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White Certificates - The New Black, Some New Grey or Now Passé?

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White Certificates (and perhaps trading?)

- The New Black
  - *"other colours **temporarily** displacing black's position in fashion or industrial design as a versatile staple that complemented all other aspects and was generally unobjectionable" (wikipedia.org)*
  - Can White Certificates establish themselves in a similar way to some other well proven regulatory and incentive based EE policies?
- Some New Grey
  - *"Complementary colours are defined to mix to grey" (wikipedia.org)*
  - White Certificates add further abstraction to already abstract concept of EE, and EE policies. Is it worth it? Might they play complementary role?
- Already Passé?
  - *"Past; gone by; hence, past one's prime; worn; faded;"*
  - Growing international efforts (trading?) but perhaps now growing questions about the potential problems of highly abstracted markets?

The New Black: EE policy the 'Quiet' Achiever

Estimated emissions reductions over Kyoto significantly greater than renewable energy or direct abatement policies implemented to date

Name (Australian Govt, 2010)	Kyoto period average (Mt CO_2-e)
Clean Energy Initiative: CCS Flagship	Not estimated
Energy Efficiency in Government Operations	<0.1
Energy Efficient Homes Package: HIP	1.3
Greenhouse Challenge	<0.1
Greenhouse Gas Abatement Program (GGAP)	0.8
Industry Greenhouse Program	0.2
National Strategy on Energy Efficiency	14.0
Equipment Energy Efficiency (E3) Program	*6.3*
Energy efficiency requirements: Building codes	*4.2*
Mandatory disclosure requirements: Buildings	*<0.1*
Framework Cool Efficiency Program	*0.1*
Phase-out of incandescent lighting	*1.0*
Phase-out of inefficient water heaters	*0.1*
Energy Efficiency Opportunities Program	*2.4*

Key EE policies to date have been regulatory – delivering >80% of energy savings

… (continued)

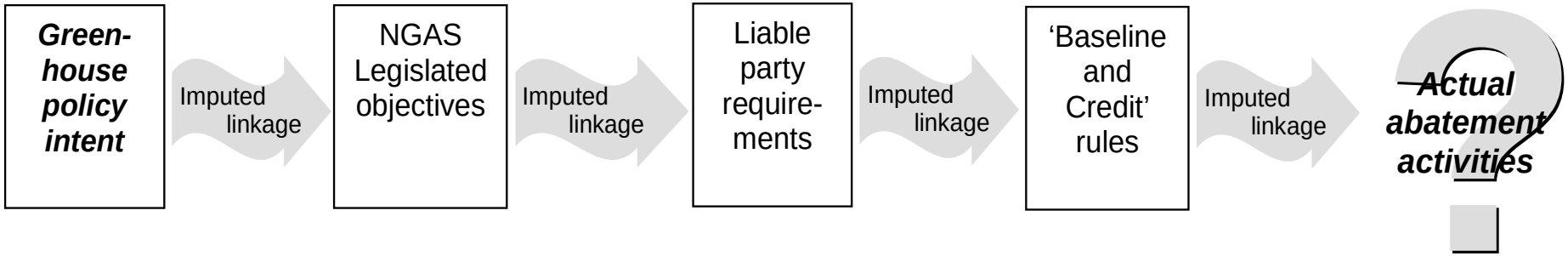
(Australian Govt, 2010)

NSW Greenhouse Gas Abatement Scheme	0.7	
Greenhouse Gas Abatement Scheme		*0.7*
NSW Energy Savings Scheme		*0.1*
Queensland Gas Scheme	2.2	
Renewable Energy Target[3]	8.8	
Large-scale Renewable Energy Target (LRET)		*8.5*
Small-scale Renewable Energy Scheme (SRES)		*0.2*
Renewable Remote Power Generation Program (RRPGP) and Renewable Energy Commercialisation Program (RECP)	0.1	
Solar Cities	<0.1	
Victorian Energy Efficiency Target and Energy Saver Incentive Scheme	0.2	
Total	**29**	

Current State Energy Savings programs delivering very little abatement although scale of ambition now growing

