The Australian Natural Gas Industry

"You call, we haul"

J. K. McDonald
CEO
Australian Pipeline Trust

8 May 2001

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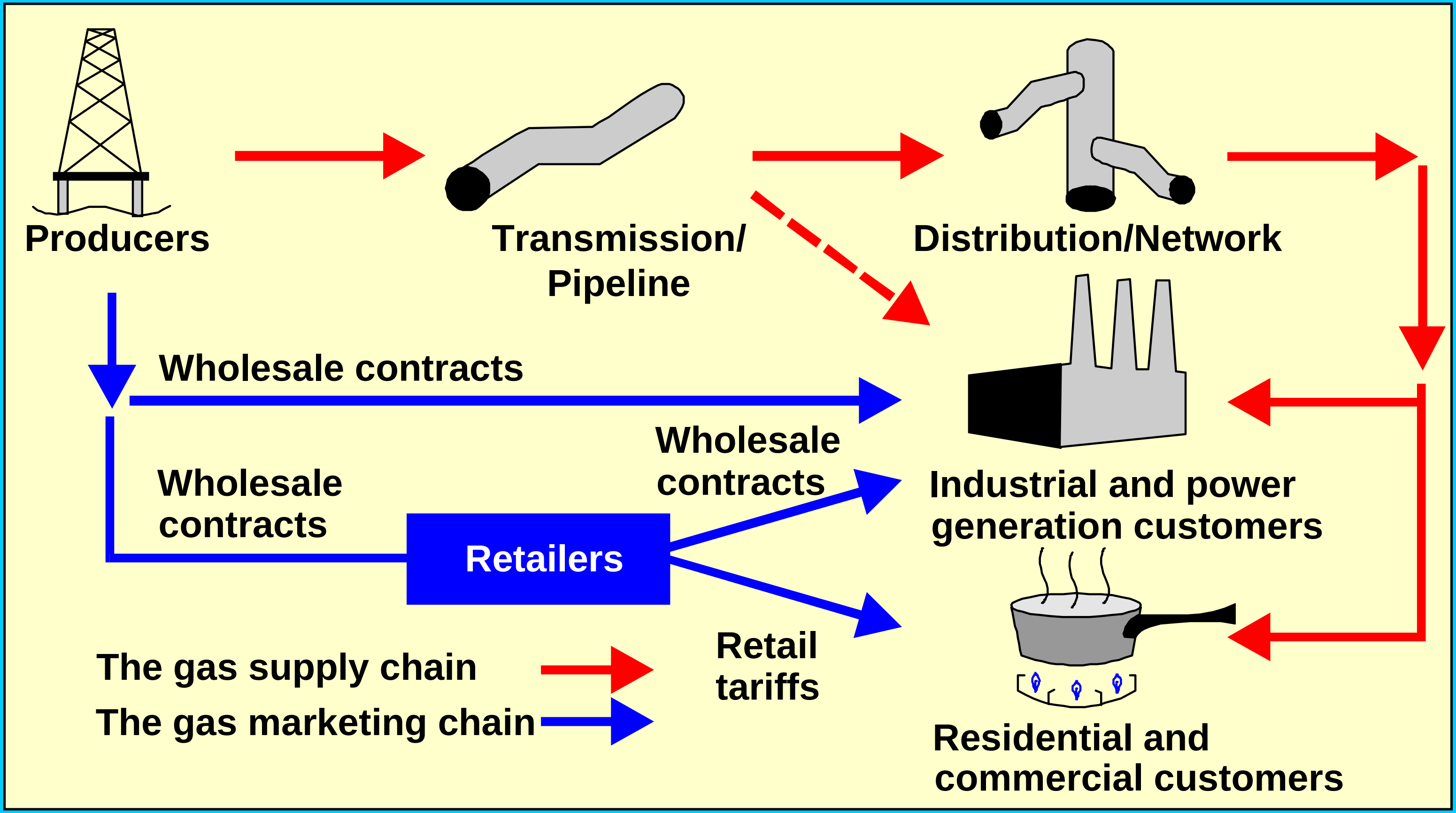
Credits

