



UNSW 2008

ALLOCATION CHALLENGES AND THE GREEN PAPER

Dr Cameron Hepburn

Deputy Director, Smith School of Enterprise and the Environment

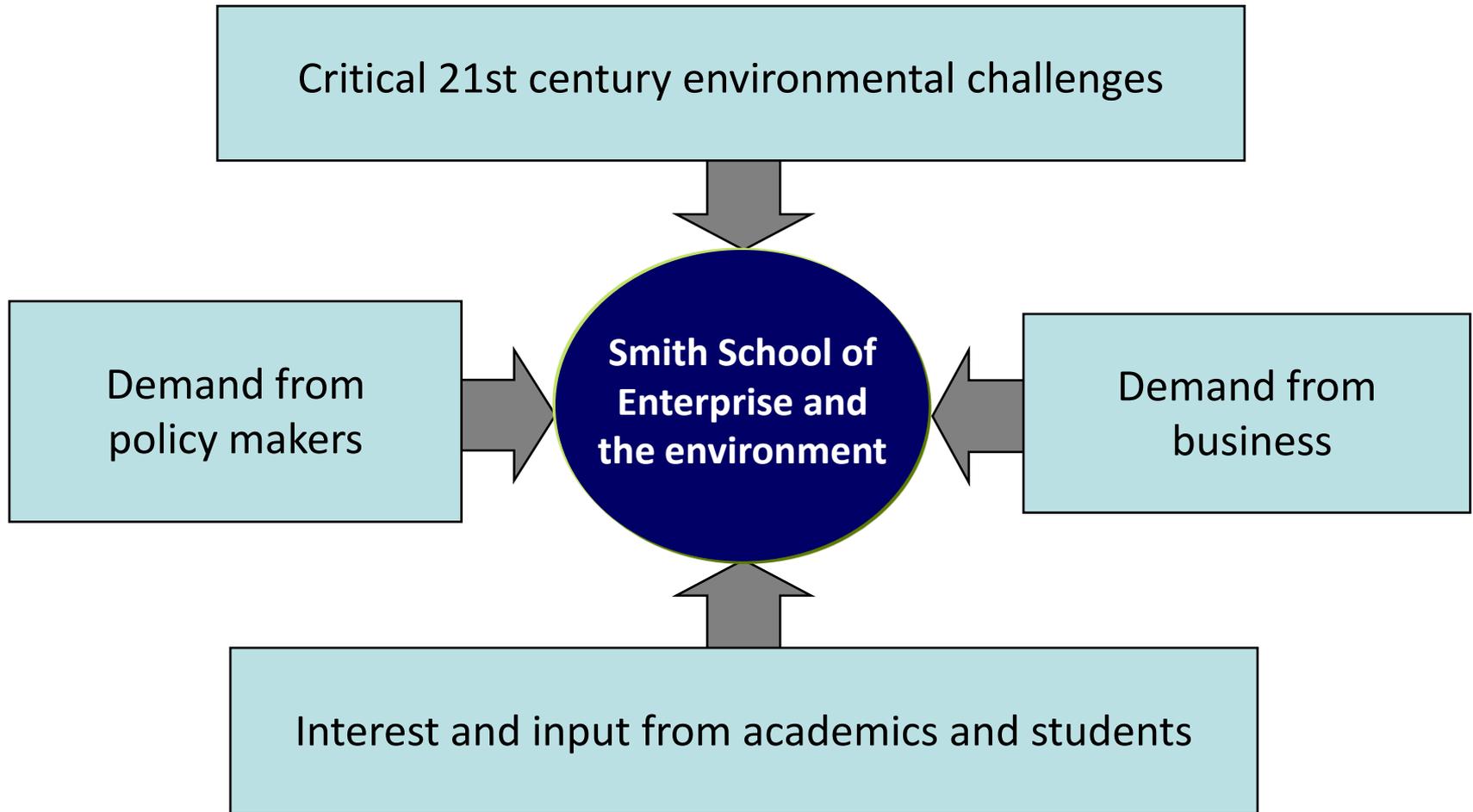
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MY OTHER INTERESTS



Climate Bridge Sample VER Projects

19 August 2008

Please note: This is only a selection of Climate Bridge portfolio. We are happy to prepare bundles of alternative projects of different sizes, standards, and technologies to optimally meet your needs.

