS, Australian Prime Minister Julia Gillard announced her new policy proposal for pricing carbon: a fixed price from 1 July 2012, which would transition to a “flexible price” ETS within three to five years. The carbon price would not apply to agriculture. The announcement was the outcome of cross-party negotiations in the governing coalition. It was immediately criticised by opposition parties as a violation of Gillard’s campaign promise not to implement a carbon tax (Leslie 2011; Priest 2013). In June 2011, Prime Ministers John Key and Julia Gillard agreed to implement an Australia–New Zealand Carbon Pricing Officials Group (CPOG) to advance work on linking ETSS, including identification of barriers to linking and advice for the timing and process for implementation (Groser 2011).

The Australian government released its detailed plan for the Australian CPM in July 2011 and passed the legislation in November 2011. The CPM began operation in July 2012, and covered the stationary energy, industrial process, and waste sectors.<sup>65</sup> The following key features were relevant to linking:

- The system started with a three-year fixed-price phase, with prices set at A\$23 per tonne in 2012–13, A\$24.15 per tonne in 2013–14, and A\$25.40 per tonne in 2014–15. From mid-2015, it was intended to transition to a cap-and-trade system, where the market set the carbon price.
- During the first three years of the “flexible price” phase, a price ceiling and floor would apply. The price ceiling was to be set at A\$20 above the expected international price and rise by 5% (real) per year. The price floor was to be A\$15, rising by 4% (real) per year.
- The cap was to be set for five years in advance and updated on a rolling basis each year in alignment with Australia’s emission-reduction targets. A default cap aligning with Australia’s emission-reduction target would apply in the event Parliament disallowed the government’s cap-setting regulations. Unlimited banking and limited borrowing were permitted.
- Linking would be feasible in the flexible-price phase. At least half of participants’ CPM obligations had to be met through domestic units.
- Domestic offset units in non-capped sectors could be sourced through a Carbon Farming Mechanism.<sup>66</sup>
- Units would be both auctioned and freely allocated. Free allocation would be provided to EITE industrial producers on an output basis. Coal-fired generators would receive one-off

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<sup>65</sup> Transport was excluded from the CPM, but an equivalent carbon price applied to some business transport emissions through changes in fuel tax credits or excise. A carbon price applied to domestic aviation, domestic shipping, rail transport, and non-transport use of fuels. No carbon price applied to household transport fuels, light vehicle business transport, and off-road fuel use by the agriculture, forestry, and fishing industries. Synthetic gases were covered by an equivalent carbon price.

<sup>66</sup> Eligible activities included: “reducing livestock emissions, increasing efficiency of fertiliser use, enhancing carbon in agricultural soil, and storing carbon through revegetation and reforestation” (Australian Department of the Environment and Energy 2016).

transitional assistance (cash and free allocation) in recognition of loss of asset value.

Financial support would be directed to households and for clean energy development.

- An equivalent emission price, rather than ETS obligations, would apply to the transport sector and synthetic GHGs (Australian Department of Climate Change and Energy Efficiency 2011).

In August 2011, Ministers from New Zealand and Australia met to discuss collaboration on carbon market development. They issued a media release stating, “We see benefits for both countries on working towards a trans-Tasman carbon market from 2015. Expanding and linking global markets provides the most cost effective approach to reducing greenhouse gas emissions” (Smith and Groser 2011). In early December 2011, Ministers from both countries jointly affirmed their interest in linking ETSs from 2015, when the CPM transitioned from a fixed to a flexible price (Groser 2011). A few days later, the Durban climate change negotiations produced a positive outcome, leaving both New Zealand and Australia to decide whether to join the EU and other countries in Kyoto CP2, or the United States, Japan, Canada, and other countries in taking an emission-reduction target under the UNFCCC. In January 2012, Prime Ministers John Key and Julia Gillard affirmed ongoing collaboration with the intention of linking their respective ETSs (Key 2012).

#### *4.2.3 Linking the CPM to the EU ETS*

During this period of collaboration between New Zealand and Australia on linking, the Australian government was also engaged in parallel discussions with the EU. In March 2011, European Commission President José Manuel Barroso and Australian Prime Minister Julia Gillard agreed to establish “Senior Officials Talks” on carbon market design and cooperation, including prospects for future linking (European Commission 2012). In December 2011, Australian Minister for Climate Change and Energy Efficiency Greg Combet and European Commissioner for Climate Action Connie Hedegaard agreed on the terms of reference for those talks (Australian Department of Climate Change and Energy Efficiency 2012). The first session of talks was held in February 2012. In March 2012, Minister Combet and Commissioner Hedegaard agreed on a work plan for linking (Hedegaard and Combet 2011).

