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Te Tari Tiaki Pūngao

Transforming the heat pump market with energy efficiency standards

Terry Collins, Manager Products Programme,
January 2011

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Overview

- Heat pumps have been a success in New Zealand in terms of both sales and efficiency improvements
- An effective standards-based regulation programme is crucial to achieve on-going efficiency improvements
- However, getting the best results requires more than just regulation – consumers have to understand and be motivated.

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What is EECA?

- New Zealand government agency
- Government energy priorities:
  - Stimulate economic growth
  - Develop energy resources
  - Security and affordable energy
  - Efficient use
  - Environmental responsibility
- Supports energy efficiency, energy conservation and renewable energy across the economy (residential, business, industry, public sector)
- Our tools: information, incentives, partnerships, influence and judicious regulation
- 100+ staff (3 offices)

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Heat pump interventions

1. **Overview of heat pump sales and performance**
2. Regulation: MEPS and labelling
3. Information: Energy Star
4. Funding
5. Information

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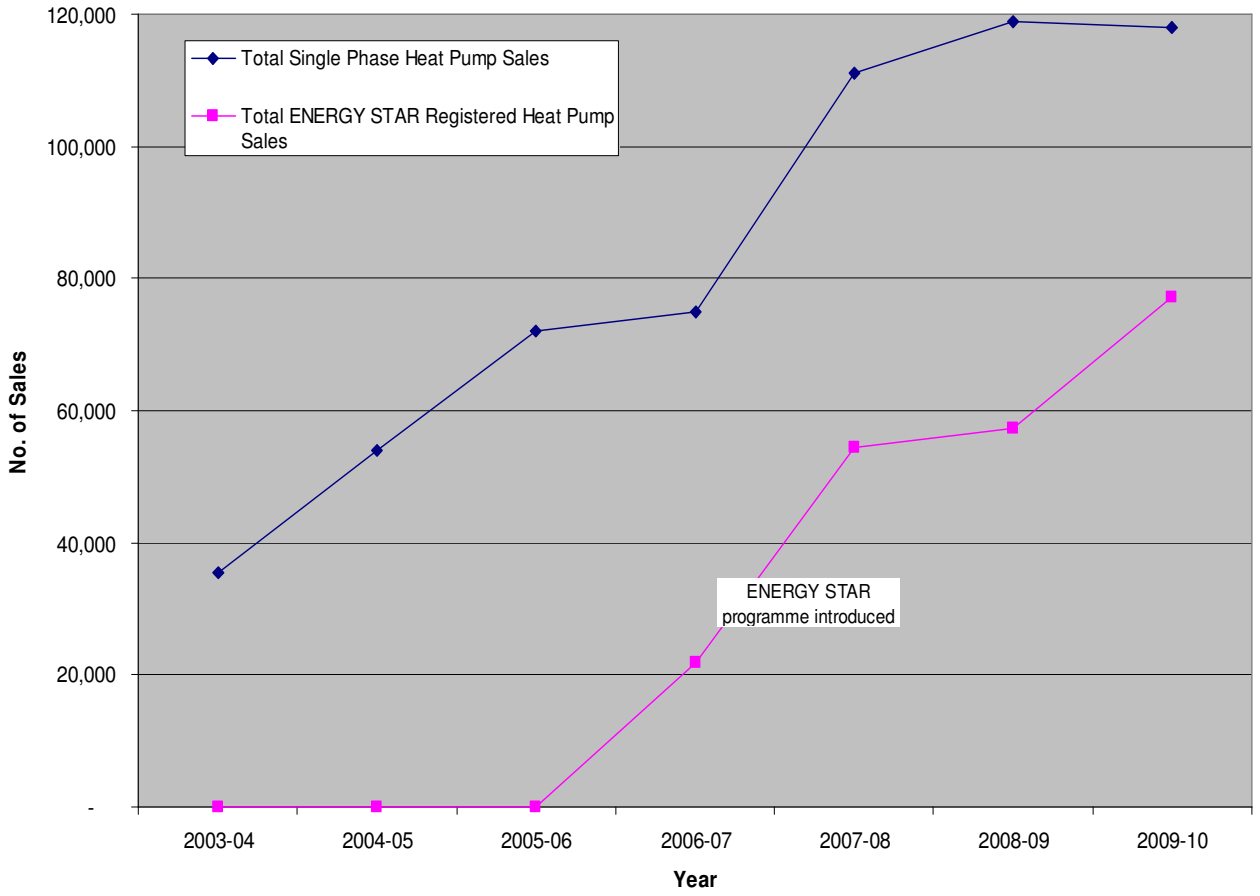
Heat pump sales in New Zealand