Wind power	
Type of project	Pre-registration
Standard	VCS 2007 (possibly GS VER)
Estimated issuance	November 2008*
Est. Annual ERs	100,927**
Est. Available VERs	50,000
Vintage(s)	2008
<p>Note: This high profile project is supplying renewable power to the Beijing Olympics Games and is the first wind power plant in Beijing. Please inquire for more information.</p>	



Coal Mine Methane Electricity	
Type of project	Pre-registration
Standard	VER+
Estimated issuance	Issued!
Est. Annual ERs	41,348**
Est. Available VERs	81,200
Vintage(s)	



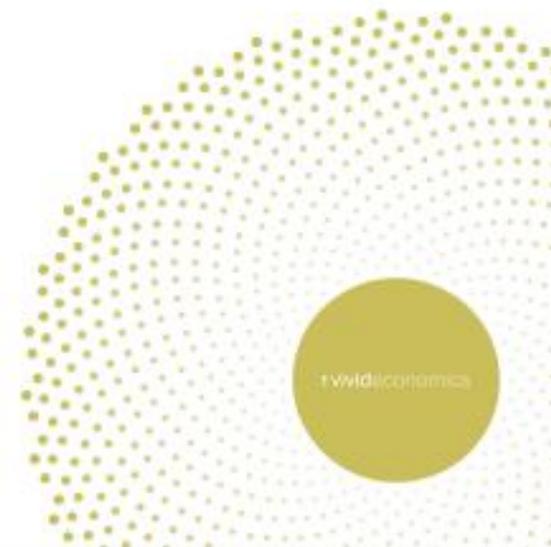
Medium hydropower (<20 MW)	
Type of project	Pre-registration
Standard	VCS 2007
Estimated issuance	Nov 2008*
Est. Annual ERs	68,535**
Est. Available VERs	90,000
Vintage(s)	2007, 2008



Telephone: +44 2071 938 501 Fax: +44 2071 009 963 Web: www.climatebridge.com E-mail: info@climatebridge.com
Address: Suite 24, Vicarsage House, 38-60 Kensington Church St, London, W8 4DB Registered in England: No. 6115329

Defra

Peer Review: Reform of the Clean Development Mechanism



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AGENDA

1. Introduction
2. What target?
3. What proportion free allocation?
4. Who gets the free permits?
 - EITE definition and application
 - Coal-fired power: the “strongly affected” sector
5. Other important issues
6. Summary

INTRODUCTION TO ALLOCATION

1. What is the target?

- This sets the total number of permits available to allocate
- Targets sets the carbon price (marginal impact)

2. What proportion should be auctioned vs freely allocated?

- Highly political as this governs wealth impacts

3. By what mechanism?

- Who gets the freely allocated permits?
- On what calculation basis (e.g. benchmarking, grandfathering)?
- Auction mechanism: interesting in practice if not theory...

4. What should be done with the revenues?

- Reduce other distortionary taxes?
- Support the losers?
- Internalise other externalities (e.g. Market failures in R&D)

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1. WHAT TARGET?

2050 Target

- Green Paper: 60% of 2000 levels
- EU: 60–80% of 1990 levels
- Norway: 100% - carbon neutral
- California: 80% of 1990 levels

2020 Target

- Green Paper: **yet to be announced**
- EU: 20% (unilaterally) 30% (global deal) on 1990 levels
- UK: 26–32% of 1990 levels
- Stern: 25–40% of 1990 levels

WHAT ABOUT THE PRICE CAP?

- Green Paper provides for an **unspecified** cap on permit prices
- This would be achieved by the government standing willing to issue new permits to anyone at a price of \$P
- The issuance of new permits would undermine the target
- But it does allow the costs of the scheme to be capped

Why not also a floor?

