NEW ZEALAND

1. GOALS FOR EFFICIENCY IMPROVEMENT

1.1. Overall Energy Efficiency Improvement Goals

The New Zealand Government's economy-wide energy efficiency target is for New Zealand to continue to achieve a rate of energy intensity improvement of 1.3 percent per annum[1].

1.2. Sectoral Energy Efficiency Improvement Goals

A number of sector-specific goals are in place to help achieve the overall energy efficiency improvement goals set out in the NZEECS:

- **Transport -** By 2016: The efficiency of light vehicles entering the fleet has further improved from 2010 levels
- **Business**
  - By 2016: An improvement in the commercial and industrial sector energy intensity level
  - By 2025: To utilise up to 9.5 PJ per year of energy from woody biomass or direct use geothermal additional to that used in 2005
- **Residential -** By 2013: Insulate 188,500 homes.
- **Products -** By 2016: Extend minimum energy performance standards, labelling and EnergyStar product coverage to remain in line with major trading partners.
- **Electricity System -** By 2025: 90 percent of electricity will be generated from renewable sources, providing supply security is maintained.
- **Public Sector -** By 2016: Improve energy use per full-time staff equivalent compared with a 2010 baseline.

1.3. Action Plans for Promoting Energy Efficiency

The New Zealand Energy Efficiency and Conservation Strategy (NZEECS) 2011-2016 is the main program of work for promoting energy efficiency in New Zealand.

a) Objectives

The use of energy efficient technology and practices, energy conservation, and renewable sources of energy can:

1. Enhance economic growth through increased productivity.
2. Improve energy security by reducing energy demand, including for imported sources of energy.
3. Assist with energy affordability by reducing consumer energy costs.
4. Defer the need for more expensive energy supply by making better use of existing energy.
5. Reduce greenhouse gas emissions from energy.
6. Improve people's health, well-being and productivity through warmer and more energy efficient homes.

[1] *The New Zealand Energy Efficiency and Conservation Strategy 2011-2016*.

As such, the New Zealand Energy Efficiency and Conservation Strategy (NZEECS) contributes to the delivery of the Government's energy priorities set out in the New Zealand Energy Strategy.

b) Applicable sectors

Transport, business, residential, products, electricity and government.

c) Outline

The NZEECS was completed as a requirement of the Energy Efficiency and Conservation Act 2000 and released in August 2011. The NZEECS replaced the second Energy Efficiency and Conservation Strategy released in 2007. The Strategy is written as a companion document to the New Zealand Energy Strategy (NZES) and sets out the government's policies and actions on energy efficiency, energy conservation and renewable energy. It gives effect to the energy efficiency, energy conservation and renewable energy objectives set out in the NZES.

The NZEECS promotes the careful use of a mix of Government measures, which can be grouped as:

- Information – targeting consumer and business needs.
- Incentives – funding or financial products to help build capability and leverage investment.
- Codes and standards – to underpin confidence in energy efficient products and practices.
- Research and development – to support innovative capability.

These measures may often be delivered in partnership with industry associations, not-for-profit energy trusts, and other parties. The exact mix of measures adopted by relevant Government agencies to deliver the NZEECS will vary according to the scale of the opportunities and the specific needs of stakeholders.

d) Financial resources and budget allocation

Actions in the NZEECS are funded by a range of sources, including the government, private sector, voluntary sector and individuals. In FY2011/12, just under $146 million was allocated for the Energy Efficiency and Conservation Authority's work in promoting energy efficiency. This figure is revised annually.

e) Method for monitoring and measuring effects of action plans

The Minister of Energy and Resources is accountable for the overall performance of the strategy. The Ministry of Economic Development (MED) reports progress on the implementation of the strategy to the Minister as published annual progress reports. All agencies involved in the implementation of the strategy are accountable for monitoring and report to MED on the impacts of their programs and the contribution to overall strategy objectives.

f) Expected results

To achieve the goals outlined in sections 1.1 and 1.2

g) Future tasks

The strategy is amplified in EECA's Statements of Intent, Output Agreements and Annual Reports.

1.4. Institutional Structure

a) Name of organisation

Energy Efficiency and Conservation Authority (EECA).

b) Status of organisation

EECA is a Crown entity, established under the Energy Efficiency and Conservation Act 2000 and subject to the Crown Entities Act 2004. EECA is governed by a Chairman and seven Board members who report to the Minister of Energy and Resources. EECA acts as a policy maker, regulator, programme funder, and implementer.

c) Roles and responsibilities

EECA is the main agency responsible for helping deliver the government's energy efficiency agenda. Its function is to encourage, promote, and support energy efficiency, energy conservation and the use of renewable energy sources in New Zealand.

d) Covered sectors

Industry, commercial buildings, agriculture, transport (fuels), households, products and equipment, research and promotion, monitoring and reporting of energy efficiency/renewable energy data.

e) Established date

2000 as part of the Energy Efficiency and Conservation Act 2000.

f) Number of staff members

As at 1 July 2011 EECA had 96 full time equivalents (FTEs).