At the end of August 2012, two months after the CPM began operation, the Australian government and the European Commission announced they would negotiate a formal linking agreement that would enable two-way linking to begin no later than July 2018. During the interim period from July 2015, Australian firms would be able to purchase and surrender EUAs through a one-way link. They could start buying EUAs immediately – at a time of low EUA prices – and bank them for future use. This decision required significant design modifications to the flexible-price phase of the Australian CPM: removing the price floor; setting the price ceiling

relative to the expected 2015–16 price of European units;<sup>67</sup> and adding a sub-limit on imported Kyoto units of 12.5% of the cap within the existing overall limit on imported units set at 50% of the cap. Negotiation of the formal linking agreement was expected to address a range of issues, including: arrangements for measurement, reporting, and verification; restrictions on third-party units; the role of land-based domestic offsets; management of competitiveness and leakage; and market oversight (European Commission and Combet 2012).

For both the EU and Australia, this linkage represented an opportunity to affirm emissions trading and build the world's first intercontinental carbon market, an important signal in the lead-up to the Doha climate change conference. It also offered political advantages for each country at home; at the time, the relatively high level of Australia's emission price was a political flashpoint, whereas the EU ETS was heavily criticised for low prices. For the EU, the link supported its vision for OECD-wide linking and created a new net buyer for surplus EUAs, which were depressing domestic emission prices.<sup>68</sup> For Australia, the link offered lower domestic emission prices through imported EUAs that had a high level of environmental integrity, and was a hedge against uncertainty regarding the future of the Kyoto mechanisms.<sup>69</sup> As a further benefit to Australia, "These arrangements would also provide Australian liable entities with a broad range of ways to manage their carbon price liability as EUAs are currently traded on fully-functioning secondary markets with well established forward price curves and established derivative instruments" (Australian Department of Climate Change and Energy Efficiency 2012). Potential downsides for Australia included vulnerability to price impacts from EU policy decisions beyond Australia's control, changes in compliance requirements for CPM participants, and potential costs to CPM participants that had invested heavily in Kyoto projects and would now face a more stringent limit on surrendering those units. The loss of the price floor had implications for projected CPM auction revenue which had been anticipated by the government. The potential for differentiated prices in the domestic market also raised questions about how the government would calculate the equivalent emission price applicable to sectors outside the CPM (i.e. transport and synthetic GHGs) and set the level of ETS-related assistance packages (Australian Department of Climate Change and Energy Efficiency 2012; Davidson 2013; Zaman and Rock 2012).

On the political front, Australian policy makers hoped that an international linking agreement with the EU – the world's largest carbon market and a major trading partner – would further embed the CPM, making it more difficult for the opposition to dismantle it after a future election. In a press conference on the linking agreement, Minister Combet stated, "This is a manageable,

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<sup>67</sup> The price ceiling was to be set at A\$20 above the international price, and under the linking agreement the EU ETS price would be used as the international price (Combet 2012).

<sup>68</sup> The Australian carbon market was relatively large, at about 500 million tonnes CO<sub>2</sub>e per year (de Jong 2015). According to Zaman and Rock (2012), Australia's total demand for imported units could have ranged from 120 to 150 million tonnes over 2015–20; of this amount, only 12.5% could be met by Kyoto units under the linking agreement.

<sup>69</sup> At that time, the Australian fixed price of A\$23 (€19.08) for the first year of the CPM was considerably higher than the EU price of €8.16 – as was the Australian price floor, set to begin at A\$15 (€12.45) in 2015 (EurActiv.com 2012).

rational, reasonable economic and environmental reform that we can and we are making. And he [Mr Abbott] cannot and will not repeal it – this only demonstrates further why he won't" (Combet 2012).