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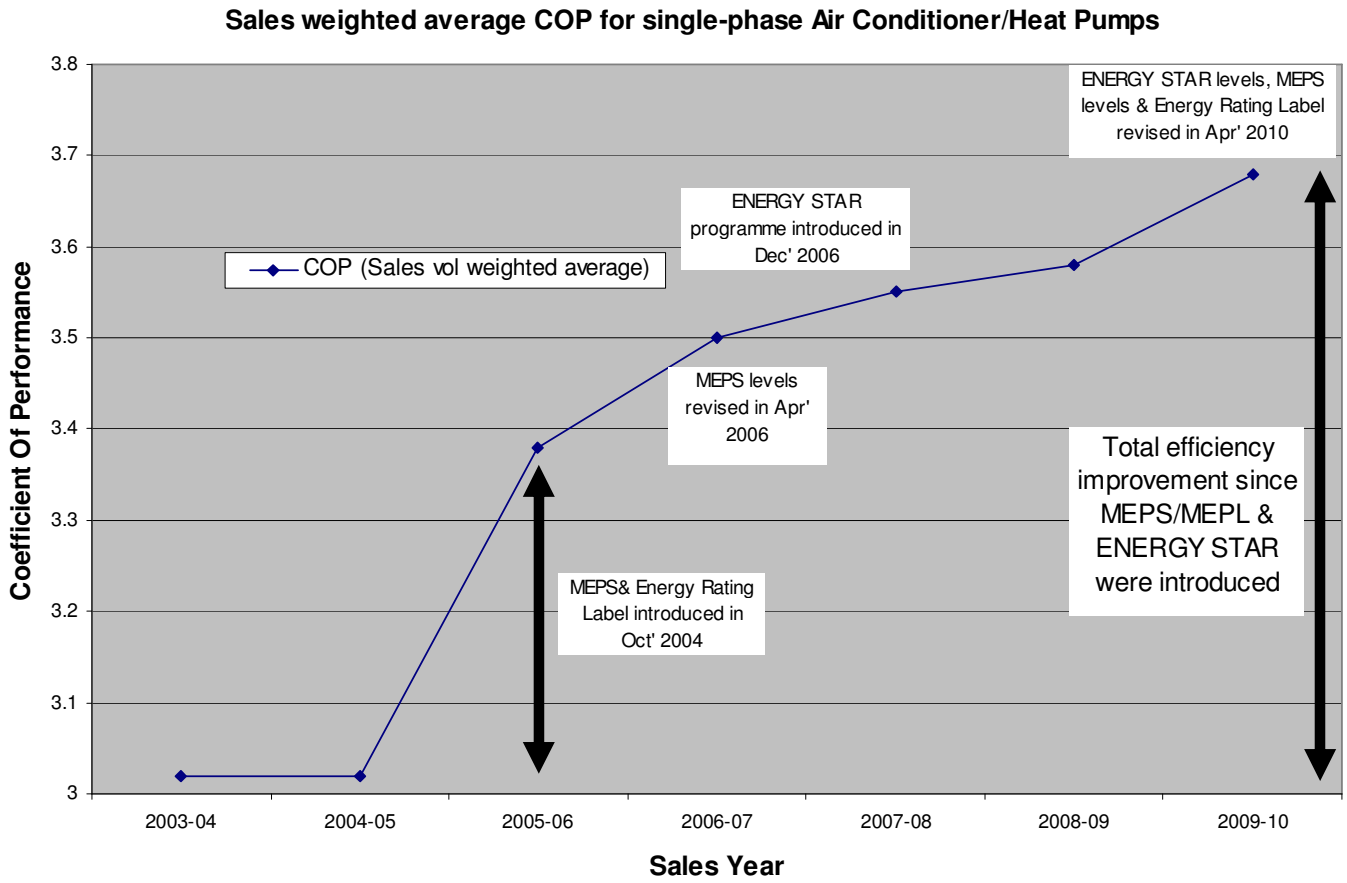
Performance of Heat pumps in New Zealand



COP (Coefficient of Performance): *The ratio of the heat energy supplied Vs the power input .This is expressed in kW/kW, which is a dimensionless ratio*