EECA works closely with government operational and policy agencies to help them design; implement; and monitor policies related to energy efficiency.

The Ministry of Economic Development (MED) has primary responsibility for providing energy policy advice to the Minister of Energy and Resources.

The Ministry of Transport and the New Zealand Transportation Agency are responsible for most transport-related energy efficiency initiatives with the exception of vehicle fuel consumption labels. EECA has a Letter of Understanding with the New Zealand Transportation Agency regarding the management of fuel consumption information.

Statistics New Zealand is responsible for the compilation of energy statistics. The Energy Domain Plan is a joint initiative between Statistics New Zealand, MED, and EECA to assess the state of energy data and identify initiatives to help fill in information gaps.

The Electricity Authority was formed in 2010 and is responsible for promoting competition, reliable supply and efficient operation of the electricity market. The electricity efficiency functions of the previous Electricity Commission (Commission) were transferred to EECA on 1 November 2010. The electricity efficiency function of the Commission managed around 30 programmes across the residential, commercial and industrial sectors and was successful in delivering around 500GW pa electricity savings by November 2010 – or around 250MW reduction in peak system demand.

Other agencies that share responsibility for energy efficiency include the Ministry of Agriculture and Forestry (renewable fuels, industry); Department of Building and Housing (Building Code); Housing New Zealand Corporation (state housing improvement programs); Standards New Zealand (for energy efficiency in products/equipment); and the Ministry of Foreign Affairs and Trade (WTO, mutual recognition arrangements, APEC forums, etc.). The New Zealand government also works closely with the Australian Government on product and appliance standards and labelling.

There are 17 regional government authorities (called regional councils) in New Zealand. Each regional council is required to produce a 'regional policy statement' that covers all natural resources, including energy. The NZEECS must be taken into consideration in the preparation of the regional policy statements. Land transportation strategies must also be consistent with the NZEECS. Five regional councils have chosen to produce separate energy action plans in

addition to their policy statements. Regional councils are granted low interest loans for energy efficiency improvements under the Crown Loan Scheme. EECA also collaborates with regional authorities on many regional energy efficiency projects. Government actions are coordinated through the Senior Energy Officials Group and Energy Data Analysis and Coordination Group.

1.5. Information Dissemination, Awareness-raising and Capacity-building

a) Information collection and dissemination

The New Zealand Government conducts monthly surveys to monitor the public's awareness, willingness and commitment to energy efficiency. Brand association and energy use behaviour change is also monitored. Survey results are published on a monthly and quarterly basis. The business sector also publishes case studies to promote energy technologies and behaviour change in industry.

b) Awareness-raising

Information about energy efficiency is provided to New Zealanders through a number of channels. The main mechanisms include:

- An integrated strategy of marketing and communications which has three distinct actions:
  - An integrated brand architecture and the formation of a clear brand management strategy.
  - An integrated marketing and communications budget.
  - The consolidation of EECA's websites from seven to three integrated websites focusing on EECA's three distinct audiences – people at home, businesses and our corporate stakeholders. These are:
    - EECA (corporate website) www.eeca.govt.nz
    - ENERGYWISE (consumer-focussed website) www.energywise.govt.nz
    - EECA Business (all businesses) www.eecabusiness.govt.nz
- The 'Energy Spot', a series of one minute televisions programmes giving New Zealanders practical useful tips to make the most of the energy used in homes, businesses, and vehicles.
- The Right Light website (www.rightlight.govt.nz) provides facts about energy efficient lighting including information about available technologies and choice, electricity savings, safety and design, and application. The site covers residential, business and trade sectors and also includes a specific and detailed section on street lighting for use by territorial authorities across New Zealand. Interactive tools allow consumers to evaluate the cost and potential electricity savings of energy efficient lighting in homes and businesses.
- Business sector information programmes including a compressed air ratings scheme for small businesses and the motor systems website (www.motorsystems.co.nz) provides specific and targeted information and tools for industrial motor systems users.
- Product and appliance labelling programmes including vehicle fuel economy labelling and Energy Star™.
- The biennial AA ENERGYWISE™ rally, aimed at raising awareness of energy. efficiency practices in driving and transportation: www.aaenergywiserally.org.nz/
- EECA Awards that celebrate and promote energy efficiency practices in communities, businesses and industry: www.eeca.govt.nz/node/16279
- A number of e-zine electronic newsletters designed for different audiences.
- A range of marketing and advertising campaigns for print, radio and television.

c) Capacity-building

Building the capacity of the energy services sector to help businesses identify and implement cost effective efficiency measures is seen as key to achieving the Government's energy saving targets.

Capacity building interventions in the business sector have traditionally been delivered by Universities and Technical Institutes, mostly as part of wider engineering courses. More recently, focus has increased on developing specific energy management training in the following areas of high economic potential:

- Commercial buildings: Courses are in place to improve electricity management and efficiency in the commercial building services industry – targeting energy specialists, facilities managers and commercial property valuers. Courses are delivered by the Energy Management Association New Zealand (EMANZ) which is an industry association of energy management experts including energy auditors, energy managers and suppliers of energy efficiency products and services.
- Industrial sector: The University of Waikato delivers training and accreditation programmes in pumps, fans and compressed air system efficiency.
- Lighting Sector: Massey University delivers specialist training in the science and engineering of lighting with a focus on electricity efficiency.

