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Australian Climate Change Policy and its Implications for AP6 Countries

Dr Iain MacGill

Research Coordinator

CEEM, UNSW

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The Australian energy context

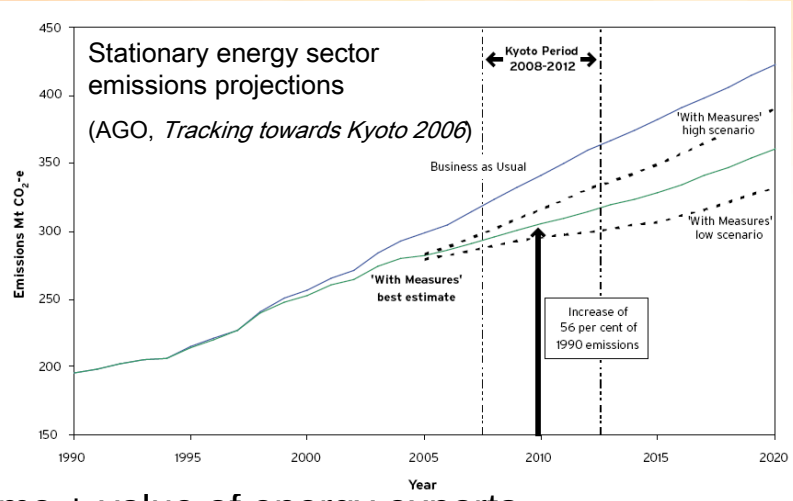
- Large, low cost + high quality coal, gas and U reserves
  - A major energy exporter – World #1 Coal, #2 Uranium, #5 LNG
  - An energy intensive economy c.f. other industrialised nations
  - Amongst the world's highest per-capita greenhouse emissions

% of Global...	Population	GDP	Energy Production	Energy Consumption	Fossil-fuel GHG emissions
Australia	*0.3*	*1.3*	*2.3*	*1.0*	*1.3*
China	21	5.4	14	15	18
India	17	1.7	4.2	5.1	4.1
United States	4.6	31	15	21	22
Japan	2.0	14	0.9	4.8	4.6
Korea	0.8	1.8	0.3	1.9	1.7
Germany	1.3	5.6	1.2	3.1	3.2

(IEA, *World Energy Statistics 2006*)

A challenging context for climate policy

- Energy-related emissions climbing – 70% of total
  - Estimated +35% over 1990–2004, projected +56% over 1990–2010



- Growing volume + value of energy exports

Complex Federal jurisdictional arrangements

- Federal Government
  - No express energy or environmental powers
  - Tax, corporate, trade + external affairs powers
- State Governments
  - Traditionally made most energy + env. policy
- Council of Australian Governments (CoAG)

  - Cooperative national policy incl. energy industry restructuring + env. regulation

Energy Governance arrangements

  - Ministerial Council on Energy (MCE) sets policy objectives
  - Australian Energy Market Commission (AEMC) makes rules
  - Australian Energy Regulator (AER) ensures compliance.

Australian climate policy framework

- Federal Govt
  - 108% Kyoto target; has not ratified but commitment to still meet
    - "ineffective, no action by developing countries, no US ratification"
  - Advocates R&D&D of new techs. c.f. deployment of existing options
  - Key player in AP6 with US,, Japan, South Korea, China + India.
    - "Voluntary, non-legally binding framework for cooperation to facilitate development + diffusion of existing + emerging techs + practices"
- State Govts
  - Some urging Kyoto ratification, setting aspirational longer-term targets, establishing market-based deployment schemes

