
New Zealand Progress in Energy Efficiency in 2012

EGEE&C Meeting 8-9 November 2012



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 - New Zealand Energy Efficiency and Conservation Strategy
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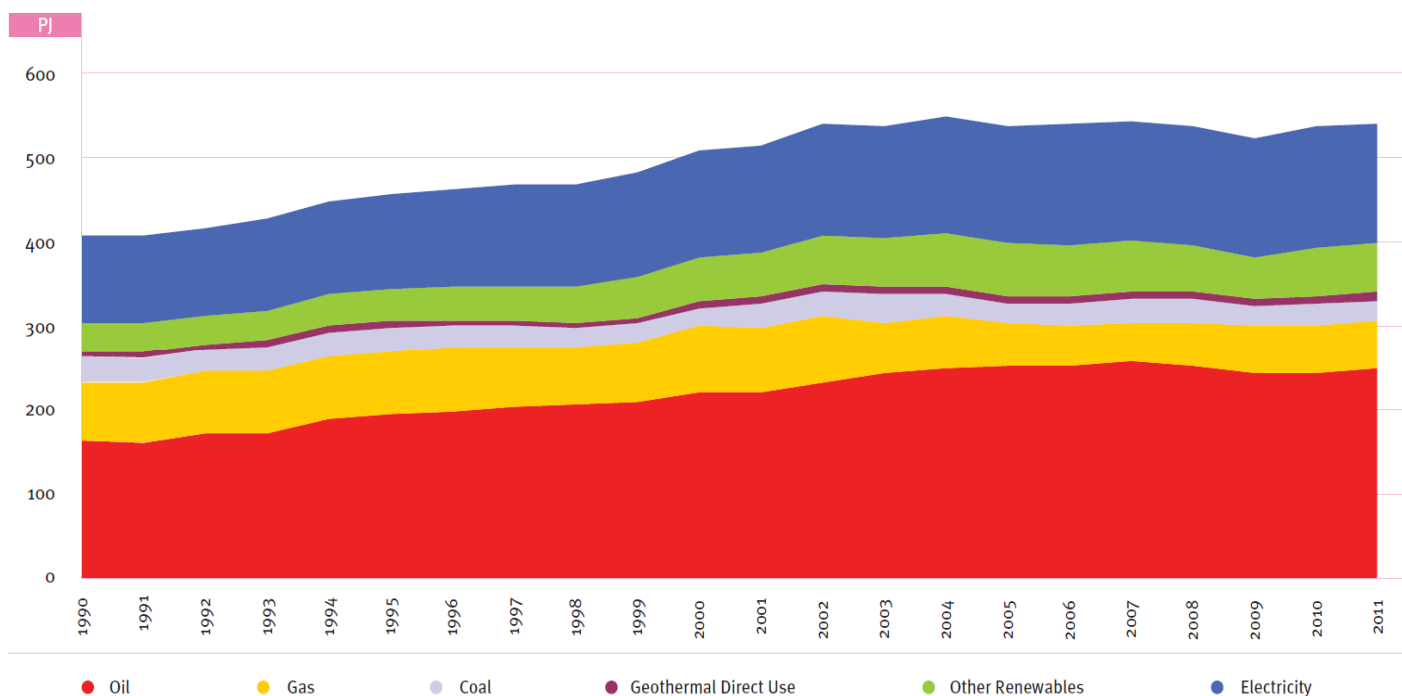


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Energy demand in New Zealand

Energy demand in 2011 was 538 PJ (~0.5 of US)

