



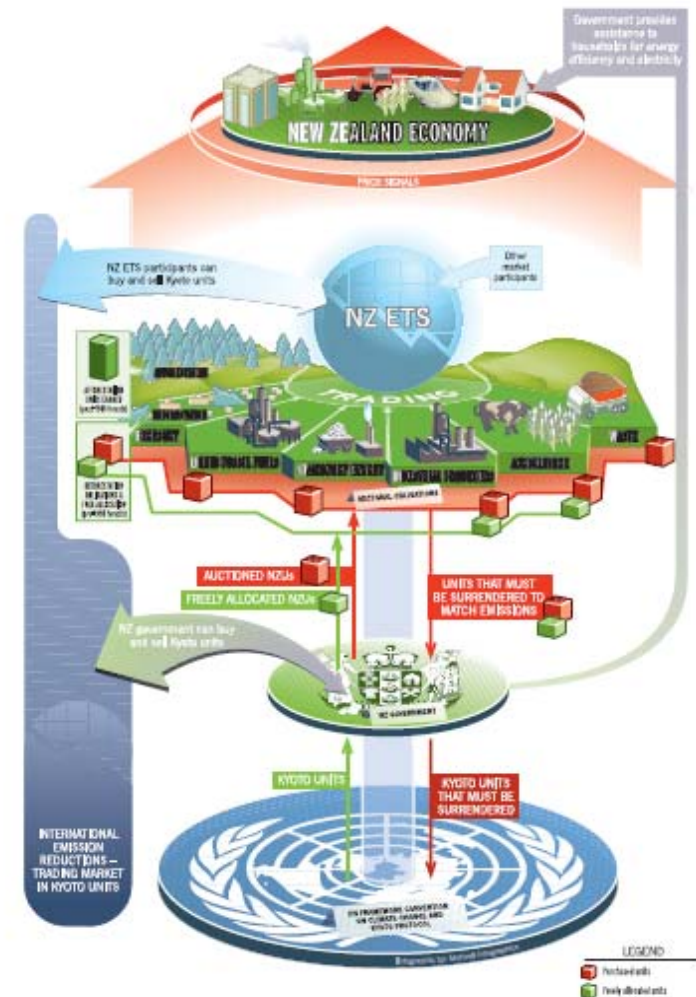
**Low emissions heat &
power**
A heat (and DG) perspective
on the NZ Energy Strategy

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The strategy is?

- “Stationary energy” and electricity enter scheme Jan 2010 - carbon costs apply
- No Govt. assistance except for large energy users where emissions have been reduced since 2003, 2004 or 2005
- Stationary energy emissions to be reduced or fully offset by 2030
- All new electricity generation in the next ten years to be renewable
- **A challenge to industry to reduce emissions significantly**



Is strategy practical/achievable?

- **Heat** in NZ is predominantly produced from coal or gas
- Alternatives?
 - Geothermal - localised, has limited potential
 - Biomass – resource is limited and localised, cost higher
 - Tallow, biodiesel, waste (as a fuel) - limited potential, expensive
 - Electricity – for industrial heat is uneconomic
 - Demand side management – lot of potential, relatively economic but NZ is (generally) behind world best practice
- Significant reductions are necessary and possible
- But how and at what cost? TBD

Impact on technologies & innovation

- Government has picked some winners for incentives
 - Marine electricity
 - Biomass - to accelerate uptake, fuel extraction from forests
- New/better combustion processes or gasification – potential limited
- Cost on emissions will change relative economics. What is possible?
 - Gas – better supply/price forecasts may facilitate cogen (higher efficiency)
 - Biomass –limited potential and uncertain supply/cost path
 - Geothermal, in some areas
- Demand side – has generally had limited focus, significant gains at the margin are available. Grants available
- **So – no silver bullet, and considerable expertise and capital will be required – and is available**

Affordability

- Coal and gas are cheap - but CO₂ emissions high
- Other fuels, i.e. wood are higher priced - likely to go higher?
- A carbon charge from 2010 at (say) \$40/tonne (or \$20, or \$60 – note the uncertainty)
 - Coal costs up - around 100%, gas around 30%
 - Heat costs would increase by \$241m @ \$30/tonne (GPC)
- Clearly:
 - A cost to consumers, or on producers – double digit impact?
 - Potentially adverse impacts on growth and investment
 - An opportunity to innovate.....
- **Costs will rise and significant capital will be required, and**
- **Success in holding policy, and businesses, depends on the world following with similar policies**

In summary

- In six years of offering solutions EFI has seen a reluctance by NZ business to address energy efficiency. Lots of projects that didn't meet 2-3 years payback, but
 - Will be enhanced by higher energy costs, and
 - A longer-term/strategic view on this issue
- The government has recognised a global problem, and established a strategy that incentivises (drives) business to respond
 - Underlying this is the assumption that the world will follow post 2012
- **There are clearly opportunities, expertise and capital available to effect significant reductions – and now a real driver!**

ON YOUR SIDE

Thank you

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