Legislating for a clean energy future. Are we there yet?

Dr David Leary
Senior Research Fellow
Faculty of Law, UNSW

Overview

- Does Australia have the legislative frameworks in place to transition to a clean energy future?
  - Clean energy vs renewable energy
- Pricing carbon-Emissions trading scheme
- Other measures

David Leary, *Renewable Energy Law* (Federation Press, 2012)

Image: The Punch

- *"Today I was very pleased to be able to support the Prime Minister in introducing the carbon price legislation. Eighteen bills were introduced prior to question time in what is one of the most important economic and environmental reforms undertaken in the country.* ***It is the culmination of a debate that has been running for the better part of two decades. We have seen 35 parliamentary inquiries into climate change since 1994****."*

  - **Minister for Climate Change and Energy Efficiency, Greg Combet speaking in Parliament 13 September 2011**

The process for negotiating the legislation

Gillard Government

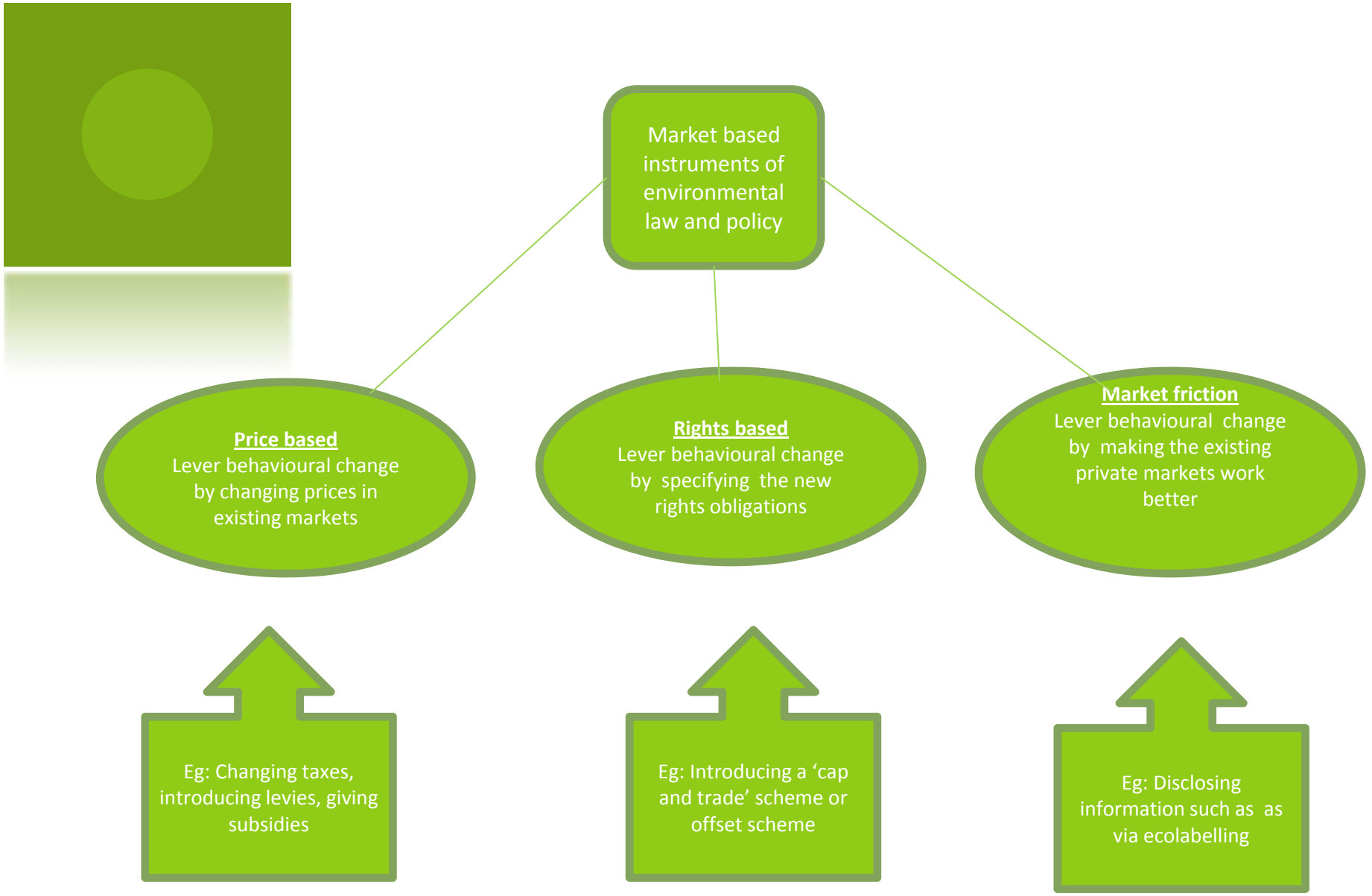
- 2010 election result
- Multi-party climate change committee
- February 2011- ETS announced with a fixed price for first 3 years
  - Note despite political rhetoric it is an Emissions Trading Scheme (ETS) not a Carbon Tax!
    - "Cap and trade"
  - Price on carbon or action on climate change

EMISSIONS TRADING SCHEME

- Clean Energy Bill 2011
- Clean Energy (Consequential Amendments) Bill 2011
- Climate Change Authority Bill 2011
- Clean Energy Regulator Bill 2011
- Clean Energy (Unit Shortfall charge–General) Bill 2011
- Clean Energy (Unit Issue Charge–Fixed Charge) Bill 2011
- Clean Energy (Unit Issue Charge–Auctions) Bill 2011
- Clean Energy (Charges–Customs) Bill 2011
- Clean Energy (Charges–Excise) Bill 2011
- Clean Energy (International Unit Surrender Charge) Bill 2011
- Ozone Protection and Synthetic Greenhouse Gas (Manufacture Levy) Amendment Bill 2011
- Ozone Protection and Synthetic Greenhouse Gas (Import Levy) Amendment Bill 2011
- Clean Energy (Fuel Tax Legislation Amendment) Bill 2011
- Clean Energy (Excise Tariff Legislation Amendment) Bill 2011
- Clean Energy (Customs Tariff Amendment) Bill 2011
- Clean Energy (Household Assistance Amendments) Bill 2011
- Clean Energy (Income Tax Laws Amendments) Bill 2011
- Clean Energy (Income Tax Rates Amendments) Bill 2011