Energy demand flat since early 2000's



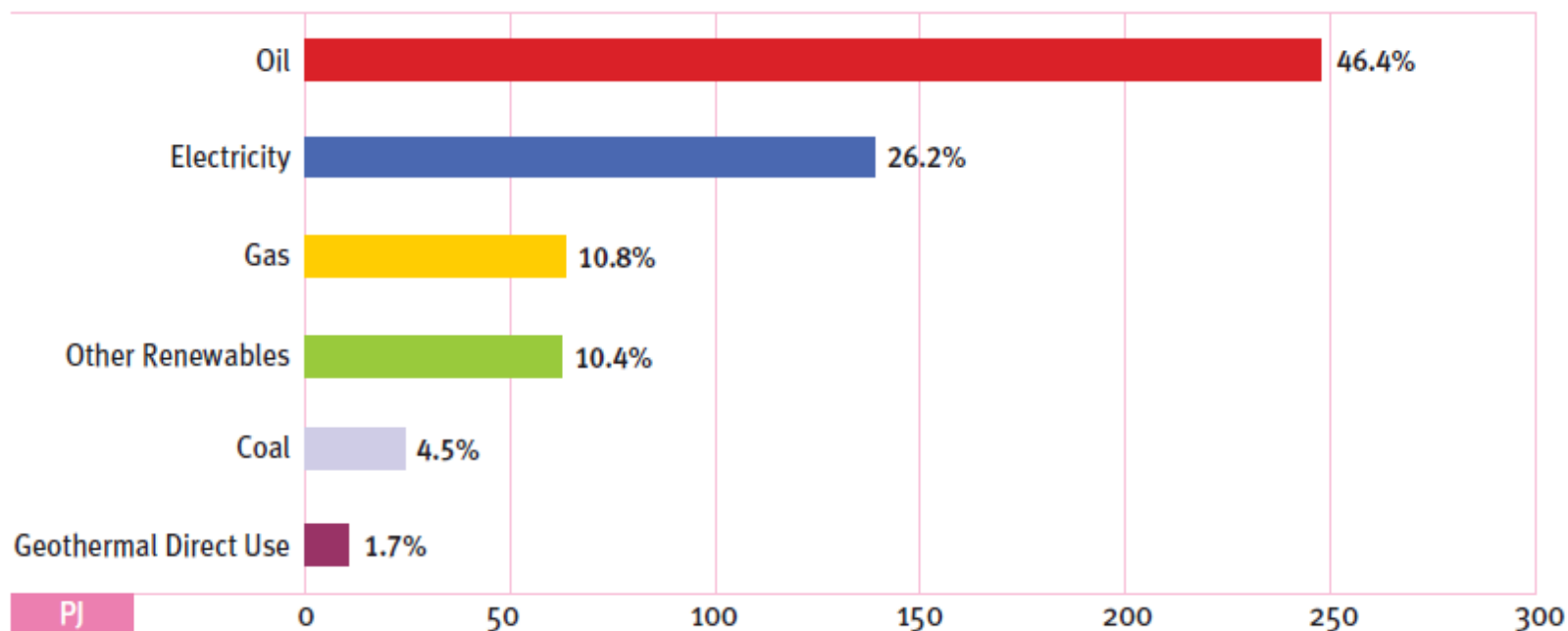
Source: NZ Energy Data File 2012



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Energy use in New Zealand

Total Consumer Energy by fuel (gross PJ)



