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**Country profiles on policies to support environment-friendly innovation**

# **Eco-Innovation Policies in New Zealand**

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## FOREWORD

The report is part of a series of country profiles on eco-innovation policies developed for eight non-EU OECD members: Australia, Canada, Japan, Korea, Mexico, New Zealand, Turkey and the US. Country profiles are based on extensive desk research and on field missions in selected countries (Canada, Japan, Korea, the US). Country experts have commented earlier drafts of their country profile.

This series complements the eco-innovation roadmaps developed by EU member countries under the Environmental Technology Action Plan. It provides an empirical basis for further investigation on policies to support eco-innovation.

A short introduction presents the background for this series of country profiles, including the methodology, and a brief overview of some of the instruments identified.

The country profiles were drafted by Xavier Leflaive, under the supervision of Brendan Gillespie. Carla Bertuzzi has provided data and information on measurement issues and has drafted selected sections. IEEP was commissioned for the initial desk research and preliminary identification of policy issues. Country experts have provided most valuable inputs, in terms of time, information and policy relevance: Warren Hughes (Department of the Environment, Water, Heritage and the Arts, Australia), Javier A. Gracia-Garza (Environment Canada), Graham Campbell (Natural Resources Canada), Tim Karlsson (Industry Canada), Noriko Kishimoto (Ministry of the Environment, Japan), Kyu-Shik Park (Ministry of Environment, Republic of Korea), Carlos Muñoz Villarreal (Ministry of Environment and Natural Resources, Mexico), Vera Power and Alison Stringer (Ministry for the Environment, New Zealand), David Widawsky (USEPA), Sebahattin Dokmeci (Ministry of Environment and Forestry, Turkey).

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## INTRODUCTION

### Background

This report is part of the OECD work programme on eco-innovation policies.

The ambition of this report is to provide an empirical inventory of policies in place in New Zealand to promote eco-innovation. Considering that European countries had developed roadmaps for eco-innovation policies in the context of the European Commission Environmental Technology Action Plan (ETAP), the secretariat prepared an inventory of eco-innovation policies in eight non-EU OECD countries (Australia, Canada, Japan, Korea, Mexico, New Zealand, Turkey and the US). A similar project for China is published separately.

The objective of this work is to complement the knowledge base on eco-innovation policies in OECD countries and to provide empirical material for additional research on policy issues related to eco-innovation. The outline of each country profile is similar to that of ETAP roadmap, to facilitate comparison.

The work was implemented in coordination with country delegations, which have identified experts in each country who could provide additional information and review initial drafts of the country profile of their country.

A consultant (IEEP, Brussels, Belgium) has been commissioned to collect all information publicly available in English on eco-innovation policies in each of the eight non-EU OECD members. Field missions have been organised by the country experts in four countries (Canada, Japan, Korea, the US). During these missions, the secretariat met with the agencies identified and selected by the country expert. Draft country profiles have been developed on the basis of desk research and field missions. They have been reviewed by national experts and revised accordingly. All country profiles present information which was up-to-date at the end of 2007. In most cases, more recent information has been taken into account.

### Policy instruments to support eco-innovation

The country profiles confirm that eco-innovation policies deploy a variety of instruments. They have to adjust to the features of the domestic economy, in particular the knowledge base, the size of domestic markets, and the *vigueur* of the venture capital industry.

In most non-EU OECD countries, public research and development (R&D) remains a major orientation. The US and Japan typically allocate significant public finance to environment-related R&D. However, three trends have emerged: i) some countries are concerned by the competition and trade issues related to such support; ii) public resources are increasingly channelled via Departments not directly in charge of environment policies (Energy, Agriculture, Transport), making inter-agency cooperation even more necessary; iii) the role of research organisations is being redefined, to intensify

linkages with the private sector and stimulate the development of marketable outputs; incubators in the US, or the National Institute of Advanced Industrial Science and Technology's (AIST) Technology Licensing Office in Japan illustrate innovative arrangements in this area.

Attracting private funds to finance environmental R&D is another major policy orientation. The main issue is to reduce risks for private investors investing in environmental R&D projects, while making sure that public money is used effectively and does not crowd out private initiatives. A variety of funds have been established to reduce risks to private investors (e.g. Sustainable Technology Development Canada-SDTC in Canada), or incubators (e.g. The Clean Energy Alliance in the US, Environmental Technology Business Incubator in Korea). Measures are taken to stimulate the venture capital industry and to provide incentives for environment-related projects; e.g. this is the role of the Environmental Venture Fund in Korea.

Environment-related performance standards are being set with the aim of stimulating innovation in goods and services. Such standards are pursued in particular in the field of energy and resource efficiency. However, standards may provide disincentives and can only have a lasting positive effect on innovation if they are timely revised. Schemes such as the Top Runner programme in Japan aim to address this challenge.

Market-based instruments are burgeoning in non-EU OECD Countries. A number of new projects and initiatives have been identified at national or local level. One interesting case is the all-encompassing Emission Trading Scheme envisioned in New Zealand, where equitable sharing of responsibility across sectors and stakeholders is based on the principle of equity across sectors.

There is some evidence that, besides environmental policy instruments and regulation, soft instruments such as voluntary commitments, eco-audits and eco-labels play a role as determinants of innovative behaviour in firms. Voluntary initiatives can become mandatory over time (cf. Stand-by Korea). Industry initiatives abound and, in particular contexts, can change the relationship between the administration in charge of environment policies and the business sector. This is illustrated by Performance Tracks in the US, where the US Environmental Protection Agency (USEPA) and firms enrolled in the programme construct a collaborative relationship. This typifies what can be seen as a new phase in environmental policies which sets out to promote broader sustainability, rather than address one single environmental issue. In that perspective, governments rely less on regulatory tools and endeavour to work with industries, in sectors which use materials and/or energy.

In line with the OECD Council Recommendation on Improving the Environmental Performance of Public Procurement [C(2002)3], green procurement initiatives are burgeoning at local and national levels. Guidelines are supported by websites, green products databases, and *pro forma* requests for tenders. The Green Purchasing Network is an international network active in this area.