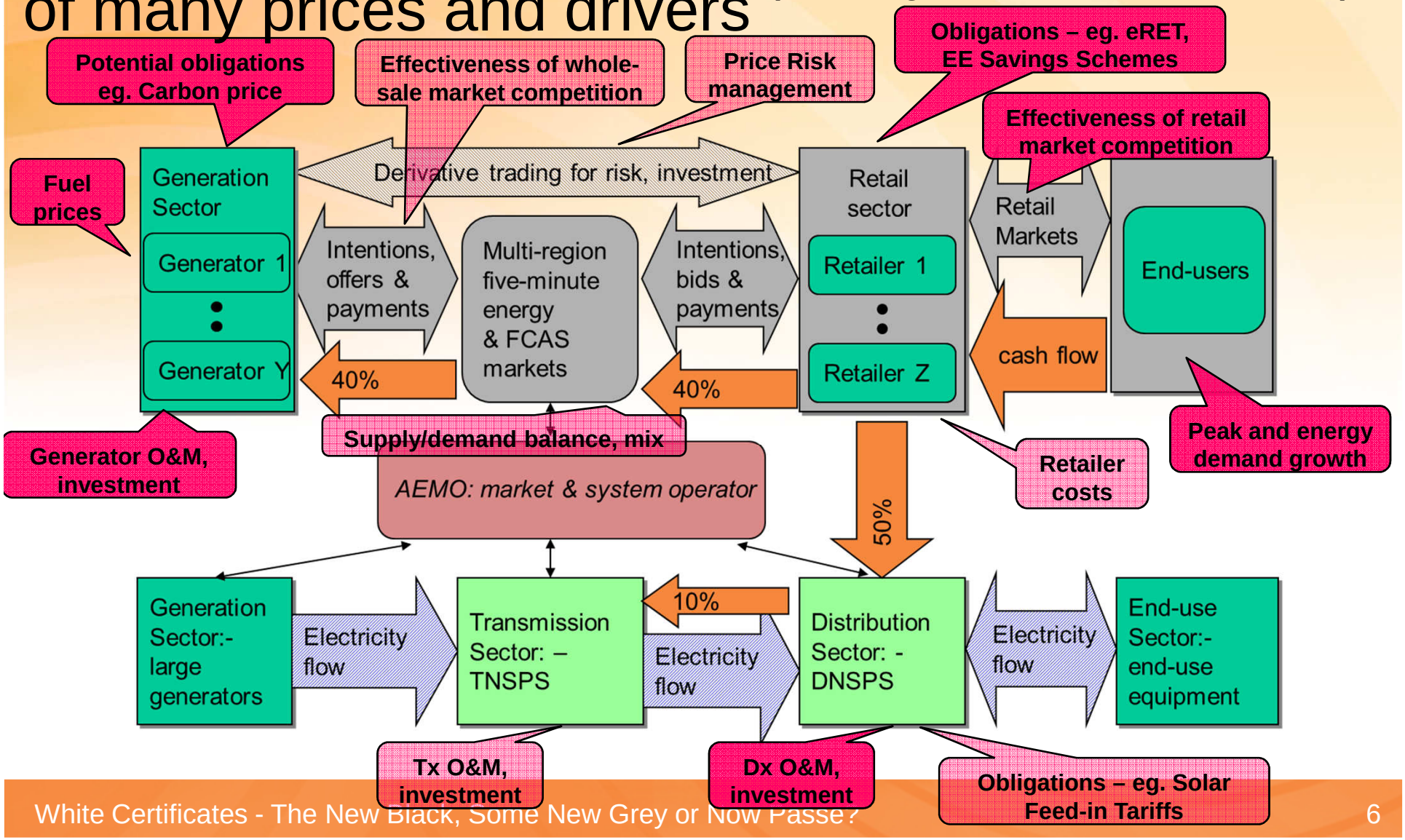
Some New Grey: Challenges of WC design

- A powerful 'designer' market policy approach
- However, highly abstracted designs
  - major separation b/n policy objectives + commercial arrangements + physical outcomes
  - *Trading adds to this*
- Potentially wide scope
  - Adds complexity, dilutes accountability
  - Risks creating a 'market for lemons'