- Cap provides cost containment
- Floor provides greater certainty for clean investment
- “Soft floor” achieved through a reserve price on the auctions

Linking challenges

- The cap is only transitional, otherwise it would be difficult for the Australian scheme to link up with other trading schemes globally

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2. WHAT PROPORTION FOR FREE?

- Proportion freely allocated will not have much impact on carbon prices, which are set by opportunity costs
- Economists have long favoured a simple 100% auction route
- But this flexibility in adjusting the wealth effects is one reason emissions trading beats carbon taxes as the climate policy of choice

WHY AUCTION?

1. Auctions generate an “efficient allocation”
 - End up with bidders who value them most
2. Avoids perverse dynamic effects
 - Incentive to pollute more now, in order to get more permits later
3. Avoid time and money spent on special pleading and rent-seeking
4. Avoid windfall profits
 - Shareholders are on average wealthier than average citizen
 - Xenophobia: Shareholders are foreigners!
5. Philosophical viewpoints
 - Atmosphere is a public asset
 - Polluter pays principle
6. Increased management attention

WHY FREE ALLOCATION?

1. Limit “carbon leakage”
 - Output based free allocation mitigates marginal cost and provides incentives for firms to stay
 - May (i) leave; (ii) reduce output; (iii) lose new investment
2. Limit “profit leakage”
 - Would not want to lose industries that are long-term viable in Australia due to short-term differentials in carbon price
3. Politics
 - Buy industry support (as in the EU)

No-one should be surprised if industry pushes these arguments very hard; if not harder than they deserve

SO, WHAT TO DO?