In residential lighting, EECA provides financial support to enable a national training programme for staff in DIY stores to provide detailed information on the range and benefits of efficient lighting products.

EECA has provided financial support and advice for an industry-lead residential rating tool, HomeStar, which rates the performance of a property based on its energy efficiency, health and comfort, water consumption, waste minimisation, home management and site location. The on line tool allows the homeowner to conduct a self assesssment of their property. The assessment gives an indication of the home's performance and suggestions of ways to make improvements. Should the homeowner decide to sell the property, and want to advertise the rating of the property, then an audit by a qualified auditor will provide the property with an independent certification of a rating, which may be used in the sales process.

Under the Warm Up New Zealand: Heat Smart programme (WUNZ:HS), service providers are required by EECA to provide proof that they have the internal capacity and capability to deliver the programme to the standard required. Applicants are assessed on that criterion by an independent evaluation panel and are reviewed annually to ensure they have ongoing capacity to deliver the programme to standards.

EECA financially supports the Insulation Association of New Zealand (IAONZ) which has developed a four-stage training module for insulation installers. Around 100 installers operating under the Warm Up New Zealand: Heat Smart programme have completed the training module.

EECA financially supports the Aotearoa Wave and Tidal Energy Association (AWATEA) whose aim is to promote and foster a vibrant viable marine energy industry in New Zealand. EECA has been a sponsor of the annual AWATEA conference and of the publication of a bi monthly newsletter. AWATEA is the main driving force for raising the profile of this emerging technology. AWATEA also represents the New Zealand government on the International Energy Agency Implementing Agreement on Ocean Energy Systems (IEA/OES) and their membership is jointly sponsored by EECA and MED. One of the main benefits of participation in the IEA/OES has been to raise New Zealand's profile within the international marine energy community.

EECA also provides administrative support for the Sustainable Electricity Association of New Zealand (SEANZ) by providing targeted funding to initiatives to improve the quality and capability of the installation industry for small-scale renewable electricity technologies such as photovoltaics, small wind turbines, and small hydro.

1.6. Research and Development in Energy Efficiency Energy Conservation and Renewable Energy

New Zealand uses international research on energy efficiency, energy, conservation and renewable energy whilst carrying out its own research to establish potential solutions for its distinctive mix of energy resources, infrastructure and cost structure.

The parameters for research are set out in the New Zealand Energy Strategy 2011-2021 and amplified in the New Zealand Energy Efficiency and Conservation Strategy, (NZEECS) 2011-21.

The lead agency for government's policy on research and development is the Ministry of Science and Innovation (MSI). It has the mandate to transform New Zealand by driving science and innovation to increase our economic, environmental and innovation sector.

MSI funding in energy research and development is $12 million per annum through the Energy and Minerals Research Fund. The scope of this fund encompasses sustainable and efficient energy generation, improved energy security and identification and extraction of energy and mineral resources for export growth while minimising the impact on the environment. Investment of about $10 million per annum also occurs in these areas through the core funding for Crown research institutes.

In New Zealand 70% of energy (370PJ annually) is consumed by businesses. EECA Business works with companies and the public sector to improve energy efficiency, energy management and uptake of renewable energy. A key driver is to maximise cost-effective energy savings and the co-benefits for New Zealand businesses, and to stimulate the uptake of both large and small-scale renewable energy. Its objectives and targets are set out in the NZEECS and are to enhance business growth and competitiveness from energy intensity improvements.

EECA Business has four areas of priority:

1. Commercial buildings – targeting lighting, HVAC and refrigeration;
2. Industrial – targeting motorised systems and processed heat;
3. Business transport – targeting more efficient fuel use; and
4. Lighting – targeting more efficient lighting technology in businesses and on New Zealand's road

The programmes are designed to overcome market barriers and broadly fit into three groups:

- Capability initiatives – training and accreditation programmes for service providers, and training programmes for end users and key influencers;
- Information initiatives – business information programmes, rating / labelling programmes; and
- Funding initiatives – audit and works funding programmes, product-based subsidy programmes (lighting), and alternative funding programmes (such as Crown Loans).

Specific goals are determined by assessing the potential for cost-effective energy savings and emissions reductions. Additional energy savings that cost more to deliver may be sought where there are significant co-benefits such as health improvements or productivity improvements, on the basis that there is a total net benefit to the nation.

In terms of renewable energy, EECA administers the contestable Marine Energy Deployment Fund (MEDF) which was set up to bring forward the development of marine energy in New

Zealand waters. The MEDF was established as part of the NZ Energy Strategy 2007 to accelerate innovation and assist with the costs associated with concept testing and device deployment.

