Australian Bureau of Statistics

statistics for informed decision making

An energy account for Australia

International Seminar on Environment Statistics and Accounting

Rio de Janeiro
21-22 September 2009

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What is an energy account?

- The ABS Energy Account is compiled according to the System of Integrated Environmental and Economic Accounts (SEEA)
  - a satellite system of the International System of National Accounts that allows for an expansion of the national accounts for selected areas of interest and integrates environmental-economic analyses

Why produce an energy account?

- The importance of energy data rises each year as evidence of a carbon-constrained world grows
- Quality energy use data is essential to formulate and monitor the effectiveness of energy related policy measures
  - Better assess sustainability of energy use
  - Address questions of efficiency and equity eg. Who uses, who pays and how much?
  - Supports better understanding and control of emissions
- The global concern to decrease carbon emissions and improve energy efficiency lends itself to a standardised approach to energy reporting

Why the central statistical agency?

- Measures of physical supply and use of energy are produced by the Australian Bureau of Agricultural and Resource Economics
  - and energy efficiency measures already available from ABARE and the IEA
- However, ABS has expertise in collecting and disseminating data
  - especially economic data
  - and in *integrating* economic and other data, which is an important aim of SEEA type accounting

Content of most recent ABS Energy Account

1. Supply and use of energy
2. Experimental hybrid use of energy account
3. Energy intensity of Australian industries
4. Energy resource stocks

Data sources

- All physical production and use stats were sourced from existing data source, ABARE's *Australian Energy Statistics*.
  - A set of statistics describing Australian energy production, transformation & use on an annual basis
  - Coverage across industry, fuel type and state
  - Expressed in terms of ‘energy content’ (PJ) for comparability
  - Primary data source is the ‘Fuel & Electricity Survey’

Data sources

- National Accounts - *Input Output tables 04-05*
  - Only source with sufficient product and industry detail
- Extensive use of physical information to guide monetary estimation (coherence)

1. Supply and Use of energy

Output

- Physical Supply and Use of energy products by major industries, industry subdivisions and households

Supply and Use of energy

Challenges

- Needed to convert from activity basis to ABS “industry of ownership” basis
  - Primarily impacted land transport fuels (petrol, diesel and LPG) Eg. ABARE has households consuming no petrol or diesel and only Transport consuming any petrol.
- Service industry usage of energy products
  - used other data to create more realistic industry data, and more detailed service industry data than in *Australian Energy Statistics*
- Allocation of conversion gains and losses to products and industries has been done on a “gross view” to allow direct confrontation with National Accounts data.

2. Hybrid use of energy

Output

- Monetary Use of energy products
  - by major industries and industry subdivisions and households, exports, inventory changes
- Ensure coherence between monetary and physical measures of industry/household use of energy products
- Juxtaposed monetary and physical measures give implied price for energy products used by each industry (& household sector)

