

# Energy Efficiency

**Townsville Seminar**

**24 July 2009**

Alan Millis

# Energy efficiency is.....

- Using less energy to accomplish the same task, such as heating or lighting a building. Using less energy lowers costs and reduces emissions.
- An effective, immediate means of meeting energy needs more sustainably through reducing energy demand while maintaining or enhancing function.
- Technologies and measures that reduce the amount of electricity and/or fuel required to do the same work, such as powering homes, offices and industries.

“The technical potential for efficiency improvements to reduce emissions and costs is substantial.”

**STERN REVIEW, The Economics of Climate Change**

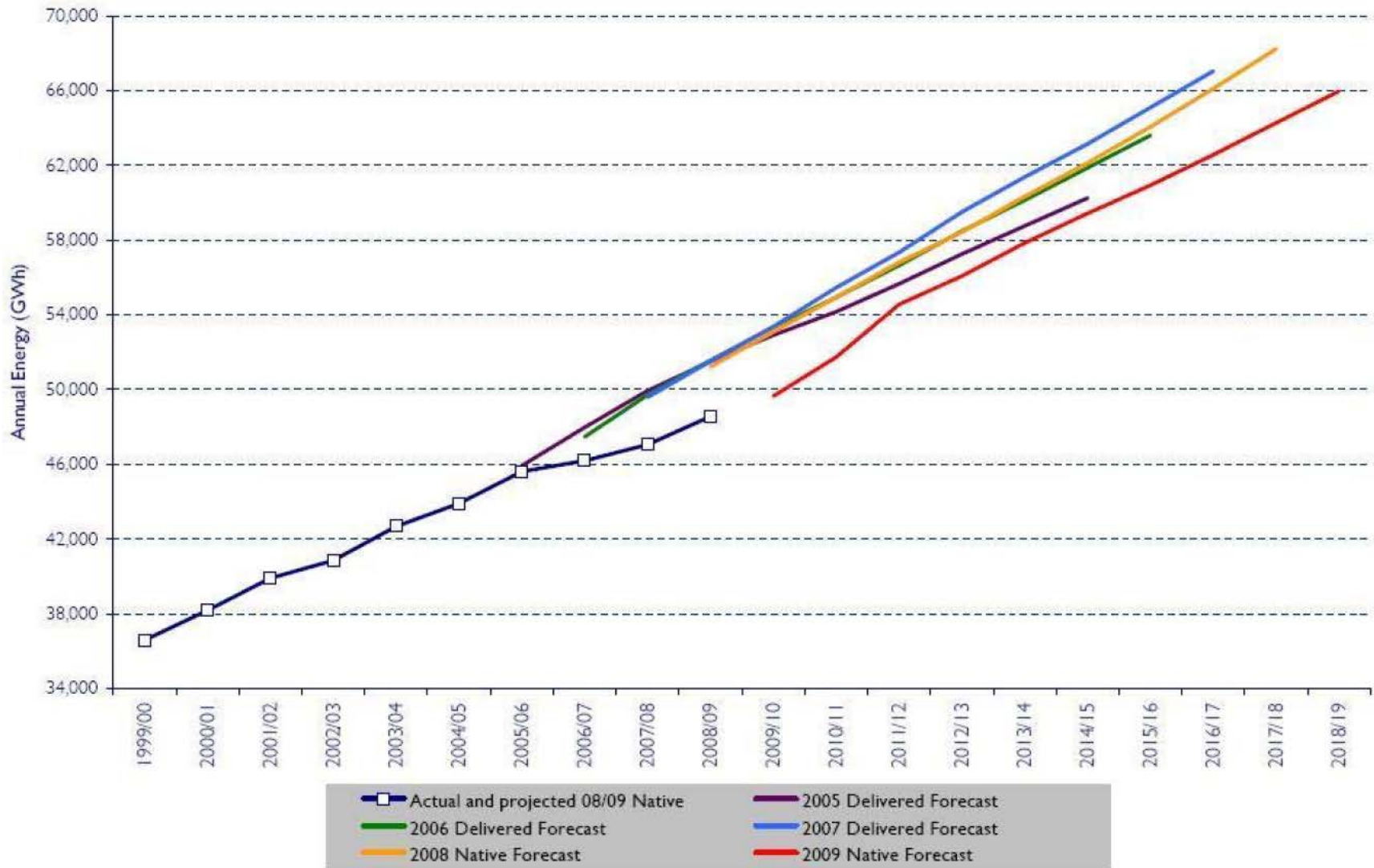
“Energy efficiency gains are a first priority for a more sustainable energy future.”