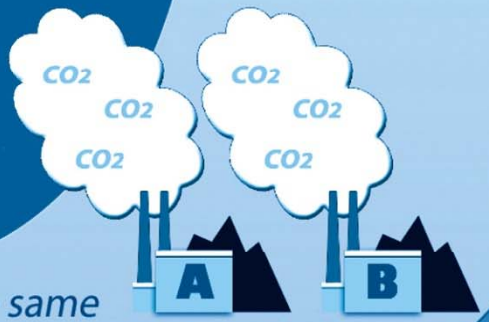
EMISSIONS TRADING SCHEME -A MARKET BASED MECHANISM

- Increasingly favoured in environmental law as they
  - Cheaper and more flexible than command and control
  - Economically efficient
  - Internalise environmental impacts and costs/value of ecosystem services in market decisions
- Garnaut Climate Change Review *Update paper No 6 (2011)*
- Market based policy mechanisms reflect the dominance of neo-liberal approaches to environmental governance in Australia.
- Four key elements are present in such an approach:
  - (1) a strong reliance on market forces and metrics in policy and legislative design;
  - (2) an appeal to the benefits of private property rights;
  - (3) an emphasis on the role of non-state actors such as business; and
  - (4) a strong clear shift away from state centered, command and control regulatory approaches. (Toke & Lauber 2007)



(Adapted from Whitten, van Bueren & Collins 2003)

Cap-and-trade systems have been used to control certain power plant emissions in the past; one may soon be applied to carbon dioxide. In its most basic form, the process begins when a limit is set on the amount of CO_2 a source can emit over a given time. Allowances for emissions can be given for free or auctioned off; if auction prices aren't carefully regulated, high costs will be passed to consumers.



Plants A and B emit the same amount of carbon dioxide gas before the cap

After a cap is set, Plant A invests in technology to reduce its emissions; Plant B continues with business as usual...

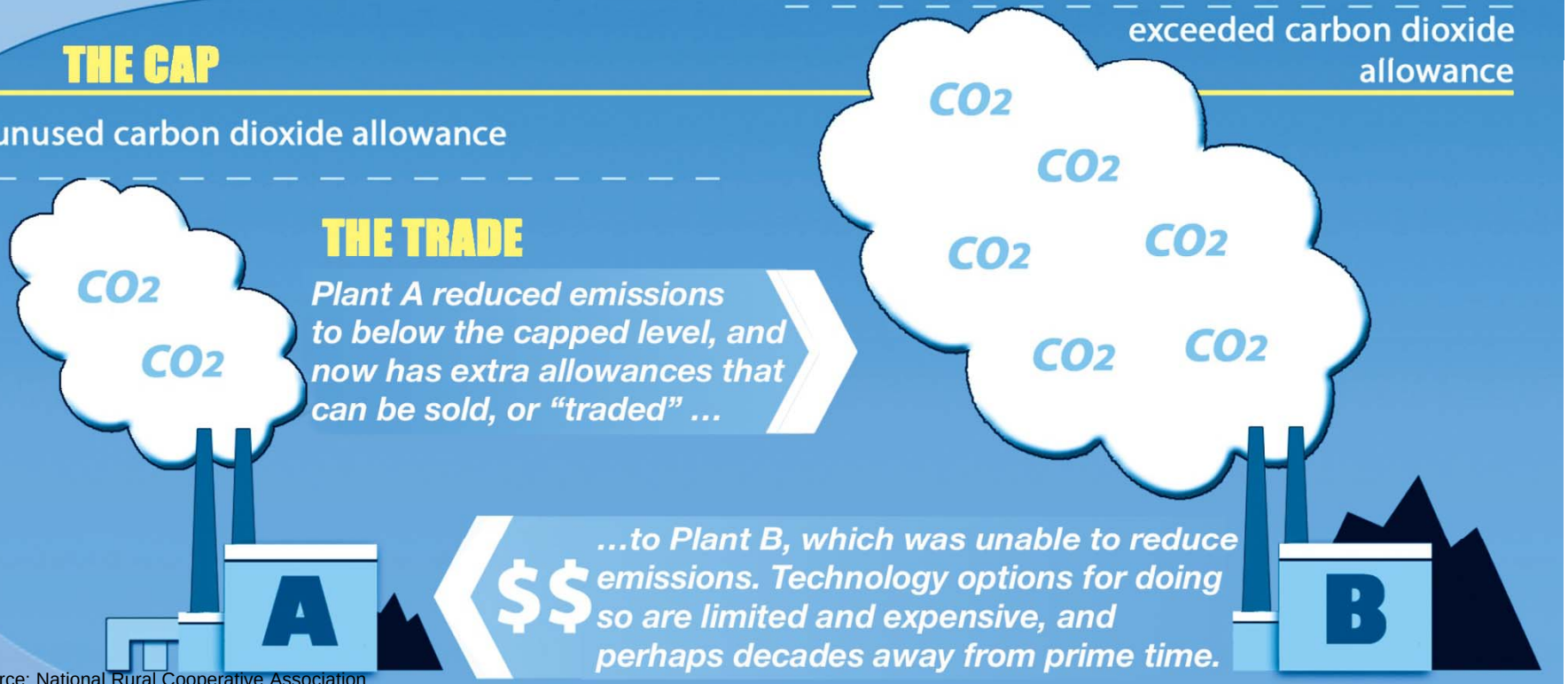
exceeded carbon dioxide allowance

THE CAP

unused carbon dioxide allowance

THE TRADE

Plant A reduced emissions to below the capped level, and now has extra allowances that can be sold, or "traded" ...