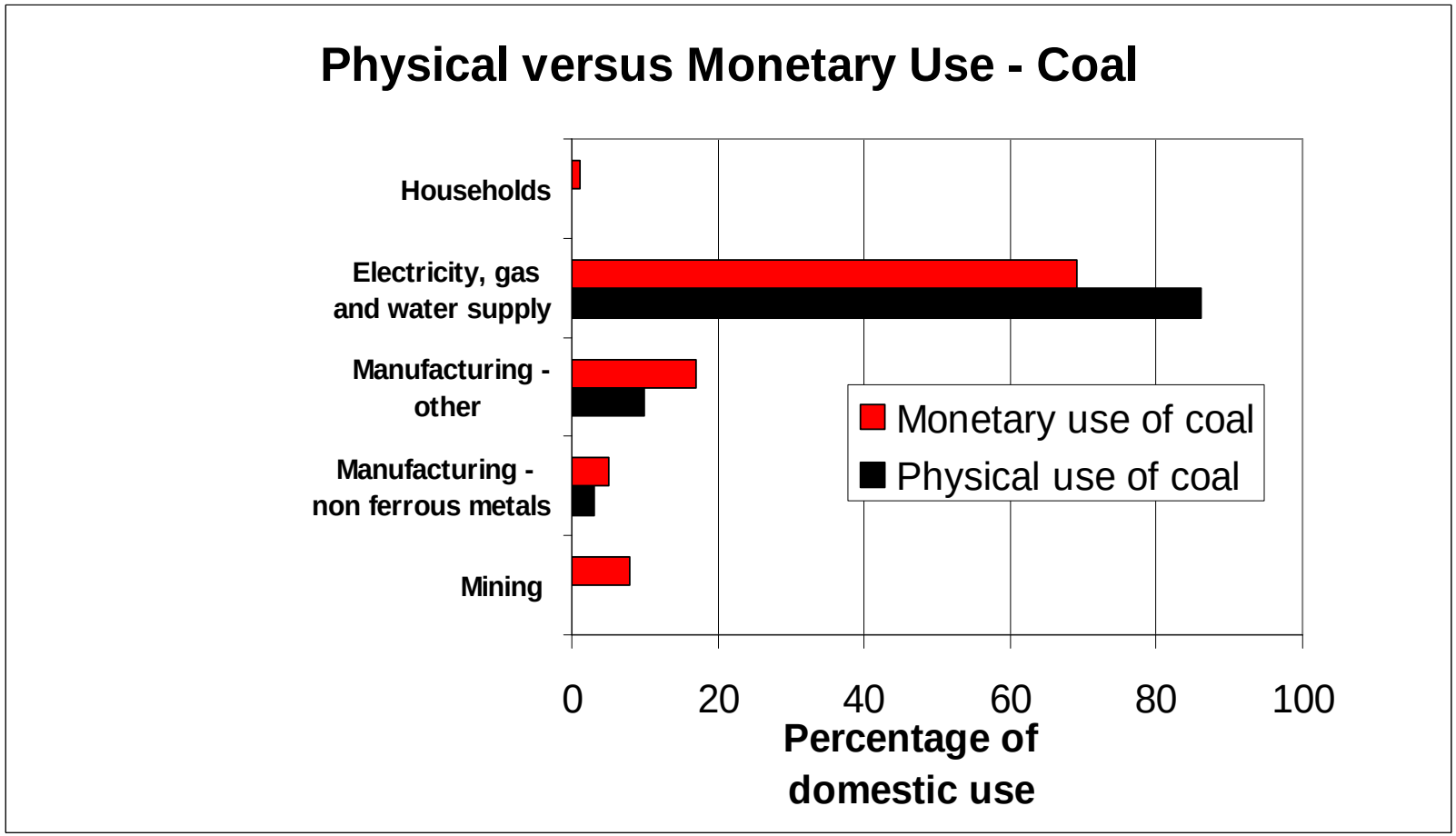
Hybrid use of energy

Challenges

- Some national accounts data raised questions at the industry subdivision or group level
- Data availability restricted to 2004-05
- Highlights the importance of *routinely* comparing physical measures with related monetary information
- National Accounts data the ‘official’ monetary measures

Physical vs. Monetary Use – Coal

(selected industry shares 2004-05)