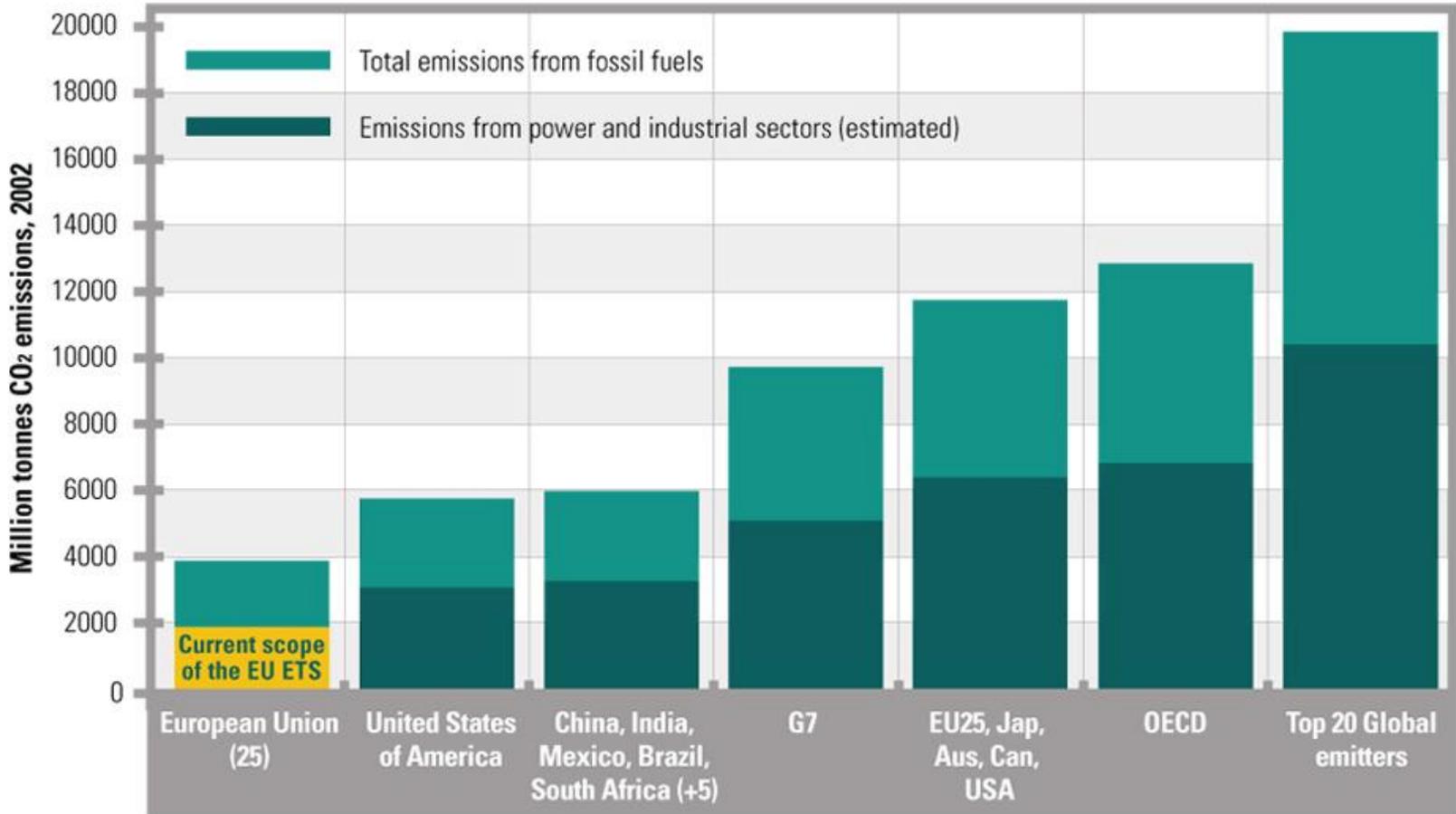
Best outcome: Close to 100% auctioning

- “Carbon leakage” and “profit leakage” arguments do matter to some sectors
- But they do not matter a great deal on an economy-wide basis

Green Paper: signals 70-80% auctioning

- Considerably better than EU ETS
 - Max of 5% auctions in Phase 1: 2005-2007
 - Max of 10% auctions in Phase 2: 2008-2012
- Compare RGGI: 100% auctioning
- Allocations would, over the longer term, **progressively move towards 100 per cent auctioning** as the scheme matures, subject to the provision of transitional assistance for emissions-intensive trade-exposed industries and strongly affected industries.

ALLOCATION CHALLENGES TO INCREASE



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EITE SUPPORT

- Up to around 30% of total allowances freely allocated to EITE
 - 20% if agriculture excluded.
- Eligible if industry-wide emission intensity is above 1,500 tCO₂e per million dollars of revenue.
- Cover 90% of emissions for EITE activities with intensities above 2,000 tCO₂e per \$million
- Cover 60% of emissions for EITE with intensities from 1,500 to 2,000 tCO₂e per \$million
- May reconsider **but** the total quantum of EITE assistance must be limited to around 30% (with ag).

