

WHAT IS CLIMATE

Ever since Prime Minister Kevin Rudd signed the Kyoto Protocol and appointed a Minister for Climate Change, the issue has been a hot topic for business. Find out how climate change will affect exporters

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CHANGE?

IMAGINE AUSTRALIA'S OLDEST wine growing regions too hot to produce grapes, dwindling agricultural exports and prime tourist attractions like the Great Barrier Reef crumbling and you get an inkling of the dramatic impact climate change could have on this country and its economy.

Professor Ross Garnaut, who was commissioned by the Australian government to review the economic impact of climate change and recommend policy options, notes that climate change will be "associated with a decline in international demand for Australia's mineral and energy resources and agricultural products".

In *The Garnaut Climate Change Review* he says climate change will affect the supply of imports to Australia and demand for Australia's exports and, consequently, Australia's terms of trade. "The Review's modelling indicates that Australia's terms of trade are affected much more adversely than any other developed country by climate change."

So what is climate change and why is the prognosis so grim? The United Nations Framework Convention on Climate Change distinguishes between 'climate variability', which is a natural fluctuation of the climate, and 'climate change', caused by people.

It defines climate change as "A change of climate which is attributed directly or indirectly to human activity that alters the

composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods".

In the past 10,000 years, the earth's atmosphere has remained relatively stable, providing people, crops and animals with optimal conditions in which to thrive. A thin layer of naturally occurring gases, called greenhouse gases after the effect they have, act like a protective skin around the planet. This layer is critical in maintaining this equitable climate. At the right concentrations, greenhouse gases shield the environment from the high-energy radiation of the sun. They allow sunlight to come in but trap some of the heat that is re-radiated from the earth back into space, keeping the temperature just right.

Since the industrial age, however, people burning carbon-rich fossil fuels, destroying forests and building polluting factories and farms, have spewed increasing amounts of carbon dioxide and other greenhouse gases into the atmosphere. The higher concentration of these greenhouse gases trap more heat than is re-radiated from the earth, which prevents radiation from escaping and results in global warming and climate change.

The major culprit is carbon dioxide, which now exceeds the natural range of the last 2 million years by 25 percent, according to the Intergovernmental Panel on Climate Change. Without

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concerted international action to cut greenhouse gas emissions, carbon dioxide levels could reach a catastrophic 1,500ppm (parts per million) by the end of this century. This could herald a new Dark Age, with unendurable temperatures, the sea largely dead, massive droughts and much of the planet uninhabitable.

The new Australian government has signed the Kyoto Protocol and stated its commitment to a 60 percent reduction in carbon emissions by 2050. Australia is introducing a cap and trade emissions scheme, to be implemented in 2010. The government will announce details of this Carbon Pollution Reduction Scheme, including interim targets for 2020, later this year.

Garnaut has recommended that Australia should support setting an international target for stabilisation of greenhouse gases at 450ppm, which gives a 50 percent chance of limiting the global mean temperature increase to two degrees Celsius above pre-industrial levels.

If the world does not agree to this target, Garnaut says Australia should play its part in stabilisation at 550ppm. He remarks: "What the rest of the world notices most about Australian emissions is that ours are the highest per capita in the OECD."

THE EXPORT ENVIRONMENT

With two-thirds of Australia's agricultural production exported, climate change will hit this sector hard. The Australian Bureau of Agricultural and Resource Economics has estimated that the effects of climate change will push sugar exports down 79 percent by 2050 and beef and dairy exports by one third.

Fiona Wain, chief executive officer of Environment Business Australia, describes climate change as the biggest threat to economies and the survival of the planet. She says it is vital to act now, because the environment is our fundamental capital. "If food productivity breaks down, if food supplies break down, millions of people will not sit around waiting to starve: they will try and mobilise and go somewhere where they think there is food and water."

She adds: "It is entirely foreseeable, with the data that we have, that the entire system could collapse. What we've got to do to avoid that collapse. There is tremendous export potential, wealth generation and wealth preservation potential in acting now. The longer we stall and delay activity, the less opportunity there will be and the worse the outcomes are likely to be."

Australia needs to reduce carbon in the atmosphere, curb future emissions and seize wealth generation opportunity in the process. There is a \$1.3 trillion global marketplace for environmental goods and services, with \$100 billion in the carbon trading market alone, according to Wain. "If Australia can demonstrate that an energy

intensive economy can retain and grow its prosperity, then we have a good opportunity to help other countries, particularly the countries in our region, with smarter technology, more energy efficiency and better infrastructure," she says.

While acknowledging that some Australian exports will dwindle, she sees fresh opportunities for exporters of clean energy technologies and high quality, sustainable goods and services. Implementing the Carbon Pollution Reduction Scheme will "do our exports a lot of good, because in fairly rapid order, we're going to see carbon pollution as a World Trade Organisation issue."

She forecasts "a new set of standards worldwide that will have impacts on entire supply chains from materials selection, manufacturing, transportation, warehousing, retailing."

Wain also notes that many senior scientists, including leading NASA climate scientist Dr James Hansen, argue that 450ppm of carbon is too high and that "we have to get below 350ppm a lot earlier than 2050". Her organisation has prepared a report on how Australia could achieve 61 percent carbon cuts by 2020, largely by switching from coal to gas, wind, solar thermal, geothermal and wave power.

"By 2030 Australia could be one of a handful of global mega-clean energy parks, energy hubs, that are value-adding to our resources through minerals processing and then manufacturing with totally clean energy and then exporting that out to the world," says Wain.

She also predicts a growing market for organic produce and crops produced using low till methods. Equally, Australia could

DEFINITIONS

Climate change: A change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer.

Greenhouse gas: Any gas that absorbs infrared radiation in the atmosphere. The Kyoto Protocol names these as carbon dioxide, nitrous oxide, methane, sulphur hexafluoride, perfluorocarbons (PFCs) and hydrofluorocarbons (CHFCS).

Emissions trading: A market-based approach to reducing emissions, placing a limit on emissions allowed from all sectors covered by the scheme. It allows those reducing greenhouse gas emissions to use or trade excess emissions permits to offset emissions at another source. Also called a 'cap and trade scheme'.

Source: www.garnautreview.org.au

grow and market new generation biofuels, produced from fast-growing biomass like algae using carbon capture methods.

Already some of Australia's trading partners such as Europe and Japan are restricting or taxing carbon-polluting imports. As a result, Australian companies should ensure that "exports of anything that is polluting, until it's phased out, have carbon credits stapled to them," says Wain. For example, coal companies might invest in reforestation in Australia or in a developing country.

For exporters who have not yet introduced green practices, remaining competitive in the new carbon conscious market is likely to involve a steep learning curve. **DB**