A new price driver (and price) in complex context of many prices and drivers

(NEM diagram based on Outhred, 2007)



A new price driver in dysfunctional retail markets

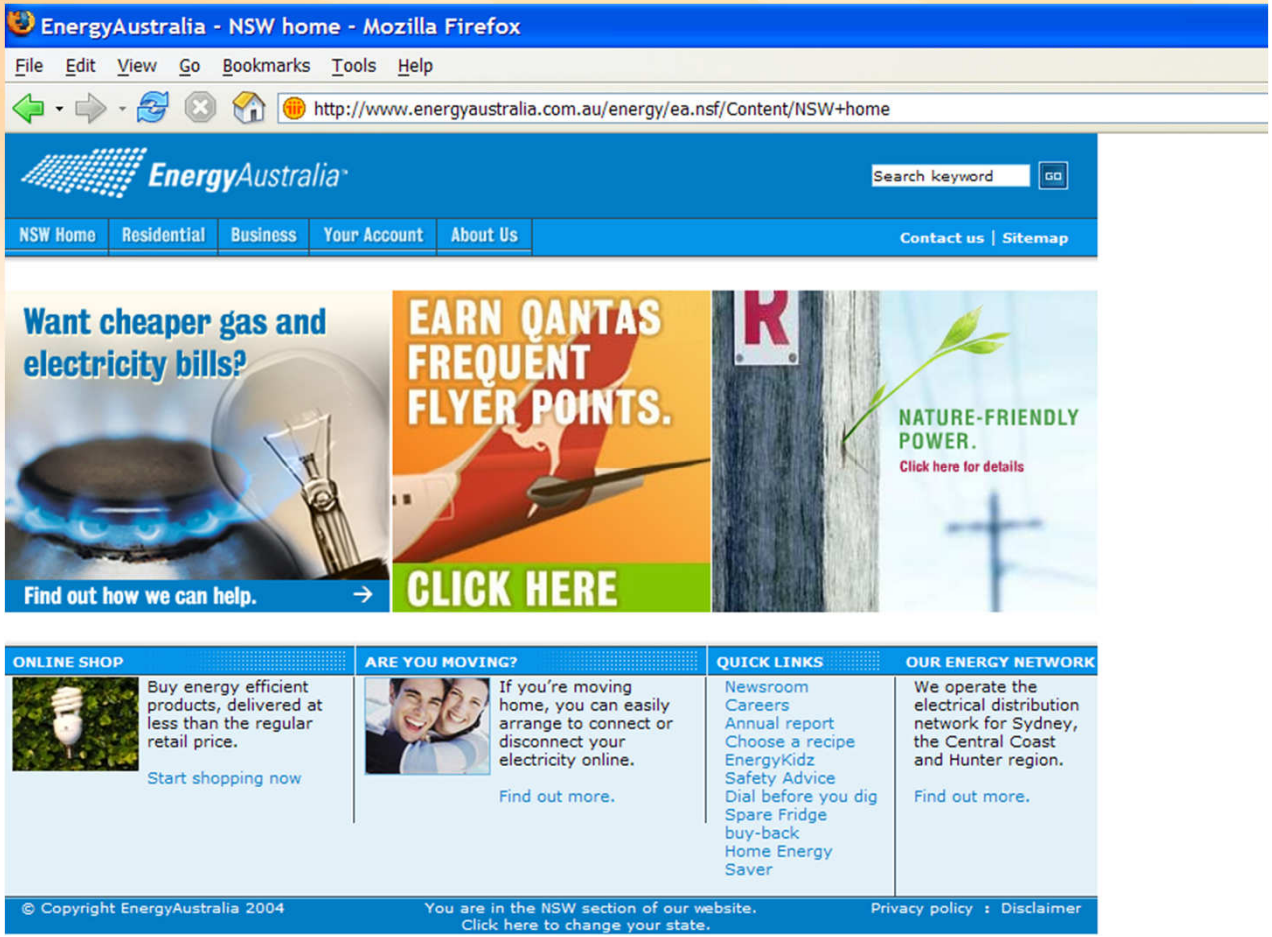
"..an important reason there is effective competition in Victoria is "Because the provision of energy is viewed as a homogenous, low engagement service.. "