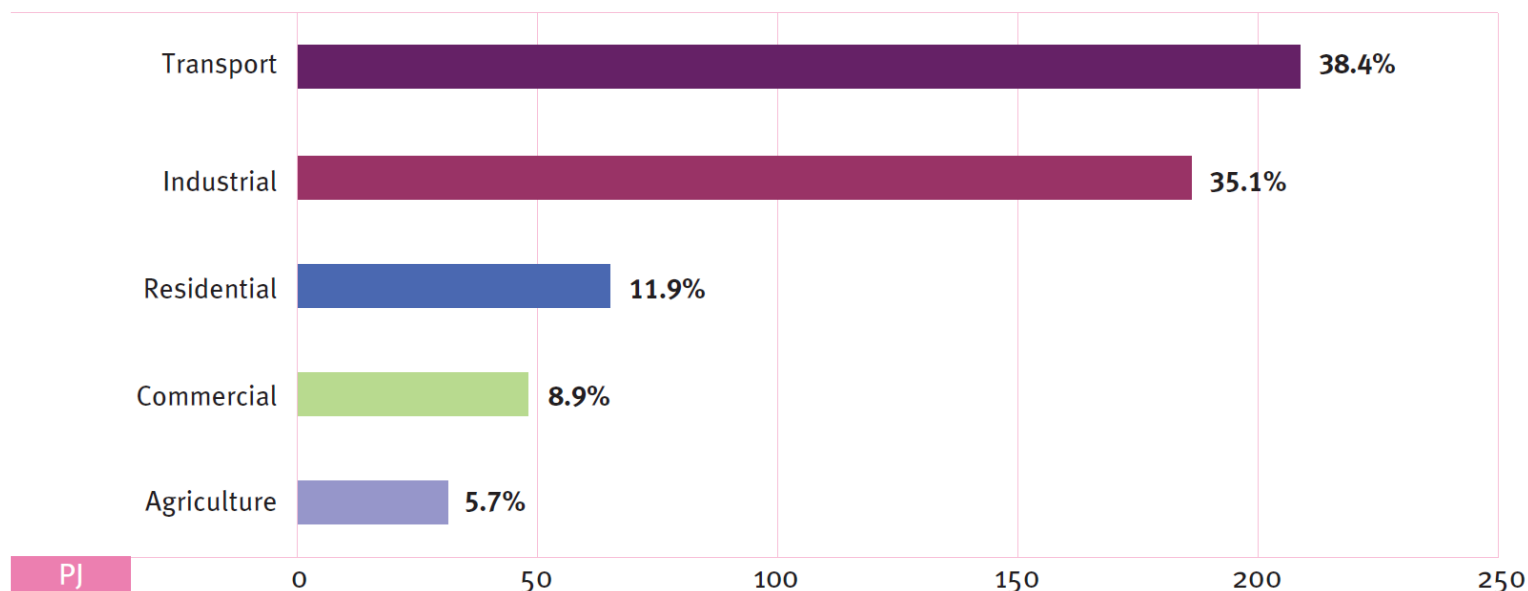
Source: NZ Energy Data File 2012



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Energy demand by sector

- Largest energy demand in transport
 - More than 99% reliant on oil
- Industry second largest, mainly pulp/paper, steel, aluminium, cement, and food processing.