**IEA 2006 Energy Technology Perspectives, Scenarios & Strategies to 2050**

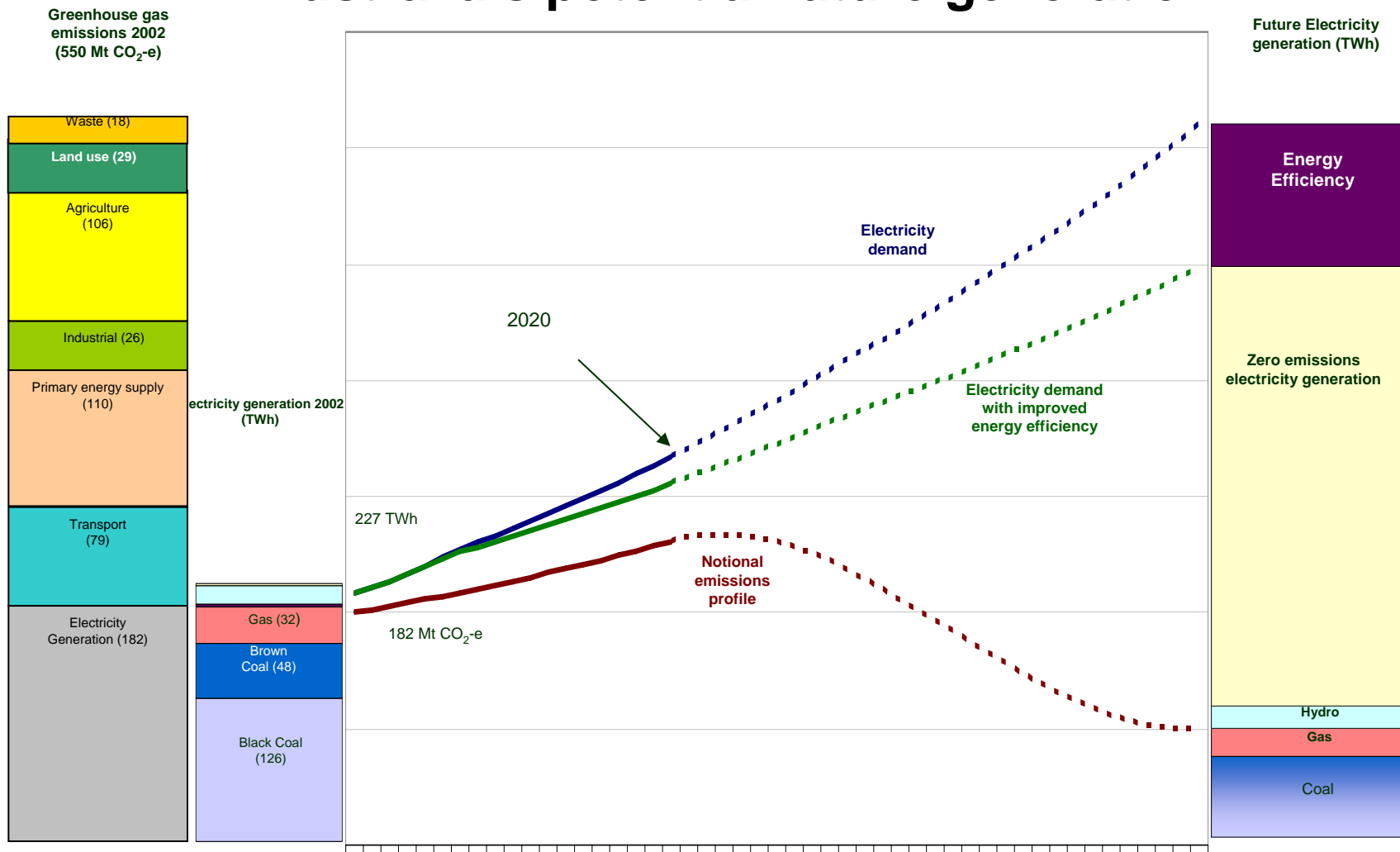
“A balanced strategy that tackles demand side energy use, as well as supply side emissions, would provide significant benefits to the entire economy.”