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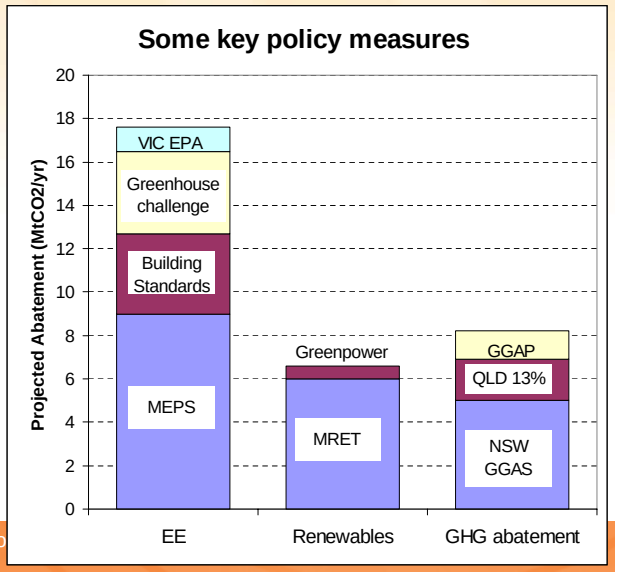
Current Australian Climate Policy

- *Federal Govt:* MRET, EE regulation, voluntary, $ incentives
- *State Govts:* NSW GGAS, QLD 13% Gas + VIC RET & EPA
- Projected outcomes
  - energy-related emissions +56% 1990–2010 (BAU + 66%)
  - Considerable overall uncertainty
    - 2003 inventory +/-5%
    - 2010 emissions scenarios range 102-115% (Kyoto +108%)

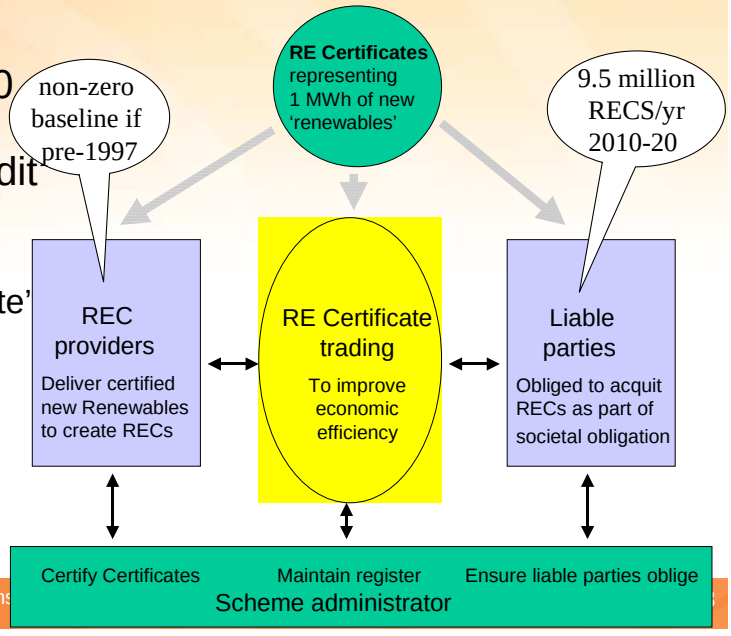


Energy industry restructuring

- Objectives
  - CoAG energy objectives include GHG abatement but not in National Electricity + Gas Laws. Still, some expectation would reduce emissions
- Outcomes
  - restructuring successful to date wrt economic efficiency but likely has increased emissions from BAU
- Possible reasons
  - Lower energy prices => reduced EE, immature gas market, low-cost coal
  - *Only partial restructuring to date*; retail market design incomplete, level playing field for DG + renewables?
- **Now**, growing focus on retail market design (eg. Smart Meters) + rules for Distributed Generation (eg. connection codes, network pricing).