...to Plant B, which was unable to reduce emissions. Technology options for doing so are limited and expensive, and perhaps decades away from prime time.

Source: National Rural Cooperative Association

Emissions trading scheme -Scheme Architecture

- Builds on and utilises data captured under the *National Greenhouse and Energy Reporting Act 2007 (Cth)*
- Commences 1 July 2012
- 5 % reduction over 2000 levels by 2020 (not explicit but implicit in structure)
- 80 % by 2050- aspirational or real?
- First 3 years fixed price
  - 2012-13 -$23 per tonne
  - 2013-14- $24.15 per tonne
  - 2014-2015 $25.40 per tonne

Emissions trading scheme -Scheme Architecture

- Flexible cap-and trade ETS from 1 July 2015
- Market price- auctioning of permits
  - Price ceiling first 3 years- $20 above international price for 2015-2016
  - Price floor $15 rising at 4% per annum
- First five years of cap under flexible scheme to be announced in 2014 Budget
- Caps announced yearly so 5 years of caps known in advance
- Criteria for determining caps legislated
- If no caps determined (or if Parliament disallows regulations) then default cap to ensure reach 2020 target

Emissions trading scheme -Scheme Architecture

- Covered emissions
  - Stationary energy, industrial processes, fugitive emission (i.e. emissions from production processing etc of fossil fuels (other than decommissioned coal mines) and emissions from non-legacy waste
  - Separate legislation applies to some business transport emissions, non-transport use of liquid and gaseous fuels and synthetic greenhouse gases
- Does not apply to
  - agriculture and land sectors
  - Emissions from biofuels and biomass and methane from landfill activities
  - Aviation

Emissions trading scheme -Scheme Architecture

- Covers only four of the six Kyoto protocol greenhouse gases
  - Carbon dioxide
  - Methane
  - Nitrous oxide and
  - Perfluorocarbons from aluminium smeltering

Emissions trading scheme -Scheme Architecture

- Emissions threshold 25,000 tonnes of CO_2-e
  - the “top 500” biggest polluters
- International linking
  - Not during the fixed price period
  - Kyoto Protocol units (CERs, CDM, JI etc)
  - Possible future linkage to New Zealand and EU ETS
- Eligibility of units from the Carbon Farming Initiative
- Treatment of voluntary action- taken into account in setting caps
  - Eg GreenPower

EMISSIONS TRADING SCHEME -GOVERNANCE

- Creation of Climate Change Authority
  - Independent body to provide expert advice on key aspects of carbon pricing and other mitigation initiatives
  - Recommendations on
    - Future caps
    - National trajectories and long-term emission budgets
    - Meeting target
    - Reforms to carbon pricing mechanism
    - Other aspects eg Renewable energy target, Carbon Farming Initiative

EMISSIONS TRADING SCHEME -GOVERNANCE

- Clean Energy Regulator
  - the carbon pricing scheme
  - Renewable energy target
  - National Greenhouse and Energy Reporting System
  - Carbon Farming Initiative
- Productivity Commission Reviews

Emissions trading scheme -Assistance

- Household assistance
  - 50% of carbon pricing mechanism revenue used for household assistance
  - Pension increases
  - Tax cuts-raising tax free threshold limit
- Assistance to eligible emissions intensive trade exposed industries
  - Free permits

EMISSIONS TRADING SCHEME -OTHER FEATURES

- Energy Security Fund
  - help to transition electricity generation system from high to low emisssions generation
  - Closure of highly emissions intensive coal fired power stations
- Major investment in renewable energy
  - Clean Energy Finance Corporation- $10 billion new funding (loans, loan guarantees, equity investments)
  - Australian Renewable Energy Agency ($3.2 billion of existing funding)
  - **Note these aspects not included in legislation currently before parliament but will be legislated later**

Carbon Farming Initiative

- Carbon Farming Initiative- a carbon offsets or credits scheme involving farmers, forest growers and landholders
- Credits will be purchased and used by individuals or companies to cancel out or 'offset' emissions
- Carbon credits can be used to offset emissions voluntarily or to meet regulatory requirements.

(Source: Department of Climate Change and Energy Efficiency)