Some initiatives set out to promote technologies and products developed by one country. Others try to alleviate barriers to the deployment of environment-friendly technologies and products; shared definitions, standards and labels contribute to a level playing field for the creation and diffusion of environment-friendly technologies, products and life-styles. Such efforts are still plagued by institutional problems related to intellectual property rights and international monetary transfers. Typically, the capacity of a national agency to (financially) support one country's side of a multinational joint venture depends on how countries will share the intellectual property rights. Few cooperation projects reach developing countries (with the exception of East Asia, and China in particular).

## COUNTRY PROFILE OF NEW ZEALAND

### Introduction and country definitions of eco-innovation

#### *Definitions related to eco-innovation used in the Country*

The Ministry of Economic Development defines innovation as ‘the dynamic process of creating and introducing new ideas and new ways of doing things. Innovations may be *incremental* (small, stepwise improvements), *major* (substantial improvements), or *radical* (new lines of business, paradigm shifts)’.

For the Business Operations Survey 2005 innovation module, Statistics New Zealand used a definition of innovation from the OECD Oslo Manual (2005) where an innovation is defined as the development or introduction of new or significantly improved:

- goods or services – this does not include the selling of new goods or services wholly produced and developed by other businesses
- operational processes – i.e. methods of producing or distributing goods or services
- organisational/managerial processes – i.e. significant changes in the business’s strategies, structures or routines
- marketing methods – this includes sales and marketing methods intended to increase the appeal of goods or services for specific market segments, or to gain entry to new markets.

Innovation is broadly defined. It includes the development or introduction of any new or significantly improved activity for the business. This includes products, processes and methods that the business was the first to develop and those that have been adopted from other organisations.

The term “innovation system” in New Zealand is taken to mean the pivotal technological, economic, social and institutional structures that encourage and support innovative development. This includes core Government policy departments and programme delivery agencies; government commercial entities such as State Owned Enterprises; universities and research bodies such as Crown Research Institutes; legislation and associated regulatory agencies; regional and local Government; and firms, supply chains, independent research providers, industry training organisations, financial institutions, markets and investors.

Almost all the above entities maintain websites that describe their operations and provide information on relevant programmes and activities.

The term mostly used in New Zealand policies and initiatives to describe eco-innovation related actions is sustainability.

## ***Institutions playing a major role in eco innovation***

### *Policy departments and the subsidiary principle*

The Government policy departments with primary responsibilities with regard to innovation are the Ministry of Economic Development ([www.med.govt.nz](http://www.med.govt.nz)), Ministry of Research, Science and Technology ([www.morst.govt.nz](http://www.morst.govt.nz)) and Ministry of Agriculture and Forestry ([www.maf.govt.nz](http://www.maf.govt.nz)). The Ministry for Economic Development also encompasses energy policy and reports to the Minister of Energy on these issues.

The Ministry for the Environment is the Government policy agency with over-arching responsibility for the implementation of the Resource Management Act (RMA) and Hazardous Substances and New Organisms Act (HSNO, see below). The Department of Conservation is responsible for the protection of natural and historical heritage.

Starting with the Resource Management Act (1991), environmental management was founded upon the 'subsidiary principle', where the power of decision-making rests as close as possible to the affected communities.

Under this system of governance, central government can issue national policy statements on any aspect of resource management which is of national significance. They will provide direction for district and regional councils.

Regional councils are responsible for the mandatory regional policy statements. These statements will consider issues of significance to the region, outline the community's goals for the environment and the policies necessary to achieve these goals.

The Ministry of the Environment maintains a number of excellent web sites where business can easily access tools, links, grants, partnerships, initiatives etc.

<http://www.mfe.govt.nz/>; [www.sustainability.govt.nz](http://www.sustainability.govt.nz/); <http://www.climatechange.govt.nz>

The Ministry Sustainable Business Initiatives are available here: <http://www.mfe.govt.nz/issues/sustainable-industry/initiatives/>

The Ministry for Economic development website also provides information on sustainability, energy and economic policy.

[http://www.med.govt.nz/templates/ContentTopicSummary\\_27750.aspx](http://www.med.govt.nz/templates/ContentTopicSummary_27750.aspx)

The Ministry of Agriculture and Forestry website contains information on sustainability resource use issues for agriculture <http://www.maf.govt.nz/mafnet/rural-nz/sustainable-resource-use/>.

### *Relevant agencies*

Alongside the core policy departments are operational and/or regulatory agencies charged with delivering and implementing associated programmes and legislation. These are:

- The Foundation for Research Science and Technology (FRST, <http://www.frst.govt.nz/>). FRST is a Crown Entity that invests in research, science and technology on behalf of the NZ

Government. It is a key driver of innovation and has programmes and funding for eco innovation projects.

- New Zealand Trade and Enterprise (NZTE, <http://www.nzte.govt.nz/>) is the agency that delivers Government economic development programmes directed at growth and innovation in exports, regions, sectors and firms. Their website contains information on relevant programmes.
- The Energy Efficiency and Conservation Authority (EECA, <http://www.eeca.govt.nz/>) is the main body responsible for helping to deliver the Government's extensive energy efficiency agenda. Its function is to encourage, promote and support energy efficiency, energy conservation and the use of renewable energy sources and related innovative technologies.
- The Environmental Risk Management Authority (ERMA, <http://www.ermanz.govt.nz/>). ERMA implements the HSNO Act and has a key role in managing the risks of new organisms and hazardous substances and therefore has a key role in the speed of technological innovation in a range of areas.

### ***Policy documents related to eco-innovation***

Over-arching New Zealand policy and strategy documents include the following.

#### *Initial legislative background*

An important over-arching legislative influence on innovation is the Resource Management Act (1991)<sup>1</sup> (RMA). This defines sustainable management in ways that address social, economic, and cultural considerations, including meeting the needs of future generations, safeguarding the life-supporting capacity of natural resources and ecosystems, and avoiding, remedying, or mitigating the adverse environmental effects of human activities. The RMA devolves a significant body of decision making relating to innovation in the areas of environment, infrastructure and development to regionally based government.

