

# NEW ZEALAND: AN EMISSIONS TRADING CASE STUDY



# New Zealand

## The World's Carbon Markets: A Case Study Guide for Practitioners



### Background

The *Climate Change Response Act* was enacted in November 2002 to establish a legal framework that would enable New Zealand to meet its obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

In September 2008, the government passed the *Climate Change Response (Emissions Trading) Amendment Act 2008*. The cornerstone of this Act was the New Zealand Emissions Trading Scheme (NZ ETS). It was designed to expose all sectors of the economy to the international price of emissions with phased introduction over the period 2008 to 2013. This was enabled through buy-and-sell linkages to the international Kyoto market. The forestry sector

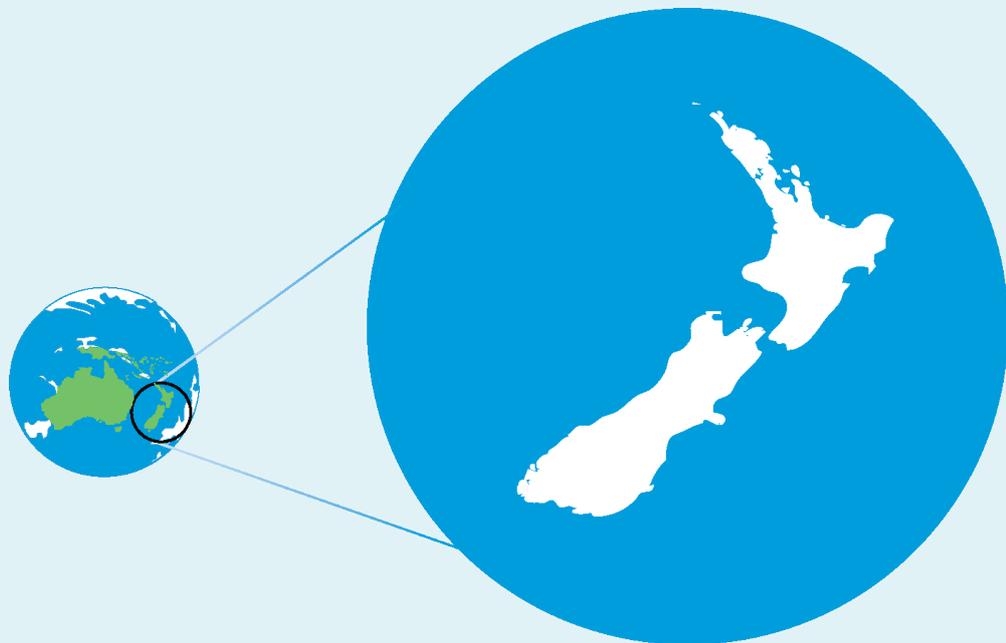
was the first to assume emissions unit (allowance) surrender obligations, based on emissions released via deforestation (in addition to the option to earn units for eligible carbon sequestration activities) retrospectively as of 1 January 2008.

Following a change in government in November 2008 and a review of the NZ ETS by a special select committee appointed in December 2008, the *Climate Change Response (Moderated Emission Trading) Amendment Act 2009* was passed in November 2009. It introduced measures to reduce the economic impact of the system, such as “1 for 2” compliance (whereby emitters in the stationary energy, industrial and transport sectors could surrender one emissions unit to cover two tons

of emissions), and a price ceiling of NZ\$25. These measures were initially designed to expire at the end of 2012. The Act also deferred unit obligations for biological emissions from the agriculture sector from 2013 to 2015, and shifted the unit obligation start dates for stationary energy, industrial and transport participants to 1 July 2010.

Following a statutory review of the NZ ETS completed in June 2011, the *Climate Change Response (Emissions Trading and Other Matters) Amendment Act 2012* was passed in November 2012. The Act extended the 2009 price moderation measures indefinitely (and applied them to 2013 entrants), deferred indefinitely unit obligations for biological emissions from agriculture, introduced 'forest offsetting' for pre-1990 forests (enabling foresters to avoid deforestation liabilities by planting an equivalent forest elsewhere), and introduced the power for the government to introduce auctioning under a cap (an option which has not been implemented to date). The Act also introduced a levy on synthetic gases in imported goods in place of NZ ETS obligations.

