EVOLUTION OF THE NZ ETS: SECTORAL COVERAGE AND POINT OF OBLIGATION

An Executive Summary of Working Paper 17-05

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INTRODUCTION

Emission pricing
can have more effect when it
reaches far and wide.

This paper aims to help inform future policy making on emissions trading system (ETS) design in New Zealand and internationally. It provides a conceptual foundation for design decisions on ETS coverage and points of obligation. An ideal ETS has:

- minimal administration costs,
- broad coverage of emissions from each included sector with effective transmission of emission price incentives, and
- effective monitoring, reporting, and compliance systems.

ABOUT SECTORAL COVERAGE

The sectoral coverage of an ETS comprises the sectors to be included, the entities and activities within each sector that are covered, and the associated gases which carry liabilities. These choices involve making trade-offs among several factors:

- the environmental effectiveness and cost effectiveness of the system,
- equity considerations,
- the prospects for bilateral and multilateral linking, and
- the administrative and political feasibility of the system.

The factors that are considered most important will depend on the objectives of a particular system and the political context in which it will operate.

ABOUT POINTS OF OBLIGATION

The point of obligation in an ETS is the entity that is required to report a defined set of information and surrender emissions units. All industries have a vertical chain of production and consumption, often with several layers.

- An 'upstream' point of obligation is at a point in the supply chain before the emissions are generated (e.g. fossil fuel producers/importers).
- A 'downstream' point of obligation is at a point in the supply chain after the emissions are generated (e.g. at the processor level for livestock emissions).

The points of obligation must:

- have sufficient auditable data to infer emissions from the chain of production,
- be legal entities on which the government can enforce compliance, and
- have either a direct (by mitigating) or indirect (by passing emission liabilities on through prices) ability to respond to the emission liabilities they face.

The point in the supply chain where the ETS obligation is assigned does not have to be the point at which emissions occur, or the point at which emissions abatement is possible. As long as the point of obligation can pass the emission price through the supply chain, the actual emitter still faces the price signal and the incentive to reduce emissions is still present. In a well-functioning economy, the ultimate distribution of costs will not depend on the point of obligation. If for equity, political, or competition and leakage reasons the government wishes to protect some firms or consumers, free allocation can be used strategically to alter the distribution of costs. The point of obligation also does not need to be the point of free allocation.

DESIGN FEATURES OF THE NZ ETS

The New Zealand Emissions Trading Scheme (NZ ETS) was designed to cover all sectors of the economy and all six major greenhouse gases (GHGs). This reflected New Zealand's relatively unique emission profile among industrialised countries and its interest in finding effective, efficient, and equitable solutions to meeting its international emission reduction targets. As of 2017, biological emissions from agriculture carry reporting but not emissions unit obligations; the latter have been deferred indefinitely.

When designing the NZ ETS, the New Zealand government's preference was for an upstream point of obligation where appropriate, but this decision was taken separately for each sector. Across sectors, obligated producers are defined by the activities they conduct and thresholds are used to exclude small producers.

ENERGY SECTOR

Given New Zealand's relatively small number of large players in most energy markets, the government chose an upstream point of obligation (at the point of fuel production or import) as the default option in the stationary energy and transport sectors. However, as an alternative large fuel users could opt in as points of obligation, in which case their purchased fuel was exempt from the upstream obligation. In the 2008 founding legislation, opt-in was limited to large users of jet fuel, coal, or natural gas. In 2012, this option was extended to large users of all obligation fuels.

Sector	Status	Point of obligation
Liquid fossil fuels	Mandatory	Owner of obligation fuel at the time the fuel is removed for home consumption or otherwise removed from a refinery, other than for export
Liquid fossil fuels	Voluntary	User of any obligation fuel above a threshold (with carve-out of the upstream obligation)
Stationary energy	Mandatory	Point of fuel production or import for coal and natural gas Point of use of geothermal fluid Point of emission for combustion of waste products Point of petroleum refining where the refining involves the use of intermediate crude oil products (for example, refinery fuels and gases) for energy or feedstock purposes Point of use of crude oil or other liquid hydrocarbons (other than obligation fuel or as specified)
Stationary energy	Voluntary	User of coal or natural gas above a threshold (with carve-out of the upstream obligation)

As of June 2016, 98 entities carried mandatory obligations and 11 entities had opted in as direct points of obligation in the energy sector. Some downstream participants felt they could lower their emission costs by assuming direct unit obligations rather than relying on the purchasing strategies of upstream suppliers. On the whole, respondents interviewed during the course of research reported that having the opt-in in legislation had proven useful for those who met the thresholds. This approach offered flexibility while still ensuring full coverage of energy-sector emissions with a relatively small number of obligated entities.