Another important influence on innovation, environment and development is the Hazardous Substances and New Organisms Act 1996 (HSNO). This legislation sets the requirements for the introduction and use of defined substances over a set hazard threshold, and new organisms.

There is a strong sense of sustainability, resource management and conservation of natural resources through the RMA, HSNO and the Environment and Conservation agencies (Ministry for the Environment, Department of Conservation, Local Government). Although the RMA devolves many performance standards the Government can set overall national targets, objectives and other requirements through initiatives such as the Energy Strategy 2007 and the Framework for a New Zealand Emissions Trading Scheme 2007. These initiatives, along with the RMA and HSNO, act to facilitate and incentivise 'eco-innovation' and sustainable development.

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<sup>1</sup> Resource Management Act 1991 <http://www.mfe.govt.nz/rma/index.php> or [www.legislation.govt.nz](http://www.legislation.govt.nz)



### *The Growth and Innovation Framework (GIF)*

Released in February 2002, the GIF (<http://www.gif.med.govt.nz>) set innovation as the pivotal feature of the next phase of New Zealand's economic development. A Growth and Innovation Advisory Board was established in May 2002 to provide an independent perspective on how the Government can advance its Growth and Innovation Programme. In 2006 the GIF was updated as the Economic Transformation Agenda which set five core themes (Growing Globally Competitive Firms, World Class Infrastructure, Innovative and Productive Workplaces, Auckland as an Internationally Competitive City and Environmental Sustainability).

### *The Government's package of sustainability initiatives*

In February 2007, the Prime Minister outlined her vision for New Zealand to be the first country to be truly sustainable. She announced six new sustainability initiatives. These initiatives are part of a broader cross-government work programme to lead New Zealand towards greater sustainability in resource use and way of life.

The six initiatives include helping households towards sustainability, business partnerships for sustainability, eco-verification demonstrating the sustainability of goods and services, sustainable procurement, a carbon neutral public service, and zero waste. The Government has tasked core agencies to implement the sustainability package of six initiatives. The initiatives are being led by Ministry for the Environment or Ministry for Economic Development. Work on the six initiatives sits alongside much existing work to promote sustainability, including:

- The [New Zealand Energy Strategy](#) (see below);
- The [New Zealand Waste Strategy](#) (see below);
- The [New Zealand Energy Efficiency and Conservation Strategy](#); published in October 2007, the Plan is targeted at maximising energy efficiency and renewable energy. This is the second five year strategy released under the Energy Efficiency and Conservation Act 2000 (the first was released in 2001)
- The [New Zealand Transport Strategy](#). The Vision behind the strategy is that, by 2010 New Zealand will have an affordable, integrated, safe, responsive, and sustainable transport system. In 2008, the government will publish an update of the New Zealand Transport Strategy. This Update will provide direction for the transport sector until 2040 in the context of the government's sustainability agenda and other government strategies in the areas of energy and energy efficiency; translate that direction into high-level targets for the transport sector; provide clearer guidelines for decisions about funding allocations; contain an action plan.
- The Sustainable Land Management and [Climate Change action plan](#). The Plan of Action covers adaptation to climate change, mitigation of climate change additional to the Emissions Trading Scheme (see below) and business opportunities arising from climate change. Research, technology transfer and communications is also covered. The Government will continue to develop key elements of this Plan of Action in partnership with industry sectors, local government and Māori.

## **Policies, Initiatives and instruments – a national inventory**

In addition to those indicated in section 1, this chapter outlines initiatives undertaken in New Zealand to foster environmental innovation.

### ***Research and Development***

A number of research and development and commercialisation initiatives have been identified. These include:

- Programmes run by the Foundation for Research, Science and Technology
- Sustainable Business Initiatives;
- The Pastoral Greenhouse Gas Research Consortium (PGgRc).

Other initiatives not reported here include individual EECA programmes (e.g. the Marine Energy Deployment Fund); FRST programmes such as the Low Carbon Energy Fund 2007; NZTE programmes such as the Australia New Zealand Biotechnology Partnership Fund, Regional Strategy Fund, Strategic Investment Fund.

A selection of local initiatives is highlighted.

#### *The Foundation for Research, Science and Technology*

The Foundation was established by the Research, Science and Technology Act 1990 to invest in science and technology research for the benefit of New Zealand. It is a Crown Agent governed by a Board appointed by the Minister of Research, Science and Technology. Its aim is to stimulate prosperity and improve the well-being of New Zealanders and the environment through investing in innovation and fostering the creation of new knowledge. It invests approximately NZ\$450 million of public money per annum through a number of funds and schemes to help support: 'public good' related science and technology, undertaken by Crown Research Institutes, universities, private researchers and industry led-consortia; private sector business research and development; and top-achieving students and researchers.

<http://www.frst.govt.nz>

#### *Sustainable Business Initiatives*

The Ministry of the Environment maintains an excellent web site where business can easily access tools, links, grants, partnerships, initiatives etc.

<http://www.mfe.govt.nz/>, <http://www.sustainability.govt.nz>, <http://climatechange.govt.nz>

The Ministry Sustainable Business Initiatives are available at <http://www.mfe.govt.nz/issues/sustainable-industry/initiatives/>

#### *The Pastoral Greenhouse Gas Research Consortium (PGgRc)*

Launched in 2002, this is a consortium of organisations from the agriculture industry (AgResearch Ltd, Dairy Insight, DEEResearch, the Fertiliser Manufacturers' Research Association,

Fonterra, Meat and Wool New Zealand and Wrightson Ltd) who, with FRST (the Foundation of Research, Science and Technology), match fund investment which aims to understand and provide mitigation solutions for greenhouse gases produced by grazing animals.  
<https://www.pggrc.co.nz/default2.asp>

#### *Selected local initiatives on green R&D*

A range of regional and local activities are also in place in New Zealand.

#### Target Sustainability

This is a programme developed by Christchurch Council to improve the efficiency of businesses. There are three categories - Waste, Water and Energy. The web site provides a calculator and auditing tools. It also provides a recycling directory.