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Australian Government

CHAPTER 9

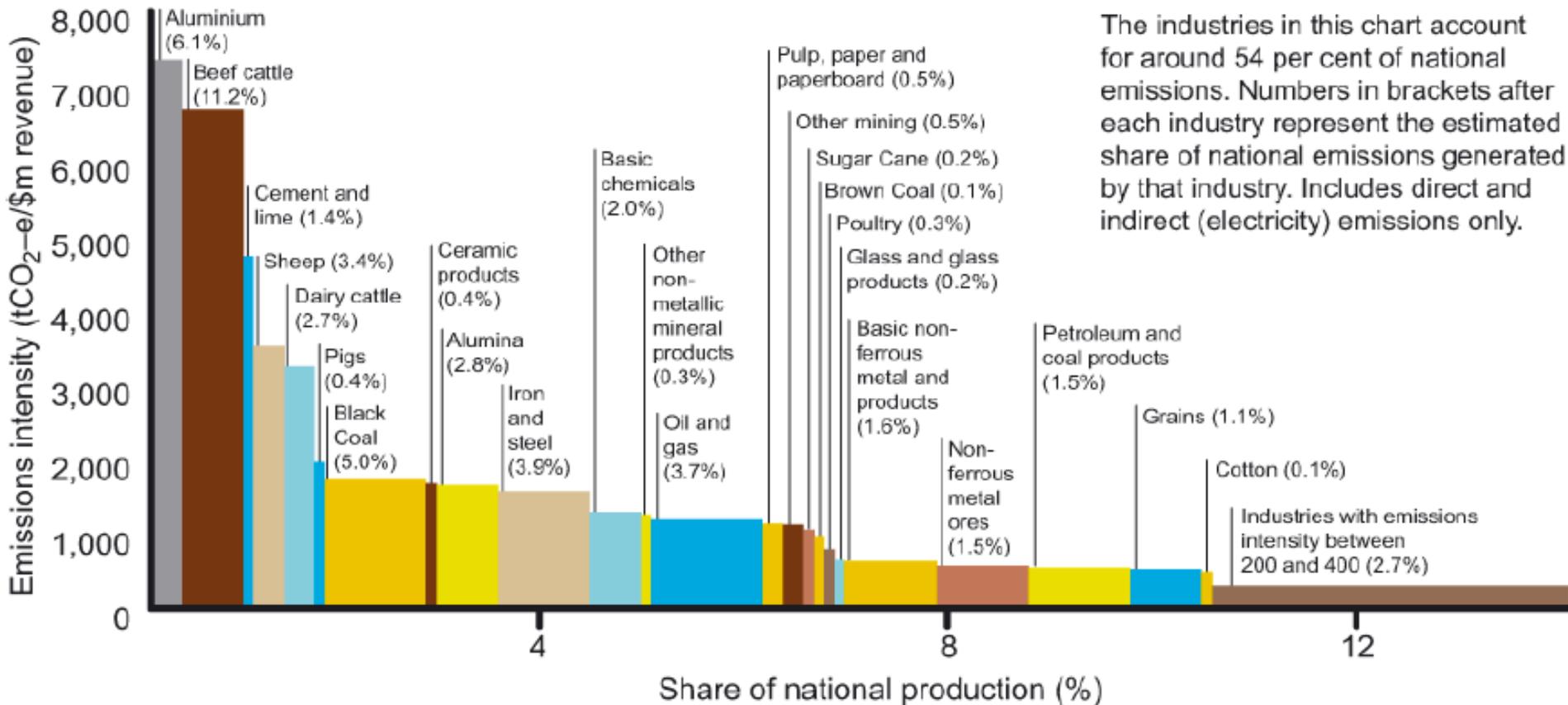
Assistance to emissions- intensive trade-exposed industries

CARBON POLLUTION REDUCTION SCHEME GREEN PAPER JULY 2008

www.climatechange.gov.au



WHO ARE EITE?



Source: Centre for Integrated Sustainability Analysis (CISA), University of Sydney, 2008⁹

DEFINITION OF “TRADE EXPOSED”

- Every activity except those with a “physical barrier to trade”
 - This is very broad!
- Definition may have resulted from by fear of breaching WTO rules
 - But EU is not worried about WTO and proposing more specific criteria for free allocation (23 Jan 2008) to:
 - Industries at risk of “carbon leakage”
 - Extent to which sector can pass on costs without loss of market share
 - Compare allowance cost with production cost and exposure to international competition
 - Lawyers indicate that border tariffs may be WTO-compliant

This is difficult, but it should be tightened in the final draft

HOW DOES IT WORK?

$$A_{ia} = \underbrace{k_a (EI_{ia}^d \times O_{ia})}_{\text{Allocations with respect to direct emissions}} + \underbrace{k_a (EI_{ia}^e \times EF \times O_{ia})}_{\text{Allocations with respect to indirect electricity emissions}}$$

where:

- A_{ia} = allocation of permits to entity i for emissions associated with activity a
- k_a = assistance rate for activity a , representing the degree of assistance provided to entities for this activity both initially and over time
- EI_{ia}^d = direct emissions-intensity baseline for entity i conducting activity a (that is, baseline level of direct emissions per unit of output for the activity)
- EI_{ia}^e = electricity-intensity baseline for indirect electricity emissions for entity i conducting activity a (that is, baseline level of electricity per unit of output for the activity)
- EF = electricity factor, which reflects the impact of the carbon price on the price of electricity
- O_{ia} = output of activity a by entity i