For renewable transport fuels, EECA administers the Biodiesel Grants Scheme for biodiesel producers offering grants of up to 42.5 cents per litre for biodiesel or biodiesel content of a biodiesel blend. These grants are available to producers of New Zealand manufactured biodiesel meeting the Engine fuel Specifications Regulations 2008 and sold for use in New Zealand. The purpose is to encourage the adoption of environmentally responsible fuels that reduce greenhouse gas emissions in the transport sector, diversify the fuel market and level the playing field between the two principal biofuels – bioethanol and biodiesel.

In addition, EECA manages an APEC funded Electric Vehicle (EV) research project on electric vehicles (EV) connectivity across the APEC region. EECA is also providing monitoring methodologies for a Wellington Council electric vehicle trial.

The Energy Efficiency and Conservation Act 2000 provides for EECA to undertake research. This is necessary for the optimal implementation of the NZEECS. EECA also administers an internal research programme. This programme focuses on providing research in the following areas:

- Better information – energy efficient technology research
- Research energy end use in industrial, commercial and residential buildings
- Primary production and manufacturing sector energy end use research
- Macro-economic modelling of energy efficiency potentials
- Behaviour change research and understanding end user service needs.

EECA has an Energy Research Committee and StageGate™ process for prioritising and managing EECA research. It prioritises high quality research and ensures that research is aligned with the corporate direction and purpose of EECA.

Individual programmes also encourage market and consumer based research. Warm Up New Zealand: Heat Smart has provided funding for university-lead energy efficiency projects aimed at specific groups for the purpose of ascertaining the positive benefits of insulation and clean heating in homes.

2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS

2.1. Government Laws, Decrees, Acts

a) Name

Energy Efficiency and Conservation Act 2000

b) Purpose

The Act is the legislative basis for promoting energy efficiency, energy conservation, and renewable energy in New Zealand. The Act can be found at: www.legislation.govt.nz/act/public/2000/0014/latest/whole.html#dlm54948

c) Applicable sectors

Undefined

d) Outline

Before the Act was passed, energy efficiency in New Zealand was addressed by the Energy Research Monitoring Agency which was attached to the Ministry of Commerce (now the Ministry of Economic Development). Legislation for the Act was introduced in 1998 and was passed in 2000.

The Act established the Energy Efficiency and Conservation Authority (EECA) as a stand-alone Crown entity with an enduring role to promote energy efficiency, energy conservation, and renewable energy across all sectors of the economy. It empowers the preparation of regulations implementing product energy efficiency standards and labelling, as well as disclosure of information to compile statistics on energy efficiency, energy conservation, and renewable energy. The Act provides the enabling legislation for the NZEECS.

e) Financial resources and budget allocation

The funds allocated vary each budget year. EECA's budgeted figures are confirmed by its Statement of Intent published annually. Funding comes from several sources including the government, private sector, voluntary sector and individuals. These funds cover all costs including administration, grants and financial assistance. In 2006/07, the figure was NZD 22,697,000; in 2007/08 NZD 36,361,000; 2008/09 NZD 52,124,000; 2009/10 NZD 83,173,000; 2010/11 was NZD 150,960,000 and in 2011/12 was NZD 155,761,000.

f) Expected results

To promote energy efficiency, energy conservation and the use of renewable energy sources in New Zealand.

2.2. Regulatory Measures

2.2.1. Minimum Energy Performance Standards (MEPS) and Labelling

a) Name

Energy Efficiency (Energy Using Products) Regulations 2002

b) Purpose

To reduce energy demand; to enhance economic growth through improved productivity; and to provide savings to the end-user by improving the energy efficiency of a product class. This will be achieved through setting MEPS that result in improvements to the most energy intensive models available for sale in a product class and category; and requirements to display energy performance labels. The programme stimulates the production and purchase of more energy efficient products whilst ensuring a range of products is available to meet consumer needs. It is a joint Australia-New Zealand programme that offers industries in both economies improved economies of scale and reduced business compliance costs.

c) Applicable sectors

All energy using products but particularly appliances, lighting, and equipment in the residential, commercial and industrial sectors.

d) Outline

Energy Efficiency (Energy Using Products) Regulations were first published in 2002. The New Zealand Government entered into the Equipment Energy Efficiency Program (E3) with Australia in 2004-05. MEPS and labelling are the main mechanisms the E3 uses to improve product efficiency where requirements are set out in energy performance standards. The standards set out the testing method to establish a product's energy performance and consumption. All covered products must meet or exceed this standard before they can be sold to consumers. The E3 jointly funds:

- The profiling of products and technologies on the market and assessments of their energy efficiency potential
- Cost benefit analysis of options for intervention
- Consultation documents and regulatory impact statements
- Development and publication of joint Australia/New Zealand standards
- Compliance testing of products.

