



Centre for Energy and
Environmental Markets

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Assessing Baseline and Credit schemes

*Baker McKenzie - Transition of trading
schemes –
From state to national level – 12th August
2005*

Presented by
Iain MacGill



Presentation outline

- B+C scheme design
- Assessing scheme performance
- Some lessons from experience to date
 - NSW Greenhouse Gas Abatement Scheme
 - Clean Development Mechanism
 - UK Emissions Trading Scheme
- Some thoughts on where next...



Designer markets

- B+C schemes the ultimate designer market
 - Almost any choice of objectives, coverage, target, allocation, flexibility, monitoring, sanctions
 - “Reality is what you can get away with!” Robert Anton Wilson
 - *Examples:* B+C markets for renewables (MRET), Gas generation (Qld 13% scheme), Energy Efficiency (UK EEC), Biodiversity and salinity (Aust. MBI Projects)

- Focus here on schemes trading greenhouse emissions
 - The NSW Greenhouse Gas Abatement Scheme (GAS)
 - The Clean Development Mechanism (CDM)
 - The UK Emissions Trading Scheme (ETS)



Market design – start with context + objectives

- NSW GAS
 - An ambitious state scheme where Federal Govt. has chosen not to implement ETS or taxes
 - Scheme “requires NSW electricity retailers and certain other parties to meet mandatory targets for reducing the emission of greenhouse gases from the production of the electricity they supply or use.” (IPART, 2004)
- CDM
 - Kyoto sets emission caps for developed countries but needs to engage developing countries with far lower p/capita but rapidly growing emissions
 - CDM has dual purpose – assisting developing countries to achieve sustainable development + assisting developed countries to meet Kyoto targets
- UK ETS
 - Introduced into a complex climate policy framework including energy tax (CCL), negotiated Climate Change Agreements
 - Objectives – achieving cost-effective emission reductions, give UK companies early experience with ETS, establish London as trading hub



Market design fundamentals

- Any effective market will require
 - Something to trade – *a fungible instrument*
 - Willing buyers, *likely to req. incentives or coercion*
 - Willing sellers, *certain to req. incentives or coercion*
- NSW GAS
 - NSW Greenhouse Abatement Certificates (NGACs), Liable parties retailers + some large users, Voluntary project based sellers
- CDM
 - Certified Emission Reductions (CERs), Interested parties are developed countries (also EU ETS participants), Voluntary project based sellers
- UK ETS
 - tCO₂-e, Voluntary buyers from incentivised auction + mandatory participation by parties with CCAs, Sellers are under (over?) achievers *ie. emissions below their baseline*
- *Note: generally private ‘carrots’, socialised or private ‘sticks’*



Assessing scheme effectiveness

- The challenge – avoiding dangerous climate change
 - Likely to require major (60%+), rapid (*peak < 30 years*) + sustained global emission reductions
- The policy challenge
 - Transformation of our economies + their dependence on fossil fuels – requires we *innovate and regulate*
 - “What counts is not what we do, but what we don’t. Success or failure... depends on just one thing: how much fossil fuel we leave in the ground” (Editors note. *or can stick back down there*). (George Monbiot, 2005)
- ETS contribution to policy mix
 - target (*idealised mkt –only policy you need or want*), backstop or strategic contributor
 - Can’t expect ETS to solve all problems, but has to support framework
 - if the major policy measure, are private ‘carrots’ and a social ‘stick’ enough?