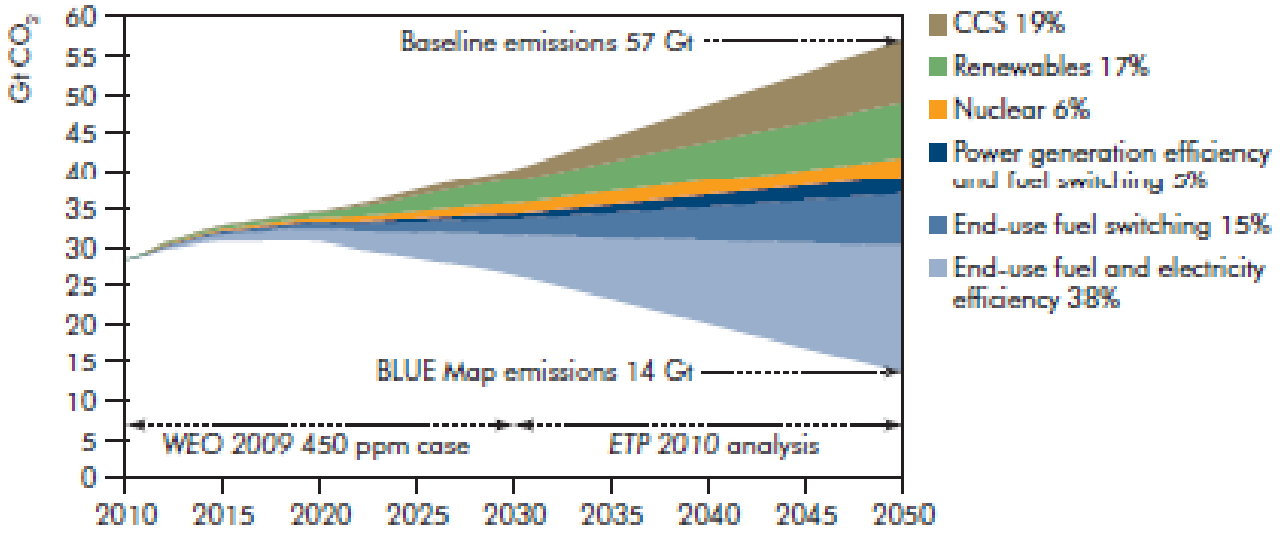
CARBON FARMING INITIATIVE

- Scheme created by
  - *Carbon Credits (Carbon Farming Initiative) Bill 2011*
  - *Australian National Registry of Emissions Units Bill 2011*
  - *Carbon Credits (Consequential Amendment) Bill 2011*
  - Passed by Parliament on 23 August 2011 (in force December 2011)
- Carbon credits represent abatement of greenhouse gases which is achieved by:
  - Biosequestration projects (i.e removing carbon dioxide from atmosphere e.g. Reforestation)
  - Native forest protection projects (i.e. protection form clearing and clear felling)
  - Emission avoidance projects (reducing emissions from savannah burning, agricultural protection and landfill)
  - Excluded projects- Minister may exclude projects that could adversely impact water availability, food production, conservation of biodiversity or employment (Source: McGregor 2011)
- Methodology

Source: Nicholson

WHAT TECHNOLOGY DO WE WANT TO SEE GROW?

Figure ES.1 ▶ Key technologies for reducing CO_2 emissions under the BLUE Map scenario



Source: IEA 2010

Renewable Energy Target

- *Renewable Energy (Electricity) Act 2000 (Cth)*
  - seeks to promote growth in the use of renewable energy sources for electricity generation
  - by a scheme involving the issue of certificates for the generation of electricity using eligible renewable energy sources and
  - requiring liable entities to surrender a specified number of certificates for the electricity they acquire during a year
  - where a liable entity did not have enough certificates to surrender, the liable entity was obliged to pay a renewable energy shortfall charge
- Under the MRET scheme a target was established of 9,500 GWh or 2 per cent of electricity to be sourced from renewable energy sources by 2010

Basic concepts: 'eligible renewable energy source' (s17)

- hydro
- wave
- tide
- ocean
- wind
- solar
- geothermal-aquifer
- hot dry rock
- energy crops
- wood waste
- agricultural waste
- waste from processing of agricultural products
- food waste
- food processing waste
- bagasse
- black liquor
- biomass-based components of municipal solid waste
- landfill gas
- sewerage and biomass-based components of sewerage; and
- any other source prescribed by the regulations

Renewable Energy Target

- The 'Howard Years of Uncertainty'
  - A period of uncertainty and undermining of investor confidence
  - 2002 *Independent Review of Energy Market Directions* (the 'Parer Review')
    - Recommended MRET be abolished
  - Section 162 of the MRET Act → 2003 *Tambling Review*
  - Wide ranging review but final report broadly supportive of MRET Act.

RENEWABLE ENERGY TARGET

- *Renewable Energy (Electricity) Amendment Act 2009 (Cth)* (and cognate legislation)
  - Increase from 9,500 GWh to 45,000 GWh by 2020.
  - target extended from 2020 to 2030.
- Solar Credits (REC Multiplier) – eligible small generation units (small-scale solar PV, wind and hydro electricity systems) receive Solar Credits.
  - Solar Credits applied to eligible systems installed on or after 9 June 2009.
- Partial exemption from liability under the scheme in respect of emissions intensive trade exposed activities.
- Existing waste coal mine gas power projects that meet RET eligibility criteria able to create RECs up to an annual cap, for a limited period, as a transitional measure to underpin the continued viability of these projects.
- State based certificate schemes transitioned into the national RET.
- A review of the operation of the RET as soon as practicable after 31 December 2013.

RENEWABLE ENERGY TARGET

- From 1 January 2011 RET scheme divided into two parts:
  - the Large Scale Renewable Energy Target (LRET); and
  - The Small Scale Renewable Energy Scheme (SRES)
- Two separate markets with RECs are reclassified into two certificate types:
  - large-scale generation certificates (LGCs) created from generation of electricity by accredited power stations; and
  - small-scale technology certificates (STCs) created in relation to the installation of solar water heaters and small generation units.

Large Scale Renewable Energy Target

- ***Annual Targets 2011-2030***

Year	Target (GWh)
2011	10 400
2012	16,338
2013	18,238
2014	16 100
2015	18 000
2016	20,581
2017	25,181
2018	29,781
2019	34,381
2020-2030	41,000

Directed at Large Scale Renewable Energy projects aims to deliver the 2020 target 20% by 2020

Image Source: ORER

OFFENCES UNDER THE *RENEWABLE ENERGY (ELECTRICITY) ACT 2000 (CTH)*

Section	Offence	Penalty
24(1)	Improper creation of certificates (Strict Liability)	1 Penalty unit per certificate
24(3)	Improper creation of certificates	5 Penalty units per certificate
24A	Improper creation of certificates -Civil penalty	Individual – 1 Penalty unit per certificate (up to 10,000 penalty units) or if under 100 certificates up to 100 Penalty Units Body Corporate – 5 Penalty unit per certificate (up to 50,000 penalty units) or if under 100 certificates up to 500 Penalty Units
24B	False information resulting in improper creation of certificates - civil penalty	Individual – 100 Penalty Units Body Corporate – 500 Penalty Units
76(1)	3rd party failing to comply with Regulator's notice	30 Penalty units
78	Liquidator failing to comply with Regulator's notice	30 Penalty units
82	Receiver failing to comply with Regulator's notice	30 Penalty units
86	Agent failing to comply with Regulator's notice	30 Penalty units
109	Offences related to Authorised Officer identity cards	1 Penalty unit
113	Failure to provide information to authorised officer	6 months imprisonment
124	Failure of occupier (of warrant premises) to provide reasonable facilities and assistance	10 Penalty units
125A(4)	Failure to comply with notice from Regulator re the provision of information.	20 Penalty units
125E	False or misleading evidence in purported compliance with s125A	12 months imprisonment
127	Incorrect divulging of protected information by Regulator or ORER staff member	2 years imprisonment
154(1)	Failure to provide documents within specified time(Strict Liability)	30 Penalty units
154(3)	Failure to provide documents within specified time	6 months imprisonment
154N(1)	Civil penalties for executive officers of bodies corporate	Not more than the maximum pecuniary penalty that could be imposed if the officer had committed the contravention referred to in paragraph 154N(1)(a)
160(7)	Failure to comply with requirement under s160	30 Penalty units