**Centre for International Economics, “Capitalising on the Building Sector’s Potential to Lessen the Costs of a Broad-based GHG Emissions Cut”, 2007**

## History and Forecasts of Annual Native Energy for Medium Economic Growth Outlooks



# Australia's potential future generation mix



Courtesy of: Department of Industry, Tourism and Resources

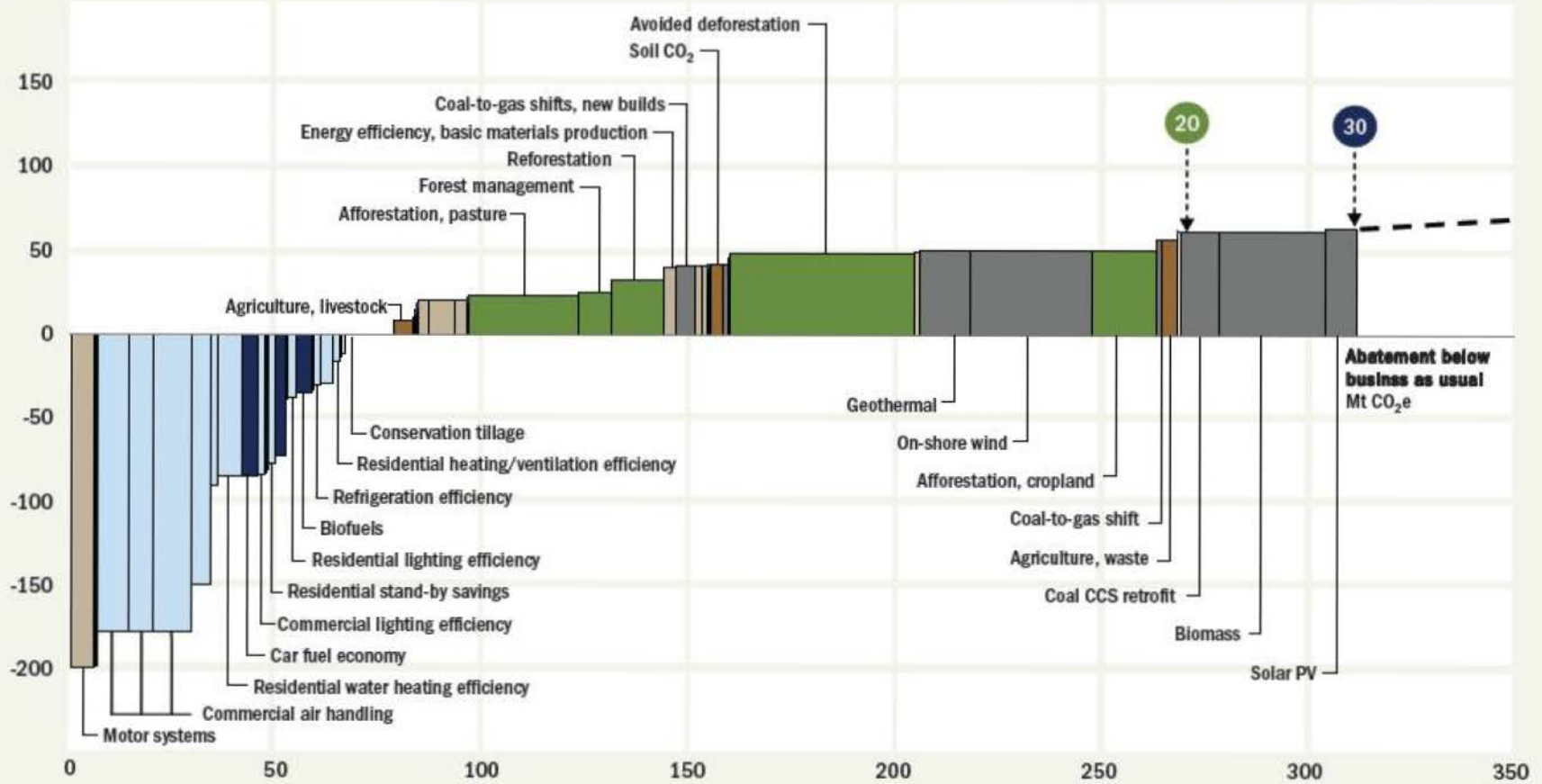
**Queensland Mines and Energy**  
 Department of Employment, Economic Development and Innovation



