

# Emissions Trading Scheme Policy

**V4.0**

**October 2017**

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## 1.0 Managing Carbon Emissions - Bathurst Resources and ETS

The ETS is New Zealand's primary response to global climate change. It puts a price on greenhouse gases\* to provide an incentive to reduce emissions, invest in energy efficiency and plant trees. Coal producers are a mandatory participant in the ETS and are required to remit carbon units to the NZ Government on an annual basis for the emissions they are deemed responsible for under the scheme.

Bathurst Resources participates in the New Zealand Emissions Trading Scheme or ETS, purchasing carbon units for remission to the New Zealand government for climate change gases that result directly from the mining activities and for the contribution of its coal in New Zealand.

Carbon, or 'emission' units\*\*\* are a globally recognised currency that allows participating nations to put a price on greenhouse gas emissions. The ceiling price in New Zealand is currently \$25 per tonne of carbon dioxide or other greenhouse gas.

The New Zealand ETS legislation came into effect from 1 July 2010 and is applicable to Bathurst and other New Zealand coal miners for:

- All CO<sub>2</sub> and other greenhouse gas emissions produced from mining
- All CO<sub>2</sub> generated by the combustion of the coal sold in New Zealand

Even though Bathurst doesn't actually burn the coal it sells, it is responsible for reporting the emissions from the combustion of that coal and remitting the required units for that combustion under the ETS. Bathurst must either purchase carbon units from elsewhere to remit, or pay the government on a calendar year basis.

Only domestic coal sales attract an ETS charge which is calculated on the amount of greenhouse gases generated in the use of the coal and for the gas emissions associated with the mining of all coal, regardless of where it is used.

The price that the ETS puts on carbon units is to incentivise a move away from carbon based fuels in New Zealand. Participants in the ETS must remit one carbon unit to the Government for every tonne of CO<sub>2</sub> (or other greenhouse gas) they emit. This includes all CO<sub>2</sub> and other greenhouse gas emissions

associated with mining (fugitive emissions) and the CO<sub>2</sub> generated by combustion of coal Bathurst sells in New Zealand.

Upon its introduction, the ETS had an initial transition period up to 31 December 2012 whereby for each two tonnes of emissions, the participant was required to remit one unit. This 'two for one' arrangement was extended from 1 January 2013 until 31 December 2016. From 1 January 2017 to 31 December 2017 the requirement is for one unit for each 1.5 tonnes of emissions, from 1 January 2018 to 31 December one unit for each 1.2 tonnes of emissions and from 1 January 2019 the transitional arrangements will be completely phased out.

To benefit its customers, Bathurst endeavours to purchase units at current market prices when prices drop below the New Zealand ETS price, which happens from time to time. As with any traded commodity, prices fluctuate with supply and demand. Bathurst can then pass on the cost savings of its unit holdings to the customer inclusive of a small administration charge.

## 2.0 What are greenhouse gases\*?

Greenhouse gases (GHG) are any of the atmospheric gases that contribute to the greenhouse effect\*\* by absorbing infrared radiation produced by solar warming of the Earth's surface. They include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxides (NO<sub>x</sub>), and water vapour. Although greenhouse gases occur naturally in the atmosphere, the elevated levels especially of carbon dioxide and methane that have been observed in recent decades are directly related, at least in part, to human activities such as the burning of fossil fuels and the deforestation of tropical forests.

Source - The American Heritage® Science Dictionary  
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## 3.0 What is the greenhouse effect\*\*?

The greenhouse effect is a warming of the earth's surface and lower atmosphere caused by substances such as carbon dioxide and water vapour which let the sun's energy through to the ground but impede the passage of energy from the earth back into space.

Energy emitted from the sun ("solar radiation") is concentrated in a region of short wavelengths including visible light. Much of the short wave solar radiation travels down through the Earth's atmosphere to the surface virtually unimpeded. Some of the solar radiation is reflected straight back into space by clouds and by the earth's surface. Much of the solar radiation is absorbed at the earth's surface, causing the surface and the lower parts of the atmosphere to warm.

The warmed Earth emits radiation upwards, just as a hot stove or bar heater radiates energy. In the absence of any atmosphere, the upward radiation from the Earth would balance the incoming energy absorbed from the Sun at a mean surface temperature of around  $-18^{\circ}\text{C}$ ,  $33^{\circ}$  colder than the observed mean surface temperature of the Earth. The presence of "greenhouse" gases in the atmosphere accounts for the temperature difference. Heat radiation (infra-red) emitted by the Earth is concentrated at long wavelengths and is strongly absorbed by greenhouse gases in the atmosphere, such as water vapour, carbon dioxide and methane. Absorption of heat causes the atmosphere to warm and emit its own infra-red radiation. The Earth's surface and lower atmosphere warm until they reach a temperature where the infra-red radiation emitted back into space, plus the directly reflected solar radiation, balance the absorbed energy coming in from the sun. As a result, the surface temperature of the globe is around  $15^{\circ}\text{C}$  on average,  $33^{\circ}\text{C}$  warmer than it would be if there were no atmosphere. This is called the natural greenhouse effect.

If extra amounts of greenhouse gases are added to the atmosphere, such as from human activities, then they will absorb more of the infra-red radiation. The Earth's surface and the lower atmosphere will warm further until a balance of incoming and outgoing radiation is reached again (the emission of infra-red radiation increases as the temperature of the emitting body rises). This extra warming is called the enhanced greenhouse effect.

*Source - NIWA website ([www.niwa.co.nz](http://www.niwa.co.nz))*

## 4.0 What is an emission unit \*\*\*?

The primary unit of trade in the NZ ETS is a New Zealand unit (NZU), or emission unit, issued by the Crown. Participants are required to surrender NZUs to the Crown to meet their obligations under the scheme. Emission units are often referred to as carbon credits, allowances or offset credits.

Participants from the forestry sector are required to surrender one NZU for each tonne of greenhouse gas emissions they produce, while participants from non-forestry sectors are required to surrender only one NZU for every two tonnes of greenhouse gas emission and the dairy sector is exempt from ETS requirements.

All participants may buy emission units from the Government for a fixed price of \$25 or from domestic and international carbon markets at market prices.

*Adopted: October 2017*

*Reviewed: October 2017*