1 penalty unit =$110

Table: Source ORER

Feed-in tariffs

Image: Courtesy Sydney Morning Herald

- Feed-in tariff= a premium paid for electricity fed back into the network by renewable energy generating source
- Feed-in tariffs are “in essence, guaranteed prices for electricity supply [which] cover the cost of generation plus a “reasonable profit” to induce developers to invest” (NERSA 2009)
- Two types:
  - Net= only paid for surplus energy exported back to the grid
  - Gross = paid for all electricity generated
  - Gross offers the greater financial incentive

FEED-IN TARIFFS

- Elements
  - a guaranteed grid connection
  - a long term contract and
  - a fixed price sufficient for a reasonable return on investment
- Feed in tariffs more than 46 jurisdictions including Germany, Spain, parts of the USA, China and Australia
- In Australia state based. No national scheme
- Problems with implementation and policy uncertainty

Feed-in Tariff (by State)

Clean Energy Council

Feed-in Tariff	ACT	NSW	QLD	SA	TAS	WA	VIC
Policy / start Date	Stage 1 (Micro) commenced 1 March 09. Stage 1 closed midnight 31 May 2011. For more information click here. Stage 2 (Medium) commenced 7 March 2011	Feed-in Tariff to commenced on 1 January 2010. Amended Oct 28 2010. Applications are now on hold. No new applications to the Scheme will be considered from midnight 28 April 2011.	Solar Scheme Bonus commenced 1 July 08	Feed-in Tariff commenced 1 July 2008	Feed-in Tariff to be announced. Currently only retail offering	Feed-in Tariff to commenced 1 August 2010. In addition to Renewable Energy Buyback Scheme	Premium Feed-in Tariff commenced 1 Nov 2009. Fair & Reasonable Tariff (1:1) to remain
Generation eligible	Gross	Gross	Net	Net	Current retail offer – Net FIT - TBC	Net	Premium FIT - Net
Tariff Level	Systems installed from 1 July 2010: 45.7 cents / kWh	20 cents / kWh	44 cents / kWh	44 cents / kWh	Current retail offer – at 20 cents / kWh FIT - TBC	FIT: 40 cents / kWh Renewable Energy Buyback Scheme: *7 cents / kWh (from 1st August 2010) A new rate of 20 cents per kilowatt hour (c/kWh) (in addition to Renewable Energy Buyback Scheme) will apply to all applications received from 1 July 2011.	Premium FIT for solar PV - 60 cents / kWh F&R Tariff - at least 1:1
Size / Eligibility	Stage 1 (Micro) & - Domestic small business, education for <30kW Stage 2 (Medium) – Domestic small business, education for <30kW-200kW Category capacity cap 15MW	Domestic, small business, schools, community organisations for < 10kW or less. Limit of one Scheme application per premises.	Domestic and small business for < 5kW or less. Limit of one Scheme application per premises.	Domestic and small business for < 10kW - single phase connection < 30kW - three phase connection. Capacity measured from peak output of solar panels	Current retail offer - no restriction FIT - TBC	FIT – Domestic Synergy:< 5kW Horizon Power: <10kW per phase (30kW total) Buyback - Domestic, educational < 10kW	Premium FIT – Domestic, small business, schools, community facilities < 5kW or less. Capacity measured from nameplate capacity of panels. F&R Tariff - Domestic and small business

Source: Clean Energy Council

Regulation of specific technologies- Geothermal energy

- Legislation in place to develop and regulate geothermal energy in all States and the Northern Territory (but not the A.C.T.)
- Specific legislative regimes for geothermal
  - *Geothermal Energy Act 2010 (QLD)*
  - *Geothermal Resources Act 2005 (Vic)*
  - *Geothermal Energy Act 2009 (N.T.)*
- Regulated as mining
  - *Mining Act 1992 (NSW)*
  - *Mineral Resources Development Act 1995 (Tas)*
- Regulated under petroleum legislation
  - *Petroleum and Geothermal Energy Act 2000 (S.A.)*
  - *Petroleum and Geothermal Energy Resources Act 1967 (W.A.)*