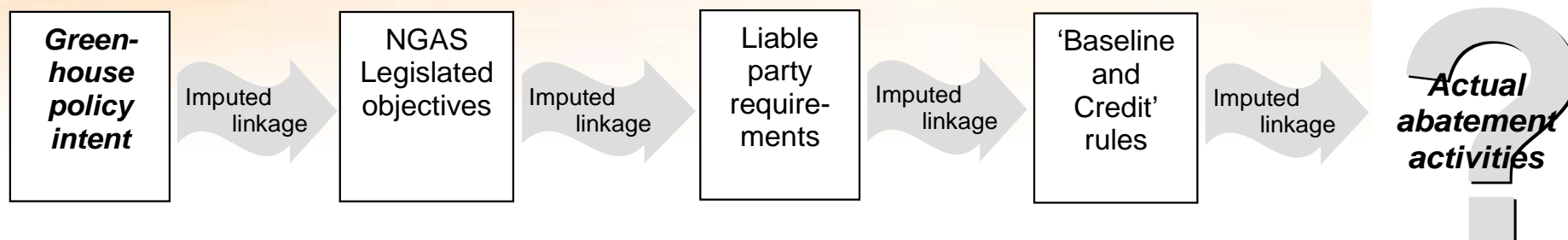
Assessment framework for ETS schemes

- Environmental performance – *objective achieved?*
 - Economic efficiency – *at least cost?*
 - Dynamic incentive – *in way that drives innovation?*
 - Technical administration – *and is practical?*
 - Equity – *while not being unfair or working against other societal objectives? Includes competitive impacts*
- *Note:* early days for NSW GAS and CDM + rules continue to evolve so any assessment somewhat speculative
Nevertheless: numerous causes for concern



Environmental performance - abstraction

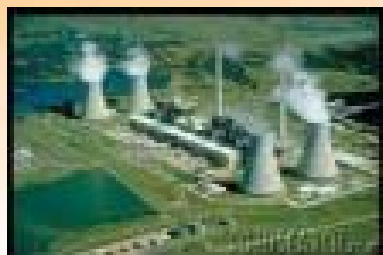
- Schemes can physical caps targets (similar to 'cap and trade' with grandfathering)
...or more abstracted ones (eg. NSW GAS)





Environmental performance – fungibility?

- *“Greenhouse tonnes ain’t greenhouse tonnes”*



Physical, measurable
emissions from fossil-
fuel consumption

≠



Estimated net CO₂
fluxes from select
ecosystems

≠



Hypothetical estimates
of emission reductions
from counter-factual
BAU baselines



Environmental performance - baselines

- Q – What’s the easiest way to save?
- A – By spending!
 - “By some kind of financial alchemy – saving has become something we do while we’re spending”
 - Ross Gittins, quoting Hamilton and Denniss, *Affluenza*



Shop Now and Save with Visa
Take advantage of incredible savings when you use your Visa card. Get the latest discounts delivered to your email inbox: [sign up and save](#).

- *And the easiest way to save greenhouse emissions?*

THE GOOD GUYS ELECTRIFYING SAVINGS

Bar Heide

- 1000W 1.5L
- 1000W 1.5L
- 1000W 1.5L

Meal Sandwich Press

- 1000W 1.5L
- 1000W 1.5L
- 1000W 1.5L

Assort Frypan

- 1000W 1.5L
- 1000W 1.5L
- 1000W 1.5L

SAVE \$10

SAVE \$20

SAVE \$10

EACH \$59⁹⁵

LESS FOR CASH

THE GOOD GUYS

IF YOU FIND A LOWER ADVERTISED PRICE WE WILL REFUND 120% OF THE DIFFERENCE



Example: Hazelwood Power Station



- Hazelwood is spewing out an astonishing **1.58 Mega tonnes of carbon per TWh (over 17 Mt/a)** and is the **most polluting** of the major coal-fired power stations WWF has come across in the OECD, and possibly the world!
- Not only is it the most polluting power station we've been able to find, but it's actually getting worse. A recent study found that between 1998-2004 Hazelwood's emissions intensity trend increased 2.7%...
- Hazelwood also accredited abatement certificate provider under NSW GAS + earned 250,000 NGACs in 2003
 - (through actions undertaken through *Generator Efficiency Standards*)



Environmental performance - additionality

- If scheme doesn't actually change behaviour of credit providers from what would have happened otherwise, no good reasons to implement + many good reasons not to
The problem – additionality is inherently counter-factual + “fiendishly difficult to assess”
- Example: UK debate on government greenhouse reduction targets
 - “They are real relative savings. They are measured against the baseline that was projected... they are genuine reductions on what would otherwise have happened had these policies not been put in place” **DEFRA official questioned by House of Lords Science and Technology Committee, 2005**
 - “If savings are real, they cannot be relative – it is meaningless to talk of savings against what might have happened had certain policies not been in place... We recommend that the Government ground its targets more firmly in reality”
Committee response (Energy Efficiency Report, 2005).