Minister Combet reported to the media that Australia would continue to explore linkages to ETSs in California, New Zealand, and the Republic of Korea (Combet 2012; Reuters 2012). During the press conference on the linking agreement, a journalist asked, "What's your reaction to the New Zealand government's move to significantly weaken their carbon pricing scheme and how does that augur for linking?" Minister Combet replied,

Well we're continuing in discussions with the New Zealand government about the issues. One of the key issues with the New Zealand scheme is that it is uncapped and that will be an issue for us in ongoing discussions with New Zealand. But as I said earlier, I had a conversation with my counterpart just a couple of hours ago in New Zealand and explained the outcome of the discussion with the European Union and we'll now focus a good deal on discussions with New Zealand. (Combet 2012)

At the time of the linking agreement, the Australian government had not yet announced its decision regarding whether to join Kyoto CP2. This was not an explicit condition of the linking agreement. When the linking agreement was announced, some observers speculated whether this signalled Australia's intention to join CP2 or alternatively to continue to access Kyoto units from outside CP2 indirectly via the link (Zaman and Rock 2012). When Australia announced its decision to join CP2 in November 2012 and New Zealand positioned itself under the UNFCCC instead, this provided a further barrier to New Zealand joining the EU–Australian linkage pre 2020.

In September 2013, an Australian federal election brought to power a Liberal/National coalition led by Prime Minister Tony Abbott. A fierce critic of the previous Labor-led governments' climate change policies, Prime Minister Abbott proceeded to repeal the CPM with effect from 1 July 2014. The Clean Energy Legislation (Carbon Tax Repeal) Bill 2014 passed by a vote of 39 to 23, with opposition from the Labor and Green parties. Press headlines declared Australia the first country in the world to abolish carbon pricing (Cox 2014; Taylor and Hoyle 2014). This abruptly ended the linking agreement between the EU and Australia before it had taken effect.

#### **4.3 New Zealand's other engagement on global carbon market mechanisms**

Since the Kyoto Protocol entered into force, the New Zealand government has continued to support the development of global carbon market mechanisms and advancement of longer-term emissions trading opportunities through multilateral, regional and bilateral initiatives. For example:

- In October 2007, New Zealand was a founding member of ICAP, launched to “create an international forum of governments and public authorities that are engaged in the process of designing or implementing carbon markets”.<sup>70</sup>
- New Zealand has been a country observer supporting the work of the World Bank Partnership for Market Readiness, founded in December 2010.<sup>71</sup>
- In May 2011, the New Zealand government founded the Asia–Pacific Carbon Markets Roundtable to enable cooperation among regional governments on carbon market development.<sup>72</sup>
- In May 2012, the New Zealand government announced a joint study with the Republic of Korea on enabling linking with the NZ ETS (Groser 2012d).
- The New Zealand government has engaged bilaterally with officials involved in emissions trading development in a range of countries, including the United States (particularly the state of California), Thailand (*Carbon News* 2014) and China (*Carbon News* 2016, 2017).

During negotiation of a post-2012 climate change agreement, New Zealand advocated for improving and expanding global carbon market mechanisms. In the lead-up to the 2009 Copenhagen conference, the government’s negotiation position was to retain the Kyoto flexibility mechanisms, support the principle of supplementarity<sup>73</sup> without a quantified limit, and encourage new market mechanisms for developing countries that could facilitate the transition toward binding national or sectoral targets (Smith and Groser 2009). The government’s 2020 target inscribed in the Copenhagen Accord was a 10–20% reduction below 1990 levels dependent on meeting a series of conditions, one of which was “full recourse to a broad and efficient international carbon market” (Smith and Groser 2010).

New Zealand’s support for carbon market mechanisms continued over the ensuing years of negotiations leading to the 2015 Paris Agreement. New Zealand’s INDC for 2030, set at 30% below 2005 levels (or 11% below 2010 levels), was conditional on “unrestricted access to global carbon markets” (New Zealand Government 2015). At the United Nations Climate Change Conference in Paris, the New Zealand government led the development of a Ministerial Declaration on Carbon Markets<sup>74</sup> to reinforce the role of international market mechanisms under the agreement and the importance of maintaining environmental integrity and transparency, and avoiding double-counting of emission reductions (Reklev 2015).

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<sup>70</sup> See <https://icapcarbonaction.com>.

<sup>71</sup> See <https://www.thepmr.org>.

<sup>72</sup> See <https://www.mfat.govt.nz/en/environment/climate-change/negotiation-and-agreements>.