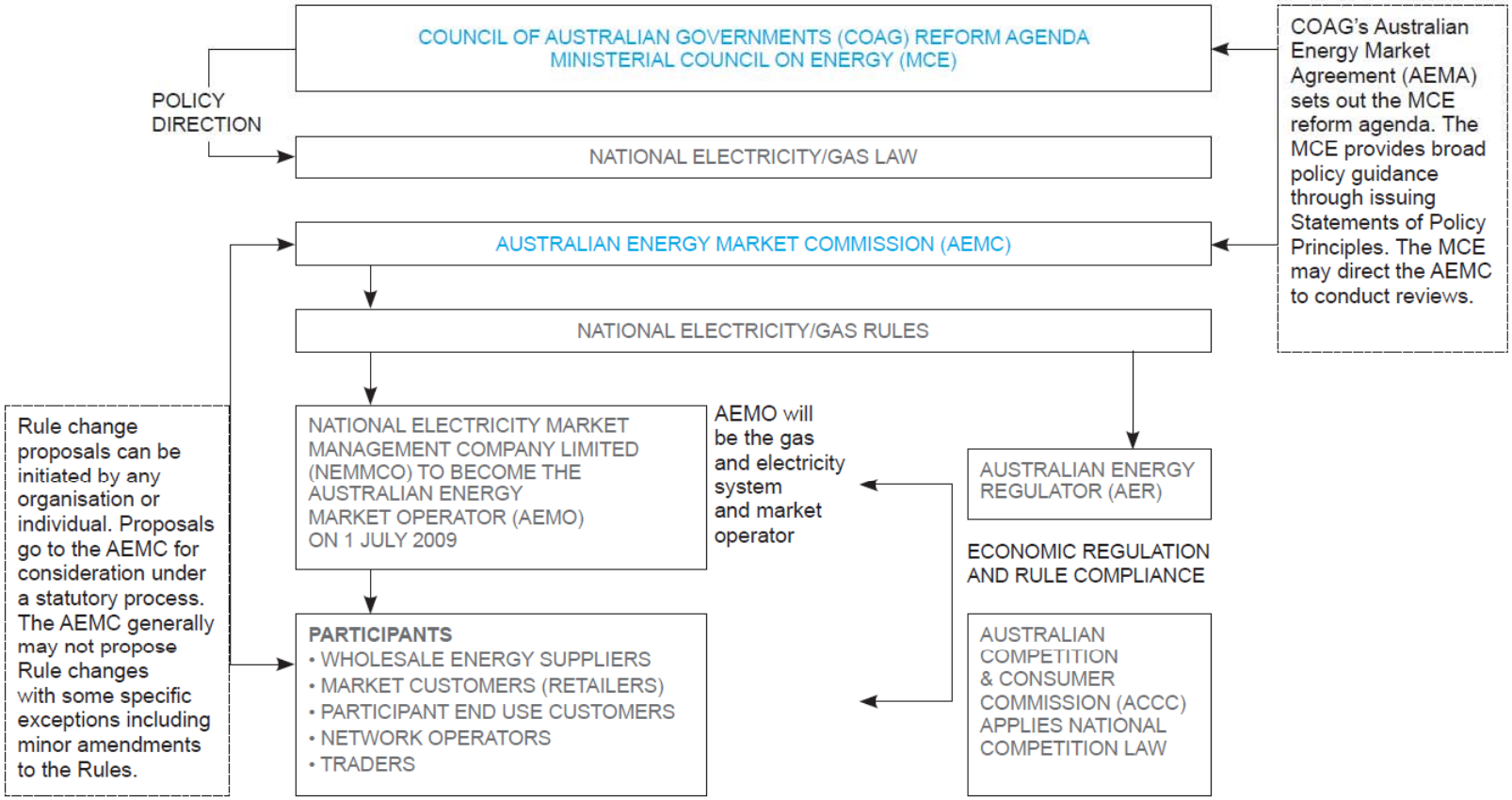
Regulation of specific technologies-Geothermal energy

- Common features
  - System of exploration permits, retention leases and mining leases
  - Prohibition of exploration and exploitation without permits and leases
  - Reservation of title in geothermal resources to the Crown
  - Royalties
- Differences
  - Definitions of geothermal energy
  - Method of allocation of permits and licences- tender vs over the counter
  - Variable attempts to resolve conflicts with other minerals , CCS and other land use
  - Public and stakeholder consultation
  - Regulation of environmental impact and OH&S

Regulation of specific technologies-small scale (household) solar

- Legislative reform in the area of Solar access rights
  - Small scale (household) solar
  - Extensive academic studies over the last 30 years (e.g. work by Bradbrook 1984; Law Reform Committee of South Australia 1978; South Australia Department of Mines and Energy 1982; Bradbrook 2010)
  - Inconsistency in current approaches by regulators across and within Australian jurisdictions
    - Ad hoc
    - Increased cost
    - Delay
    - A system that is positively discouraging the uptake of solar energy
  - A dual planning law and property rights issue
    - common law property rights-easements, restrictive covenants etc
    - Overseas models- e.g. solar access permits (Watt and Passey 2009)
  - time to turn ideas into action by policy makers and develop specific proposals for legislative reform

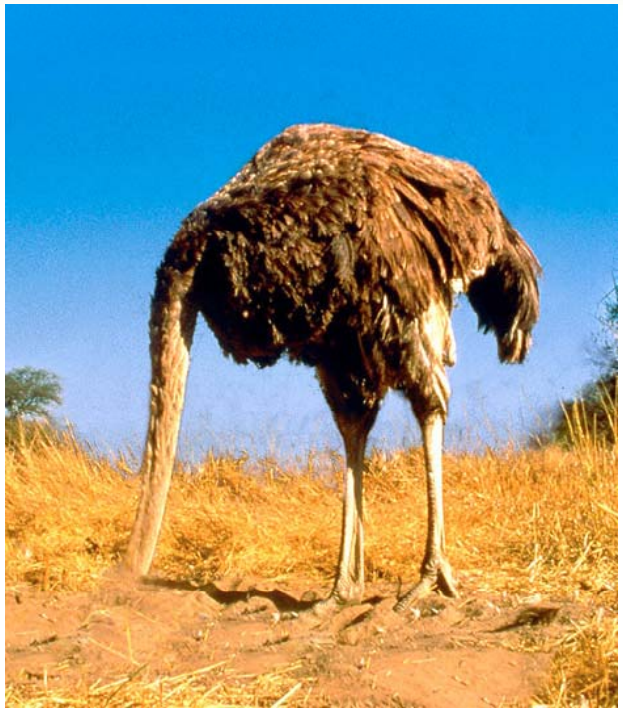
Connecting renewable energy to the National Electricity Market



Source: AEMC

Connecting renewable energy to the National Electricity Market

- Integration of renewable energy to the NEM-especially wind energy
  - Who pays the costs
- Challenges of distributed energy