<http://www.ccc.govt.nz/TargetSustainability/>

#### Cleaner Production

Extensive information on the council of Waitakere's Cleaner Production programme is available from their website. Good practice guides are available for a number of sectors including restaurants and cafes, retail, building, printing and sustainable living. The web site hosts best practice projects, a newsletter ('Wise Resource Use', distributed to around 4,500 local businesses to showcase cleaner production initiatives adopted by other local businesses); guidelines for business sustainability:

<http://www.waitakere.govt.nz/abtcit/ec/clnprod/resrcs.asp>; a service of auditing of resources' use (energy, water, materials) to reduce wastage, reduce their environmental impact, and increase profitability) is provided by the Council.

<http://www.waitakere.govt.nz/abtcit/ec/clnprod/services.asp>

#### Monitoring and minimising your company's environmental footprint

This programme set up by Auckland Council offers a wide range of tools such as: cleaner production checklists, toolkits, and Environmental Operations Plans.

<http://www.arc.govt.nz/arc/index.cfm?74628379-62E2-419B-AD53-921B5C4AFBCF#usefulsites>

#### Auckland Regional Council Programmes for Cleaner Production

REBRI stands for Resource Efficiency in the Building and Related Industries:

<http://www.arc.govt.nz/arc/index.cfm?F16D140D-DFE2-47D6-835F-B8F52ACCB91D>

#### *Verification of technologies*

The major initiative in this domain is the Enhanced Eco-verification initiative, which sets out to improve information about standards and certifications relating to reduced environmental impacts of products and firms, facilitate tools to help businesses meet those standards, and enhance systems to verify that the standards have been met.

<http://www.mfe.govt.nz/issues/sustainability/eco-verification.html>

## *Performance Targets*

Initiatives identified in this area include:

- New Zealand Energy Strategy;
- New Zealand Energy Efficiency and Conservation Strategy (see above);
- Minimum Energy Performance Standards (MEPS);
- Greenlight;
- National Environmental Standards;
- The New Zealand Waste Strategy;
- New Zealand Packaging Accord;
- Carbon Neutral Government Agencies.

### *New Zealand Energy Strategy*

Released in October 2007 the strategy sets out the Government's vision for a sustainable, low emissions energy system and includes an action plan for implementation. The Strategy sets a target of generating 90 percent of New Zealand's electricity from renewable energy sources by 2025. [http://www.med.govt.nz/templates/ContentTopicSummary\\_19431.aspx](http://www.med.govt.nz/templates/ContentTopicSummary_19431.aspx)

### *Minimum Energy Performance Standards (MEPS)*

The Government introduced regulations in February 2002 which require selected products and appliances to meet minimum energy performance standards (MEPS) and/or energy labelling requirements: Energy Efficiency (Energy Using Products) Regulations 2002 (<http://www.eeca.govt.nz/eeca-library/products/standards/report/energy-efficiency-energy-using-products-regulations-04.pdf>). Standards are set in collaboration with the Australian Government; all standards are or soon will be joint standards with Australia (<http://www.standards.co.nz/default.htm>).

Thereafter, a set of regulations on energy efficiency have been drafted:

- Energy Efficiency (Energy Using Products) Amendment Regulations 2004 (<http://www.eeca.govt.nz/eeca-library/products/standards/report/energy-efficiency-energy-using-products-amendment-regulations-04.pdf>);
- Appliance and Equipment Energy Efficiency - Forward Programme 2004-05 covers:
  - proposed increases in energy efficiency stringency levels, on products covered by the Energy Efficiency (Energy Using Products) Regulations 2002 (the Regulations);
  - products currently being considered for introduction under mandatory MEPS or labelling; and
  - proposals for 17 additional products. Many of these proposals will involve further investigation (i.e. [Standby Power - Dishwashers and Washing Machines](#), [External Power Supplies](#) (from 1 October 2008), [Set Top Boxes](#) (not before 1 October 2008), [Home Entertainment Products](#) (from 1 October 2008), [Heating Ventilation & Air Conditioning](#)

(HVAC) , [Chillers](#) (not before 1 October 2008), [Gas Water Heaters](#) (not before October 2008) <http://www.eeca.govt.nz/eeca-library/products/report/forward-programme-05.pdf>

#### *Greenlight*

New Zealand is developing a programme on the basis of the one developed in Australia for the promotion of efficient lighting in business. It will include Mandatory energy performance standards and energy labelling.

<http://www.energyrating.gov.au/library/pubs/200418-greenlight.pdf>

#### *National Environmental Standards*

The Government has developed National Environmental Standards. The Air quality standard is in force as regulation. National Environmental Standards in development regard: human drinking water source; water measuring devices; telecommunications facilities; electricity transmission. Moreover, the Ministry is currently scoping the potential for the development of standards to address on-site waste water systems and contaminated land.

<http://www.mfe.govt.nz/laws/standards/index.html>

#### *The [New Zealand Waste Strategy](#)*

This includes a target requiring all substandard wastewater treatment plants to be upgraded, closed or replaced by December 2020. The Ministry for the Environment partners the [New Zealand Water and Wastes Association](#) to develop initiatives which improve the country's environmental performance in the area of wastewater. A number of joint initiatives exist to manage wastewater, among which a list of code compliant contractors and guidelines.

<http://www.mfe.govt.nz/issues/waste/wastewater/index.html>

#### *New Zealand Packaging Accord*

The Packaging Council of New Zealand and the Ministry for the Environment have brought together brand owners, retailers, importers, manufacturers, recyclers and local government to negotiate a New Zealand Packaging Accord. The Accord is a voluntary industry and government initiative which sets targets aimed at making more sustainable use of packaging in order reduce its life-cycle impacts. It is in particular aimed at reducing waste while improving the efficiency along the chain of manufacturing, use and recovery of packaging materials. Producers (brand owners and retailers/importers) will take responsibility for what happens to their packaging products throughout their lifecycle - from manufacture to use, to recycling and eventual disposal. Also involved in this lifecycle are manufacturers of packaging, councils and businesses that collect used packaging material for recycling, and consumers who buy and throw away packaging.