# Australian 2020 carbon abatement cost curve

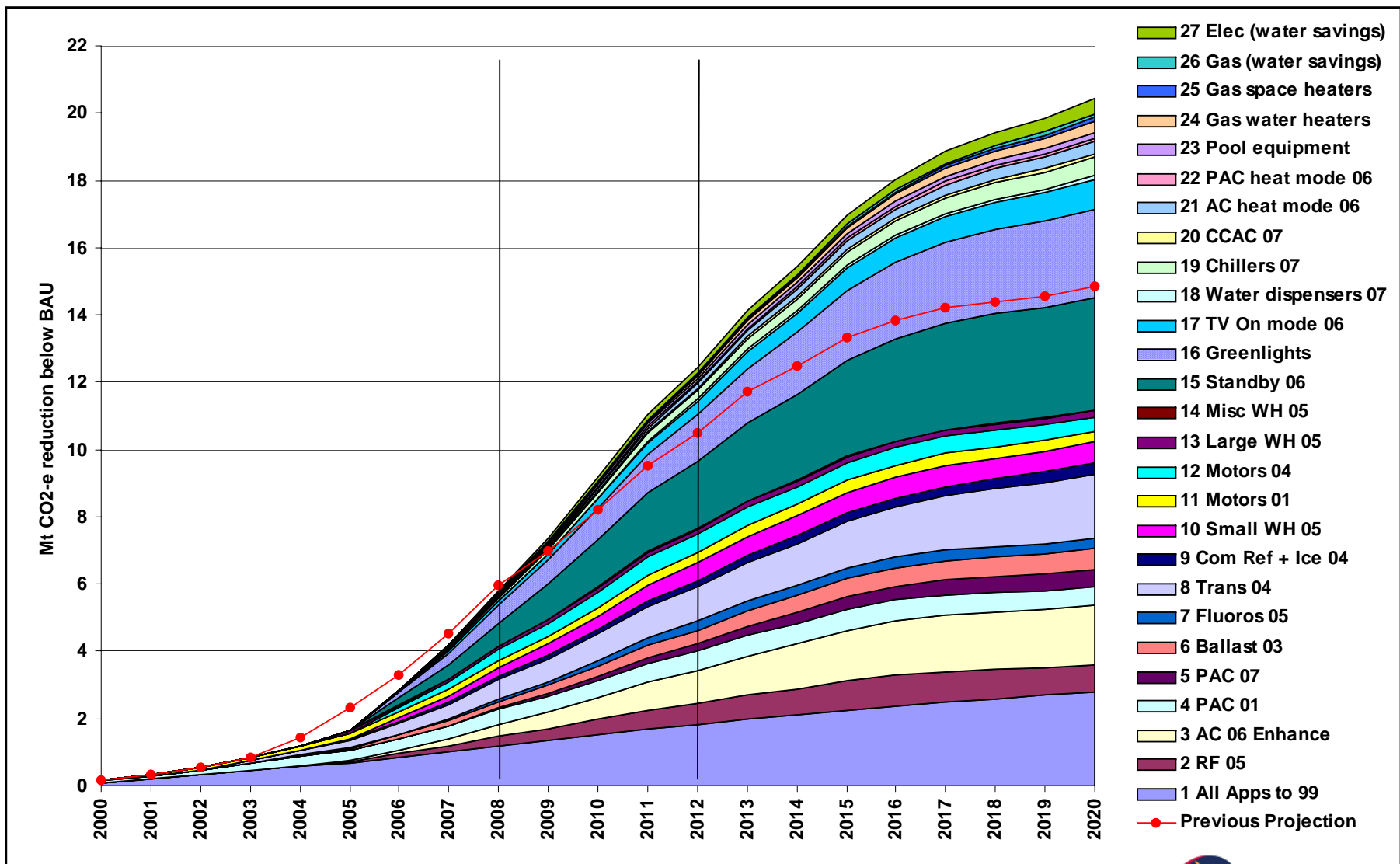
Cost of abatement  
A\$/t CO<sub>2</sub>e

- X Reduction below 1990 levels, percent
- Break-even point
- Industry
- Buildings
- Forestry
- Power
- Transport
- Agriculture



Note: Abatement opportunities are not additive to those of previous years  
Source: McKinsey Australia Climate Change Initiative