FORESTRY

In designing forestry elements of the NZ ETS, the government sought appropriately directed incentives for reduced deforestation, greater afforestation and reforestation, and greater average carbon stocks. Mandatory emissions unit liabilities apply for deforesting pre-1990 forest, whereas owners of forest planted after 1989 can opt into the system to receive emissions units but then must surrender units associated with emissions from harvest or deforestation.

The government placed ETS deforestation obligations on the landowner. If the landowner is not the one making the decision to deforest, the individual making this decision becomes the mandatory participant for the activity of deforesting pre-1990 forest. In the case of afforestation, the principle is that the owner of the forest, not the owner of the land that the forest is on, should receive emissions units and face the deforestation or harvest liability.

Sector	Status	Point of obligation
Forestry – Deforesting pre-1990 forest	Mandatory	Owner of forest land Third party with deforestation rights, where the landowner has no control over the decision
Forestry – Owning post-1989 forest land	Voluntary	Owner of forest land Holder of a forestry right or lease with the agreement of the landowner

Although the NZ ETS was enacted in September 2008, unit obligations for deforestation of pre-1990 forest took effect retrospectively from 1 January 2008, to stop further acceleration of deforestation in anticipation of restrictions. Enabling post-1989 forests to accrue emissions units from 1 January 2008 was intended to incentivise greater rotation lengths and more forest replanting as well as to support market liquidity and cross-sectoral trading.

Voluntary forestry participants account for the vast majority of participants in the NZ ETS; there were 2,115 as of June 2016, compared to 45 mandatory participants for deforestation of pre-1990 forest, 243 other mandatory participants and 21 other voluntary participants across all sectors. The number of forestry participants has varied considerably from year to year.

AGRICULTURE

As of 2017, the agriculture sector is exposed to ETS costs for its stationary energy and transport emissions but not biological emissions. In the initial all-sectors design of the NZ ETS, the desired outcomes from the agriculture sector included improving the emissions efficiency of production activities and incentivising lower-emitting land uses while maintaining administrative feasibility and broad compliance.

Sector	Status	Point of obligation
Agriculture – Fertiliser and animals	Mandatory	Default: Processor Alternative by Order in Council: Farmer

There is considerable ongoing debate on where agricultural points of obligation should reside. The government's initial preference for a processor-level point of obligation was chosen to minimise the number of participants in the system, keeping down administrative costs and simplifying verification and compliance. Stakeholders in the agricultural sector, however, generally had a strong preference for a farmer-level point of obligation. Officials acknowledged that a processor-level obligation would function more like a per-kilogram levy and farmers' mitigation opportunities would likely relate to changes in output mix. In the 2008 founding legislation and 2009 amendments, the government proceeded with a default obligation at the processor level and the flexibility to move to the farmer level by regulation.

Starting in May 2010, the government consulted on regulations for exemptions and thresholds for points of obligation as well as emission methodologies in the agriculture sector. Table 2 in the working paper reports the exemptions which apply as of 2017.

During the 2011 review of the NZ ETS, almost all submitters voiced a preference to move to a farmer-level point of obligation, as it would provide more direct and effective incentives to improve farm practices and reduce emissions. An analysis by KPMG in 2012 showed that placing the point of obligation at the level of the farm business owner would best meet the government's objectives of high emissions coverage, lower compliance costs, and incentives for mitigation. In the 2012 amendments, the points of obligation remained unchanged and unit obligations for biological emissions from agriculture were deferred indefinitely. As of June 2016, there were 80 points of obligation for biological emissions from agriculture.

The government noted the potential for systematic underreporting in the NZ ETS for the agriculture sector relative to the national inventory, given the combination of exemptions, exclusions, and conservatism on NZ ETS emission factors to avoid double counting, together with the inherent variability of biological systems. In the 2012 amendments, the government adjusted exemptions and emission factors to support better alignment between NZ ETS and national inventory reporting.

OTHER SECTORS

The selection of points of obligation was straightforward for most industrial processes, as emissions in these sectors can only be monitored where they occur. However, there were some challenges around selecting the points of obligation for synthetic GHGs. Whereas the 2008 legislation placed an obligation on all importers of HFCs and PFCs, in 2012 HFCs and PFCs in imported goods (i.e. motor vehicles, air conditioning units, and refrigeration units) were removed from the NZ ETS and subjected to a comparable levy to reduce transaction and compliance costs. Whereas the 2008 legislation placed an obligation on importers of SF_6, in 2012 this was shifted to electrical switchgear operators (users), with improved alignment between participants' obligations and national inventory accounting. In the waste sector, the point of obligation was assigned to landfill operators, who also carried responsibility for paying the waste disposal levy under the Waste Minimisation Act 2008.