Testing additionality - NGAS

- Scheme doesn't formally assess additionality
- Some other assessments (MacGill, Passey and Nolles, 2005)
 - Over 95% of 2003 NGACs from installations built prior to scheme start
 - Scenario analysis suggests additionality over scheme life may also be low

Some potential scenarios of non-additionality for NSW GAS

Scenario mix	½ policy overlap + 60% BAU plant	½ policy overlap + 90% BAU plant	policy overlap + 60% BAU plant	policy overlap + 90% BAU plant
6 million non- additional NGACs from existing projects	62%	65%	75%	78%
6.6 million non- additional NGACs from existing projects	67%	70%	79%	82%
7.5 million non- additional NGACs from existing projects	72%	75%	85%	88%



Testing additionality - CDM

- Rigorous additionality assessment by CDM Executive Board
 - Have rejected or required modifications to almost half of 74 proposed baseline methodologies
- ...but considerable controversy
 - “Developers fear unnecessarily strict approach to additionality will strangle the CDM by increasing bureaucracy + transaction costs. They particularly oppose so-called “financial” or “investment” additionality, requiring developer to demonstrate that project is not financially viable without extra revenue from sale of credits. They argue that for many large projects, additional revenue is unlikely to tip the balance, especially when CER prices are so low.”
(Eco Securities, 2005)