Labelling is mandatory for the following electrical products offered for sale in New Zealand:

- Refrigerators and freezers
- Clothes washers
- Clothes dryers
- Dishwashers
- Air conditioners
- Televisions (proposed for 2012)

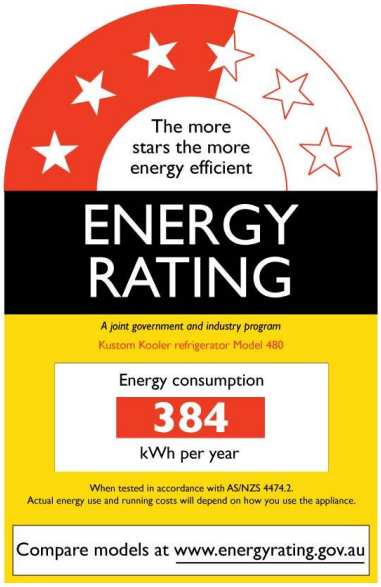
The following products are also regulated on the basis of Minimum Energy Performance Standards (MEPS).

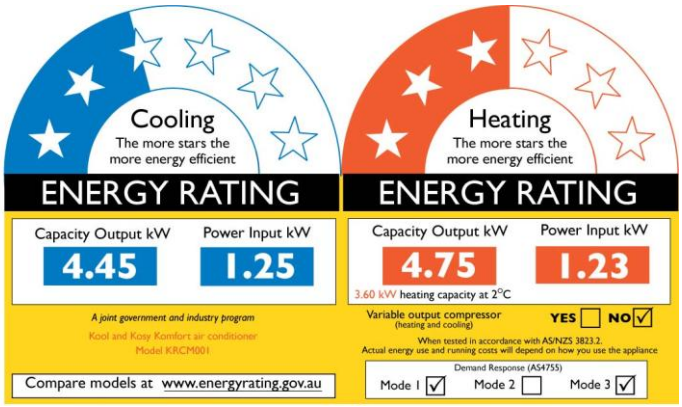
- Refrigerators and freezers (revised 2011)
- Mains pressure electric storage water heaters (from 2002)
- Small mains pressure electric storage water heaters (<80L) and low pressure and heat exchanger types (from 1 October 2005)
- Three-phase electric motors (0.73kW to <185kW) (from 1 October 2001, revised April 2006)
- Single-phase air conditioners (from 1 October 2004, revised 1 April 2006, 2007, and 2011. Another further revision may occur around 2013)
- Three-phase air conditioners up to 65kW cooling capacity (from 1 October 2001, revised 1 October 2007, and 2011. Another revision may occur around 2013)
- Distribution transformers (from 1 October 2004, revisions proposed for 2012)
- Ballasts for linear fluorescent lamps (from 1 March 2003). In addition to MEPS, ballasts also have to be marked with an energy efficiency index (EEI)
- Linear fluorescent lamps—from 550mm to 1500mm inclusive with a nominal lamp power >16W (from 1 October 2004)
- Commercial refrigeration (self contained and remote systems) (from 1 October 2004)
- Compact fluorescent lamps (proposed for 2012)
- External power supplies (from 2011)
- Set top boxes (from 2011)
- Televisions (proposed for late 2012)
- Commercial building chillers (from 2011)
- Close-control air conditioners (from 2011)
- Gas water heaters (from 2011).

The following products have been identified through the E3 program as potential areas for regulation in the future. This is subject to favourable cost-benefit analysis, regulatory process and approval from the relevant Ministerial level Council in Australia and the New Zealand Cabinet.

- Standby power
- Home entertainment products
- Information and communication technology products (including computers and monitors)
- Gas products (including space and water heating products)
- Industrial products
- Hot water (solar and heat pump water heating)

- Heating and cooling products (various types of air conditioning).





e) Financial resources and budget allocation

NZD 2.9 million a year is allocated to MEPS and labelling, ENERGY STAR and Vehicle Fuel Economy Rating.

f) Expected results

To date, measured results are 11.7 PJ and NZD $729 from the start of the programme in 2002 till March 2011. Annual savings are currently around 3 PJ per annum, which is increasing each year.

2.2.2. Building Energy Codes

a) Name

Compliance Document for New Zealand Building Code Clause H1: Energy Efficiency—Third Edition

b) Purpose

To facilitate the efficient use of energy

c) Applicable sectors

Residential and commercial

d) Outline

Mandatory provisions for building work are contained in the New Zealand Building Code (NZBC). Energy efficiency is covered in NZBC Clause H1.

In 2007 and 2008, new insulation and double glazing requirements were introduced for new houses, major extensions to existing houses, new multi-unit residential apartments and new small buildings with a floor area of up to 300 square metres. These changes are estimated to provide a 30% improvement in thermal performance over previous requirements. Hot water heating requirements, implemented in late-2000 remain unchanged.

In 2008, improved lighting requirements were introduced for new buildings with a floor area greater than 300 square metres. Thermal efficiency requirements for large buildings remain unchanged from 2000 levels, as are the energy efficiency requirements for domestic type hot water systems. Hot water systems over 700 litres are exempt from the Building Code.