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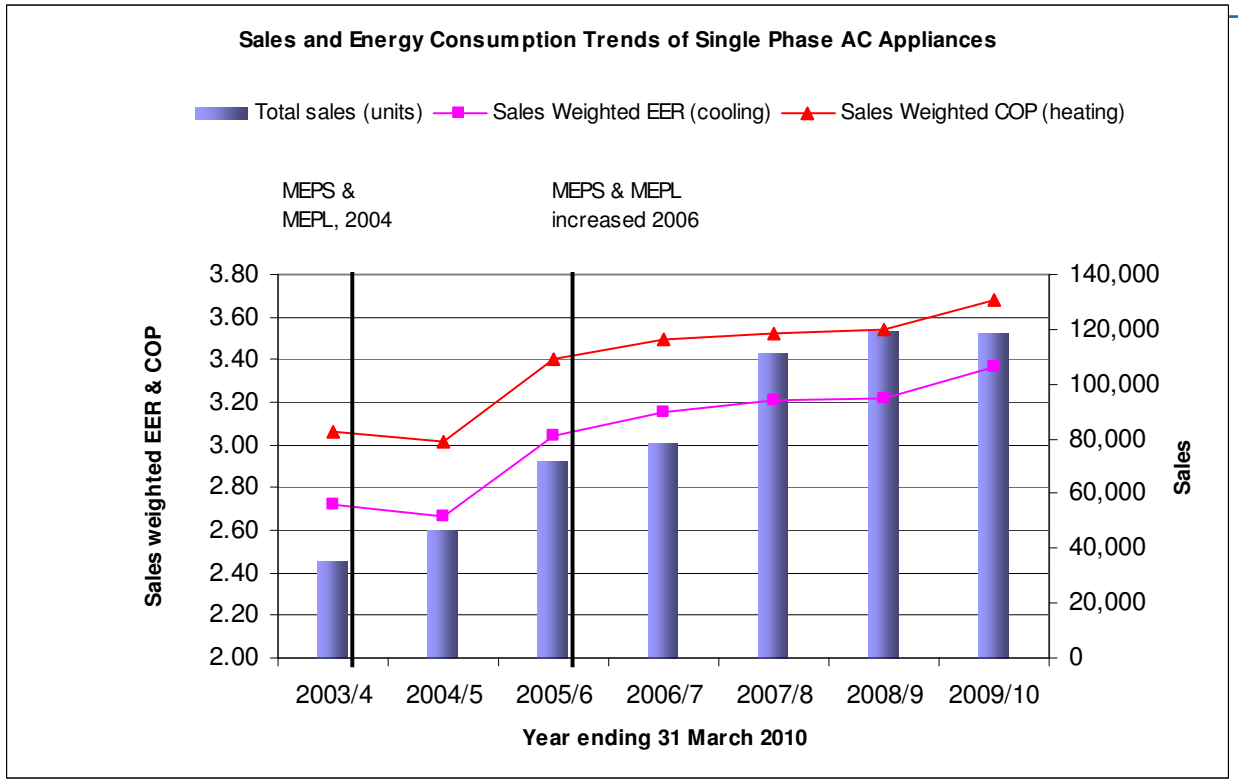
Heat pump success



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Equipment Energy Efficiency Program (E3)

- Joint Australia and New Zealand programme
- Develops energy efficiency measures for a range of residential, commercial, and industrial products
- E3 tools: Minimum energy performances standards (MEPS) and mandatory labelling
- Benefits of international harmonisation: lower costs, reduces risk of trade barriers

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Minimum Energy Performance Standards (MEPS)

- Removes the least efficient products from the market
- Standards are tightened over time
- Results in continued improvements in product performance and efficiency

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Products in the MEPS programme

Currently Regulated

- Water heaters - Electric
- Refrigerators/Freezers (Domestic & Commercial)
- Air conditioner/Heat Pumps
- Lighting – fluorescent lamps & ballasts
- Distribution transformers
- 3-Phase electric motors

Scheduled for Regulation 2011

- Commercial chillers & computer/server room A/Cs
- Water heaters - Solar, Gas & Heat-pump
- Home Entertainments (TVs, Computers, Monitors, Set-top Boxes)
- External Power Supplies
- 1W Standby
- Gas Room & ducted heaters
- Lighting – compact fluorescent