<sup>73</sup> The concept of “supplementarity” arose from the Kyoto Protocol’s requirement that the three flexibility mechanisms can be used to help meet only part of the quantified commitments of Annex B countries, and therefore their use must be supplemental to domestic action.

<sup>74</sup> The declaration was also supported by the governments of Australia, Canada, Chile, Colombia, Germany, Iceland, Indonesia, Italy, Japan, Mexico, Netherlands, Panama, Papua New Guinea, Republic of Korea, Senegal, Ukraine, and the United States.

Modelling work commissioned by the New Zealand government when considering its INDC suggested that, at a global emission price of NZ\$50 per tonne, New Zealand might need to meet up to 80% of its global contribution through investment in mitigation overseas (Infometrics 2015).<sup>75</sup> This suggests that New Zealand will continue to have a strong interest in global cooperation to reduce emissions, including through the use of carbon market mechanisms. Directly linking the NZ ETS to other markets would be only one of many possible options for enabling this. New Zealand's experience with past attempts at ETS linking under the top-down Kyoto framework suggests that there will be similar difficulty in doing so in the post-Paris world, where carbon market evolution may be even less predictable.

## **5 Practical outcomes from linking the NZ ETS**

### **5.1 Impacts of linking on the domestic carbon market**

International trading of Kyoto units to and from New Zealand pre-dated the implementation of the NZ ETS, and started slowly.<sup>76</sup> As discussed above, the first Kyoto units eligible for international trading were issued by the government under its 2002 policy package to participants in the PFSI, PREs, and NGAs. Since the NZEUR began operation in December 2007, both overseas and domestic carbon market brokers have supported New Zealand's international unit trading activity. New Zealand's carbon market has never operated a central trading exchange with a clearing house.<sup>77</sup> From inception through 2015, unit trading occurred primarily through bilateral arrangements without a common agreement structure.

Although NZ ETS unit obligations started accruing for the forestry sector as of 1 January 2008 and for the energy and industrial sectors as of 1 July 2010, the first unit surrender deadline for NZ ETS participants was not until 31 May 2011. While some NZ ETS participants started assessing their compliance and purchasing options early on during the system's development, initial compliance trading activity was dampened by policy uncertainty during the government's 2009 review and the lag before freely allocated NZUs were issued to forestry and industry participants. In 2008, while the NZ ETS was still in development, New Zealand's international trading consisted solely of a small volume of imports and exports of secondary-market CERs (New Zealand Emissions Trading Register 2016a,c).

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<sup>75</sup> The report transparently identified several limitations of the analysis. It did not account for mitigation in the forestry or agriculture sectors, the potential for transformational technology improvements, or the economic value of domestic co-benefits from mitigation.

<sup>76</sup> In New Zealand, unit trading has also taken place through voluntary carbon markets (e.g. to assist firms or individuals with offsetting their emissions to achieve carbon neutrality or for other reasons). As of 2017, the government's unit register (first the NZEUR and currently the NZETR) has never supported trading in units issued under voluntary markets.

<sup>77</sup> The option of a central exchange with a clearing house was initially investigated by the NZX while designing its carbon market trading platform, TZ1, which ultimately operated as a registry for voluntary trading.

Unit export activity from the NZ ETS was limited by the ban on exporting non-forestry NZUs (added in the 2009 amendments) and low overseas demand. Exports of forestry NZUs converted to NZ AAUs occurred in 2009 and 2010, alongside exports of Kyoto units associated with New Zealand's other market mechanisms (New Zealand Emissions Trading Register 2016b,c). The first sale of forestry NZUs converted to NZ AAUs was from New Zealand forestry company Ernslaw One to the Norwegian government in mid-2009; the parcel of 520,000 units fetched a unit price of about NZ\$22 (€10) (*Carbon News* 2009a; *National Business Review* 2009). In addition to Norway, early purchases of New Zealand Kyoto units across all mechanisms were dominated by Japan and Europe (e.g. Netherlands, France, United Kingdom, and Austria) (*Carbon News* 2009b, 2010; World Bank 2009). No forestry NZUs were exported as NZ AAUs in subsequent years. Ultimately, only 1.2 million forestry NZUs were exported as NZ AAUs over the period 2008–15 (New Zealand Emissions Trading Register 2016b).