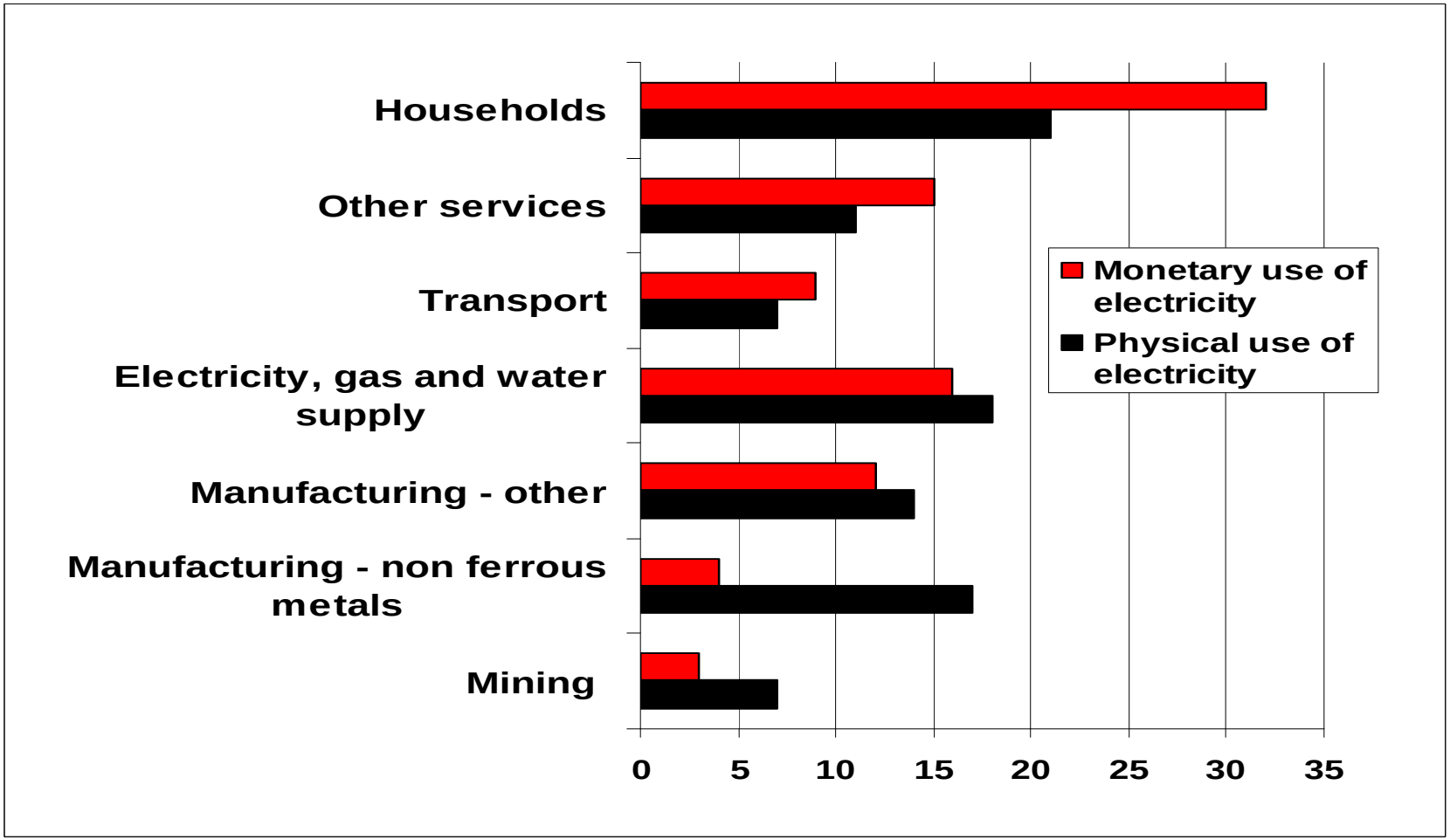
Physical vs. Monetary Use – Coal

(selected industries 2004-05)

Industry	Physical use of Coal (PJ)	Monetary use of Coal ($m)	Implied Price ($m/PJ)
Mining	7	259	37
Manufacturing - non ferrous metals	64	147	2.3
Manufacturing - other	31	70	2.3
Electricity, gas and water supply	1,975	2,268	1.1
Households	0	1	-

Physical vs. Monetary Use – Electricity

(selected industry shares 2004-05)