- ABARE
- AGA
- APIA
- NIEIR
- Powerline GES
- UMS Group Inc

Natural Gas Supply and Marketing



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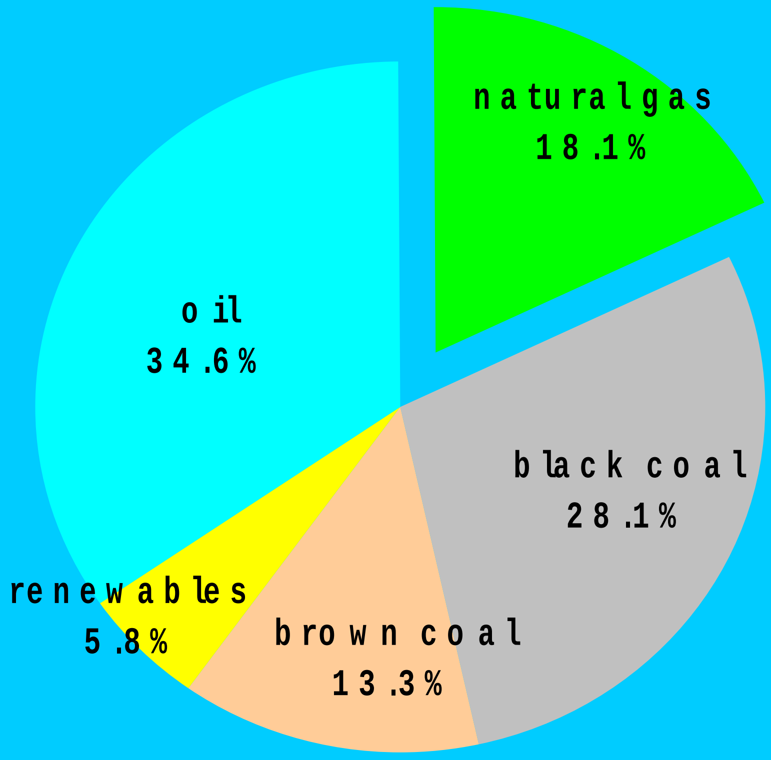
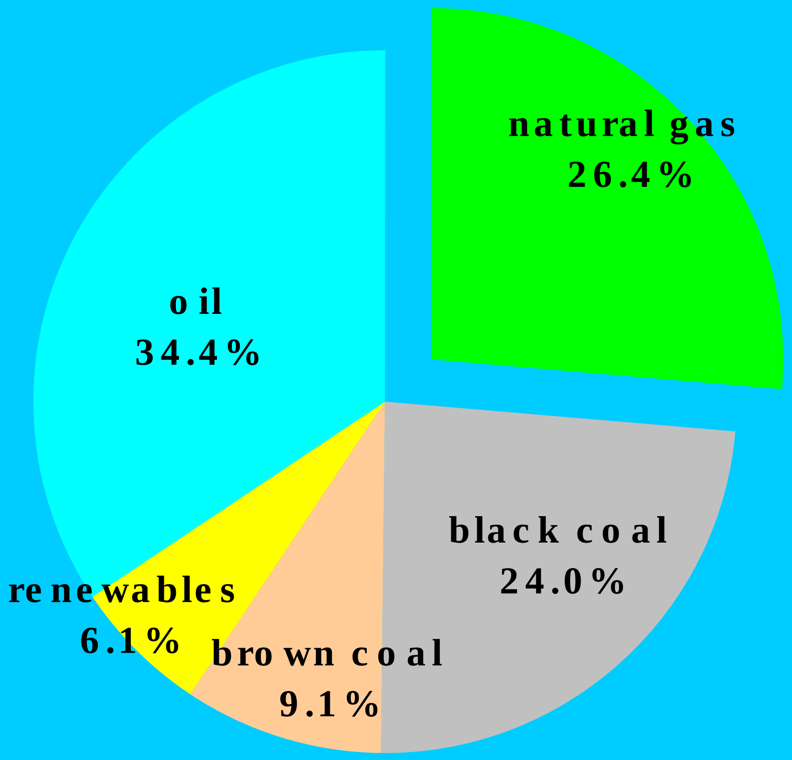
Primary Energy Consumption by Fuel Type