With limited NZU export opportunities starting in 2009, New Zealand's domestic market initially priced NZUs at about NZ\$20. This was below prevailing prices for secondary-market CERs, which were influenced by demand in the higher-priced EU ETS market (European Environment Agency 2015). From 2009 through mid-2011, NZ ETS compliance trading focused primarily on domestic units. As discussed by Kerr and Ormsby (2016) and illustrated in Figure 2, NZU prices remained roughly around the NZ\$20 mark in 2010 and through mid-2011, hitting a low point of NZ\$17.40 in June 2010 and a high point of NZ\$21.40 in November 2010. However, from mid-2011 the global oversupply of Kyoto units exacerbated by the global financial crisis led to a rapid decline in international unit prices. As international Kyoto unit prices fell below NZU prices, NZ ETS participants took advantage of the unconstrained international linkage and shifted to importing Kyoto units – predominantly ERUs from countries with “hot air” targets – for compliance. NZU prices subsequently dropped in tandem with international prices.

Figure 2: NZU, CER, and ERU prices in NZD: 2010–16



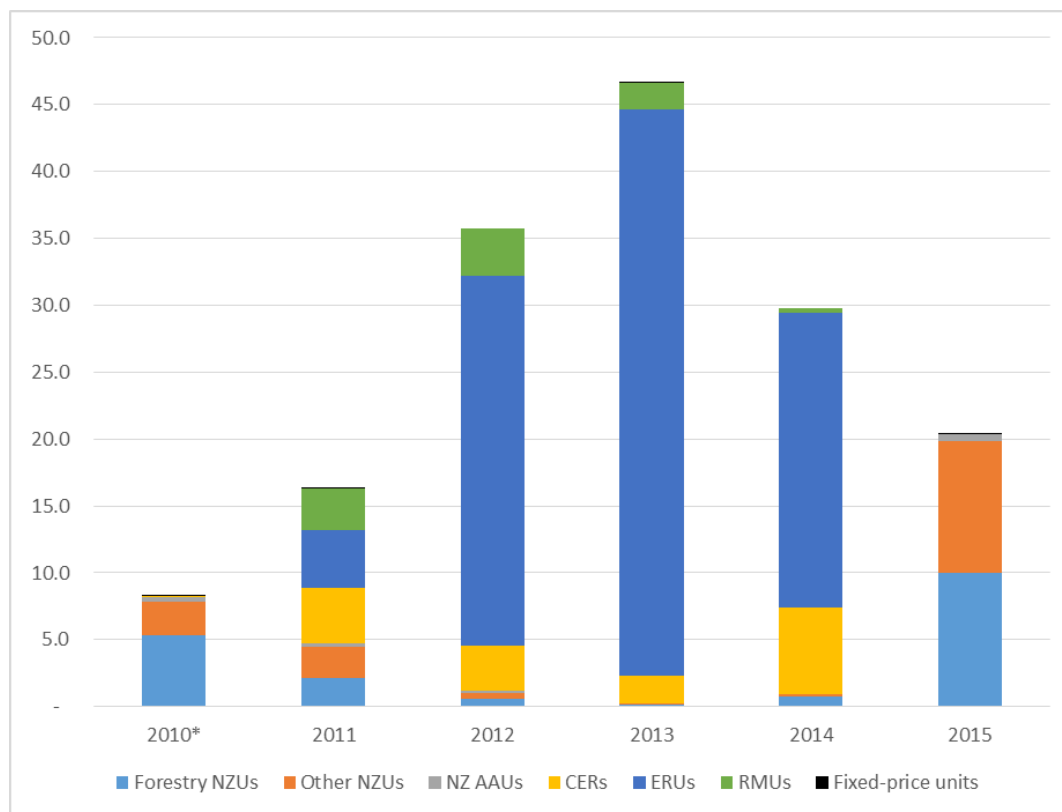
Data source: OMF

In November 2012, when the New Zealand government announced that it would not take its post-2012 target under the Kyoto Protocol, the market reacted to uncertainty about New Zealand's future access to the Kyoto market and the implications for the NZ ETS. While all unit prices remained low, NZUs began to command a significant premium. NZUs hit their lowest recorded price of NZ\$1.45 in February 2013, shortly before government consultation began on NZ ETS carry-over rules, alongside a CER price of about NZ\$0.60 and an ERU price of about NZ\$0.20. From early 2013, NZU prices started to rise, a trend that strengthened once the government confirmed in December 2013 that the NZ ETS would delink as of 31 May 2015.