CARBON LEAKAGE

- Carbon leakage happens in three ways:
 1. Existing industry moves offshore (very unlikely)
 2. Output from existing plant is generated offshore (more likely)
 3. New facilities are built offshore (also more likely)
- Assistance for leakage should focus on new facilities

Some problems

- Formula stops leakage but reduces incentives to clean up
- Discontinuities in EITE support potentially creates incentive problems and gaming
 - As based on *recent* past emissions (2006-2008)
- However, discontinuity allows easier categorisation of firms; reduced importance of the precise emissions intensity estimate should reduce arguments



FREE ALLOCATION DISTORTIONS

Allowance allocation method	Impacts	More expenditure on extending plant life relative to new build		Increase plant operation		Less energy efficiency investment
	Distortions	Discourage plant closure	Distortion biased towards higher emitting plants	Shields output (and consumption) from average carbon cost	Distortion biased towards higher emitting plants	Reduce incentives for energy efficiency investments
Auction						
Bench-marking	capacity only	X				
	capacity by fuel/ plant type*	X	X			
Updating from previous periods'	output only	Y		X		
	output by fuel/ plant type*	X	X	X	X	
	emissions	X	X	X	X	X
Note: X indicates a direct distortion arising from the allocation rule. Y indicates indirect distortions if allocation is not purely proportional to output/emissions. * Differentiating by plant type adds additional distortions compared to purely fuel-based.						

Source: *Neuhoff et al. (2006b).*



COAL-FIRED POWER

Strongly affected industries are:

- non-trade-exposed
- emissions-intensive
- include some entities that are emissions-intensive compared to their competitors, such that they cannot pass on carbon costs and could experience significant losses in asset value
- have significant sunk capital costs
- not have significant economically viable abatement opportunities available to them