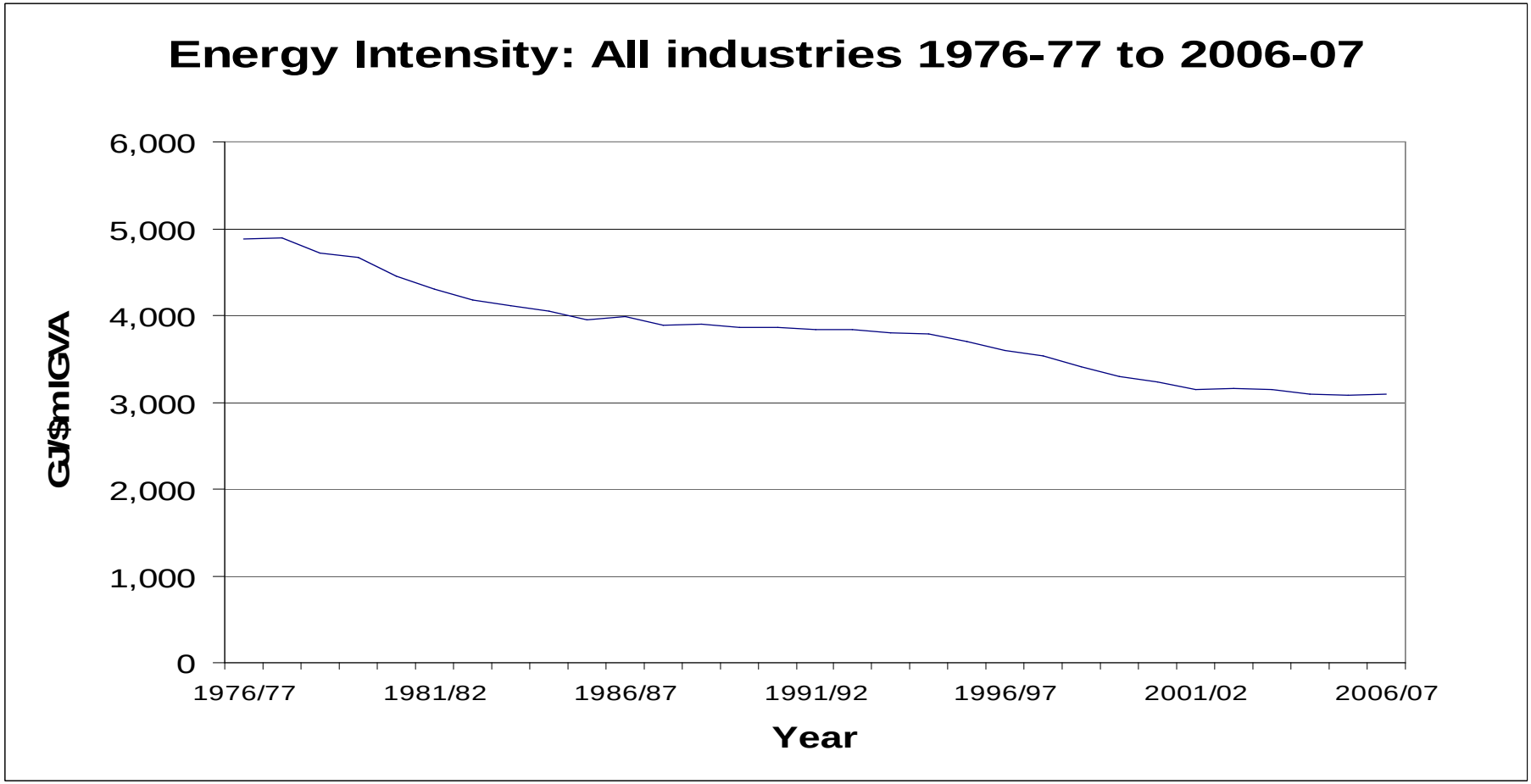
3. Energy Intensity

- Interest in energy intensity measures will heighten in a carbon-constrained economy with rising energy prices
- Energy intensity in ABS Energy Account is physical energy use divided by economic output (chain volume measure)
  - Not per capita energy use, which produces different results.