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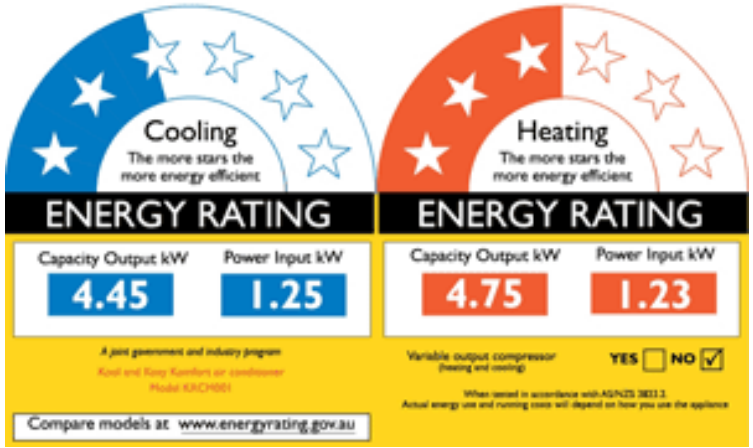
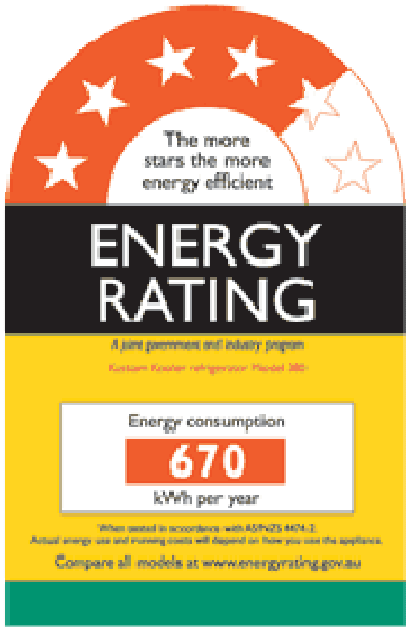
Labelling (MEPL)

- Mandatory programme
- All products included must display an Energy Rating Label
- Compliance monitoring required to maintain confidence





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Products in the MEPL programme

Currently Regulated

- Refrigerators/Freezers (Domestic)
- Air conditioners
- Whiteware (washing machines, dishwashers, clothes dryers)
- Cars (VFEL)

Considered for Regulation

- Home Entertainment (TVs)
- Gas Water Heaters
- Gas Room Heaters

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MEPS and labelling - results

- Savings of 706 GWh (2.5 PJ) in the year ended in March 2010 ($157m)
- Cumulative savings of 2,397 GWh (8.6 PJ.) ($530 m)
- Cost benefit ratio of 1:53.5.
- New and revised Standards are forecast to contribute an additional 38.4 PJ over the next 10 years. ($1.7b)

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ENERGY STAR

The global mark of energy efficiency

ENERGY STAR
THE GLOBAL MARK OF ENERGY EFFICIENCY

- ENERGY STAR is a voluntary endorsement programme for the top 25% most energy efficient products.
- Manufacturers and retailers can use the brand to help promote or sell their most efficient products.
- EECA is licensed to run ENERGY STAR in New Zealand by the United States Environmental Protection Agency (EPA). The programme covers:
  - heat pumps
  - whiteware (fridge/freezers, washing machines, dishwashers)
  - home electronics (TVs, audio/video, set-top boxes)
  - office equipment (computers, imaging equipment)
  - solar water heating systems
  - compact fluorescent lamps (CFLs).

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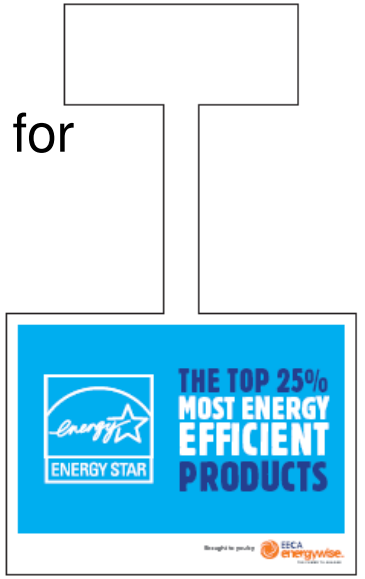
ENERGY STAR marketing

- General awareness campaign
- Joint promotional activities with retailers
- Google online campaign
- In-store point of sale information
- Education of retail staff
- Using ENERGY STAR as a requirement for Government funding (clean heat, solar water heating)
- The Energy Spot Campaign



