



Australian Government

Department of Climate Change

Use of facility specific data Australian in the inventory

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National Inventory Team

- Department of Climate Change and Energy Efficiency (DCCEE)
- Responsible for compilation of the national inventory
- Responsible for estimation of all sectors except LULUCF
- Responsible for policy and design of National Greenhouse and Energy Reporting System



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AIMS

- Introduction to the Australia's National Greenhouse and Energy Reporting (NGER) system
 - Data collection, but also measurement policy
- IPCC Guidelines on the use of plant specific data
- Use of plant-specific (NGER) data in Australia's National Inventory



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The National Greenhouse and Energy Reporting System (NGERs)

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National Greenhouse and Energy Reporting system (NGERs): AIMS

- To support the national inventory
 - Improved information
 - Shift from simple tier 2 models to more complex tier 3 models
 - Potential for inventory of company data
- To streamline existing ad hoc data collection processes on both emissions and energy
- To support a future emissions trading scheme



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NGERs: Major elements

- Act of parliament 2007
- Regulations – specifying what must be reported
- Measurement Determination – specifying how emissions are to be estimated
- Ministerial determinations on audit



NGERs: Major elements

■ Regulator

- Greenhouse and Energy Data Officer
- Data validation, compliance and enforcement
- Sits within DCCEE

■ First year of reporting 2008-09

■ First reports submitted by companies October 2009



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Emission Measurement

- National Greenhouse and Energy Reporting Measurement Determination 2008
- Issued by Minister for Climate Change and Water
 - (who also issues the national inventory)
- Updated at beginning of each new year
- Similar to EU ETS and US Mandatory Reporting rules



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NGERs – coverage of IPCC sectors

- Energy – fuel combustion
- Energy – fugitive emissions
- Industrial processes
- Waste

- No land based emissions....

➡ ○ 75% of national inventory




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NGERs – who is affected?

- Reporting thresholds for facilities and companies
 - Facilities (25kt emissions)
 - Corporations (50kt)
- Scope 2 emissions and energy thresholds

 : 95% of covered sectors



Features of the NGER system

- Integrated emissions estimation methods within the National Greenhouse Accounts framework
- Management of risks of unsustainable compliance costs for certain reporters



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NGERs: Integration with National Greenhouse Accounts Framework

■ National Inventory total

= \sum National IPCC sectors

= \sum National ISIC sectors

= \sum States

= \sum Companies

= \sum Facilities / plants



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National Accounts Framework

- Accounting identities – like national income accounts
- Integrated estimation methods
 - default emission factors for method 1 taken directly from national inventory
- Company estimation methods consistent with IPCC guidelines
- Provides potential for move to census of company / facility data
- Policy efficiency for mitigation



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How much measurement effort?

- Important to ensure costs of measurement do not exceed benefits
 - Those with liability must have means to measure accurately
 - Must also provide a low-cost measurement option
- In absence of good information on measurement costs, and to minimise risk of unsustainable compliance costs on companies, choice of measurement technique provided
 - Exceptions for electricity, coal and aluminium



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Estimation method selection

- Method 1: Default EFs
- Methods 2&3: Measurement of fuel input quality characteristics in accordance with Australian and international standards to determine facility-specific EFs
- Method 4: Direct emission measurement



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NGER EF data results....

■ Black coals:

- 92% coverage:
- Mean of facility data < 2% different to the NGER default

■ Brown coals:

- 100% coverage
- Mean of facility data < 1% different to the NGER default

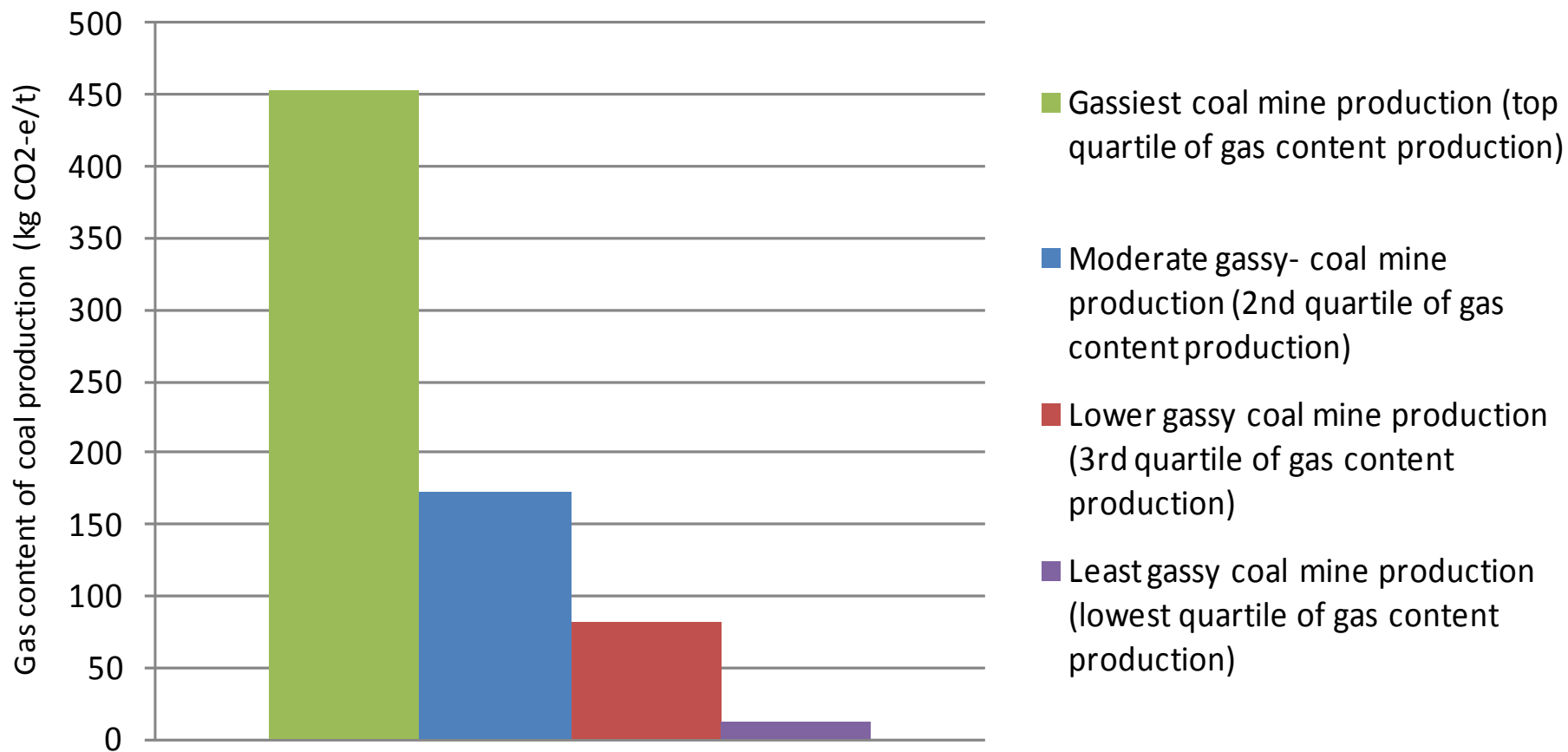
■ Full analysis to be published next week...



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Underground coal mines: variation in fugitive emission rates



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Use of NGERs data in the Australian inventory



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Current use of plant specific data in Australia's national inventory

- Mainly tier 2 methods (ie models)
 - Range of sources for existing tier 2 emission factors, many established in early 1990s
- Tier 3 for electricity and certain fugitives
- With NGERs, potential for facility data to be available for every sector



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Use of plant – specific data on emission factors

- Should reported emission factors be used in the national inventory?
- If partial coverage, what decisions to make about the emission factor for the unknown portion of a category?



What do the 2006 IPCC Guidelines say about use of facility-data?

- If complete coverage, then implement tier 3 plant specific method (energy volume)
- If not complete coverage, then
 - Option A: Scope for use of plant specific data as QC tool
 - Option B: Development of mix of tier 2 /3 methods: accept plant data...but then make judgement about missing data on EFs



2006 IPCC Guidelines

- *..if there are emission factors available for a few plants (but not enough to support a bottom up approach)...these data ...provide an indication of the reasonableness of the country-specific factor...*
- *..when data do not fully represent the whole country, eg measurements for 3 out of 10 plants, then the data can still be used but needs to be combined with other data to calculate a national estimate....*



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2006 IPCC Guidelines

- *When considering using measurement data ..check whether it covers a representative sample – ie that is typical of a reasonable proportion of the category...*
- *A degree of judgement is required even when applying classical statistical techniques since one must judge whether the data are a representative sample*



Tier 2 / 3 mixed method: Additional judgements for EF of unknown tail

- A number of assumptions can be made about the residual or tail where EF is unknown:
 - The EFs for this segment reflect the known EF of a representative sample; or
 - The EFs continue to reflect the pre-existing tier 2 (model) assumption
- Inevitably expert judgements to be made



Australian inventory decision tree

- In Australia, a framework has been developed for consistent judgements on the use of plant-specific data
 - An attempt at a systematic approach to identification of the 'representativeness' of the newly available data
 - Aim to provide consistency in judgements across experts but also over time and across NGER sectors
 - Tests of sample size, normal distributions, significance of differences in means



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IPCC workshops

- IPCC should provide materials to assist development of improvements in national inventories
- Workshops provide an opportunity for inventory experts to share information on international practice
- An opportunity to provide information beyond the minimum standard of the IPCC Guidelines



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