NZ ETS participants took advantage of the arbitrage opportunity created by the growing price differential between imported Kyoto units and NZUs. As shown in Figure 3, starting in 2013 participants predominantly met their NZ ETS obligations using low-cost imported Kyoto units – largely ERUs – and banked higher-value NZUs issued for free allocation and removals. By June 2015, when the NZ ETS became a stand-alone system, participants had accumulated a bank of 140 million NZUs – nearly five times the annual surrender volume (Ministry for the Environment 2015c). In 2016, the sources of unit supply in the domestic market consisted of relatively small amounts of free allocation to the industrial sector, forestry and industrial

removals, and the participant-held bank. By July 2016, under policy uncertainty about future unit supply, NZU prices had crossed the NZ\$18 mark.<sup>78</sup>

Figure 3: Unit surrenders in the NZ ETS, 2010–15



\* The 2010 compliance year covered July through December.  
Data source: Environmental Protection Authority (2016)

## 5.2 Implications of linking for the New Zealand government

During the period when the NZ ETS was initially conceived and designed (2006–08), the government projected a significant Kyoto unit deficit relative to its target over Kyoto CP1 (Ministry for the Environment 2015b). As shown in Figure 4, by May 2009 New Zealand had shifted from a projected Kyoto unit deficit for CP1 to a unit surplus.<sup>79</sup> The projected Kyoto surplus grew continually from NZ ETS surrenders in subsequent years and accelerated post 2012 as a result of arbitrage by NZ ETS participants. In 2015, New Zealand met its CP1 target with a surplus of 123.7 million Kyoto units. In fact, New Zealand could have met its target without using any imported Kyoto units. It opted to retire all of its imported Kyoto units, all of its RMUs, and some of its NZ AAUs to meet its CP1 obligations, and to carry over a surplus of 123.7

<sup>78</sup> Information on NZU prices is courtesy of OMF.

<sup>79</sup> The government reported that this was largely as a result of data improvements in the forestry and agriculture sectors that led to an adjustment in New Zealand's favour, and reduced agricultural output under drought conditions (Smith 2009c).

million NZ AAUs for use in the post-2012 period (United Nations Framework Convention on Climate Change Secretariat 2016).<sup>80</sup> New Zealand's relatively heavy reliance on imported ERUs – largely from countries with “hot air” targets – to meet its Kyoto CP1 target drew criticism and international attention (Simmons and Young 2016a,b).

New Zealand's approach to ETS linkage has affected how the Crown has accounted for the fiscal cost of New Zealand's international climate change obligations relative to its NZ ETS obligations. The government accounts have borne the difference in prices between NZUs issued by the government and Kyoto units surrendered by participants to meet their NZ ETS obligations.

For the 2008–12 period, the New Zealand government was obligated under the Kyoto Protocol to issue AAUs and to retire Kyoto units against its net emissions.<sup>81</sup> As a result, the government treated its 2008–12 target as an accounting liability. It periodically assessed its Kyoto financial position as the difference between its projected Kyoto unit holdings and international unit obligations for the period, valued using the monthly average spot secondary certified emission reduction (sCER) unit price published by Point Carbon (Crookston 2014; Ministry for the Environment 2015a). As international unit prices and exchange rates fluctuated alongside the government's unit holdings and projected emissions, so did the valuation of the Crown's net Kyoto liability or asset.<sup>82</sup> Once the New Zealand government could no longer sell its surplus Kyoto units overseas after mid-2015, the surplus was assigned an asset value of zero, although the government still intends to use a substantial portion of those units (estimated at 38.1 million units in July 2016) to help meet its target for the 2013–20 period (Ministry for the Environment 2015d, 2016a).