In 2009, the Building Code introduced guidance for the energy performance of heating, ventilation and air conditioning systems.

e) Financial resources and budget allocation

No information available

f) Expected results

Improved energy performance of residential and small commercial buildings

2.2.3.Fuel Efficiency Standards

a) Name

Vehicle Fuel Economy Labelling

b) Purpose

To achieve reductions in fossil fuel demand and emissions, and savings to end users, through improving the average fuel efficiency of the vehicle fleet

c) Applicable sectors

Transport

d) Outline

The Energy Efficiency (Vehicle Fuel Economy Labelling) Regulations were first published in 2007. The labels must be displayed on all new and late-model used cars available for sale through registered motor vehicle traders and on Internet listings, provided the information is available. They are intended to allow consumers to make informed decisions about purchasing a car, knowing the effect it will have on the environment and its fuel costs. This should stimulate the supply and purchase of more fuel efficient vehicles.

The label displays a star rating out of six, where six stars indicates the most fuel efficient cars; the indicative cost of running the vehicle and the vehicle's fuel economy.

A voluntary version of the label was introduced in 2011 for electric vehicles.

e) Financial resources and budget allocation

NZD 2.9 million a year is allocated to MEPS and labelling, ENERGY STAR and Vehicle Fuel Economy Rating

f) Expected results

To date, measured results are 11.7 PJ and NZD $729 from the start of the programme in 2002 till March 2011. Annual savings are currently around 3 PJ per annum, which is increasing each year.

2.3. Voluntary Measures

a) Name

ENERGY STAR

b) Purpose

To achieve reductions in energy demand and energy-related GHG emissions and savings to the end user through stimulating the uptake of, demand for, and marketability of high efficiency products.

c) Applicable sectors

Residential and commercial.

d) Outline

The ENERGY STAR™ concept was developed by the US Environmental Protection Agency in 1992 as a voluntary labelling program designed to promote energy efficient products to reduce GHG emissions. It provides an independent endorsement mark for high-efficiency products that can be used by industry/retail partners in product labelling, promotional material and advertising.

New Zealand became a licensed partner for ENERGY STAR™ in 2005 and has both adopted United States' specifications and developed New Zealand specifications for certain product classes. Products covered include whiteware, home electronics, office equipment, air conditioners, solar water heating, and some types of lighting.

ENERGY STAR™ rated heat pumps (air conditioners) are the only products specified for use under the Warm Up New Zealand: Heat Smart insulation and clean heating programme.

e) Financial resources and budget allocation

NZD 2.9 million a year is allocated to MEPS and labelling, ENERGY STAR and Vehicle Fuel Economy Rating.

f) Expected results

No information available

2.4. Financial Measures Taken by the Government

2.4.1. Tax Scheme

New Zealand does not have a tax scheme for stimulating conservation energy efficiency improvements.

2.4.2. Low-Interest Loans

a) Name

Crown Energy Efficiency Loan Scheme

b) Purpose

To improve central government energy efficiency and ensure greater value for money from the public sector

c) Applicable sectors

Government (central)

d) Outline

The scheme was introduced in 1989 and provides funds to government agencies to encourage investment in energy efficiency measures in their building, facilities and vehicle fleets. The loans are repaid by the recipient department/agency over a calculated payback period. The enduring energy savings accrue to the recipient for the remaining life of the project or measure.

e) Financial resources and budget allocation

EECA provides $2million per year baseline funding for Crown loans for Government organisations (public sector including health and local govt) for energy efficiency, technology or renewable energy initiatives.

f) Expected results

Expected results are improved government energy improvements (savings) of around $2 million per year.

2.4.3. Subsidies and Budgetary Measures

a) Name

Warm Up New Zealand: Heat Smart Programme

b) Purpose

To improve energy efficiency in the residential sector; improve the health of people living in cold, damp houses; stimulate the market for energy efficiency services, including employment in the insulation manufacturing the installation industries; and reduce economy-wide energy demand.

c) Applicable sectors

Residential

d) Outline

The New Zealand Insulation Fund was announced by the New Zealand government on 28 May 2009 and came into effect on 1 July 2009 as Warm Up New Zealand: Heat Smart. It is now the centrepiece energy programme in the residential sector. Funding is provided to fit homes with insulation and clean heating devices such as heat pumps and approved wood burners, and to remove or decommission non-compliant (dirty) fires and burners.

The programme offers to meet 33% of the cost (up to NZD 1300 including tax) of installing ceiling and under-floor insulation to all households living in houses built before 2000. Households with sufficient ceiling and under-floor insulation may also be eligible for clean heating device funding of up to NZD 500. Lower-income households (i.e. Community Services Card holders) are eligible for more funding—60% of the total cost of insulation and NZD 1200 toward a clean heating appliance (provided the home is insulated). Landlords with Community Services Card holding tenants can also get the 60% subsidy and up to NZD 500 for the clean heating device if the home is insulated.

The program also works on a co-funding basis with a range of partners: local government; Iwi (Maori); service providers; local public health providers; charitable trusts, and energy retailers. Working with these partners, EECA will retrofit over 226,000 homes over the four years of the programme. Between $15 and $20 million per annum in private sector third party funding raised under the programme will assist low income households.