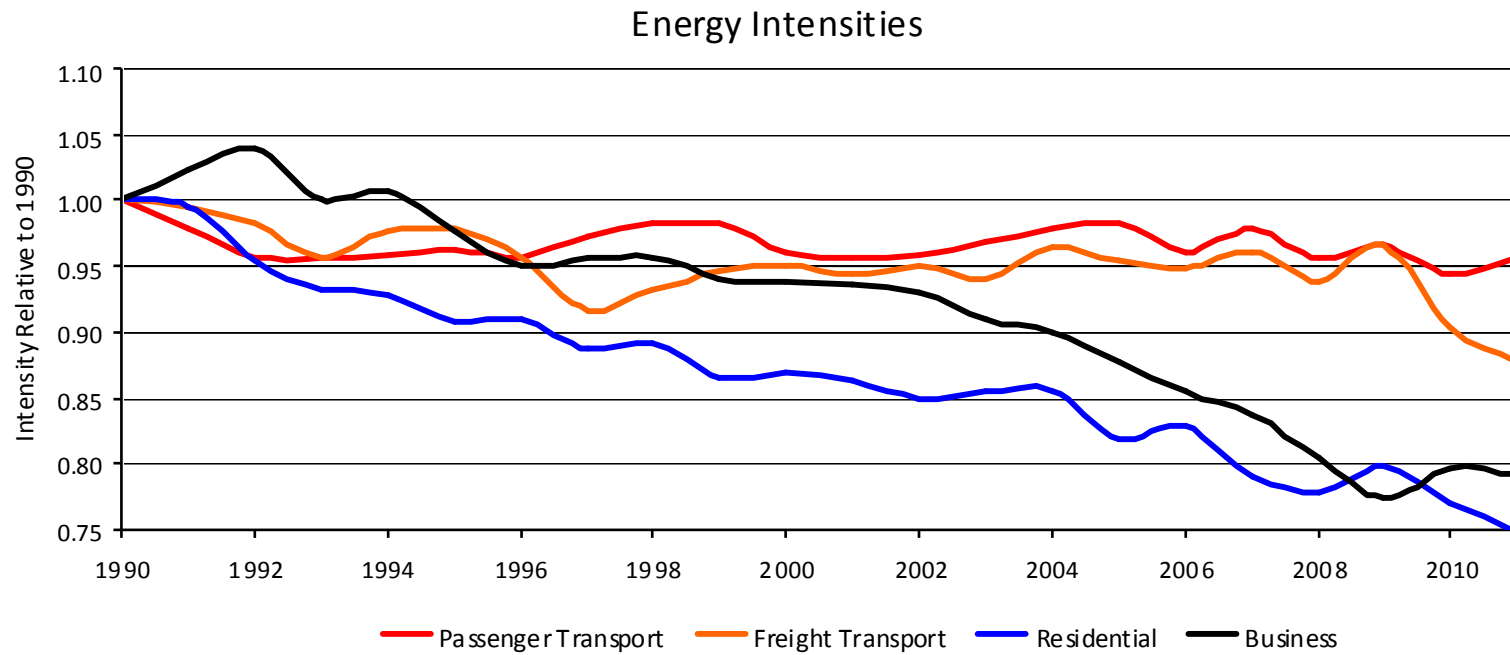


Source: NZ Energy Data File 2012



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Energy Efficiency Trends



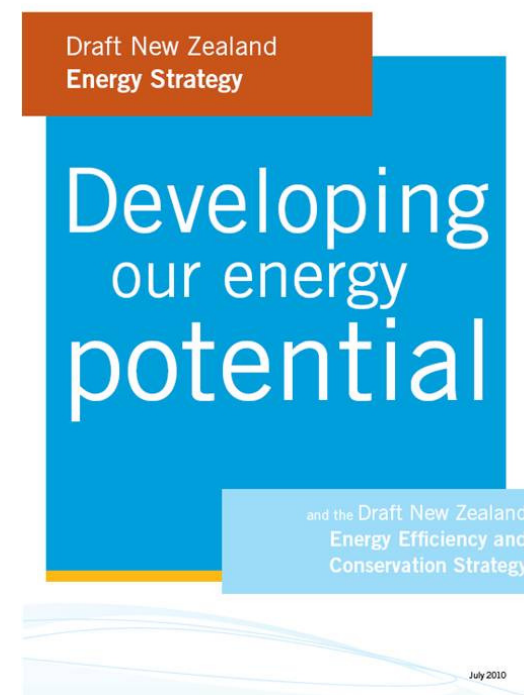
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New Zealand Policy

- New Zealand Energy strategy
 - Sets official government priorities
 - Diverse resource development
 - Environmental responsibility
 - **Efficient use of energy**
 - Secure and affordable energy
- New Zealand Energy Efficiency Strategy
 - Sets energy efficiency targets:
 - Business
 - Products
 - Homes
 - Transport