1998-99



2014-15



Source: AGA

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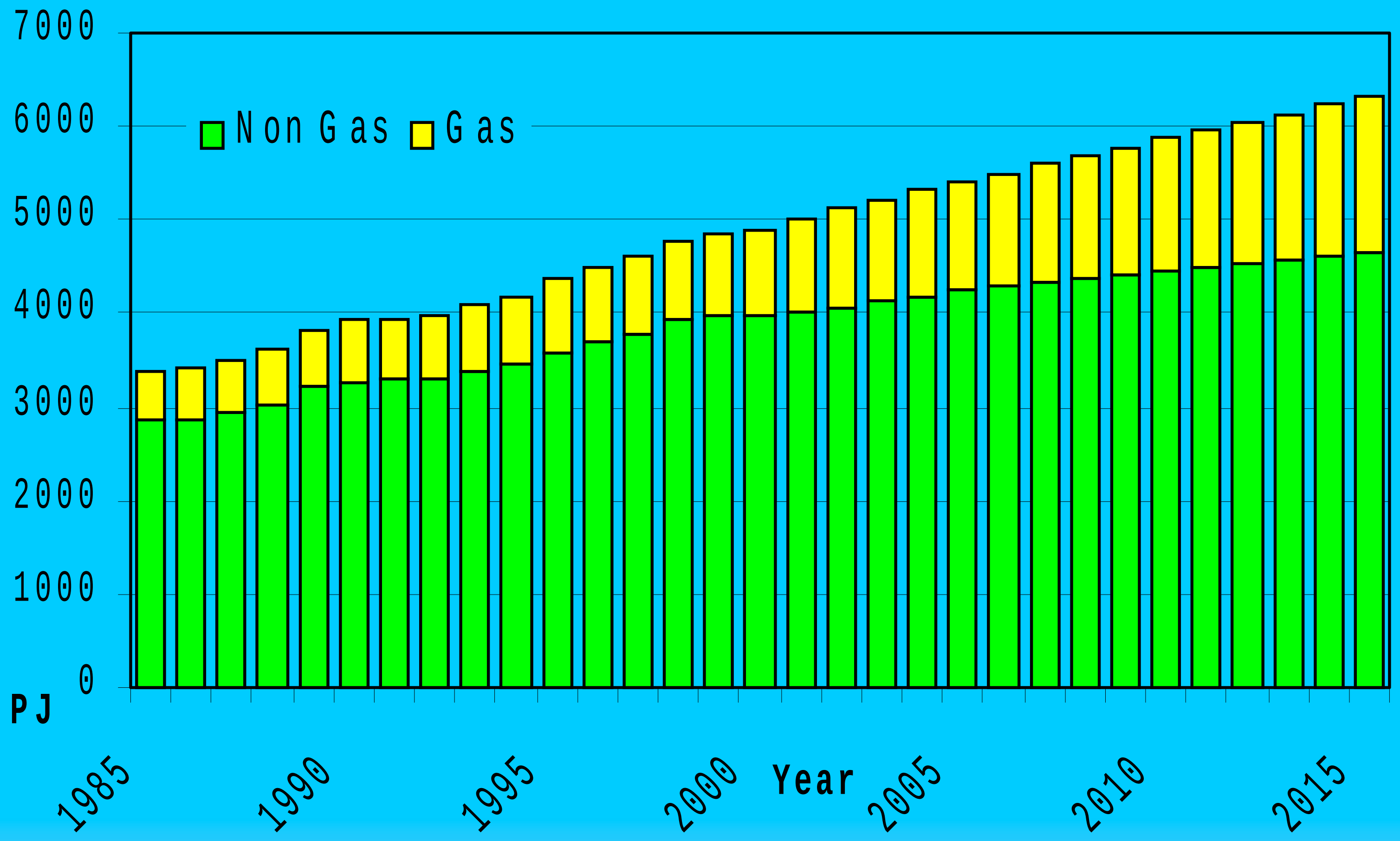
Natural Gas Primary Energy Share