In November 2012, the New Zealand government chose to take its emission reduction commitment for the period 2013-2020 under the UNFCCC broadly rather than participate in the second commitment period of the Kyoto Protocol. New Zealand severed access to the Kyoto carbon market after the end of the true-up for the first Kyoto commitment period. Starting on 1 June 2015, NZ ETS participants could no longer surrender imported Kyoto units to meet their obligations. As of July 2016,



the eligible sources of unit supply in the domestic market are a substantial bank of participant-held New Zealand Units (NZUs), NZUs freely allocated to the industrial sector on an output basis, and NZUs issued for removals (sequestration) by the forestry and industrial sectors. In December 2015, the government initiated a third review of the NZ ETS in two stages. The first focused on whether to restore a full "1 for 1" unit obligation and how to manage the associated price effects. The second focused on a broad range of issues regarding business

responses to the NZ ETS, competitiveness and free allocation, unit supply, price stability and operational issues. In May 2016, the government announced that a full unit obligation would be phased in progressively by 1 January 2019 and that the price ceiling of NZ\$25 per ton and industrial free allocation would be retained. As of July 2016, the government had not announced further decisions pursuant to the review.

# Summary of Key Policy Features

<b>Long-Term Reduction Goal</b>	5% below 1990's levels by 2020 (unconditional) 10-20% below 1990's level by 2020 (conditional) 30% below 2005's level (11% below 1990's level) by 2030 50% below 1990's levels by 2050. <sup>1</sup>
<b>Cap</b>	While the country has a national emissions reduction commitment under the UNFCCC, no absolute cap on NZUs is currently in operation at the level of the ETS. <sup>2</sup>
<b>Compliance Periods</b>	Annual compliance periods operate on a calendar-year basis. Units must be surrendered by 31 May in the following year.
<b>Greenhouse Gases Covered</b>	Carbon Dioxide (CO <sub>2</sub> ), Methane (CH <sub>4</sub> ), Nitrous Oxide (N <sub>2</sub> O), Sulphur Hexafluoride (SF <sub>6</sub> ), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) <sup>3</sup>
<b>Sectors Covered</b>	Unit surrender and emissions reporting: Forestry, stationary energy, transport, industrial processes, synthetic GHGs <sup>4</sup> and waste. Emissions reporting only: Biological emissions from agriculture (unit obligations deferred indefinitely).
<b>Number of Obligated Entities</b>	329 mandatory and 2,207 opt-in (June 2015)
<b>Point of Regulation</b>	<b>Forestry:</b> Landowner with the possibility for transfer to the forest rights holder. <b>Stationary energy and transport:</b> Point of fuel production or import where possible. <b>Industrial processes:</b> Point of emission. <b>Synthetic GHGs:</b> Point of production, import or equipment operation. <b>Waste:</b> Landfill operator. <b>Agriculture:</b> Point of processing for animals and animal products and point of production or import for fertilizer.
<b>Threshold</b>	Dependent on sector
<b>Average Carbon Price</b>	NZD17.50 (June/July 2016) <sup>5</sup>
<b>Allowances Allocation</b>	Fixed free allocation was initially provided to the forestry and fishing sectors and output-based free allocation is ongoing to eligible EITE industrial producers. <sup>6</sup> Total levels of free allocation are low. <sup>7</sup> Industrial free allocation will be phased out by one percent of the starting level per year once a full unit obligation is in place. Units are also allocated for removals in the forestry and industrial sectors. The 2012 amendments introduced a government power to auction NZUs under a cap, but this has never been implemented as of July 2016.
<b>Carbon Leakage Provisions</b>	Output-based free allocation is provided to eligible EITE industrial producers.
<b>Use of Revenues</b>	No auction revenue is generated at present.
<b>Price/Market Control Measures</b>	A price ceiling of NZ\$25 per ton is provided by enabling participants to purchase fixed-price units for immediate surrender.