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What EECA does



Transport

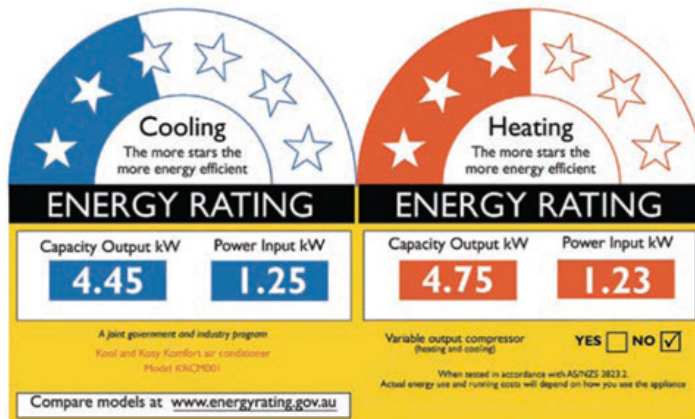


Business

Inspiring energy efficiency – advancing renewable energy



Residential



Products



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Business

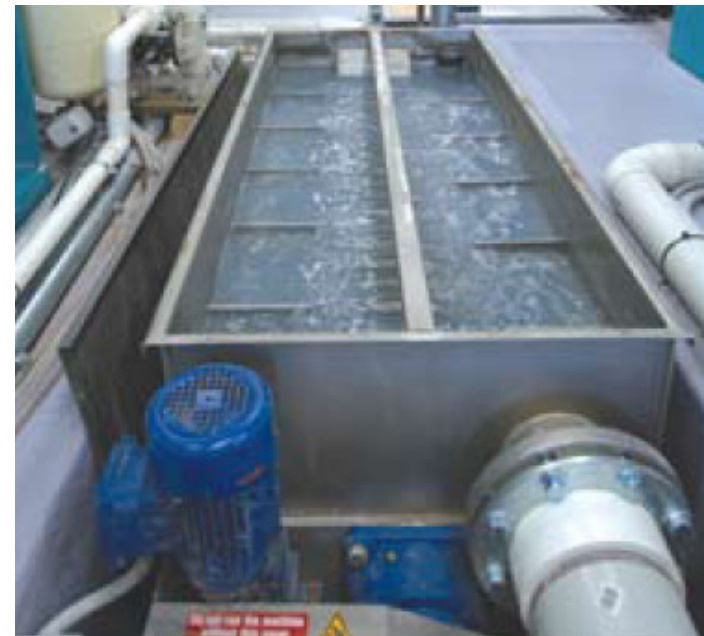
- Businesses represent the majority of energy consumption:
 - 80% of non-transport energy
- EECA is targeting to save 4PJ per annum by 2014 in business.
- Key areas of influence targeted:
 - Commercial buildings
 - Industrial motor and motor systems
 - Process heat



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Business

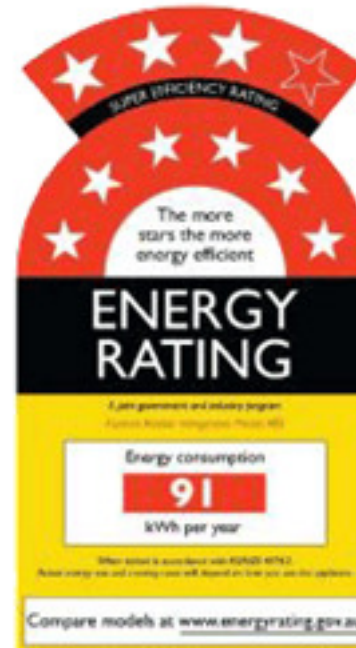
- Key initiatives to influence businesses:
 - Training
 - Energy management
 - Motor maintenance
 - Energy auditing
 - Information
 - On cost-effective opportunities
 - Energy policies
 - Standards and labelling
 - Funding
 - Crown Loans Scheme
 - Energy Audits
 - Uptake biomass process heat
 - Assistance of EE motors



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Products

- Partnership with Australia
 - Largest trading partner
 - Align energy efficiency standards and regulation
- Key Programmes:
 - Minimum Energy Performance Standards (MEPS)
 - 19 Product Classes
 - Mandatory Energy Performance Labelling (MEPL)
 - 6 Product classes
 - Energy Star
 - 19 Classes
 - Vehicle Fuel Economy Label (VFEL)
 - Covers 87% of post-2000 vehicles