AEMC, *Effectiveness of Competition in Vic,* 2008

Wholesale NEM market has prices (vary by time, location and uncertainty)

Retail market has 'schedule of fees' and many non-price barriers

But White Certificates can direct cash flow to parties that are ready, willing and able to address barriers



Possible assessment frameworks

- Effectiveness
  - Delivery of EE
- Efficiency
  - **Static:** Cost-effectiveness of EE delivery
  - **Dynamic:** supporting technical & business innovation
- Equity
  - Distribution of costs and benefits amongst stakeholders

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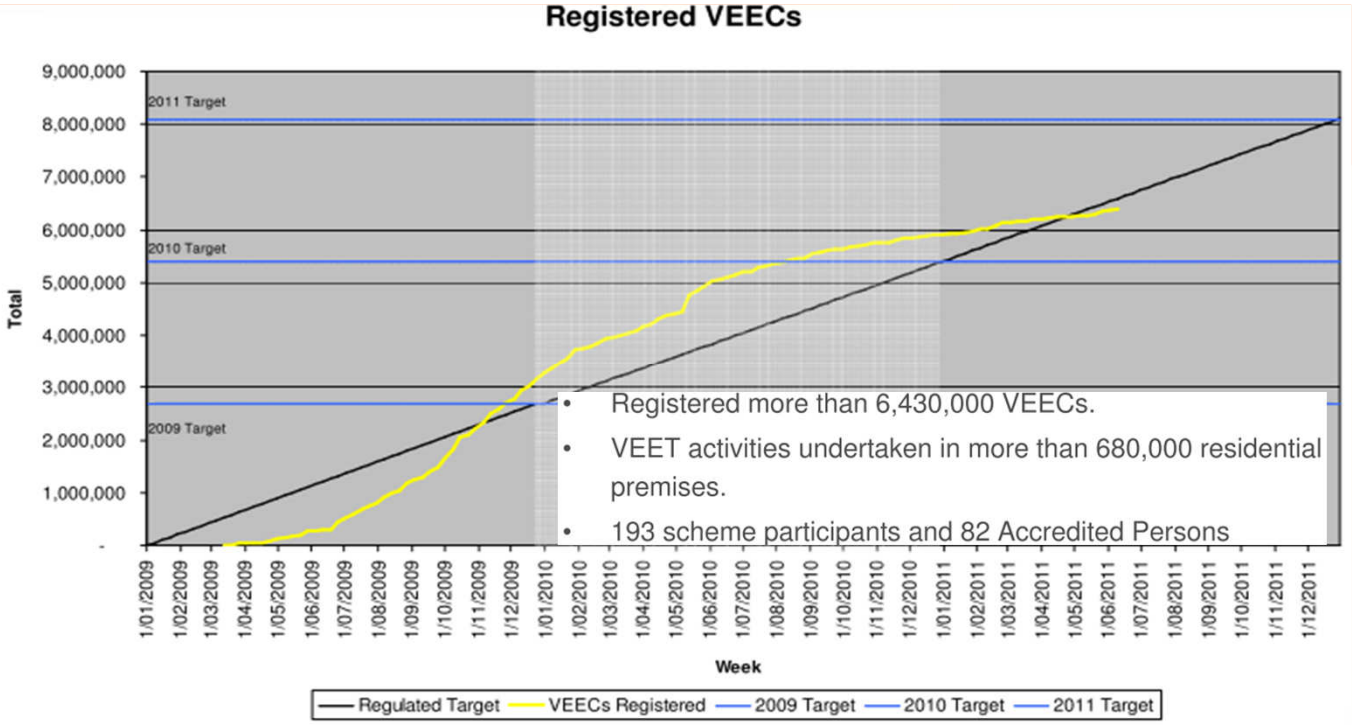
Range of possible measures of effectiveness: eg. target,technologies