→ **In other words, coal-fired power**

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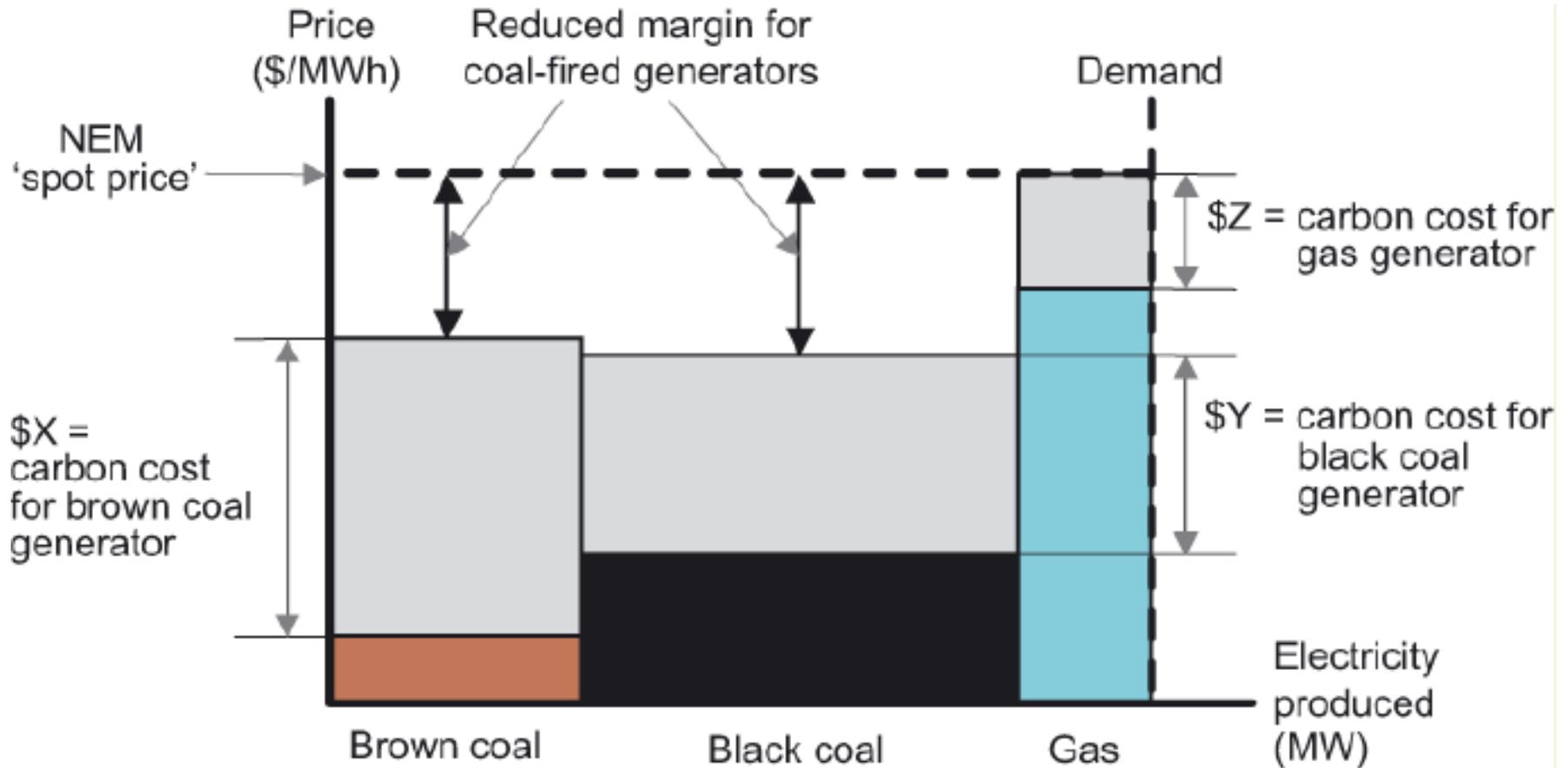


Australian Government

CHAPTER 10

Strongly affected industries

REGULATORY CAPTURE?



QUESTIONS FROM A BYSTANDER

- Experience in EU shows massive windfall profits to coal
 - But retail and wholesale price caps may imply a different outcome in Australia
- How fat are coal-fired margins? What are current returns to shareholders?
- Is marginal price always set by gas, or is it sometimes (if not often) true that coal-fired generation is on the margin?
 - If so, the full carbon cost is incorporated
- What are the market structure impacts?
- What if the dispatch order changes after the carbon price is incorporated?
- If coal is genuinely badly hurt to point of closure, as models suggest, what support is justified?

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OTHER KEY ISSUES

Offsets

- Avoiding AAUs, limiting to CERs is reasonable
- Limits are yet to be announced...

Stimulating low-carbon investment and RD&D

- Several technologies look likely to be critical:
 - Energy efficiency
 - Renewables (solar, wind, geothermal)
 - Carbon capture and sequestration
 - Nuclear

New low-carbon business opportunities

- Discourse focuses on “costs”, rather than productivity improvements, new wealth generating industries for Australia etc

AGENDA

1. Introduction
2. Some theory
3. The Green Paper
4. Key allocation challenges
 - EITE Definition and application
 - Coal-fired power and special treatment
5. Other important issues
6. Summary

SUMMARY

1. **Targets should be tight**

- Necessary to prevent carbon price collapsing
- Critical for international credibility
- Important for scheme linking

2. **Most permits should be auctioned**

- 100% is the favoured starting point
- 70-80% is considerable nod to industry and leakage concerns

3. **Free allocation should minimise distortions**

- Restricting this to EITE makes sense
- Definition of “trade exposed” still lacking (WTO concerns)

4. **Revenues spent on reducing taxes or other distortions**

- Other distortions include low-carbon R&D
- Or compensating households that lose from the scheme (as prices **will** rise)

THANK YOU



Thank you

Comments and questions welcome!

1 September, 2008