<sup>1</sup> These are all global responsibility targets in that they can be achieved through a combination of domestic and international mitigation effort.

<sup>2</sup> The government has the power to introduce auctioning under a cap but this has not been implemented as of July 2016.

<sup>3</sup> Nitrogen trifluoride emissions do not occur in New Zealand.

<sup>4</sup> This excludes synthetic GHGs (HFCs and PFCs) in imported goods, which are covered by a levy.

<sup>5</sup> This is the average price of a New Zealand Unit (NZU) in June/July 2016. Unit prices over the history of the NZ ETS have varied from over NZD20 to close to zero.

<sup>6</sup> Industrial free allocation was reduced in line with the "1 for 2" unit obligation and will increase as a full obligation is restored.

<sup>7</sup> In 2014, the government freely allocated 4.48 million NZUs to the industrial sector and 0.04 million NZUs to owners of pre-1990 forests, whereas NZ ETS participants surrendered 29.8 million units for compliance. The government also issued 10.08 million NZUs for forestry removals and 1.47 million NZUs for other removal activities (Environmental Protection Authority 2015).

<b>Offsets</b>	From 2008 to mid-2015, the NZ ETS accepted imported Kyoto units subject to some restrictions on sources but not on quantities. As of 1 June 2015, the NZ ETS does not accept imported units. Domestic units issued to participants in three domestic mechanisms outside the NZ ETS – the Permanent Forest Sink Initiative, Negotiated Greenhouse Agreements and Projects to Reduce Emissions <sup>8</sup> – are eligible for use in the NZ ETS.
<b>Linkages</b>	The NZ ETS was designed with broad buy-and-sell linkages to the global Kyoto market. Starting in 2009, forestry NZUs were the only NZUs eligible for export by exchange for NZ AAUs because of the price cap. As of 1 June 2015, the NZ ETS delinked from the Kyoto market. The NZ ETS has never been linked bilaterally to another system, although this possibility has been explored.
<b>Market Regulation and Oversight</b>	The Ministry for the Environment is responsible for the <i>Climate Change Response Act</i> and associated policy development. The Ministry for Primary Industries manages NZ ETS operations relating to the forestry and agriculture sectors. The Environmental Protection Authority administers the NZ ETS and operates the register.
<b>Complementary Policies</b>	The NZ ETS is New Zealand’s primary policy supporting mitigation. Other policies and regulations support improvements in energy efficiency, renewable energy, transport supply and demand and land management. The Synthetic Greenhouse Gas Levy applies to synthetic gases in imported goods. Mitigation of biological emissions from agriculture is supported by research and development. The Permanent Forest Sink Initiative and Afforestation Grant Scheme incentivize afforestation on land outside the NZ ETS.
<b>Enforcement/Penalties</b>	Installations that fail to meet their obligations must surrender units to match the shortfall, and pay a penalty of NZD\$30 for each shortfall unit. Failure to comply with data collection, reporting and other obligations carries a fine. Knowingly providing false information carries a fine and/or prison term.
<b>Banking</b>	<b>Banking:</b> there are no quantitative or time-based limits on banking allowances. <b>Borrowing:</b> is enabled only to the extent that participants can meet their obligations for the prior year using the current year’s free allocation issued prior to the surrender deadline.
<b>Monitoring and Reporting</b>	Mandatory participants are required to submit an annual emissions report to the NZ EPA by 31 March of the following year. Verified annual self-reporting is required for covered sectors, and, for forestry, there is an option for voluntary quarterly reporting. Third-party verification is only required when participants do not wish to use the default emission factor to calculate their GHG emissions, and apply for calculations to be made using a Unique Emission Factor. Post-1989 forestry participants have the option to report on carbon stock increases every five years rather than annually.