<http://www.mfe.govt.nz/issues/sustainable-industry/initiatives/packaging/index.html>

#### *Carbon Neutral Government Agencies*

The Ministry for the Environment, Ministry of Health, Ministry for Economic Development, Inland Revenue Department, Department of Conservation and The Treasury are all due to be carbon neutral by 2012. They will: measure all emissions associated with energy, transport and waste to

landfill, starting with the 2006/07 financial year as a baseline measure; develop emission reduction plans by mid-December 2007; and offset unavoidable emissions through New Zealand based projects. The Ministry for the Environment is leading the programme, which has a budget of \$10.4 million over three years.

<http://www.mfe.govt.nz/issues/sustainability/public-service-carbon-neutrality.html>

### ***Mobilisation of Financing***

Initiatives in this area include:

- The Energy Intensive Business (EIB) project;
- Bio-energy Gateway;

#### *The Energy Intensive Business (EIB) project*

This project, run by the Energy Efficiency and Conservation Authority (EECA), offers cash grants to businesses to help them adopt energy saving technologies. The project is targeted at companies that spend a high portion of their business costs on energy, allowing them to apply for up to 40 per cent of the capital cost of an energy efficiency project (to a maximum of \$100,000). The grants are designed to pay for projects that include energy efficient technologies such as: high efficiency motors; fans and boilers; variable speed drives; dehumidifier dryers; heat recovery; storage and retention; cogeneration; renewable waste product fuels; industrial refrigeration; fishing technologies; and soil moisture sensing. Examples of initiatives supported by the EIB project include:

- Implementation of a heat recovery system at Tegel Food's New Plymouth factory (a poultry plant). The system uses waste heat from the plant's industrial refrigeration system and main air compressor to preheat process water. This looks set to save the company more than \$110,000 a year in gas and electricity and cut the factory's CO<sub>2</sub> emissions by over 600 tonnes a year.
- Conversion of a boiler at Christchurch specialty meats producer Verkerks from burning diesel to burn tallow (a meat processing byproduct), which looks likely to cut the company's energy costs by \$150,000 a year and has also cut the factory's particulate matter emissions by 60%.

<http://www.eecabusiness.govt.nz/eib/>

#### *Bio-energy Gateway*

This is a programme to support the use of wood waste as a renewable energy source from businesses. EECA is coordinating the bioenergy initiative of the Government's Forest Industry Development Agenda (FIDA) to increase the uptake of renewable energy from the forestry sector. It provides tools, calculator and forums for the business

<http://www.bioenergy-gateway.org.nz/>

Capital grants are awarded for projects and for feasibility studies

<http://www.eeca.govt.nz/renewable-energy/bioenergy/fida.html>

## *Envirolink*

The Envirolink scheme funds research organisations (Crown Research Institutes, universities and some not-for-profit research associations) to provide Regional Councils with advice and support for research on identified environmental topics and projects. The scheme aims to support Regional Councils in two areas of environmental management: adapting management tools to local needs, and translating environmental science knowledge into practical advice. Envirolink investment funding is \$1.6 million per annum.

<http://www.frst.govt.nz/research/Envirolink.cfm>

## ***Market-based Instruments***

The main initiative is the Emission Trading Scheme. Legislation implementing the ETS was introduced in December 2007 (<http://www.climatechange.govt.nz/nz-solutions/trading-scheme-reports.shtml>). The government has made an in-principle decision that the Emissions Trading Scheme will include all major sectors and all greenhouse gases specified in the Kyoto Protocol. It is expected that by 2013 all major sectors will be included. See <http://www.nzeur.govt.nz>. This initiative will stimulate research and investment in new areas of economic opportunity associated with sustainable lower energy technologies and climate change commitments.

Other initiatives include the Biofuels Sales Obligation. In October 2007 the Government announced that it will introduce a mandatory obligation on firms that sell petrol or diesel in New Zealand to also sell biofuels (<http://www.transport.govt.nz/biofuels-440-index/>). This will act as a primary incentive to innovate in the area of cost effective energy sustainability and climate change commitments.

## ***Procurement***

Initiatives identified in this area include:

- The Govt<sup>3</sup> programme
- Single procurement policy
- Waste management and recycling procurement

### *The Govt<sup>3</sup> programme*

This programme aims to help government departments get their own house in order – aiming for a carbon neutral public service, focusing on recycling/waste minimisation, buildings, transport, office consumables and equipment.

### *Single procurement policy*

The Government is currently developing a single procurement policy to ensure sustainably produced goods and services are purchased wherever possible. This programme will be closely aligned with the development of eco-labels, standards and verifications processes to assist procurement decisions and influence businesses.

<http://www.mfe.govt.nz/issues/sustainability/procurement.html>

[http://www.med.govt.nz/templates/StandardSummary\\_181.aspx](http://www.med.govt.nz/templates/StandardSummary_181.aspx)

#### *Waste management and recycling procurement*

This document provides practical advice and tools to use when procuring waste management and recycling contracts. The emphasis is on local government contracts because of the major role councils play in waste management in New Zealand, but businesses and industry may find some of the principles useful.

<http://www.mfe.govt.nz/publications/waste/best-practice-recycling-waste-mgmt-jul07/index.html>

#### *Awareness raising and training*

There are numerous initiatives at the central, regional and local levels to promote sustainable management and practices by the public and businesses. Consultation, public meetings and awards are frequent. Below can be found a small selection of different types of engagement:

- Energy Star and Energy Rating labels
- Lighting Efficiency Stakeholder Group
- Water awareness campaign
- EECA Energywise Awards 2007
- Talk Environment Road show
- Green Ribbon Awards
- World Environment Day 2008 to be hosted in New Zealand. (Identified Theme: Kick the Habit – Carbon Neutrality)
- BusinessCare

#### *Energy Star and Energy Rating Label*

New Zealand adopted in 2005 the Energy Star label for household and office appliances. EECA is currently working on Energy Star specifications for fridges, freezers and compact fluorescent light bulbs.

<http://www.energystar.govt.nz/>

Fridges, freezers, and single-phase domestic air conditioners must also display an Energy Rating Label (see <http://www.eeca.govt.nz/labelling-and-standards/energy-rating-labels.html>).