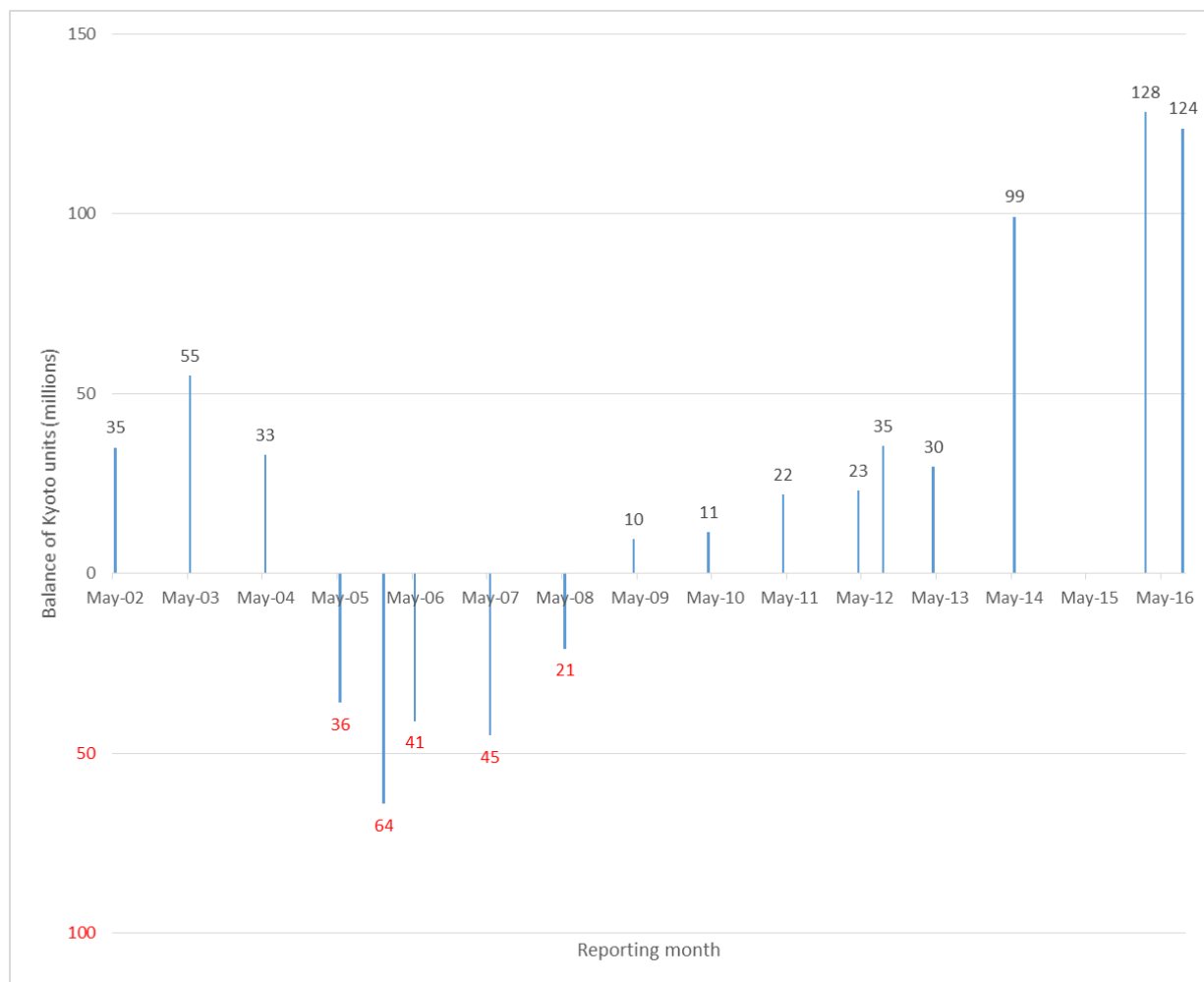
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<sup>80</sup> For reference, this surplus equates to about 1.5 times New Zealand's gross GHG emissions of 81.1 million tonnes CO<sub>2</sub>eq in 2014 (Ministry for the Environment 2016c).

<sup>81</sup> The New Zealand government earned RMUs on the basis of net forestry removals from eligible afforestation, reforestation, and deforestation over the 2008–12 period. These units could be used in meeting New Zealand's CP1 target but could not be carried over between Kyoto commitment periods.

<sup>82</sup> The largest Kyoto financial liability was recorded in March 2008: slightly over NZ\$1 billion for a deficit of 45.5 million units (valued at NZ\$22.18 per unit). The largest Kyoto financial asset was recorded in March 2011: NZ\$444 million for a surplus of 21.9 million units (valued at NZ\$20.33 per unit). In February 2015 (prior to the final true-up), the government projected a net asset of NZ\$4 million for a surplus of 128.2 million units (valued at NZ\$0.03 per unit) (Ministry for the Environment 2015b).

