

The New Zealand government has decided to use an emissions trading scheme for greenhouse gas emissions as part of its response to climate change. Emissions trading will help reduce emissions, encourage and support global action on climate change, and help put New Zealand on a path to sustainability. This factsheet is an introduction to how emissions trading is likely to affect industry.

## Emissions trading and industry

Factsheet 8



September 2007

### Industrial process emissions

Industrial process emissions result when materials are transformed from one substance to another in an industrial setting. These emissions arise from non-energy uses of products. The industrial process sector also covers emissions from the use of imported inert synthetic gases.

The metal, mineral and chemical industries in New Zealand emit significant quantities of carbon dioxide. The products made by these processes include steel, aluminium, cement, burnt lime and glass, plus ammonia and urea. Limestone is the raw material for cement and burnt-lime production; it is also used for 'liming of grasslands'. This use results in emissions of carbon dioxide that are included in the industrial process sector.

Non-carbon dioxide emissions from the industrial process sector include perfluorocarbons (PFCs) from aluminium smelting. Imported inert synthetic gases include: hydrofluorocarbons (HFCs), which are used as substitutes for ozone-depleting substances and in metered-dose inhalers; PFCs used as refrigerants; and sulphur hexafluoride (SF<sub>6</sub>) used in electrical switchgear.

Emissions from New Zealand's industrial process sector represented 5.6 per cent of total greenhouse gas emissions in 2005. These emissions increased by 31.8 per cent from 1990 to 2005.



### What activities will an emissions trading scheme cover in this sector?

It is proposed that the scheme covers:

- > carbon dioxide from the production of steel, aluminium, cement, burnt lime, glass, gold, paper plus ammonia and urea
- > PFCs from the production of aluminium
- > carbon dioxide from limestone sold as a fertiliser for grasslands
- > sulphur hexafluoride imported for use in electrical switchgear
- > HFCs imported for use as a refrigerant.

Using of metered-dose inhalers also emits hydrofluorocarbons. However, these are proposed to be excluded from the scheme, because of the administrative complexity and the amounts involved are small.

For carbon dioxide emissions from the metal, mineral, and chemical industries, the emission trading obligation is best placed on the emitter. Emissions would be calculated by tracking the volume of products or 'emission sources' (which are purchased, produced or imported) and multiplying this volume of product by an emission factor, rather than by monitoring actual emissions.

For PFC emissions resulting from aluminium production, the emission trading obligation is also best placed on the emitter. Calculations are based on measurable parts of the production process that provide a substitute for actual emissions, multiplied by an agreed emission factor.

For lime – limestone used as a fertiliser – the emission trading obligation is best placed on the fertiliser company; an obligation to buy emission units would arise at the time lime fertiliser is sold.

For the inert synthetic gases SF<sub>6</sub>, PFCs and HFCs, the emission trading obligation is best placed on bulk importers at the time of importation. Importers' records of the volume of these gases, kept for excise duty purposes, can then be used for compliance with the emissions trading scheme.



A separate factsheet deals with the combustion of fuels used mainly for stationary energy (electricity generation and industrial heat), which covers coal, natural gas, and geothermal resources.



### What options are open for discussion for the industry sector?

The government's preferred option is a 1 January 2010 start date in the emissions trading scheme for industrial process emissions.

In 2004, a non-binding Memorandum of Understanding (MOU) was signed between the Crown and users of imported SF<sub>6</sub> in the electricity sector. Major users were to be exempt from any climate change policy costs in return for meeting a specified target. All users agreed to adopt best practice in SF<sub>6</sub> management. This MOU covers the period to 31 December 2012.

For this reason, the government has decided that the emissions of SF<sub>6</sub> will not enter the scheme until 1 January 2013.

Further discussion with the industrial process sector will address exactly where in the supply chain an obligation will be triggered for each product or activity; and the possibility for industrial process emitters, who are large energy users, to opt in to the emissions trading scheme with respect to their use of coal and natural gas.

### Potential impacts of an emissions trading scheme on industry

Industrial producers are likely to face increased costs in two ways, as a result of the emissions trading scheme:

- > directly – because they cause industrial process emissions (and use fuels for stationary energy if they opt in to the scheme as direct points of obligation), and/or
- > indirectly – owing to the increased costs of fuels used for stationary energy and electricity.

The government proposes to assist industry with these increased costs, by either reducing their emission unit obligations or through an allocation of free emission units.



### Other government climate change initiatives relevant to industrial process emissions

The Ministry for the Environment is in the process of developing resources to assist firms that want to monitor and report their emissions on a voluntary basis. This guidance will be targeted at businesses who wish to track the greenhouse gas emissions they are responsible for (eg, from electricity and transport use).



Initially, this guidance will focus on a limited set of common emission sources. The guidance will not specifically cover the details of industrial process emissions (the emissions trading scheme and international guidance are expected to do this). However, alongside the requirements of the emissions trading scheme, the guidance would be relevant to firms that have industrial process emissions and would like to do comprehensive reporting voluntarily on the emissions sources they use (eg, for corporate sustainability or triple bottom line reporting purpose).



The No Loss Synthetic Greenhouse Gas initiative is a scheme for companies that handle synthetic greenhouse gases. Such greenhouse gases are, on average, several thousand times more powerful than carbon dioxide. Therefore these companies need formal accreditation to minimise the risk of synthetic greenhouse gases leaking into the atmosphere.

As noted above, the SF<sub>6</sub> MOU supports industry in adopting best practice in managing emissions of sulphur hexafluoride. As a greenhouse gas, SF<sub>6</sub> is many tens of thousands of times more powerful than carbon dioxide.

### Where to go for more information

For more information on the government's climate change work, including 'The Framework for a New Zealand Emissions Trading Scheme' (particularly the sections on Stationary Energy, Industrial Processes and Industrial Production) and a series of emissions trading factsheets, visit [www.climatechange.govt.nz](http://www.climatechange.govt.nz)

For more information on Energy Efficiency and Conservation Authority programmes, visit:

- Emprove: <http://www.eecabusiness.govt.nz/emprove/>
- Energy Intensive Businesses: <http://www.eeca.govt.nz/energy-intensive-businesses/index.html>