A database of energy efficient appliances and equipment is covered by Minimum Energy Performance Standards and by the Energy Rating Label, and hosted by the Australian Government (New Zealand and Australia set a joint programme) (see <http://www.energyrating.gov.au/>).



### *Lighting Efficiency Stakeholder Group*

This is an example of the participation of business in decision-making. EECA and the Electricity Commission are keen to encourage and facilitate input into the development of an efficient lighting strategy from across the lighting industry and wider stakeholders. To achieve this, a Lighting Efficiency Stakeholder Group was formed.

<http://www.electricitycommission.govt.nz/advisorygroups/pjtteam/lesg>

### *EECA Energywise Awards 2007*

This initiative is New Zealand's biggest celebration of achievement and innovation in the energy efficiency and renewable energy industry, organised by EECA.

<http://www.eeca.govt.nz/news/awards/index.html>

### *BusinessCare*

The BusinessCare National Trust has been set up as a not-for-profit trust funded by MFE Sustainable Management Fund plus significant in-kind support from a number of local authorities around the country. BusinessCare's focus is on promoting, supporting and encouraging the implementation of sustainable management and cleaner production practices by local SME businesses nationwide. It seeks to work at both the national level and the local level. By providing training and support, BusinessCare aims to increase the number of people who have cleaner production skills throughout the country, giving business and industry greater access to experts to help them towards a sustainable future.

The organisation has a number of programmes to disseminate information on sustainable solutions to the business community.

The Business Sustainability assessment tool is an instrument developed by the Christchurch City Council and a group of other local bodies under the BusinessCare umbrella organisation. The tool draws on work undertaken by the EPHC (a council of Australian State Governments in which New Zealand is an invited participant) which developed a framework to assist local government agencies in both New Zealand and Australia implement strategies for improving the capacity of business to implement sustainable practices in terms of use of energy, water, raw materials, packaging, chemicals

[http://www.businesscare.org.nz/gettingstarted/satool/Sustainability\\_Assessment\\_Tool.xls](http://www.businesscare.org.nz/gettingstarted/satool/Sustainability_Assessment_Tool.xls)

The Cleaner Production Tool Kit includes information sheets on all aspects of sustainable business practice and cleaner production, including an environmental purchasing guide, a Green Guide for Vehicle Fleet Management and a sample Solid Waste Management Plan. Businesses can sign up to BusinessCare to receive these information sheets.

### *Simply Sustainable Programme*

This is a programme developed by the Environment Ministry. Here businesses can find a database of services and tools regarding: cleaner production, energy efficiency and conservation, waste minimisation, product life cycle and environmental management systems. It includes case studies, guidelines, grants, lists of contacts, initiatives. It can be thought of as a 'platform' for sustainable businesses:

<http://www.mfe.govt.nz/issues/sustainable-industry/tools-services/topics.php?id=4>

### *Acting Globally*

A number of the initiatives presented above have an international reach. Typically, Energy Performance Standards are jointly set with Australia. The most notable area of international activity for New Zealand is a considerable amount of cooperation with Australia. The two countries have undertaken a number of joint initiatives, including the Australia-New Zealand Climate Change Partnership. Other bi- and multilateral initiatives are United States-New Zealand Climate Change Partnership; Trade and environment.

#### *Australia-New Zealand Climate Change Partnership*

In July 2003, the New Zealand and Australian governments announced a joint Climate Change Partnership, built around five themes:

- Engaging with business and local government on technology development, policy design and implementation;
- Building on existing cooperation on energy efficiency;
- Measuring and reducing emissions from the agricultural sector;
- Further enhancing climate change science and monitoring;
- Working together with our Pacific island neighbours to address the regional challenges posed by climate change.

<http://www.greenhouse.gov.au/international/partnerships/newzealand.html>

#### *United States-New Zealand Climate Change Partnership*

This was launched on 25 October 2002 with a list of projects announced on 25 July 2003: Climate change science; Technology development; Greenhouse gas accounting in forestry and agriculture; Engagement with business; Cooperation with developing countries; Climate change research in Antarctica; Public education initiatives.

<http://www.mfat.govt.nz/Foreign-Relations/1-Global-Issues/Environment/Climate-Change/climchangeinteng.php>

### *Trade and Environment*

New Zealand promotes sustainable development through its international trade policy. Environment provisions are negotiated in New Zealand's bilateral and regional trade agreements. The Ministry for the Environment promotes New Zealand's environmental and sustainability expertise to encourage new government, research and business partnerships with its trade agreement partners.

New Zealand also promotes sustainable development in WTO negotiations by actively working to liberalise market access for environmental goods and services.

## Country Synthesis

Sustainability, and in particular environmental sustainability, is one of the five core themes of New Zealand's Economic Transformation Agenda. This has been coined at the highest political level and has inspired a comprehensive set of initiatives: in February 2007, the Prime Minister outlined her vision for New Zealand to be the first country to be truly sustainable; she announced six new sustainability initiatives which are part of a broader cross-government work programme to lead New Zealand towards greater sustainability in resource use and way of life. The implementation of the initiatives is led by the Ministry for the Environment or the Ministry for Economic Development.

New Zealand's approach to sustainable development is participatory, decentralised and inclusive. And innovation is considered as the pivotal feature of the next phase of New Zealand's economic development.

The development of metrics plays a key role in the strategy. The Government is working to set New Zealand as a global leader in research and development in product life-cycle analysis and application of eco-verification support structures. In particular, it is working with stakeholders to position New Zealand as a leader in carbon-footprint measurement and management – and in areas that will make the greatest contribution to sustainability and economic transformation. The development of mandatory standards for equipment and appliances goes in the same direction.

In this framework, the government has undertaken a number of initiatives, which are characterised by

- a genuine partnership with the business community;
- a priority on information sharing and dissemination, in particular on resource efficiency;
- an international (if not global) reach.

### *A genuine partnership with the business community*

This is illustrated by the business partnerships for sustainability and the Energy Intensive Business project. This is done to preserve and enhance the physical environment and foster greater national identity, and to ensure ongoing competitiveness in a world where consumers are increasingly demanding innovative, eco-friendly and low carbon products and services.