Energy intensity *continued...*

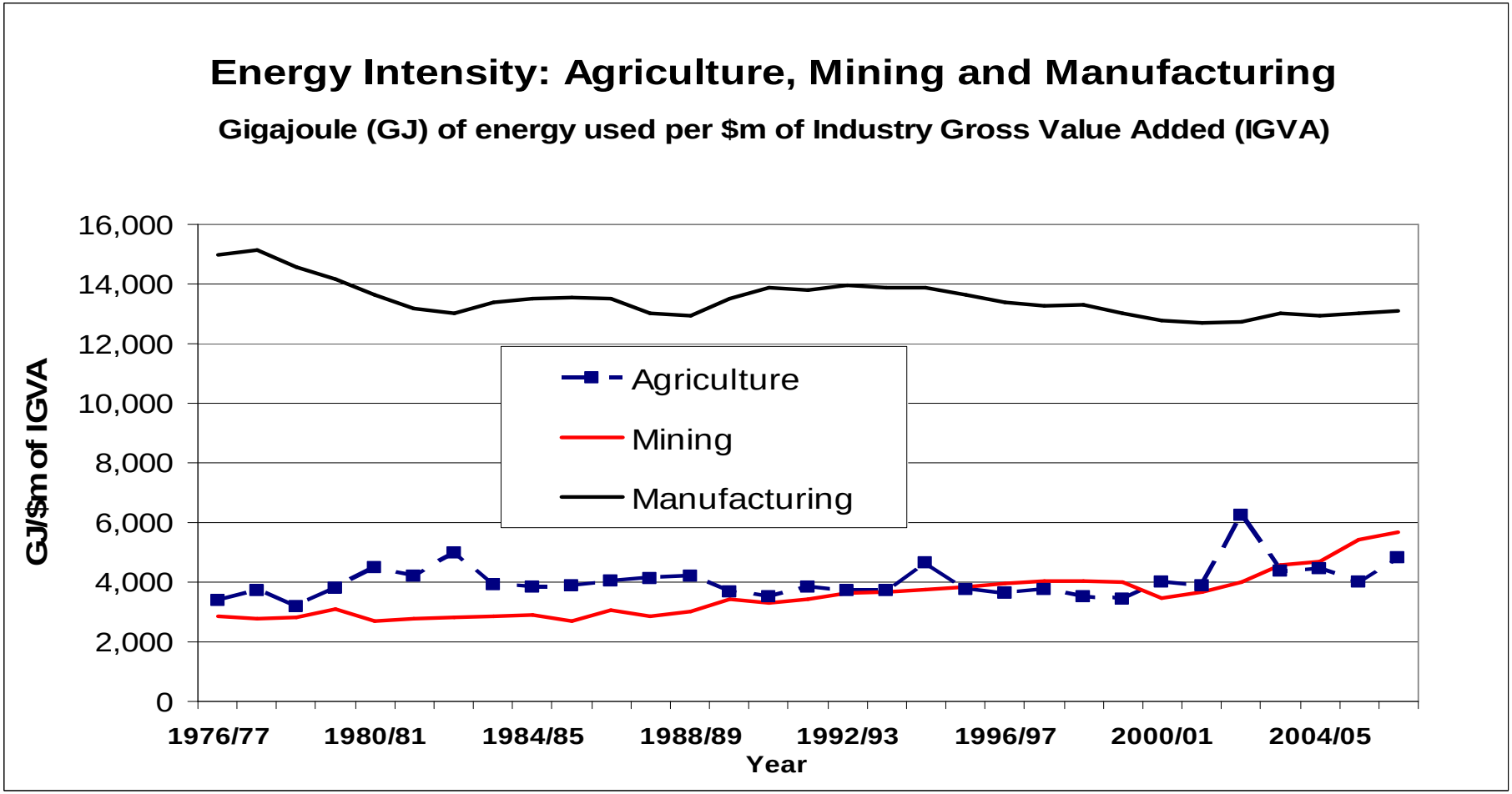
- Energy Account re-allocates physical consumption on a more conceptually appropriate basis
  - Giving more realistic estimates of energy intensity by industries.
- As expected, overall trend over the last 30 years has been downward…..