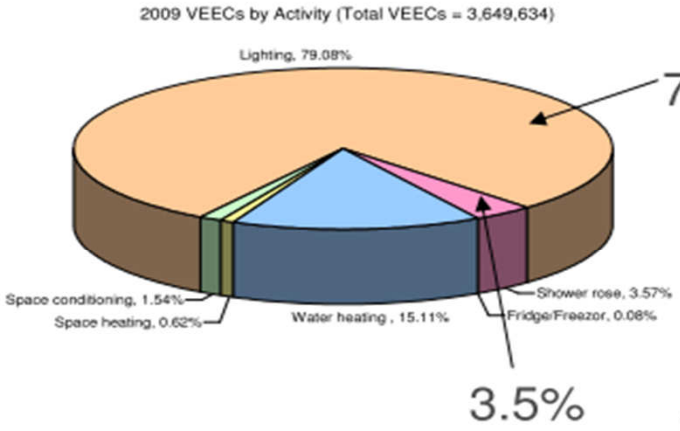
… *additionality is always a key issue and challenge*



- Registered more than 6,430,000 VEECs.
- VEET activities undertaken in more than 680,000 residential premises.
- 193 scheme participants and 82 Accredited Persons

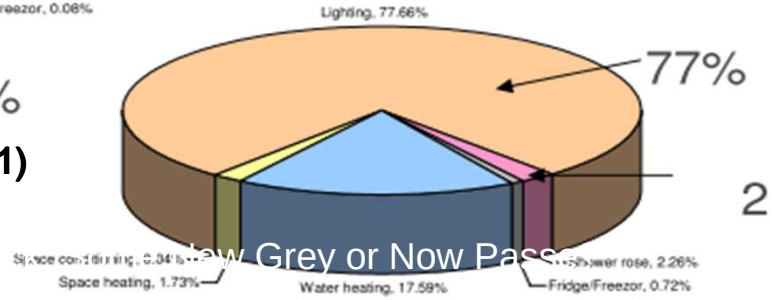
VEEC distribution

2009

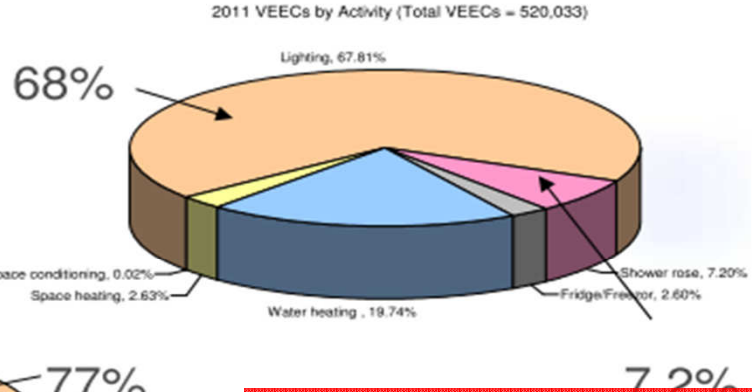


(ESC Public Forum, 2011)

2010



2011



Does CFL lightbulb switch-outs really require an Energy Savings Scheme?

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Additionality can be very challenging for baseline + credit schemes

- Particularly if scheme doesn't formally assess additionality
- Estimations must be made under considerable 'counter factual' uncertainty
  - Eg. MacGill, Passey and Nolles, 2005 using scenarios for NSW GGAS
  - DCCEE (2011) suggests GGAS additionality of ~5%

Lessons from past experience have driven improved additionality outcomes in WCs but requires ongoing vigilance

15.5 million NGACs were created in 2009. However, this number included some abatement that is not additional to that which would have occurred in the absence of GGAS. According to the Department of Climate Change:

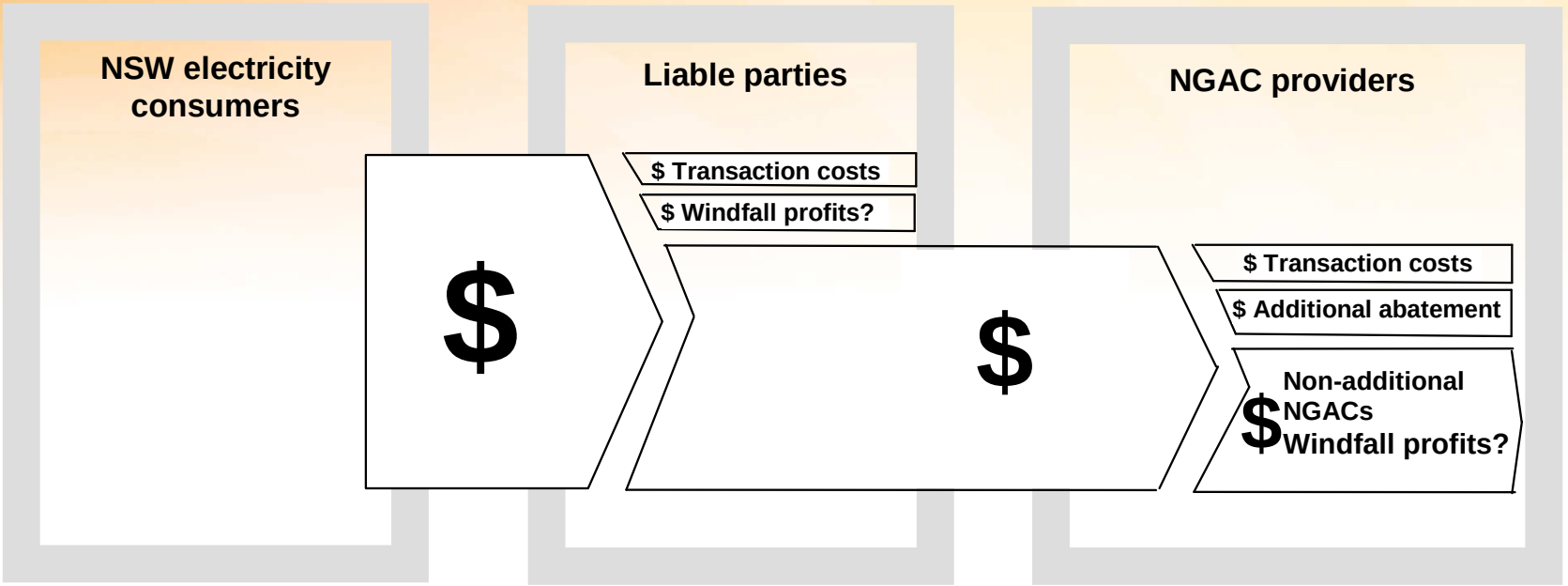
> GGAS includes non-additional abatement because it applies simple rules (baselines) to assess abatement, and imposes no additional test to discern whether that abatement would have occurred in any event. Examples of the sorts of non-additional activity that could be rewarded under GGAS include:
>
> - output from new gas-fired generators in the National Electricity Market, regardless of whether that new gas-fired generator would have been built and operated even without the support of GGAS; and
> - improvements in efficiency of coal-fired generators, even if those efficiency improvements are economic in their own right. (DCC 2010, pp. 1–2)

Estimates reported in DCCEE (2011c) imply GGAS is leading to 0.7 Mt of additional abatement annually. The Commission has not independently verified this

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%

Efficiency + equity?

- Static efficiency generally low when environmental effectiveness low and a large proportion of 'claimed' energy savings are non-additional
  - especially when high transaction costs
  - *But what of dynamic efficiency wrt technology, business innovation?*



- Equity often threatened when environmental effectiveness low
  - Potential that some key stakeholders have captured the policy process and are obtaining easy 'windfall' profits

Some international (EU) experience (CIRED,33-2011)

In general, consumers are barely aware of their participation to the scheme

In every country, most energy savings come from one dominant measure: insulation in Great Britain (75%), compact fluorescent light bulbs (CFLs) in Italy (64%), and heating device replacements in France (68%) (Giraudet *et al.*, 2011, figure 1). At glance, flexibility of the schemes should attract

target are fulfilled at levels of cost-effectiveness and efficiency that seem *favourable*, though not necessarily *optimal* from the social standpoint. In other words, measures that are primarily implemented are not necessarily the cheapest for customers, but the most rewarding for obliged parties, given the incentive structures created by the institutional environment. "Downstream"