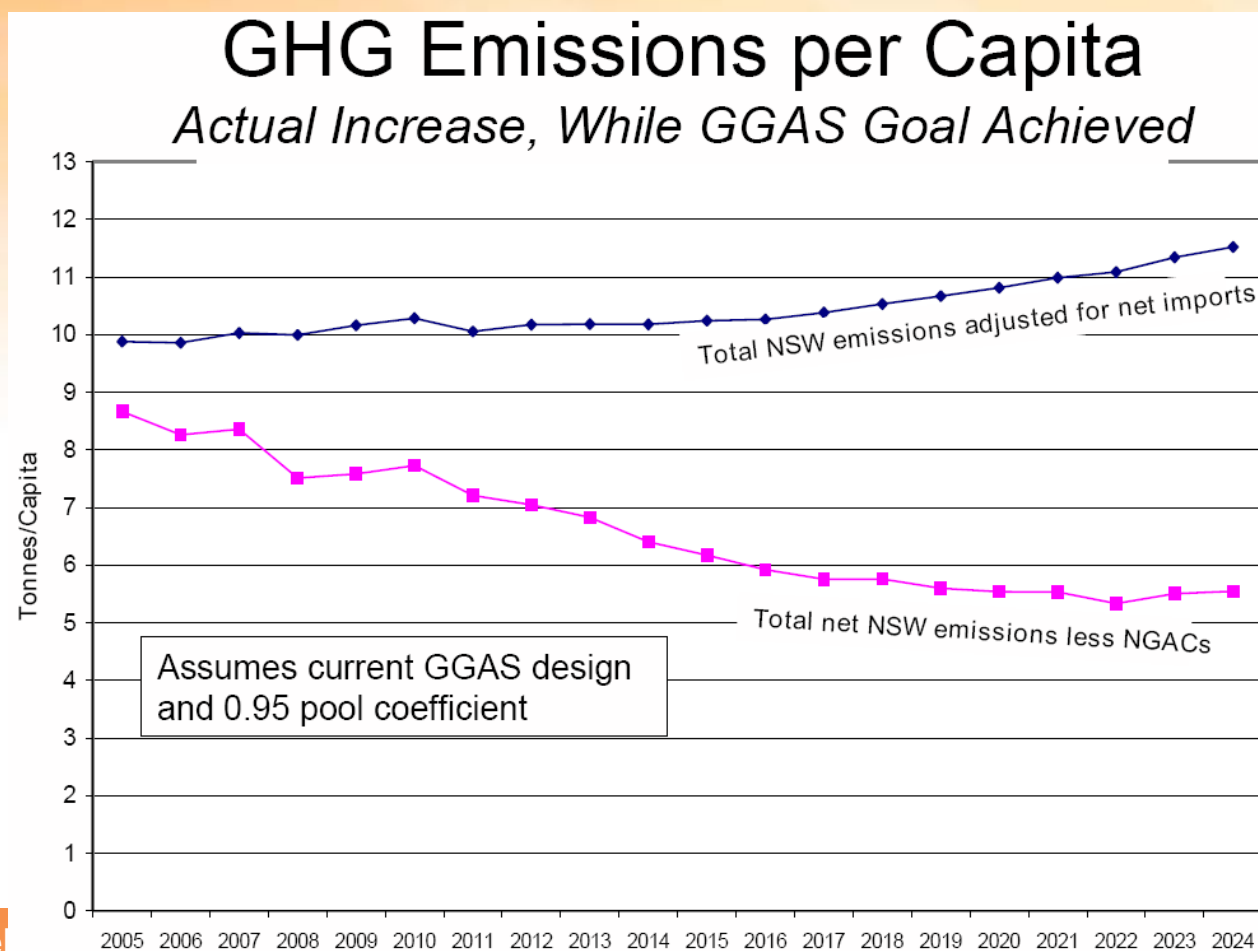
Testing additionality – UK ETS

- National Audit Office estimates one third of auctioned reductions from 4 largest over-achievers was non-additional
 - DEFRA has sought concessions from participants who ‘benefited unduly’ from generous baselines.... some have volunteered to give permits back.
- Govt. paid £18 tCO₂-e yet now trading for < £3
- Proposed project-based participation in scheme collapsed
 - In part because arrangements for estimating baselines + demonstrating additionality were extremely complex, risked double counting + price insufficient to materially change economics



Environmental effectiveness?

- Example: A scenario of NSW GAS performance to 2025 (Nemtzw, NSW Power and Gas Conference, 2005)





Economic efficiency

- Efficiency in delivering abatement
= abatement action + transaction costs / tCO₂-e

- Can be questionable
 - Low additionality + high transaction costs likely to lead to low efficiency
 - Price discovery in these environmental markets can be poor

- But never under-estimate power of markets
 - **Example:** CDM abatement mainly coming from large non-CO₂ (HFC + CH₄) projects with questionable sustainable development outcomes
 - “frequent complaint that CDM is ‘not working’ in that it is not driving sustainable development and not funding renewable energy projects ...The real problem, conversely, is that it is working perfectly in doing what a market-based scheme is designed to do – discover and direct funding to projects that produce max carbon credits per \$ invested.”
(CDM Watch, 2005)



Dynamic incentive

- B+C schemes can focus incentives on most willing + innovative participants to *'do new things'*

However,

- Voluntary 'credits' tend to attract those doing something anyway
- socialised liabilities can reduce innovation by stopping others from continuing *'doing the old things'*
 - Example: Hazelwood Power Station



Technical administration

- B+C schemes inevitably complex
- Transparency may be lacking
- Participants will always be testing the rules – *a major potential source of competitive advantage*

Greenhouse Gas Abatement Scheme - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.greenhousegas.nsw.gov.au/

New South Wales Government

view print friendly

Home

What's New

Scheme Overview

Legislative Framework

Implementation of the Scheme

Key Dates

Scheme Administrator

Compliance Regulator

Registry

Audit Panel

Participating in the Scheme

- Benchmark Participants
- Abatement Certificate Providers
- Approved Auditors

Fact Sheets

Guides and Forms

Scheme Glossary

Links

Contact Us

Search

ACT Scheme

GUIDES AND FORMS

Compliance Regulator

- [Election Form](#)
- [Annual Greenhouse Gas Benchmark Statement](#)
- [Guide to Completing Annual Greenhouse Gas Benchmark Statement](#)
- [Category B Generating System Reporting Template - Notes](#)
- [Category B Generating System Reporting Template](#)

Scheme Administrator

Accredited Abatement Certificate Providers - Future Projects

- [Application Form for Accreditation of future projects](#)
 - [Attachment A - Generation](#)
 - [Attachment B - Demand Side Abatement](#)
- [Guide to Applying - Future Projects](#)
- [Guide to Record Keeping for Abatement Certificate Providers](#)
- [Consent to contact the Office of the Renewable Energy Regulator Form](#)
- [Consent for the NSW Greenhouse Gas Scheme Administrator to contact the Australian Greenhouse Office Form](#)
- [Undertaking regarding benefits under other schemes Form](#)

Accredited Abatement Certificate Providers - Existing Generation Projects

- [Application Form for Accreditation under the Generation Rule](#)
 - [Generation Attachment A](#)
 - [Generation Attachment B](#)
 - [Generation Attachment C](#)
 - [Generation Attachment D](#)
- [Generation Rule - Guide to Applying](#)
- [Guide to Record Keeping for Abatement Certificate Providers](#)
- [Consent to contact the Office of the Renewable Energy Regulator Form](#)
- [Consent to contact the Australian Greenhouse Office Form](#)
- [Undertaking regarding benefits under other schemes Form](#)

Done

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A challenging policy process

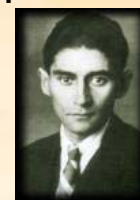
- Ideally

- “Start with what is right rather than what is acceptable”

- Peter F. Drucker



and/or Franz Kafka



- In practice

- “Politics is not the art of the possible. It consists in choosing between the disastrous and the unpalatable.”