# No silver bullet

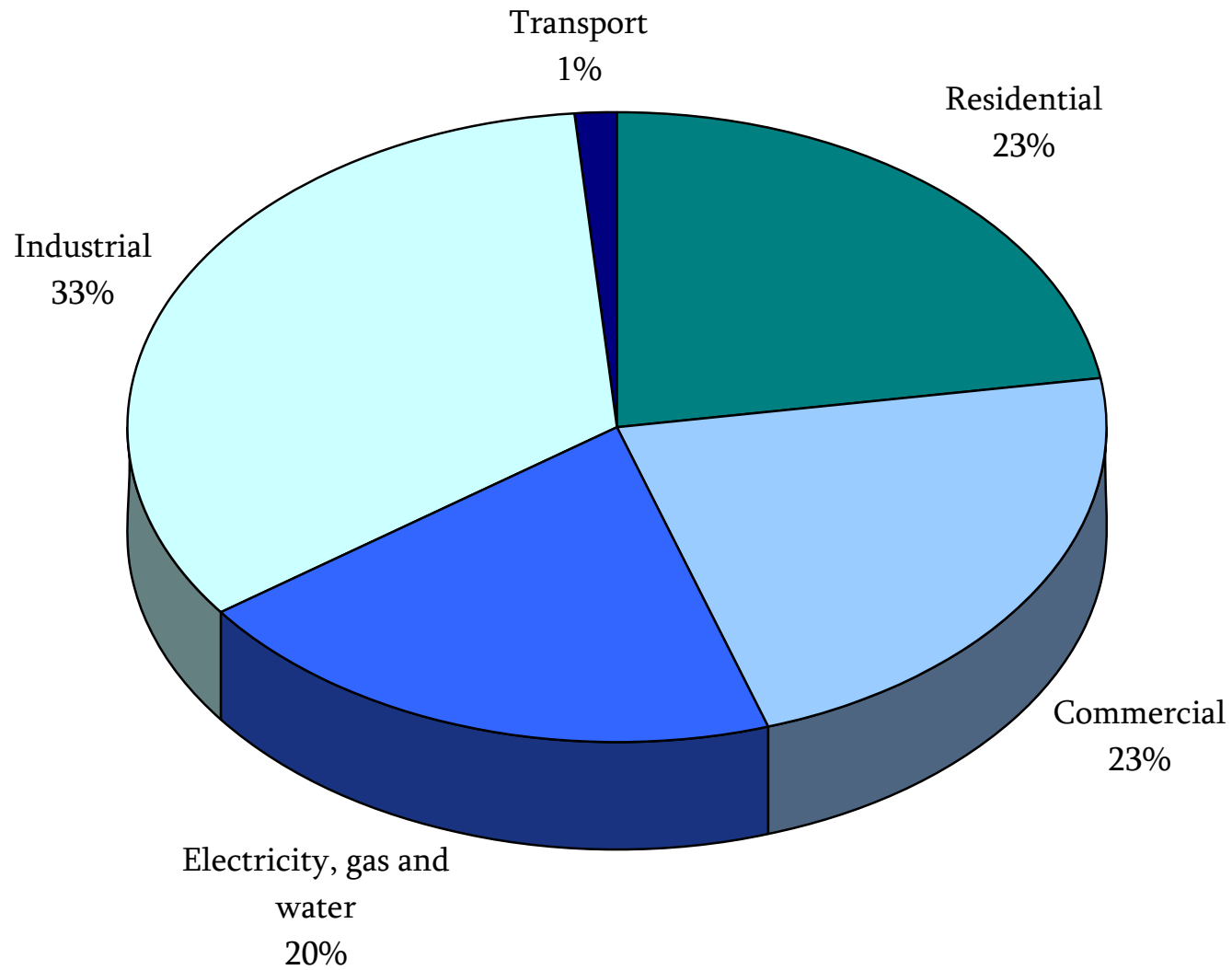


# Queensland Context

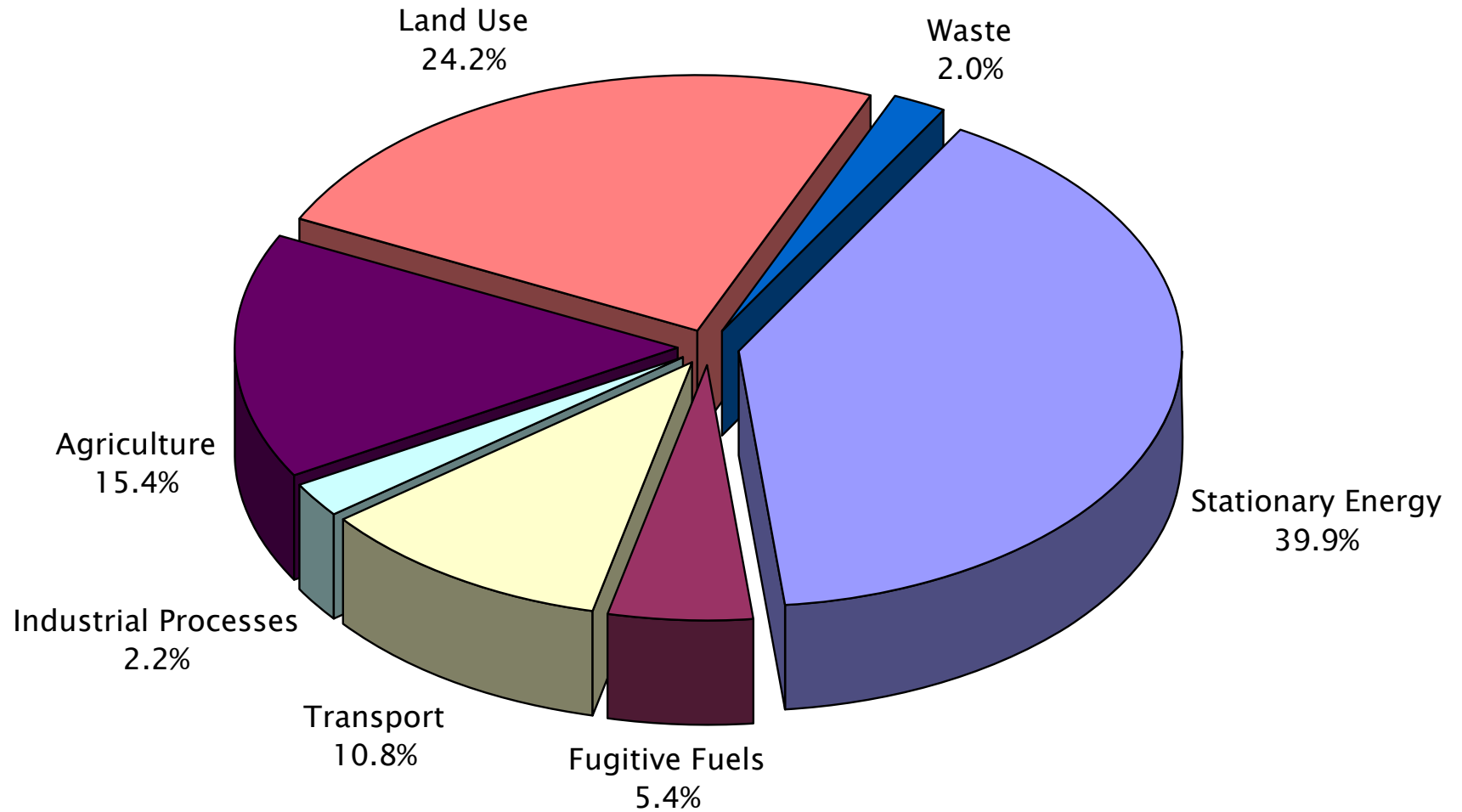
- High rates of population and economic growth
- An energy-intensive, decentralised economy
- Relatively high energy consumption and peak demand growth rates
- Coal-fired base load generation has ensured economic competitiveness – but is relatively high emission plant
- Gas as new fuel source for generation
- Scope for renewables
- But there is a big emissions reduction task and we need to look at all the potential sources