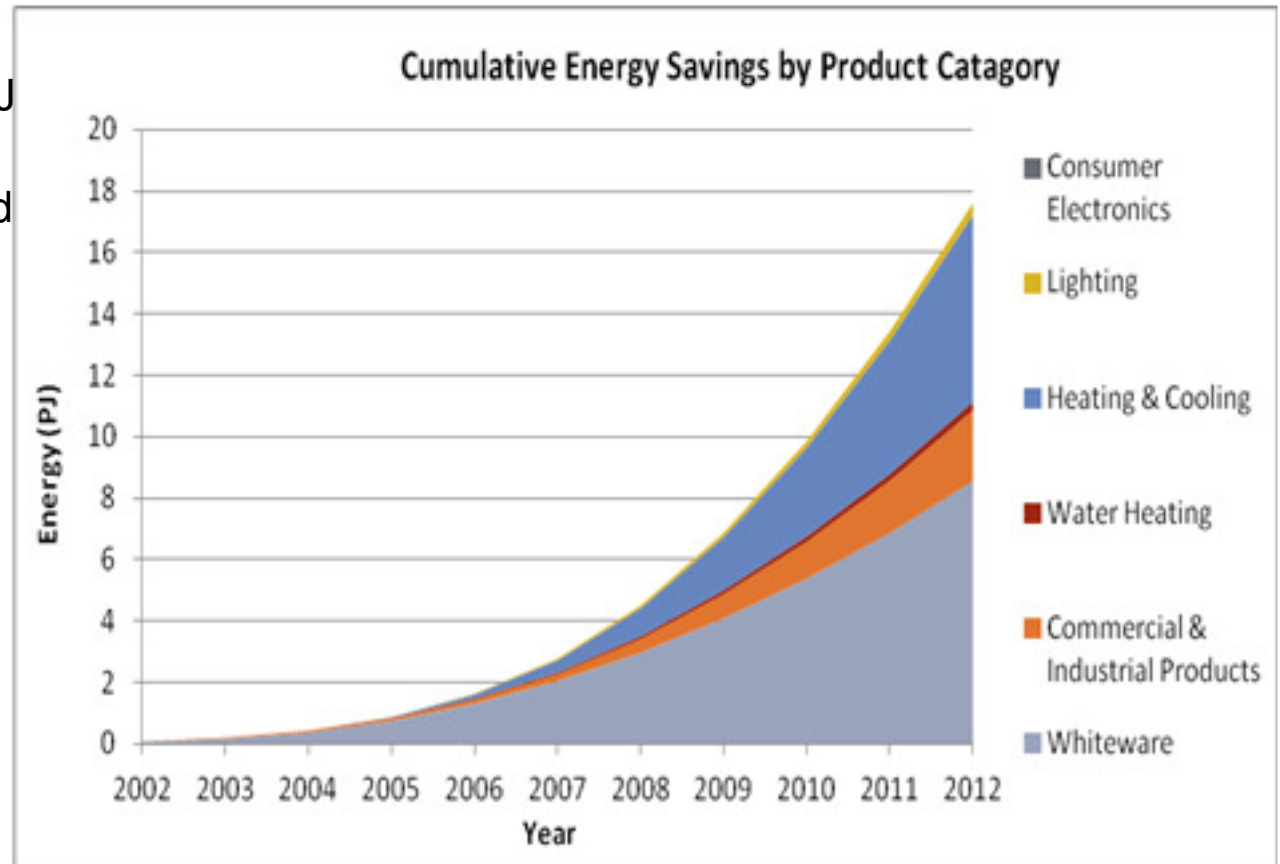
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Minimum energy Performance Standards (MEPS)	Mandatory Energy Performance Labelling (MEPL)	Energy Star
<p>Ballasts for fluorescent lamps Chillers Close control air conditioners Compact fluorescent lamps Distribution transformers Dry-type distribution transformers External power supplies Gas water heaters Household refrigeration Low-pressure copper thermal storage electric water heaters Refrigerated display cabinets Set-top boxes Air conditioner and heat pumps Storage water heaters (electrically heated) Television sets Three-phase air conditioners and heat pumps Three-phase motors Tubular fluorescent lamps</p>	<p>Clothes washing machines Dishwashers Household refrigerating appliances Rotary clothes dryers Single-phase non-ducted air conditioners and air-to-air heat pumps Television sets</p> <div data-bbox="1003 863 1290 1385" data-label="Image"> <p>The image shows a vertical Energy Rating label. At the top is a red semi-circle with white stars. Below it is a black section with the text 'ENERGY RATING'. Underneath is a yellow section with a white box containing the number '91' and the text 'kWh per year'. At the bottom is a white section with the text 'Compare models at www.energyrating.gov.au'.</p> </div>	<p>Dishwashers Fridge/freezers Washing machines Home theatre Televisions DVD players/recorders Heat pumps (air conditioners) Ducted heat pumps Compact fluorescent lamps LED lamps Printers Copiers Multi functional imaging equipment Scanners Fax machines Monitors and displays Computers Laptops Solar water heating</p>



Products Programme

- Key results
 - ~NZ\$1 billion + 17.5 PJ estimated savings
 - 75% Energy Star brand awareness
 - 95% Energy Rating Label awareness
 - 95% Compliance with rating labels
 - 86% Compliance with VFEL
 - ROI = \$69 per dollar EECA spend



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Products

- New initiatives
 - Continue to update and expand MEPS and MEPL
 - Additional Products for 2013
 - Computers, Monitors, Laptops, (New) Distribution Transformers, Heat Pumps, Televisions (Revisions)
 - Continue to update and expand Energy Star
 - 3 New and revised
 - Feasibility for Energy Star for vehicles being researched
 - Voluntary rating scheme for windows and glazing
 - Compliance and monitoring capability
 - Supporting NZ Green Building Council's Homestar rating tool