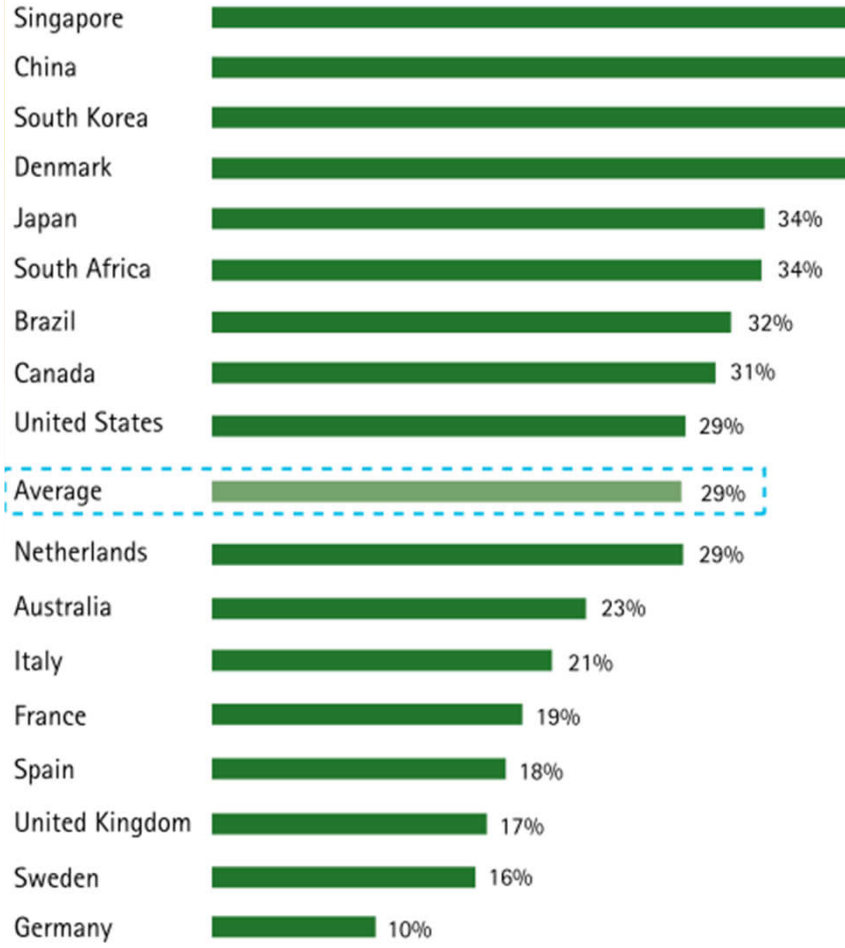
The analysis shows that schemes perform well in terms of static efficiency – they generate net social benefits over the period considered – though there are large discrepancies in cost-effectiveness due to various technical potentials across countries. They achieved mixed results regarding dynamic efficiency – the ability to induce and sustain technological change over the long run. Market transformation occurred in Great Britain, but was poorly incentivized in Italy and France due to inadequate compliance cost recovery rules. Substantial organisational change has occurred in every

White certificates and dynamic efficiency

- "A key assumption behind this review is that consumers will always make the best decision from their viewpoint, based on the prices they face, the technology and equipment they have access to, the information they have and their individual transaction costs. …This will also allow third parties to assist consumers make optimal decisions under innovative business models." (AEMC, DSP Issues Paper, 2011)
- NEM a highly complex 'designer' market with network infrastructure, regulated monopolies, major asymmetries between supply + demand. *"In this context, expecting energy consumers to optimise their level of DSP without any support from third-parties and specific DSP schemes is* ***preposterous****… The EEC recommends that the AEMC focus this review on DSP schemes and barriers to third-parties driving DSP"*
  (EEC, Submission to DSP Issues Paper, 2011)
- *NEM needs Energy Service Companies (ESCOs) – how best to facilitate, and can white certificates play a useful role in establishing and strengthening ESCO opportunities in the NEM?*