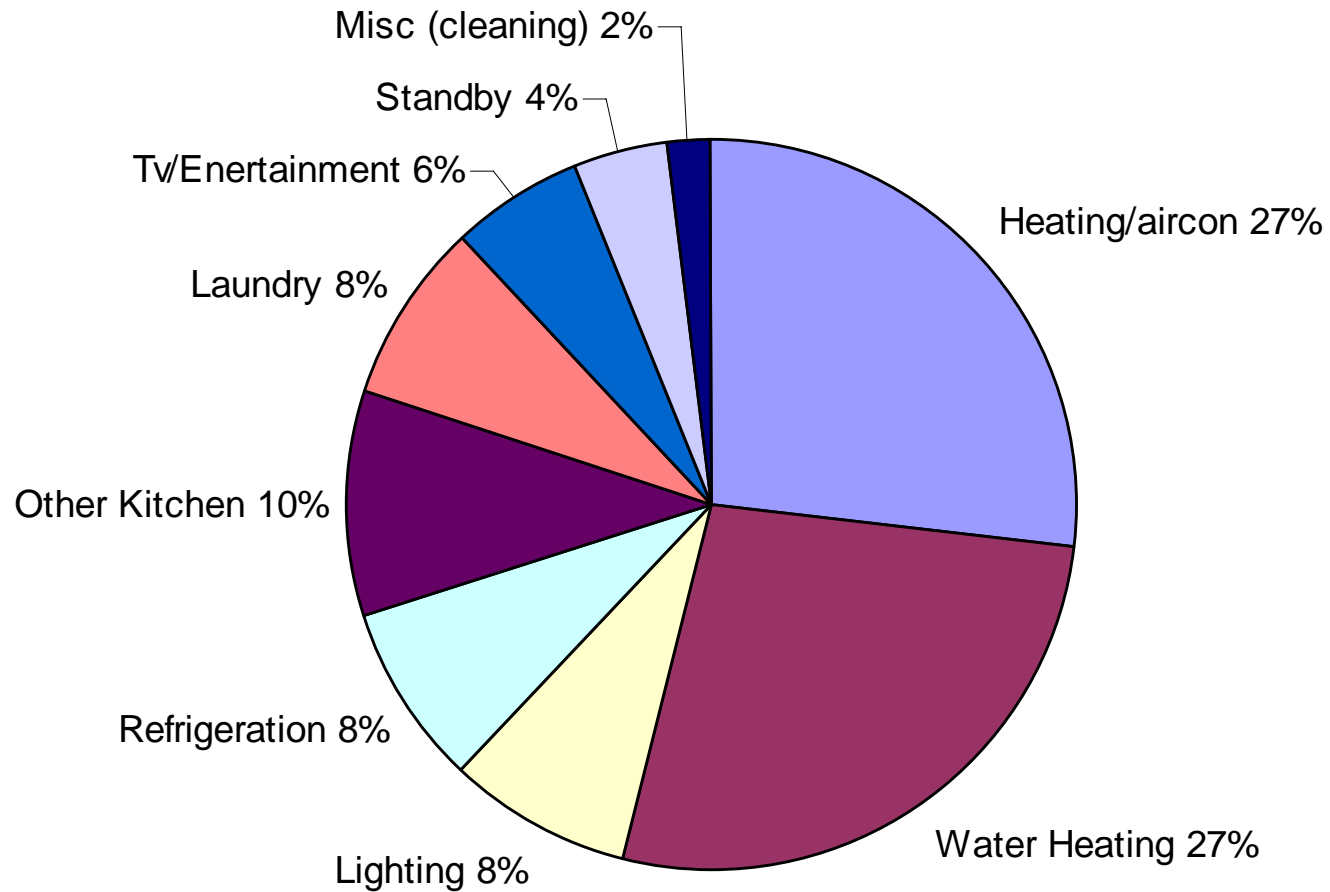
## Queensland Electricity Consumption, by type, 2006-2007



## Queensland Greenhouse Gas Emissions by Sector 2006 Total - 170.9 Mt CO<sub>2</sub>-e



# Queensland Household Energy Consumption



# Key Energy Efficiency Strategies

# NFEE Stage One



## Policy packages



## Implementation Plans



## Implementation Committees



# NFEE Stage Two

Five new energy efficiency measures for delivery:

- Expanding and enhancing the Minimum Energy Performance Standards (MEPS) program
- Heating, ventilation and air conditioning (HVAC) high efficiency systems strategy
- Phase-out of inefficient incandescent lighting
- Government leadership through green leases
- Development of measures for a national hot water strategy, for later consideration.

Plus continuing some of Stage One measures.

## National Framework - Results

- Three major Stage One projects are estimated to yield 50PJ of energy savings and GDP benefits of up to \$400M per year by 2015.
- Tangible outcomes included new appliance minimum energy performance standards and building standards and EEO legislation and framework.
- Stage Two measures will have an additional economic benefit of \$791M and greenhouse gas savings of 14.2 million tonnes per year by 2020 nationally.

# National Strategy on Energy Efficiency

- Signed by all jurisdictions July 2009
- Aims to address barriers to and accelerate the uptake of energy efficiency measures, and to complement the CPRS.
- Four key themes:
  1. Assisting households and businesses to transition to a low-carbon future
  2. Reducing impediments to the uptake of energy efficiency
  3. Making buildings more energy efficient; and
  4. Government working in partnership and leading the way.



## Other Strategies in Queensland

- **Toward Q2 Green Ambition** - 30% reduction in greenhouse emissions from electricity use, fuel consumption and waste per Qld household by 2020.
- **ClimateSmart 2050** – includes energy efficiency – Climate Smart Homes.
- **Smart Energy Savings Program** - a program aimed at promoting energy efficiency in larger businesses
- **Electric hot water phase-out** and **prohibition of less efficient air-conditioners.**
- **Solar water heater** scheme

# Thank you



Supporting Queenslanders to lower their emissions at home, at work, and in their local communities.