<sup>8</sup> The Projects to Reduce Emissions mechanism is no longer operating but units awarded to past projects may still be in circulation.

# Carbon Price Evolution

**Figure 1: Price development in the NZ ETS: 2011 to 2016**

From inception of trading activity through mid-2011, NZU prices ranged below prices of Kyoto certified emissions reductions (CERs) at between NZD15-22. From mid-2011 through December 2012, NZU prices matched CER/ERU prices and declined in concert with them. Once the New Zealand government announced its decision in December 2012 not to proceed with a quantified commitment under the second commitment period under the Kyoto Protocol, unit prices in the NZ ETS and international CER market diverged with

NZUs earning a premium in the face of doubt about future linking to the Kyoto market and rules for unit carry-over. The price of NZUs continued to rise after delinking was confirmed in December 2013, imported Kyoto units became ineligible in the NZ ETS after May 2015, and the government confirmed in May 2016 its intention to restore a full "1 for 1" unit obligation by 2019.



Source: Data courtesy of OMF

# Commentary on Market Functioning

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The NZ ETS was designed with a dual objective: to assist with meeting New Zealand's international climate change obligations and to reduce domestic emissions below business as usual. The market has functioned successfully in that ETS administrative systems have operated effectively, the market has set a price on emissions, participants have been able to buy and sell units in a liquid market to meet their NZ ETS unit obligations, and participant compliance rates with emissions reporting and unit surrender obligations have been high. Imported Kyoto units surrendered by NZ ETS participants contributed to New Zealand's compliance with its Kyoto target for 2008-2012 and generated a surplus which will be applied by the government to help meet its target under the UNFCCC for 2013-2020. However, in their 2016 evaluation of the system, government officials found that "no sector other than forestry made emissions reductions over Kyoto Protocol Commitment Period One (2008-12) (CP1) that were directly caused by NZ ETS obligations" (Ministry for the Environment 2016b). Domestic mitigation gains in the forestry sector generated during initial periods of higher emission prices were largely eroded as prices declined.

The low impact of the NZ ETS on domestic emissions resulted from repeated policy decisions to use the international Kyoto market to set domestic emission prices without quantity limits on importing Kyoto units. This was intended to support globally economically efficient investment decisions and least-cost compliance with New Zealand's international obligations. As international unit prices declined, so did domestic unit prices and the incentive to mitigate within New Zealand.

The prospect of delinking from the Kyoto market created a price premium for NZUs and opportunities for arbitrage. From 2013 through 2015, in anticipation of future delinking, participants predominantly surrendered low-cost imported Kyoto units and banked higher-value NZUs received under free allocation or earned via removals. This has had several consequences. First, this contributed to the accrual of a large participant-held bank of NZUs; as reported in November 2015, the bank totalled 140 million NZUs, compared to annual unit surrender levels of around 30 million units. The NZU bank will increase the fiscal cost to the government as it meets its target for the period 2021-2030. Second, this created an arbitrage opportunity for post-1989 foresters who identified an opportunity to deregister their land from the NZ ETS, cover their deregistration liabilities using low-cost Kyoto units while banking the higher-value NZUs they had earned previously, and re-register to receive further NZUs for eligible removals. A legislative amendment in May 2014 closed down that opportunity. Third, the New Zealand government's disproportionate use of imported ERUs surrendered by NZ ETS participants to help meet its Kyoto CP1 target drew negative international attention in 2016.

In November 2015, the government launched a two-stage review of the NZ ETS. The first stage resulted in the decision in May 2016 to progressively restore a full "1 for 1" unit obligation in the NZ ETS by 1 January 2019. While this increased policy certainty about future market demand for units, questions remain over the future of unit supply in the domestic market. In the second stage of the review, the government invited submissions on a range of issues

including unit supply and price stability. As of July 2016, the government had not yet taken decisions in that regard.

# What Distinguishes this Policy?

## UNIQUE ASPECTS

1.