Figure 4: New Zealand's projected net position for CP1



Note: One Kyoto unit equals one tonne of CO<sub>2</sub>eq.  
Data source: Ministry for the Environment (2015b)

In contrast, under the NZ ETS, NZUs issued for free allocation or removals are counted as an expense to the government and NZUs surrendered back to the government are counted as revenue. The government periodically assesses its net NZ ETS position, valued using the lower of the current quoted NZU spot price and the monthly average NZU spot price as published by Point Carbon (Controller and Auditor-General 2011; Crookston 2014). Therefore, to the extent that the government received low-value Kyoto units instead of NZUs to cover emissions,<sup>83</sup> the government's ETS position declined.

The New Zealand government has applied a different accounting approach to its 2013–20 target under the UNFCCC. Because international compliance with that target does not involve the retirement of unit assets, the government is not accounting for that target as a fiscal liability (Ministry for the Environment 2015d). As of 2016, the government had not yet announced how

<sup>83</sup> As shown in Figure 2, this possibility arose during the NZ ETS surrender periods for 2013 through 2015, when there was a significant price divergence between NZUs and imported Kyoto units which could be used for compliance.

it will account for the cost of meeting its INDC under the Paris Agreement (Ministry for the Environment 2016b).

Ultimately, the New Zealand government did not require any imported Kyoto units to meet its Kyoto CP1 target, but because of its unconstrained ETS linkage it ended up with a large surplus of Kyoto units and a large participant-held bank of NZUs. The government intends to use some of its surplus Kyoto units to meet its 2013–20 target (Ministry for the Environment 2016a), although this is not clearly established in Party decisions under the UNFCCC.<sup>84</sup> As of April 2017, Parties had not yet negotiated carry-over rules under the Paris Agreement, and the government had reserved its decision about the disposition of remaining surplus Kyoto units for the 2021–30 period. To the extent that banked NZUs are not backed by government-held units that can be used for compliance with New Zealand’s international obligations, the banked NZUs represent an emission liability to the government and a cost to taxpayers under New Zealand’s future targets.

In the future, the government may wish to consider how to account for its international target liabilities and its NZ ETS liabilities to appropriately align these and avoid adverse fiscal implications. The rules for NZ ETS banking and international carry-over should be aligned where appropriate to manage fiscal risk.

## 6 Conclusion

When designing the NZ ETS, officials sought to capture the potential benefits of linking to the international Kyoto market: aligning domestic prices with international prices to support globally economically efficient mitigation; ensuring liquidity and guarding against manipulation in a small domestic market; and enhancing international cooperation on climate change mitigation. This was intended to be achieved by enabling Kyoto unit imports and exports without quantitative limits. To protect against upside price risks during a time of recession, the government added a price ceiling of NZ\$25 and halved the unit obligation for non-forestry sectors. As international prices declined from mid-2011, NZU prices also declined. When it became apparent in late 2012 that delinking was likely, NZUs began to command a significant price premium and NZ ETS participants took advantage of the arbitrage opportunities, banking NZUs and buying and surrendering Kyoto units in their place. As a result, by mid-2015 the government had accumulated a large surplus of imported Kyoto units whose long-term environmental benefit and fiscal value are unclear, and a liability under its future targets from a large participant-held bank of NZUs. Although the New Zealand government was interested in bilateral linking with other ETSS, particularly in the EU and Australia, other governments did not

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<sup>84</sup> Decision 1/CMP.8 on the Doha amendment to the Kyoto Protocol [FCCC/KP/CMP/2012/13/Add.1] describes the procedure for carrying over surplus AAUs for parties that have inscribed a target under Kyoto CP2, but not for parties (including New Zealand) that did not assume such a target (United Nations Framework Convention on Climate Change Secretariat 2012).

share New Zealand's commitment to least-cost compliance and proved unwilling to accept New Zealand's design features.

This experience highlights that achieving the conditions required for successful ETS linking can be fraught with technical, economic, and political challenges. The 2015 Paris Agreement has now placed the challenges of international emissions trading (under the framework of internationally transferred mitigation outcomes) in a new context: achieving global decarbonisation in a system where all countries are making mitigation contributions. If New Zealand aspires to link to overseas mitigation in the future, whether through the NZ ETS or through government-to-government agreements, it will require careful management of the risks to ensure positive outcomes for New Zealand's domestic decarbonisation and contribution to global mitigation.

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