Generally, third party funding is applied to low income households to cover the 40% of the costs of insulation not provided by the programme. Different funders provide different mechanisms and eligibility criteria for their funding. For example, some territorial local authorities provide funding via a targeted rate on a rateable property for all households, not just low income households. Other funders provide direct contributions via Service Providers for low income households with health referrals from local doctor's offices, for example.

The program includes a two-year independent evaluation program that measures the effectiveness and efficiency of delivery and achievement of energy, health and economic outcomes. The longer-term goals for the Fund are: energy savings, health benefits, and stimulating the supply and demand side for energy efficiency upgrades.

e) Financial resources and budget allocation

The government allocated NZD 323 million over four years in the 2009 Budget. In November 2009, the government announced that the program would be enhanced by an additional NZD 24 million targeted exclusively at low-income families.

f) Expected results

188,500 homes insulated; 40,000 homes with clean heating devices.

The evaluation reports confirm and quantify the success of the programme to date – which translates to $1.2 billion net benefits to New Zealand over the expected life-time of measures delivered under the programme, with a benefit cost ratio of 4.3:1. The majority (99%) of the measured net benefit is from improved health.

The major assessed benefit from the programme is in improved health resulting largely from warmer, drier conditions after insulation is installed. Reduced mortality comprises around 74% of the assessed health benefit along with a drop in hospitalisation rates and costs, particularly in relation to asthma, respiratory and circulatory illnesses. Other benefits include avoided pharmaceutical costs, reduced absenteeism from school and work, and fewer medical visits.

The evaluation of the programme found that 85% of the insulation uptake has been additional to the background market rate and is therefore directly attributable to the programme. That equates to an additional 6.6 million m2 of insulation and an additional $35-53 million in producer surplus annually, worth $192 million (NPV 4% discount rate) over the four years of the programme.

The industry will employ more than 1,100people at the peak rate of installation. About 60% are directly employed in installation, production of materials and administration, whilst the remainder are indirectly employed by working for firms supplying the producers, importers, retailers and installers. Over the 4 year programme, direct and indirect employment will be nearly 3,500 person-years. 2

a) Name

Efficient Water Heating Programme

b) Purpose

To increase the uptake of efficient water heating products (including heat pumps).

c) Applicable sectors

Residential.

d) Outline

The Efficient Water Heating Initiative is designed to contribute to industry development by promoting and providing incentives to encourage the uptake of efficient water heating systems. The overall aim of the programme is sustained future growth of the industry without government support.

e) Financial resources and budget allocation

NZD 15.5 million over three years starting in 2006 followed by a further NZD 8.3 million for three years ending in 2012/13.

f) Expected results

Approximately 2,600 new efficient hot water heater installations per annum.

a) Name

Commercial Buildings Audit and Works Programmes

b) Purpose

[2] Reports commissioned by MED as the basis for its evaluation of the programme to date are: [A] Grimes A, *et. al.* (October 2011) "Warming Up New Zealand: Impacts of the New Zealand Insulation Fund on Metered Household Energy Use". [B] Grimes A, *et. al.* (October 2011) "Cost Benefit Analysis of the Warm Up New Zealand: Heat Smart programme". [C] Barnard LT, *et. al.* (October 2011) "The impact of retrofitted insulation and new heaters on health services utilisation and costs, pharmaceutical costs and mortality: Evaluation of Warm Up New Zealand: Heat Smart". [D] Covec (October 2011) "Impacts of the NZ Insulation Fund on Industry & Employment".

To encourage commercial building owners to undertake efficiency measures that would otherwise not have occurred due to capital constraints.

c) Applicable sectors

Commercial.

d) Outline

Part-funding (up to 40%) is provided for energy efficiency projects in commercial buildings where there is a genuine financial barrier preventing the project occurring. Projects are delivered through contracted service providers, sourced by way of a RFP process. Electricity savings are guaranteed (90%) with repayment mechanisms in place for any shortfalls. Although most providers focus on multiple project types & technologies, some focus exclusively on one type (e.g. lighting, continuous commissioning, monitoring & targeting).

e) Financial resources and budget allocation

NZD 4.0 million in grant funding for fiscal year 2011/12.

f) Expected results

The commercial programme is currently delivering annual savings of around 0.5 PJ a year; at a cost to Government of around 25% of the cost of building new supply assets.

