



**Energy Efficiency and New and Renewable  
Energy in Residential and  
Commercial Buildings  
New Zealand**

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## Coverage

### Energy Efficiency in Buildings

### New and Renewable Energy in Buildings

### The New Zealand Profile

### Key Points



## Energy Efficiency

Many Applications being pursued,

- Mainly Passive,
- Mainly Residential.

Heat Loss Reduction

- Thermal Insulation,
- Radiation Minimisation.

Temperature Perception

- Wall Colours,
- Heat/Light Capture – Light pipes

*Much recent Activity*



## **New and Renewable Energy**

**New Zealand started with 100% Renewable Energy**

- Firewood,
- Hydroelectricity.

**Has gone Backwards in Renewable Energy Use**

- Cheaper to use Coal, Gas and Petroleum Products.

**Now trying to slow the Decline by Promoting:**

- Hydro,
- Geothermal,
- Biogas,
- Wind Power,
- Biofuels.

***A Slow Process***



## Current Consumer Energy Distribution

### Energy Consumption, 2005

Energy Consumed	PJ	%
<b>Total Energy</b>	<b>465</b>	<b>100</b>
Agriculture	20	4
Industrial	136	29
<b>Commercial</b>	<b>49</b>	<b>11</b>
<b>Residential</b>	<b>62</b>	<b>13</b>
Transport	198	43

*Residential and Commercial Energy use is Small*



## The New Zealand Profile

### New Zealand has a Maritime Climate

- Few Temperature Extremes,
- Less Heating and Cooling Demand cf. other APEC Economies,

### Economic Drive

- Energy Efficiency savings are relatively small,
- Many Government Subsidies for Energy Efficiency.

### Most Energy Conservation Activity in Residential Sector

- Management of Off Peak Electricity for Water Heating,
- Building Insulation

*Consumer Economic Drivers are Strong*



### **Key Points**

- Low Heating and Cooling Demand cf. other APEC Economies,
- Energy Efficiency savings are relatively small,
- Strong Government Subsidies for Energy Efficiency,
- Most Energy Conservation Activity in Residential Sector,
- Commercial Energy use quite small (11%),
- N & RE targets Residential Energy Sector,
- Quite high level of N & RE (24%) in the Energy Supply Mix,
- Govt Policy to increase energy efficiency and N & RE Supply,
- No significant incentives for Commercial Buildings.

***Strong Residential Economic Drivers***