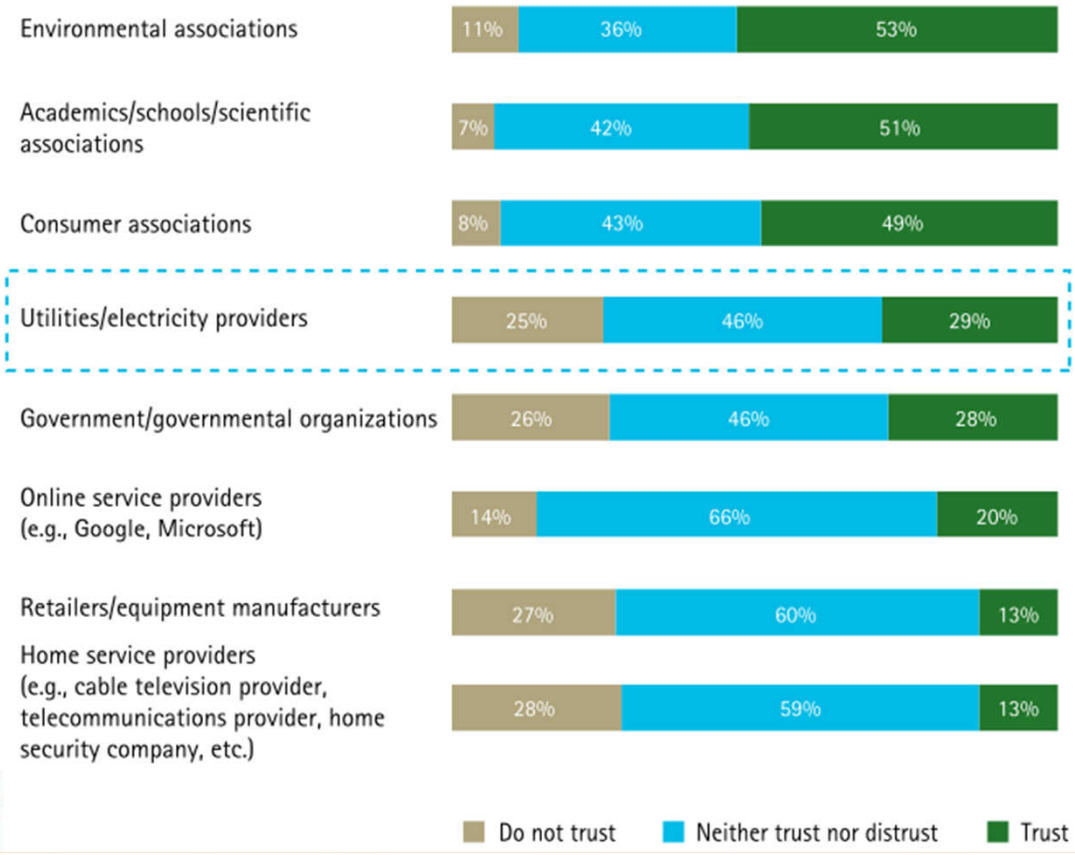
Currently some 'trust' issues for existing electricity providers

Do you trust your utilities/electricity providers to inform you about actions you can take to optimize your electricity consumption?



(Accenture, 2010)

What organizations do you trust to inform you about actions you can take to optimize your electricity consumption?



Key challenge of governance – possible lessons from 'serious markets' like NEM

- *Maintaining NEM security has priority over commercial arrangements – widespread industry failure is not an option.*
- Very high transparency in market operation *on supply side anyway*
- Formal separation of powers and interfaces between policy making, rule making, operation and enforcement MCE, AEMC, AEMO, AER, ACCC
- Rules for changing the rules

Serious governance the key to successful market-based policies

Robustness is critical: where are security regimes to ensure we achieve desired energy efficiency objectives even if particular favoured policies fail?

Might this require policy 'portfolios' where White Certificates make useful, adaptive, contribution within a broad policy suite?

- High transparency with significant disclosure obligations
- Robust against the rent-seekers (often but not always incumbents)
- Fixable: "market and investor' certainty mustn'tover-ride necessary fixes
- Compatible and complementary to other key EE policies eg. regulation

NEM governance may be ponderous but more robust than that for some other key environmental markets to date including EECTs

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Thank you… and *questions*

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