Source: AGA / NIEIR

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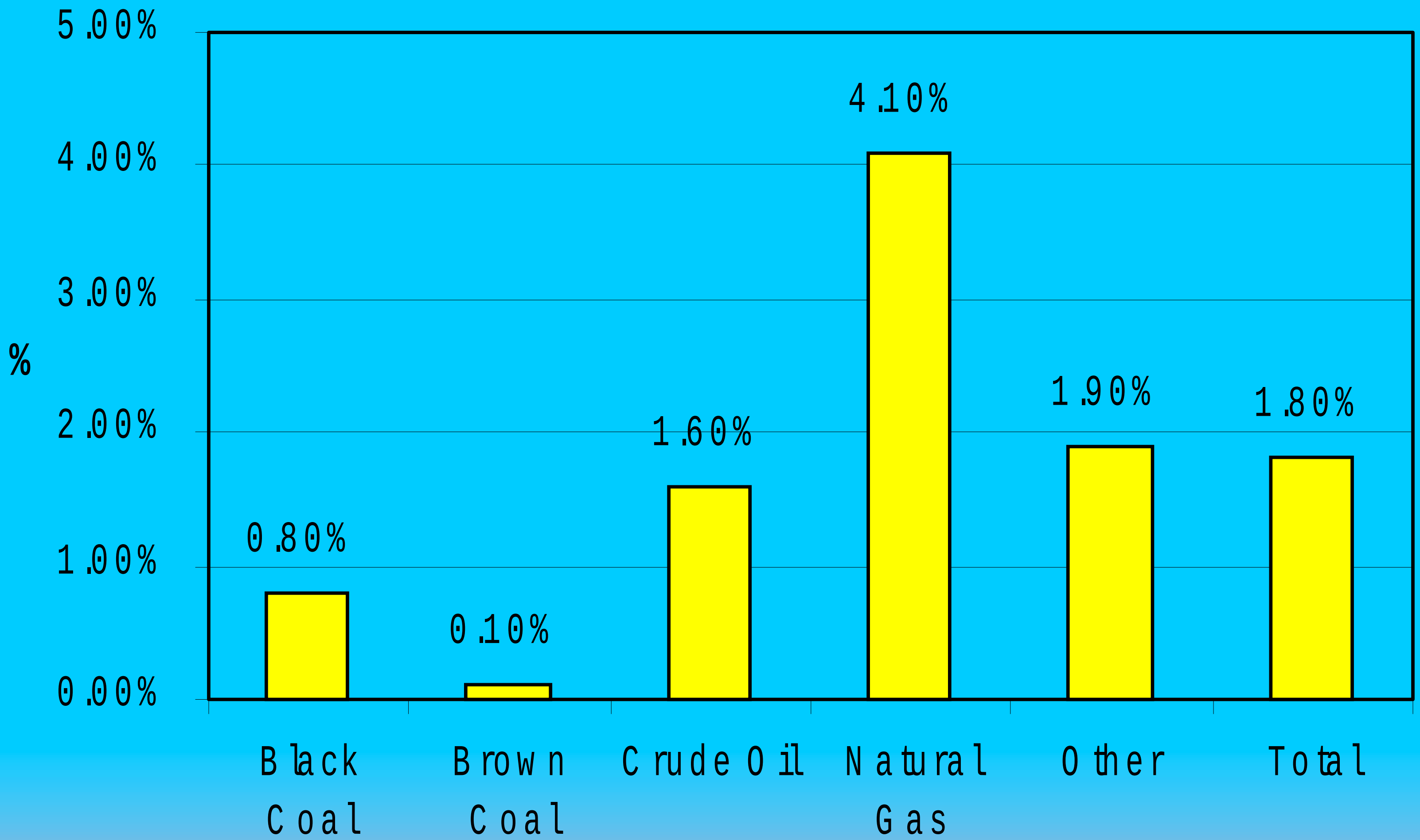
Australian Energy Consumption Compound Growth 1997-2015