Mandatory Renewable Energy Target (MRET)

- GHG reduction + industry development objectives
- Original target of 2% 'new' renews 2010-2020
- Novel 'baseline and credit' trading scheme
  - Similar to 'green certificate' schemes in Europe, RPS in United States



MRET Outcomes

- Considerable success
  - Now operating over five years – ramping target easily met
  - Considerable new investment + competitive REC mkt (c.f. EU experience?)
  - Technology neutral flexibility has been valuable
  - Seems well suited to facilitating high renewable penetrations: *exposes project developers + owners to locational + temporal energy market signals*
- **However**
  - Sufficient investment already to meet very modest target
  - Problematic baselines for pre-scheme generators, poor transparency
- **Now**, some States implementing own MRET style schemes in absence of Federal Govt. expansion of MRET; QLD has MRET for Gas Generation

Energy efficiency

- Equipment + Appliance Standards (MEPS)
  - effective program since 1992 on growing range of appliances + equipment
  - Major challenge keeping pace with tech. progress via stakeholder process
- Building Standards
  - State Govt. residential standards => BCA + extension to commercial sector
- Greenhouse Challenge
  - Early voluntary joint Govt.–Industry initiative for reducing industry emissions
  - Negotiated confidential 'no or low regret' abatement plans with self reporting
  - However, credibility questioned b/c poor transparency + abatement estimates
  - **Now**, has independent verification + mandatory participation by large emitters,

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Carbon pricing

- Federal Govt
  - Has rejected ETS b/c “absence of similar schemes in key trading partners”
  - Some project based tendering for abatement via GGAP
- NSW implemented world’s first mandatory GHG ETS (2003)
  - ‘baseline + credit’ ETS for GHG reductions by low-emission generation, methane capture, Energy Efficiency, sequestration
- **Now**, all State Govts. calling upon Federal Govt. to implement ETS, will establish multi-state scheme under State jurisdiction should it not
- Federal government revisiting ETS – *key issue is investor uncertainty*
  - Govt.–Business Task Group reporting on *“nature of workable global ETS including us + additional steps here consistent with this goal”*

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Technology R&D & Demonstration

- Climate policy emphasis on R&D & Demonstration of promising but emerging GHG abatement techs, especially CCS
  - Research mapping geological reservoirs, CO2 capture, coal generation.
- Low Emission Technology Demonstration Fund (LETDF)
  - support demonstration of energy techs with major abatement potential by 2020–2030.
  - A$500 million over 2006 – 2012 to leverage $1billion of private investment
  - Projects to date focused on CCS + advanced coal generation techs
- Early lessons
  - time delay before significant abatement reductions may be achieved
  - potential project proponents calling for carbon price to make techs commercial

Some lessons for climate policy

- Greenhouse inventory + projections
  - Considerable remaining uncertainty: *2003 national inventory +/-5%*
  - Plausible scenarios for 2010 emissions 102-118% of 1990 levels.
- Voluntary schemes
  - Useful capacity building but abatement hard to estimate, may limited: rigorous and transparent verification is key.
- Energy Industry Restructuring
  - Energy markets are 'designer markets' + choices impact emissions
  - Need demand-side participation, level playing field for new techs

Some lessons for market-based instruments

- Potential advantages in restructured energy industries but mixed success so far
- Offer great flexibility to market 'designers' **however**
  - Hard to predict performance of designs
  - Poor design choices can greatly impact effectiveness + efficiency
- Rigorous + transparent design process required with stakeholder management
  - Incumbency, information asymmetry + potential gaming of design
- Interactions between measures may reduce effectiveness
  - economy-wide schemes will have many interactions
- Need transparent, liquid + efficient mkts for price discovery + risk management
- Derivative markets have vital role in bridging short – longer term decision making

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Some lessons for technology innovation

- Innovation certainly required - *policy question is how best to achieve it*
  - Public support for R&D&D important but longer time frames + risks
  - Market-pull mechanisms including EE regulation, renewable targets + carbon pricing to drive deployment + increase private R&D the higher priority
- AP6 a valuable multi-party tech-focused partnership b/n six key nations
  - Initial portfolio of AP6 projects "weighted towards sectoral assessments, capacity building, identifying best practices + tech research + demonstration"
  - Useful 'no and low regrets' outcomes possible through voluntary framework
  - Larger success of AP6 (+ all policies) depends on contribution to widespread adoption + diffusion of existing + emerging abatement techs to stabilise atmospheric GHGs at 'safe' levels

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