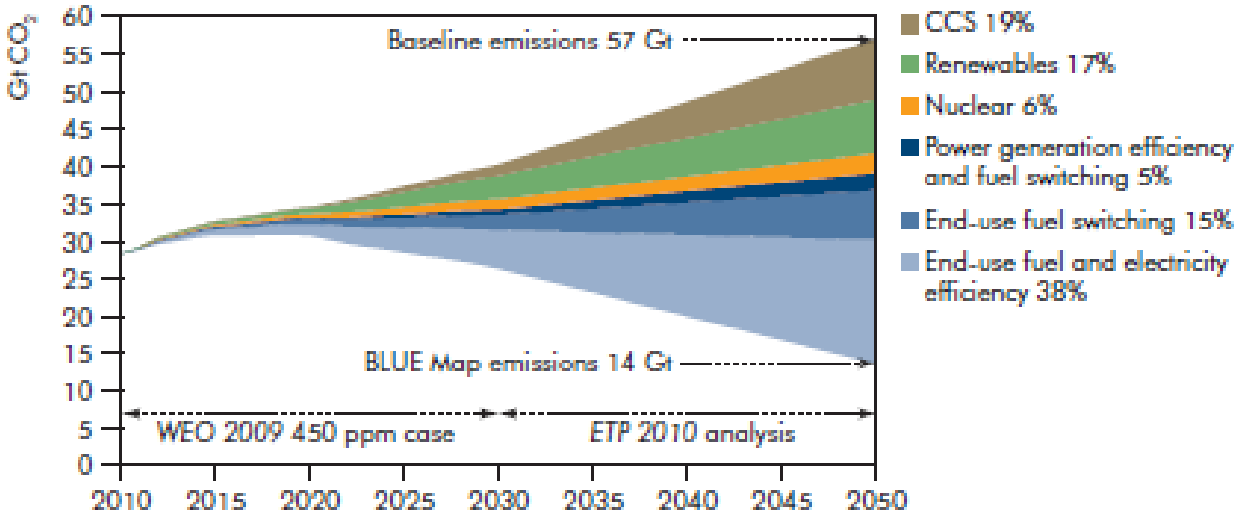
Source: http://images3.wikia.nocookie.net/__cb20110709060703/glee/images/a/a8/Ostrich_head_in_sand.jpg

CONSUMER PROTECTION AND RENEWABLE/CLEAN ENERGY

- ACCC- *Green Marketing and the Trade Practices Act* (2008); *Green Marketing and the Australian Consumer Law* (2011)
- *Competition and Consumer Act 2010* (Cth)
  - Misleading and deceptive conduct (s 18(1)
  - ACCC v *Global Green Plan Ltd*
    - RECS and Greenpower
    - Misleading and deceptive conduct
    - Representations as to environmental benefit
    - Representations as to approval or affiliation
- Green marketing-*ACCC* v *GM Holden Ltd* [2008] FCA 1428
- Carbon offsets- *ACCC* v *Prime Carbon Pty Ltd* (unreported) (2010)
- ACCC and the Carbon Price

NUCLEAR POWER

Figure ES.1 ▶ Key technologies for reducing CO_2 emissions under the BLUE Map scenario



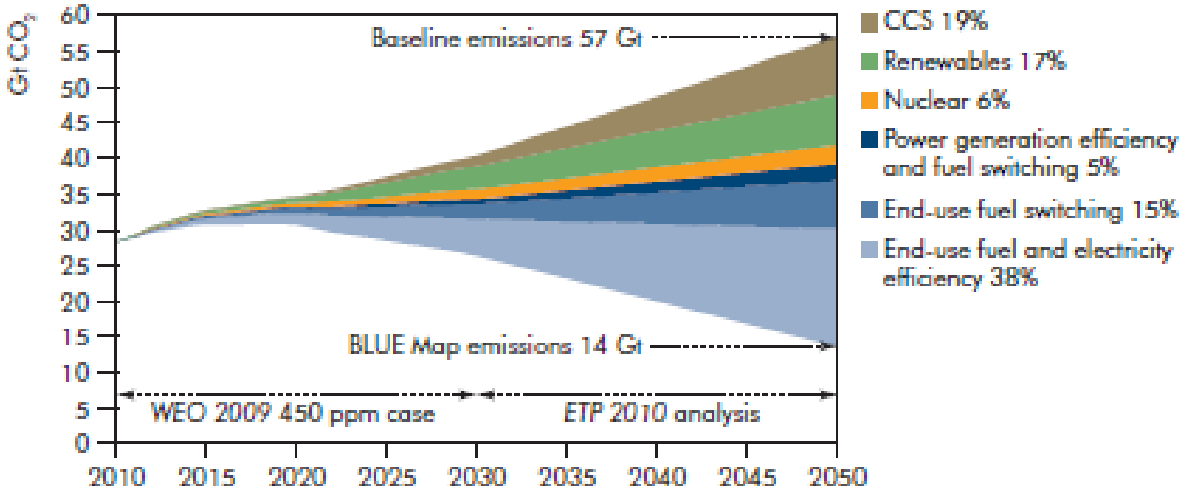
Source: IEA 2010

Nuclear Power

- Lack of public acceptance
  - Environmental concerns
  - Safety
  - Terrorism
  - Nuclear non-proliferation (4th generation plutonium reactors)
- Cost-Insurance underwritten by the state
- *Australian Radiation Protection and Nuclear Safety Act 1998 (Cth)*
  - Section 10 specifically prohibits the construction of
    - a nuclear fuel fabrication plant;
    - a nuclear power plant;
    - an enrichment plant; or
    - a reprocessing facility.