Energy intensity - falling



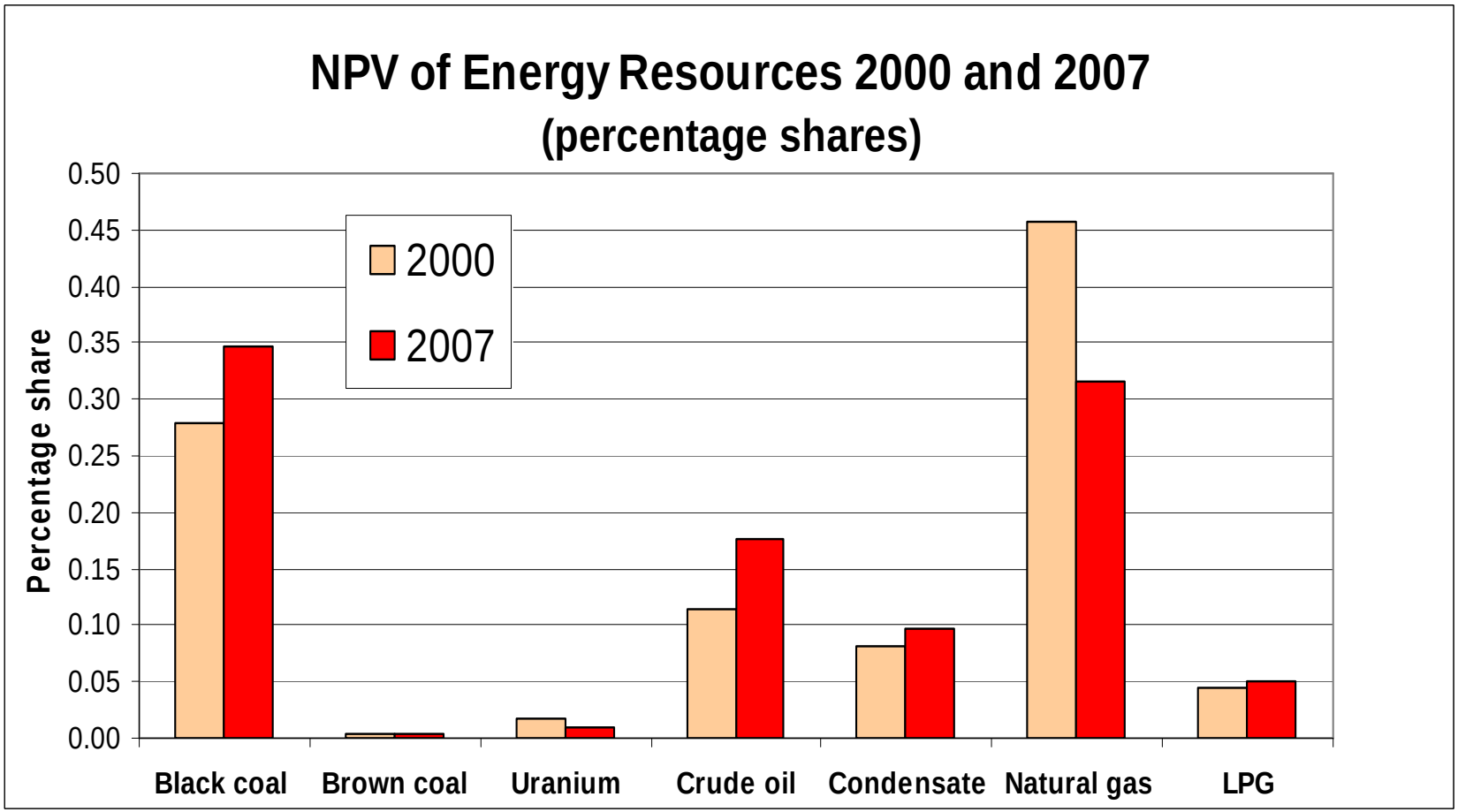
not all industries followed the general downward trend

- notably, Mining and Agriculture



Why mining has become more energy intensive

4. Energy Resources



The future….

- ABS will be conducting an Energy, Water and Environment Survey (EWES) 2008-09
  - which will provide extremely valuable input into future ABS Energy Accounts
  - especially if survey becomes a regular collection.

Issues

- ABARE's Fuel and Electricity sampling frame is old and may need updating
- Response to ABARE survey is voluntary and modelling is needed to fill in gaps
- ABS input-output data is intermittent, preventing a time series for the hybrid (monetary and physical) table
- New administrative source of energy data coming on board from 2010 but high thresholds initially
  - What to do to bridge gaps in first few years
  - What is the future of ABARE survey?
  - Will the administrative data fit neatly into statistical and other (eg IEA) classifications?

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Thank you

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