In particular the first of a set of strategic priorities of the government sponsored programme aimed to promote and develop the adoption of sustainable business practices in New Zealand (the 'Business partnership for sustainable development') is 'marketing sustainable businesses and helping sustainable businesses access new markets here and overseas'. This involves working with business networks, such as the Chambers of Commerce, the New Zealand Business Council for Sustainable Development and the Sustainable Business Network, to enhance business sustainability programmes.<sup>2</sup>

The ambitious Emission Trading Scheme illustrates how sectoral emissions' reductions coverage is based on the principle of 'equity' - by way of equitable sharing of responsibility across sectors and stakeholders participating in the Emission Trading Scheme. This differs from the approach taken in the EU, where not all sectors are involved.

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<sup>2</sup> For more information on the 'Business partnership for sustainable development' follow this link to the Ministry of the Environment website: <http://www.mfe.govt.nz/issues/sustainability/business-partnerships.html>

*A focus on resource efficiency*

This is illustrated by initiatives in areas including research and development (e.g. Sustainability assessment tool and Christchurch Council's Target Sustainability programme), performance targets (e.g. Minimum Energy Performance Standards for appliances and equipment and the New Zealand Packaging Accord), and mobilisation of financing (e.g. The Energy Intensive Business project).

*An international (if not global) reach*

New Zealand can be seen to set a good example in terms of working with a close neighbour, namely Australia, on various sustainability and eco-innovation initiatives. Activities include initiatives in the areas of research and development (the Business Sustainability Framework and Sustainability assessment tool), the development of equipment and appliances performance standards which is carried out jointly by the two countries (e.g. Energy Rating Label, Minimum Energy Performance Standards), and the bilateral Australia-New Zealand Climate Change Partnership.

## Appendices

### Summary table

Actions	Initiatives
Research and Development and commercialisation	<ul style="list-style-type: none"> <li>▪ The Foundation for Research, Science and Technology programmes</li> <li>▪ Sustainability assessment tool</li> <li>▪ Simply Sustainable Programme</li> <li>▪ Ministry of the Environment website</li> <li>▪ Ministry for Economic Development website</li> <li>▪ Ministry of Research Science and Technology website</li> <li>▪ Ministry of Agriculture and Forestry website</li> <li>▪ BusinessCare Cleaner Production Tool Kit</li> <li>▪ The Pastoral Greenhouse Gas Research Consortium (PGgRc)</li> <li>▪ Target Sustainability, Christchurch Council</li> <li>▪ Cleaner Production, Waitakere</li> <li>▪ Monitoring and minimising your company's environmental footprint, Auckland Council</li> <li>▪ Auckland Regional Council Programmes for Cleaner Production</li> </ul>
Verification of Technology	<ul style="list-style-type: none"> <li>▪ Database of energy efficient appliances and equipment</li> <li>▪ Energy efficiency regulation updates</li> <li>▪ Labelling Compliance Survey (2004)</li> <li>▪ Recycling directory</li> <li>▪ Energy services directory</li> <li>▪ The Enhanced Eco-verification initiative</li> </ul>
Performance Targets	<ul style="list-style-type: none"> <li>▪ New Zealand Energy Strategy</li> <li>▪ New Zealand Energy Efficiency and Conservation Strategy</li> <li>▪ Minimum Energy Performance Standards (MEPS)</li> <li>▪ Energy Rating Label</li> <li>▪ Energy Star</li> <li>▪ NZ Green Star</li> <li>▪ Greenlight</li> <li>▪ Implementation of a Mandatory Vehicle Fuel Economy Labelling Scheme</li> <li>▪ National Environmental Standards</li> <li>▪ The New Zealand Waste Strategy</li> <li>▪ New Zealand Packaging Accord</li> <li>▪ Carbon Neutral Government Agencies</li> </ul>
Mobilisation of Financing	<ul style="list-style-type: none"> <li>▪ Grants for Energy Efficient Technologies adopted in energy intensive industries</li> <li>▪ EECA good practice industry guidelines</li> <li>▪ Emprove</li> <li>▪ Bio-energy Gateway</li> <li>▪ The Energy Intensive Business (EIB) project</li> <li>▪ New Zealand Trade and Enterprise programmes</li> <li>▪ </li> </ul>
Market-based	<ul style="list-style-type: none"> <li>▪ Emission Trading Scheme</li> </ul>

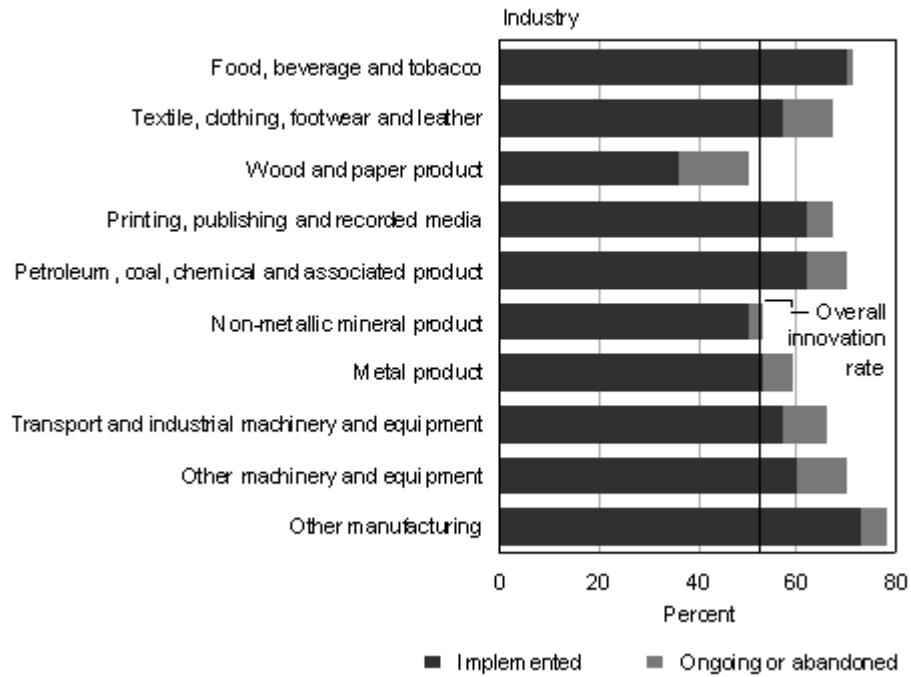
Actions	Initiatives
Instruments and State Aid	
Procurement	<ul style="list-style-type: none"> <li>▪ The Govt<sup>3</sup> programme</li> <li>▪ Single procurement policy</li> <li>▪ Waste management and recycling procurement</li> <li>▪ Ecolabels and eco-verification</li> </ul>
Awareness Rising and Training	<ul style="list-style-type: none"> <li>▪ Talk Environment Road show</li> <li>▪ Lighting Efficiency Stakeholder Group</li> <li>▪ Water awareness campaign</li> <li>▪ EECA Energywise Awards 2007</li> <li>▪ Green Ribbon Awards</li> <li>▪ World Environment Day 2008 to be hosted in New Zealand</li> </ul>
Acting Globally	<ul style="list-style-type: none"> <li>▪ Australia-New Zealand Climate Change Partnership</li> <li>▪ Sustainability assessment tool</li> <li>▪ Energy Rating Label</li> <li>▪ Minimum Energy Performance Standards (MEPS)</li> <li>▪ Greenlight – based on a similar initiative undertaken in Australia</li> <li>▪ Trade and Environment</li> </ul>