Carbon Capture and Storage

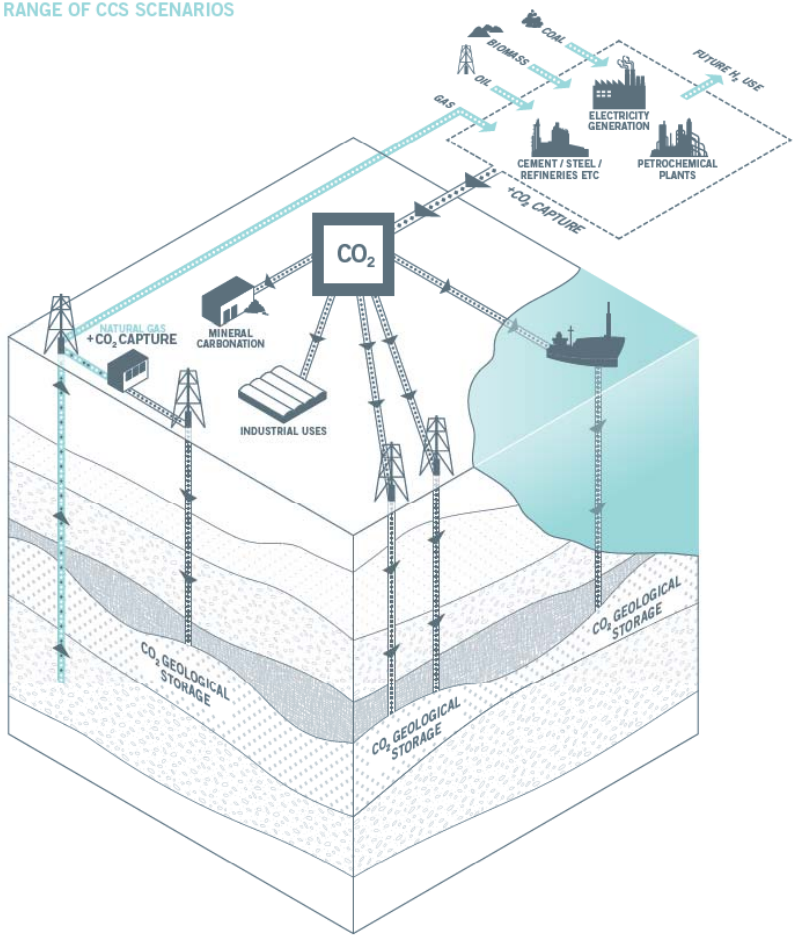
Figure ES.1 ▶ Key technologies for reducing CO_2 emissions under the BLUE Map scenario



Source: IEA 2010

Carbon Capture and Storage

FIGURE 2 - A RANGE OF CCS SCENARIOS



AFTER CO2CRC.

Image: Global CCS Institute

Carbon Capture and Storage

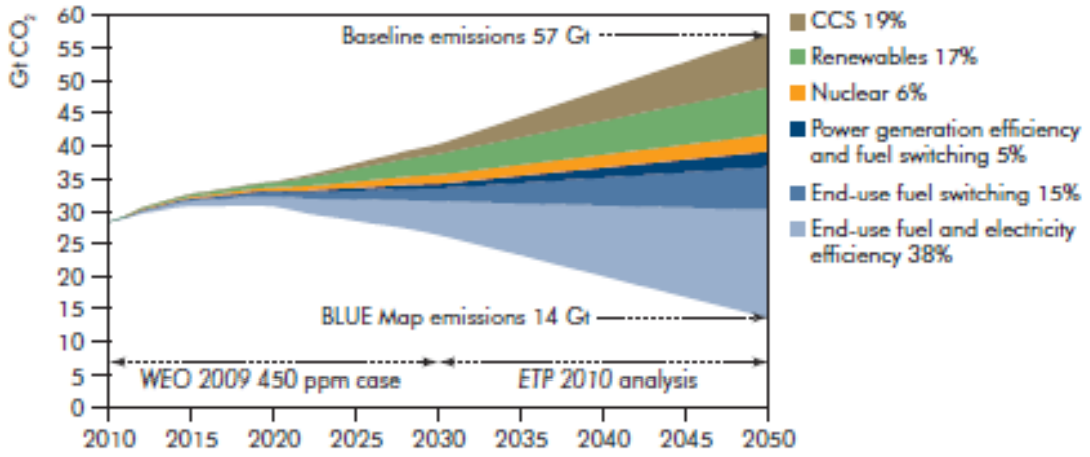
- Unproven technology?- feasible 2024-2050 at the earliest if at all
- Cost
- Funding
- Environmental impact

Carbon Capture and Storage

- Regulatory frameworks
  - *Offshore Petroleum Amendment (Greenhouse Gas Storage) Act 2008 (Cth)*
  - *Greenhouse Gas Geological Sequestration Act 2008 (Vic)*
  - *Greenhouse Gas Storage Act 2009 (Qld)*
  - *Petroleum and Geothermal Energy Act 2000 (SA)*
  - WA proposals
  - NSW and Tas no legislation related to CCS
- Regulates injection and storage of greenhouse gases
- Property rights and title for CCS exploration and injection
- Process for managing conflicts with petroleum industry and other users
- Management of liabilities

ENERGY EFFICIENCY

Figure ES.1 ▶ Key technologies for reducing CO_2 emissions under the BLUE Map scenario



Source: IEA 2010

Energy Efficiency

- Buildings account for 40% of energy used in OECD Countries (IEA & OECD 2008)
- Significant potential for savings in energy usage through energy efficiency
- Potential measures
  - Building codes promoting energy efficiency in new buildings
  - Mandatory energy efficiency standards buildings and electrical appliances
  - Window glazing
  - Insulation
- *Building Energy Efficiency Act (Cth) 2010*
  - Aims to improve the identification and evaluation of energy efficiency opportunities by large energy using businesses to encourage implementation of cost effective energy efficiency opportunities
  - Required to identify but not to implement

CONCLUSION

- Does Australia have the legislative frameworks in place to transition to a clean energy future?
  - Largely, yes!
  - The end of the 'era of legislating' and the beginning of the 'era of implementation'
  - Still further reform needed in specific areas
    - Eg NEM, Planning law, specific technologies (wave & tidal)
- Energy efficiency the 'low hanging fruit' but policy makers are yet to "locate the orchard"
- Future focus on improving governance and policy and legislative consistency