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ENERGY STAR partnerships

- Partnerships with manufacturers and retailers essential to ensure their support and use of the brand.
- Retailers a key channel for reaching end consumers

In 2010/2011, ENERGY STAR partners will spend $2.50 for every $1 EECA spends on marketing

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Why ENERGY STAR has been successful

- Independent endorsement of energy efficiency is valuable for both consumers and manufacturers.
- Simple tool for suppliers to differentiate their products.
- Strong partnerships with major industry players.
- Extensive brand use by partners.
- Specific marketing programme by EECA.
- Qualifying criteria for NZ Government clean heat subsidies.

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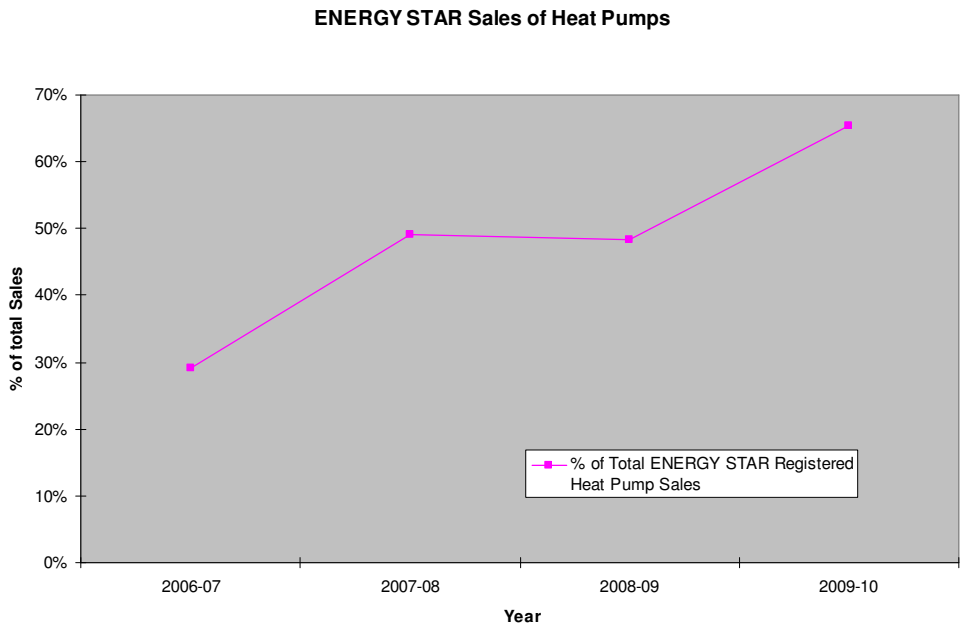
ENERGY STAR achievements

- The percentage of heat pumps models that were registered with the ENERGY STAR program increased from 7% in 2006 to *21% in 2010.*
- *At the same time sales of ENERGY STAR heat pumps have risen from a market share (sales volume) of 29% to 65% of total sales.*



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Warm Up New Zealand: Heat Smart

- $347 million government programme
- 188,500 homes over four years
- 84,000 homes retrofitted already (18months)
- Subsidises ceiling and underfloor insulation, as well as efficient heating options

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Information channels

- EECA websites
- Energy Spot
- Stores and partner advertising
- Brochures and guides

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The Energy Spot campaign

- 60 second TV ads promoting a variety of energy efficiency messages
- four major TV networks, three nights a week during prime time.
- Thirty different episodes have been produced including efficient heating:
- http://www.energywise.govt.nz/energyspot/episode-

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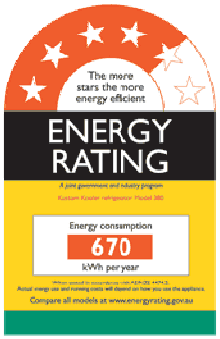
Public awareness of labels

77%



95%

Synovate consumer research, July-Sept 2010

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Overall achievements

- Heat pump efficiency has improved by more than 20% since 2003
- 2.59 PJs saved since 2004
- Estimated $147.6 million savings
- Comparative energy labels have 95% consumer recognition.
- Label compliance rate is 99%

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Lessons learned

- No “silver bullet” – a range of complementary interventions is needed
- Cross support helps, e.g. using ENERGY STAR as a requirement for funding
- Education needs to include use as well as the right choice
- Government and industry have to work together