- John Kenneth Galbraith



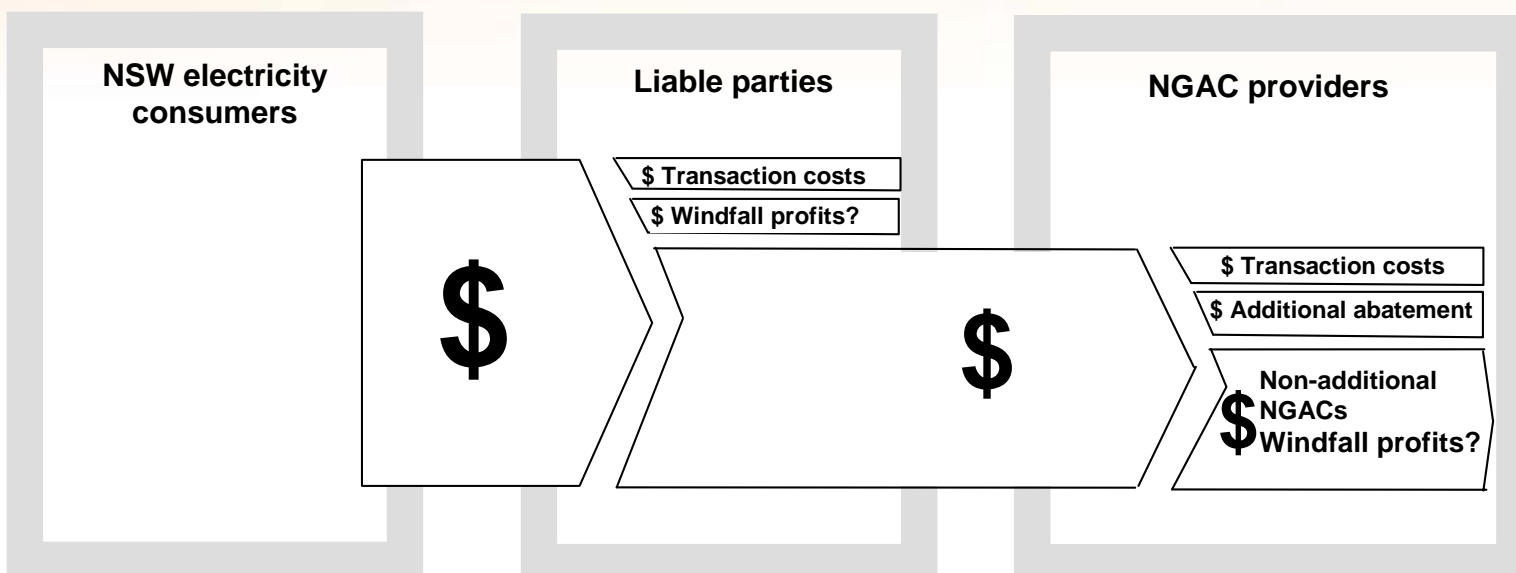
- **The risks** – many moral hazards for ETS designers
(*not just with ‘baseline and credit’ schemes*)

- “The UK ETS seems to have suffered from a very common problem: policy-makers in an attempt to secure industry support and cooperation become far too reliant on industry guidance, subsequently leading to regulatory capture, and the extraction of concessions for industry cooperation.” (Von Malmborg and Strachan, 2004)



Equity concerns

- B+C scheme flexibility allows finely ‘tuned’ response to equity + competitiveness concerns
 - Eg. NSW GAS saw a single State imposing scheme while neighbouring states didn’t (*but don’t forget Qld 13% Scheme*)
- However,
 - Most schemes privatise benefits and socialise costs
 - Low additionality a problem, particularly if poor price discovery





Some possible 'take home' messages

- Designer markets like B+C create policy opportunities but carry significant risks
- Take care with:
 - Environmental performance: *particularly additionality*
 - Economic efficiency: *unavoidable transaction costs, potentially poor price discovery*
 - Dynamic incentives: *carrots and sticks both have their role*
 - Technical administration: *need a consultative + transparent policy process, and scheme*
 - Equity concerns: *Windfall profits generally a poor policy outcome*
- Seriously consider 'cap + trade' schemes instead
 - Although it is entirely possible to get these wrong too
- *Find some good lawyers – you'll be needing them*



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Thank you... and *questions*

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