## Climate Smart Homes

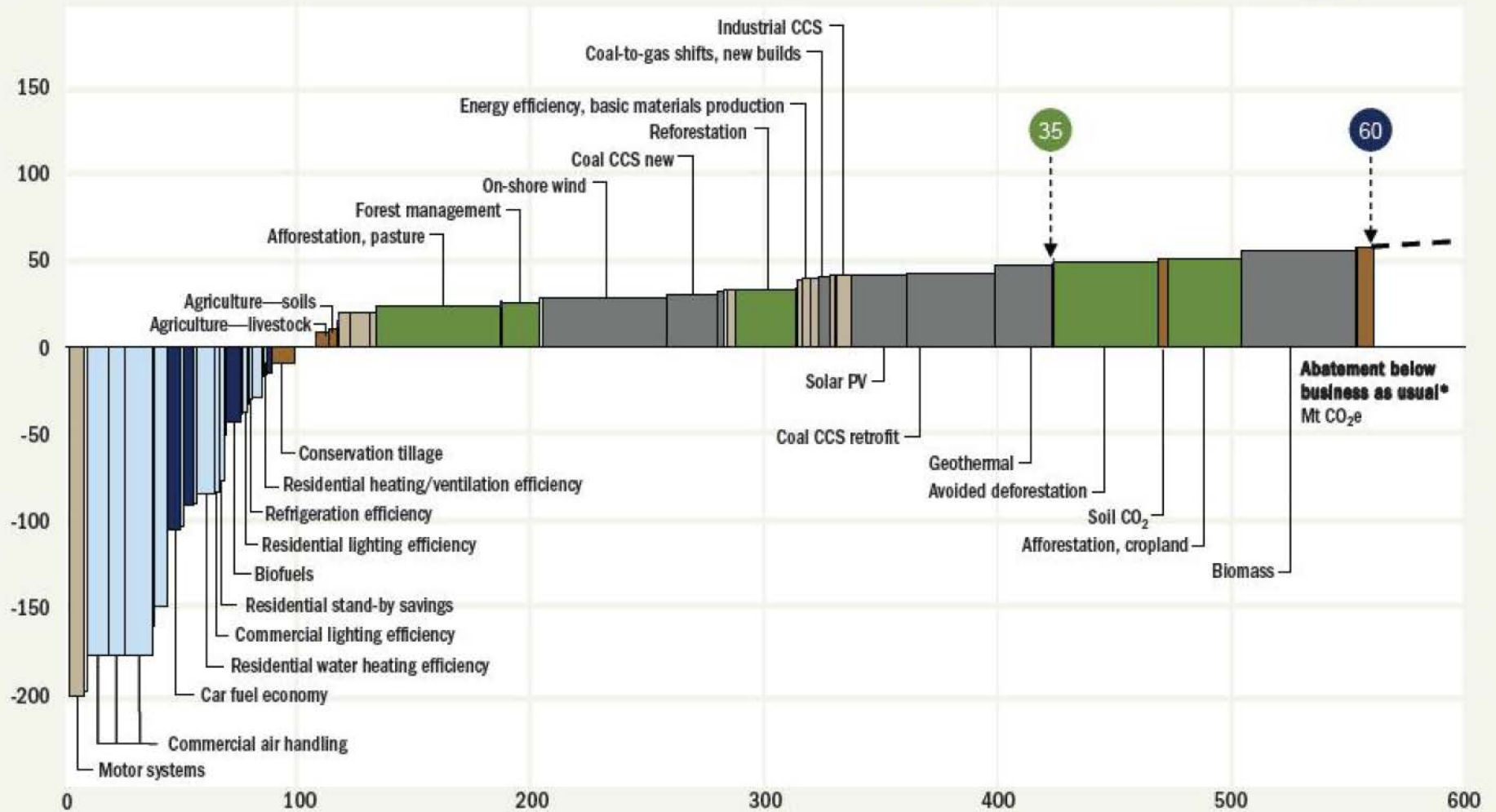
## Smart Energy Savings Plan



# Australian 2030 carbon abatement cost curve

Cost of abatement  
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# Predicted Impact of Energy Policies on Emissions from Queensland Electricity Generation Sector