The NZ ETS was the first system in the world designed to cover all sectors of the economy, including forestry and agriculture, and all six major greenhouse gases. The forestry sector carries mandatory liabilities for deforestation of pre-1990 forest and can earn units for eligible removals by post-1989 forests in return for accepting liabilities for future reversals. Although unit obligations for biological emissions from agriculture have been deferred indefinitely, the sector is still required to report on those emissions under the NZ ETS and much of the enabling design work for unit obligations has been done.

2.

The NZ ETS pioneered an upstream point of obligation (i.e. at the point of fuel production or import) in the stationary energy and transport sectors while providing free allocation to eligible EITE industrial producers exposed to the emission price through purchases of fossil fuels and electricity and/or their direct obligation for industrial process emissions. The upstream point of obligation has reduced the number of obligated participants while ensuring broad coverage of sources, minimizing administrative and compliance costs, maximizing mitigation opportunities and almost eliminating leakage within sectors. The NZ ETS has successfully demonstrated that the point of obligation does not also need to be the point of free allocation.

3.

The NZ ETS was not designed to constrain domestic emissions via a domestic cap on unit issuance or limit on imported units. From 2008 to mid-2015, the NZ ETS was nested within the cap established by the Kyoto Protocol and relied on that market to serve as a major source of units and to set the domestic emission price. For the 2008-2012 period, the government was responsible for “truing up” net domestic emissions against its holdings of Kyoto units to ensure achievement of its Kyoto target. To moderate price impacts, the system operated with a “1 for 2” unit obligation in non-forestry sectors which is unique among ETS. That feature will be removed progressively by 1 January 2019. As a result of delinking from the Kyoto market, the government will need to decide on the future of unit supply in the domestic market.

## CURRENT CHALLENGES AND OPPORTUNITIES:

1.

The government faces important decisions about the future of unit supply and price management in the NZ ETS, including how to set the cap in relation to New Zealand’s targets and other mitigation policies, when and how to initiate auctioning under a cap, what form of price management would benefit the NZ ETS as a stand-alone market, and what rules should apply to unit imports in the event linking to overseas markets becomes feasible and desirable again in the future. Increasing policy certainty on longer-term ambitions for domestic mitigation and emission pricing would help to guide low-emission investment decisions in all sectors.

2.

New Zealand’s Nationally Determined Contribution (NDC) is predicated on meeting part of New Zealand’s obligations through funding credible mitigation abroad. Mechanisms for this are at an early stage of development. Further work is needed to explore how the NZ ETS and other bilateral or regional mitigation initiatives could support New Zealand in achieving its NDC for 2021-2030.

3.

Biological emissions from agriculture constitute nearly half of New Zealand’s gross GHG emissions. In 2012, the government deferred indefinitely unit obligations for those emissions under the NZ ETS. Strategic questions remain about how the agriculture sector can best contribute to New Zealand’s low-emission transition and the implications for mitigation ambition in NZ ETS sectors.

# Author Acknowledgements

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## EDF

[www.edf.org](http://www.edf.org)

EDF co-authors:  
Ruben Lubowski

EDF Contact:  
Ruben Lubowski ([rlubowski@edf.org](mailto:rlubowski@edf.org))

Environmental Defense Fund  
1875 Connecticut Ave NW Ste. 600  
Washington, DC



## MOTU

[www.motu.org](http://www.motu.org)

MOTU co-authors:  
Catherine Leining & Suzi Kerr

MOTU Contact:  
Catherine Leining ([catherine.leining@motu.org.nz](mailto:catherine.leining@motu.org.nz))

Motu Economic and Public Policy Research  
97 Cuba Street, Level 1,  
Wellington 6011, New Zealand



## IETA

[www.ieta.org](http://www.ieta.org)

IETA co-authors:  
Jeff Swartz & Stefano De Clara

IETA contact:  
Jeff Swartz ([swartz@ieta.org](mailto:swartz@ieta.org))

IETA  
Rue de la Loi 235 Brussels 1040  
Belgium