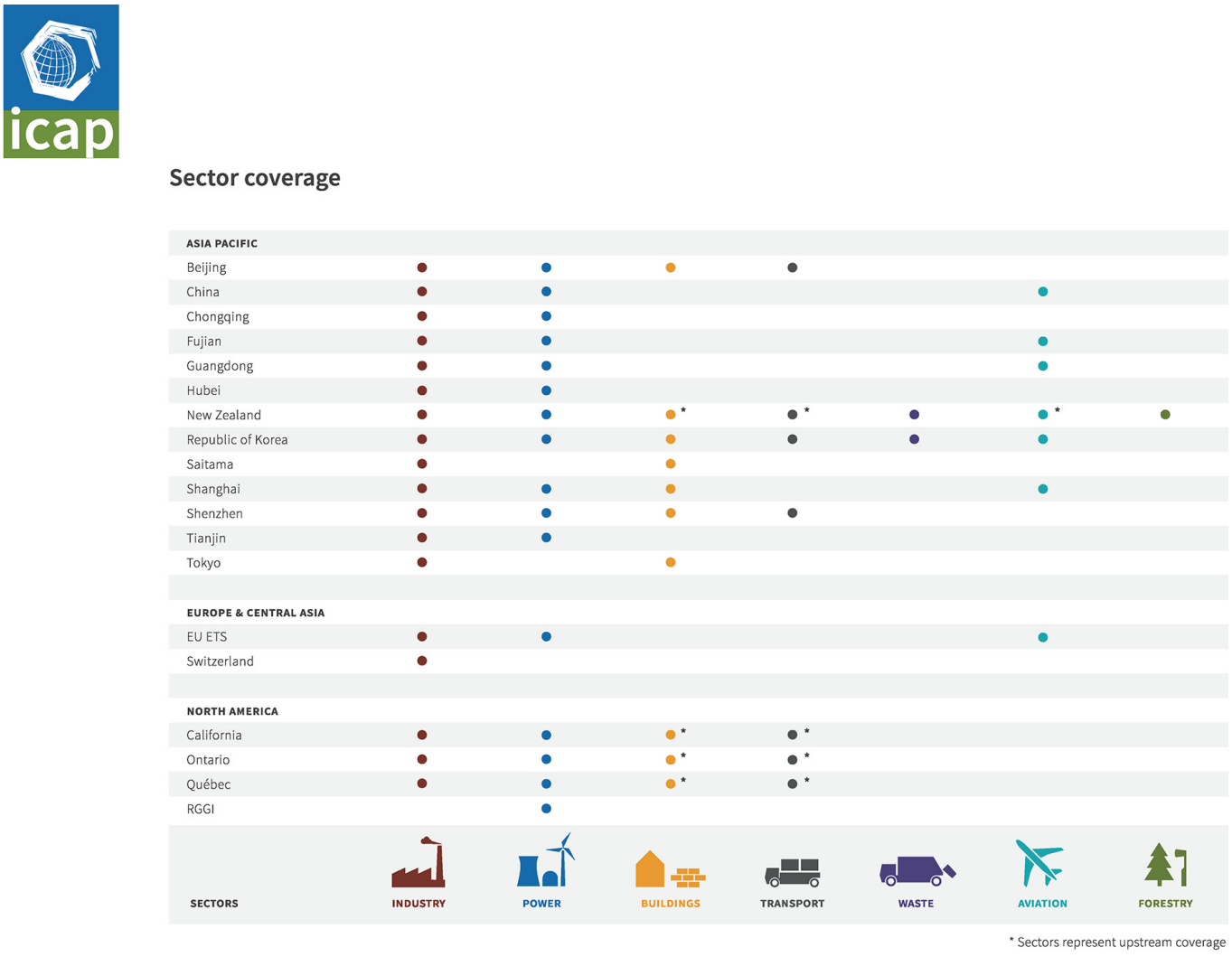
Sector	Status	Points of Obligation
Industrial processes	Mandatory	Point of production
Synthetic GHGs[1]	Mandatory	Point of import, manufacture, or equipment operation
Synthetic GHGs	Voluntary	Point of export or destruction
Waste	Mandatory	Landfill operator
Other removal activities	Voluntary	Producer

[1] Synthetic GHGs in imported goods are excluded from the NZ ETS and covered instead under a synthetic GHG levy.

COMPARISON WITH OTHER SYSTEMS

As of 2017, the NZ ETS remains the only system in the world designed to cover all economic sectors and all major GHG emissions over time. It was the first to include the transport sector, which has since been included in several systems. Its inclusion of forestry and potential future inclusion of agriculture as directly obligated sectors rather than sources of offset credits remain globally unique. The NZ ETS pioneered an upstream point of obligation across the energy sector, a feature which has been adopted selectively in other systems but not in others. As global experience with emissions extends into new jurisdictions with different regulatory and market settings as well as political contexts, it will be interesting to see which ETS design choices are made and for what reasons.

Figure 1: Sector coverage in the world's emissions trading systems



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