### *The environmental benefits of innovation in New Zealand*

The Business Operations Survey 2005, carried out by Statistics New Zealand, is the most recent and most extensive collection of statistics on innovation in New Zealand. The finance and insurance industry reported the highest rate of innovation, at 68 percent, followed by manufacturing, at 65 percent. Examining manufacturing in more detail, the survey shows that innovation rates in the manufacturing industry ranged from 49 percent to 78 percent. Only the wood and paper product industry division had an innovation rate lower than the overall New Zealand innovation rate of 52 percent (see figure 5 below).

**Figure 1. Innovation rate - Manufacturing**

Last two financial years, at August 2005

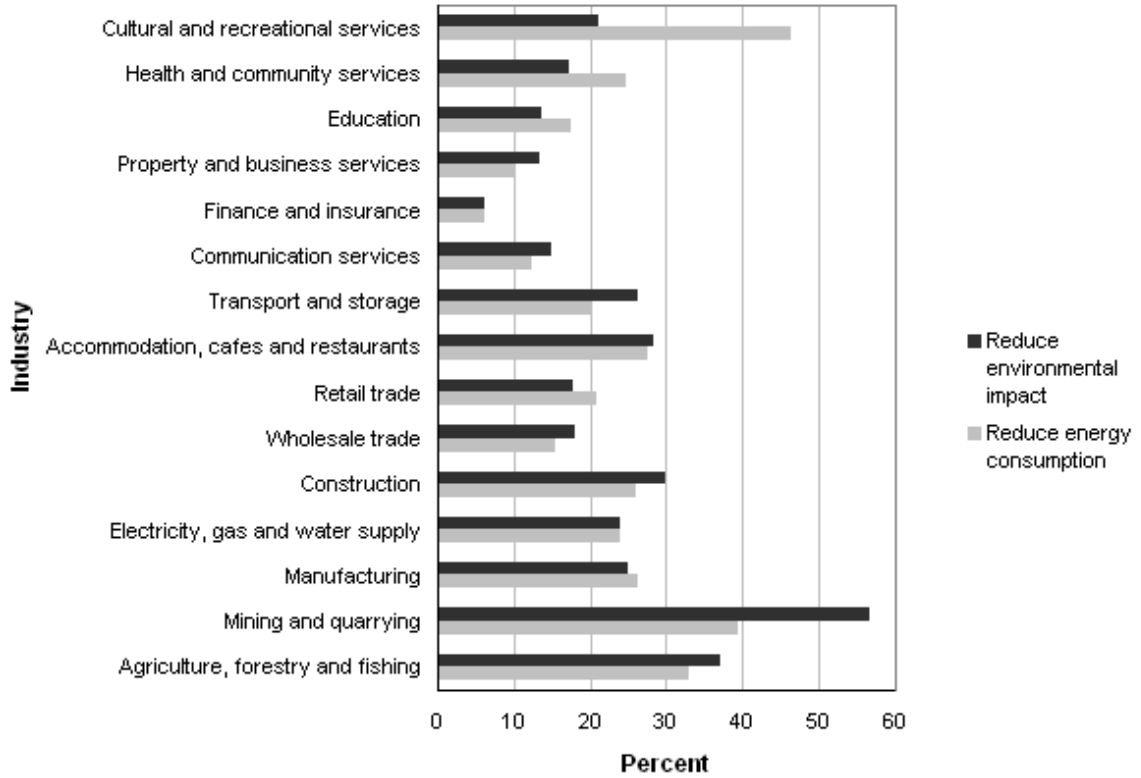


Source : Statistics New Zealand (2007) 'Innovation in New Zealand 2005', Wellington, New Zealand; available at: <http://www.stats.govt.nz/NR/rdonlyres/4D070B56-8EFB-4DFD-A351-3C145AC7B51C/0/5511SNZinnovationreportffweb.pdf>

The survey indicated that the most common reasons for innovating were to increase revenue (92 percent of all innovating firms) and improve productivity (81 percent). These were followed by reducing costs, increasing market share, increasing responsiveness of customers and establishing/exploiting new market opportunities. Just over one in five businesses reported reduced energy consumption or reduced environmental impact as reasons for innovating (both 22 percent) although this varied across industry groups, as figure 6 shows.

**Figure 2. Innovation to reduce energy consumption or environmental impact**

Last two financial years at August 2005



Source : Statistics New Zealand (2007) 'Innovation in New Zealand 2005', Wellington, New Zealand; available at: <http://www.stats.govt.nz/NR/rdonlyres/4D070B56-8EFB-4DFD-A351-3C145AC7B51C/0/5511SNZinnovationreportffweb.pdf>