2.4.4. Other Incentives

a) Name

Efficient Lighting

b) Purpose

To encourage uptake of efficient lighting technologies.

c) Applicable sectors

Residential, Commercial

d) Outline

EECA provides a range of subidies aimed at increasing the uptake of efficient lighting across the resdential and business sectors. The programme supports the RightLight information and capability building programme. The Rightlight Programme is a subset of the efficient lighting programme.

e) Financial resources and budget allocation

$3m in fiscal year 2008/09.

f) Expected results

1.6 PJ energy savings pa by 2012.

a) Name

Compressed Air Scheme

b) Purpose

To increase the efficiency of compressed air systems in the New Zealand industry.

c) Applicable sectors

Commercial

d) Outline

Funding is provided for two levels of audits on large compressed air systems (>=75KW) – a basic walk-through audit of the plant/ system, and an in-depth audit. Auditors must be accredited Compressed Air Systems auditors (trained through a programme referred to in the capacity building section above). The walk-through audit is primarily aimed at identifying and quantifying the opportunity for savings on a site. Some specific recommendations will arise from this as well as an assessment of whether an in-depth audit is justified. Follow-ups are performed after 6 and 12 months to determine the level of savings achieved.

e) Financial resources and budget allocation

NZD $1.0 million for the fiscal year 2011/12.

f) Expected results

The commercial programme is currently delivering annual savings of around 0.2 PJ a year; at a cost to Government of around 25% of the cost of building new supply assets.

a) Name

Vehicle fleet auditing for businesses programme

b) Purpose

To improve the vehicle efficiency of the commercial vehicle fleet.

c) Applicable sectors

Commercial.

d) Outline

This program provides audits for businesses with fleets of more than 100 vehicles. Businesses are eligible for a government funded grant of up to 50% of the audit (up to a maximum of NZD 10, 000). Monitoring and case study information is collected by EECA.

e) Financial resources and budget allocations

No information available.

f) Expected results

0.25 PJ of energy savings in 201/2015.

a) Name

Biodiesel Grants Scheme

b) Purpose

The grant assists the production and adoption of an environmentally responsible fuel which reduces greenhouse gas emissions and provides a similar advantage for biodiesel to that currently available to bioethanol.

c) Applicable sectors

Biodiesel producers in New Zealand.

d) Outline

Under the scheme, a grant of up to 42.5 cents per litre for biodiesel or biodiesel content of a biodiesel blend is available to biodiesel producers. The grant is payable monthly in arrears to producers whose product sales amount to, or are in excess of 10,000 litres, B100 content (100% biodiesel) per month.

e) Financial resources and budget allocation

NZD 9 million in 2009/10; NZD 12 million in 2010/11; NZD 15 million in 2011/12.

f) Expected results

In year one (Jul 2009 – Jun 2010) total grants of $230,000 were made for 542,000 litres of biodiesel.

In year two (Jul 2010 – Jun 2011) total grants of $805,000 were made for 1.893 million litres of biodiesel.

In year three (half year to date - Jul 2011 – Dec 2011) total grants of $417,000 have been made for 982,000 litres of biodiesel. The expectation for the full year is grants to a similar level to those given in year two.

2.5. Energy Pricing

New Zealand's energy sector is guided by free market principles. As an independent Crown entity, the Electricity Authority regulates the operation of the electricity market.

Since New Zealand's pricing is market-based, its effect on energy efficiency improvement programs varies with fluctuating supply and demand for energy. Generally, when energy prices increase because of weather conditions (for example a drought decreases hydroelectricity generation, New Zealand's primary source of electricity) or global fuel prices, people are more likely to adopt more energy efficient behaviour.

2.6. Other Efforts for Energy Efficiency Improvements

2.6.1. Cooperation with other Government Organisations

MED and EECA work closely with the Ministry of Health, Ministry of Social Development, Ministry for the Environment, Ministry of Transport, Ministry of Agriculture and Forestry, the Department of Building and Housing, Housing New Zealand and Statistics New Zealand. EECA also works closely with local government and District Health Boards.

2.6.2. Cooperation with Non-Government Organisations

In general, non-government organisations (NGOs) and community energy groups in New Zealand have good knowledge and awareness of energy efficiency improvement programmes implemented by the central government under the NZEECS. NGOs have established partnerships with central agencies to realise the goals of the NZEECS in certain areas. Central government agencies have been providing financial and technical support to local governments in implementing energy efficiency and renewable programs. Local governments are currently focused on energy efficiency improvement efforts to lower or maintain their energy expenditures, while NGOs are focused on the alleviation of fuel poverty and improving health outcomes among lower-income families. Through EECA, NGOs/community and energy groups, are implementing the Warm Up New Zealand: Heat Smart Programme and are able to use local networks to assist in reaching more participants.

2.6.3. Cooperation through Bilateral, Regional and Multilateral Schemes

The New Zealand government cooperates with other economies and New Zealand agencies on energy efficiency, including:

- The Australian Department of Environment, Water, Heritage and the Arts (DEWHA) and Australian State Regulators through the E3 committee to set joint standards and regulatory requirements for appliances and equipment.
- APEC and International Energy Agency (IEA) membership and forums.
- Energy Regulators Advisory Council (Australia and New Zealand) to align regulations for energy using products such as gas/electrical safety and radio spectrum management.

- The Commonwealth Scientific and Industrial Research Organisation (CSIRO, Australia).
- Regulators' Forum.
- WTO TBT notification.

2.6.4. Other Cooperation/Efforts for Energy Efficiency Improvements

Through the Warm Up New Zealand: Heat Smart programme, EECA has contractual agreements with private service providers to safely install insulation and clean heating measures into homes.

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