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Homes

- New Zealand Housing Stock
 - Largely uninsulated (insulation first mandated in 1978)
 - Drafty
 - Cold and damp
- High health and energy costs
- Warm Up New Zealand Programme (WUNZ) announced 2009
 - Roof, under floor insulation
- Project announced in 2009
 - Budget of \$347m
 - Target of 188,500



Warm Up New Zealand (WUNZ)

- Project over delivering
 - Insulating at below initial cost projections
 - Leveraging funds from 3rd parties (\$100m)
 - New target 230,000 retrofits by June 2014 (~15% of stock)
- Multiple benefits:
 - Health improvements
 - Energy efficiency
 - Employment



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Cost : Benefit ratio report

Cost

\$347 million

Benefit

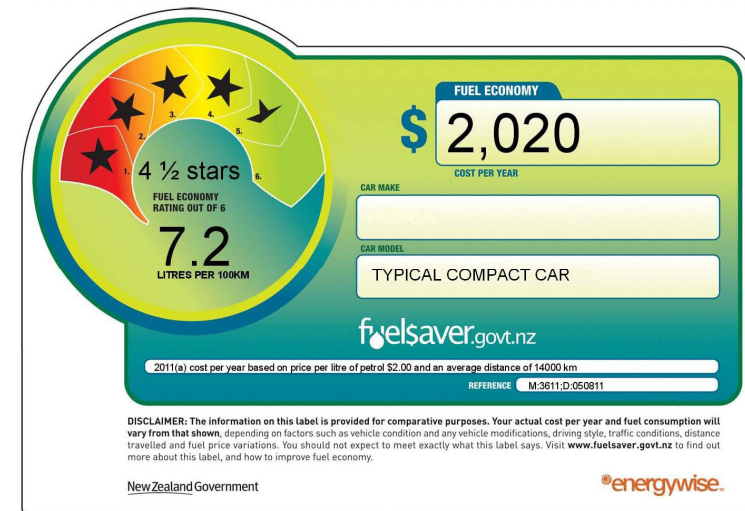
\$1.37 billion





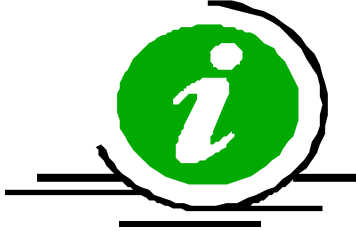
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Transport

- Focus on road transport (90% of total transport energy)
- NZ Light Vehicle Fleet
 - 99% reliant on oil
 - Technology taker, LPV fleet largely 2nd hand imports from Japan
 - Low fuel efficiency – 8 years behind leading developments
- Energy Efficiency Approaches
 - Information (Vehicle Fuel Economy Labelling)
 - Driver behaviour
 - Renewable transport fuels
 - Biofuels
 - Electric vehicles



Business transport programme portfolio

Project Funding	Capability	Information
 <p>New grants programme</p> <p>Funding for:</p> <ul style="list-style-type: none"> - Fleet review - Implement recommendations such as monitoring and targeting of fuel and driver training 	 <p>Training</p> <p>Providing the skills and knowledge for Heavy Vehicle Performance Advisors to:</p> <ul style="list-style-type: none"> - Undertake fleet reviews - Implement fuel efficiency programmes within fleets 	 <p>Providing information that is relevant and useful</p> <p>Comprehensive website on heavy vehicle fuel efficiency</p> <p>Targeted information in relevant industry publications</p> <p>Seminars and workshops</p>

The programme is targeting savings of 10% from the fleet



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Key Opportunities

- Transport
 - Large potential in improving fleet **efficiency**
 - Behaviour change
 - Electric Cars
- Industrial process heat
 - Large efficiency and GHG savings potential
- Renewable Energy
 - Biofuels
 - Process heat from biomass
 - Transport



Key Challenges

- Funding
 - Tight fiscal conditions from government
 - Private sector more focused on survival than efficiency
- Identifying actual barriers of action
 - Bounded rationality
- Remote market
 - NZ far away
 - Small market
- Regulation V voluntary