Source: AGA/ABARE

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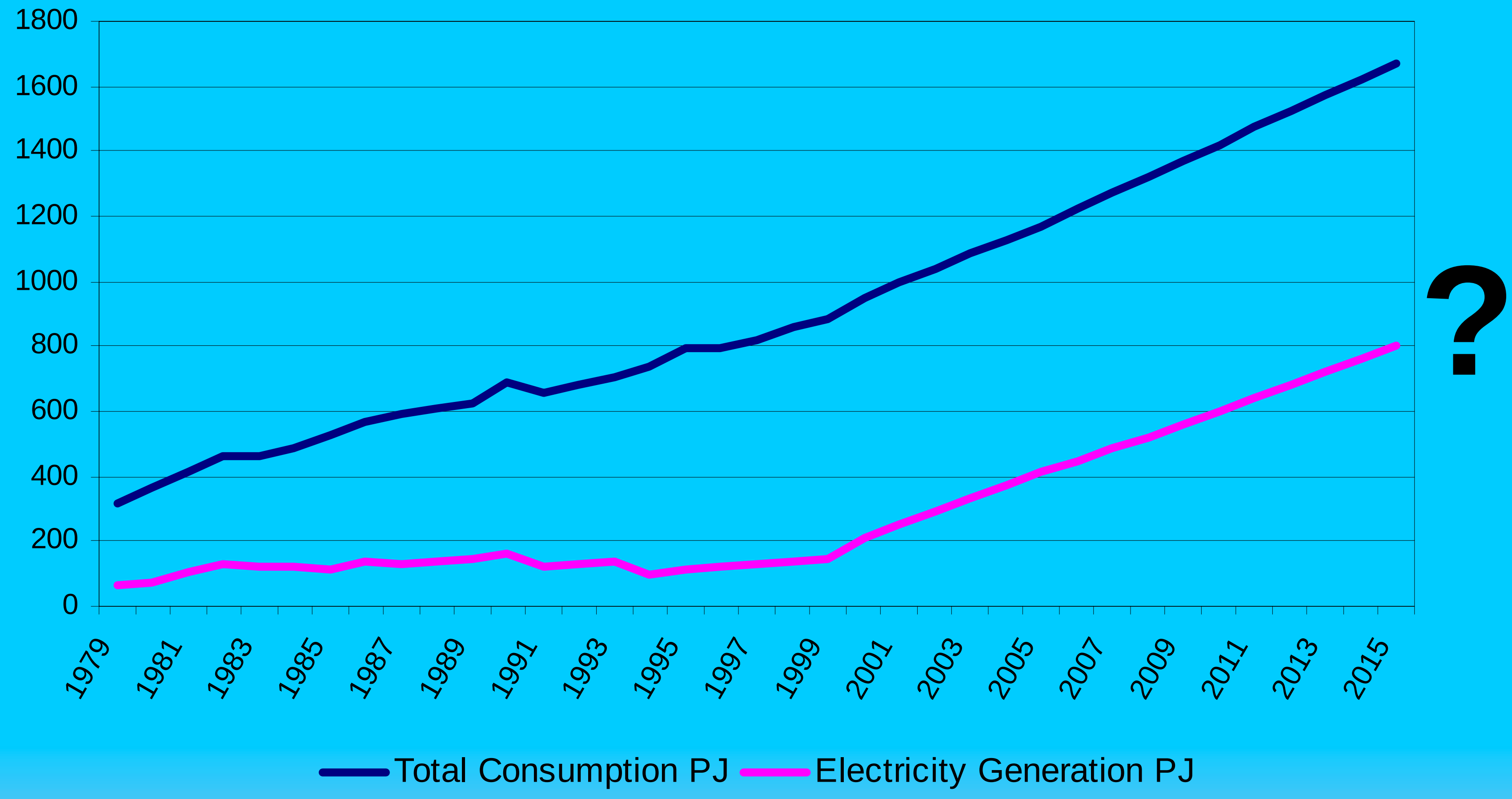
Australian Natural Gas Consumption



Source: ABARE

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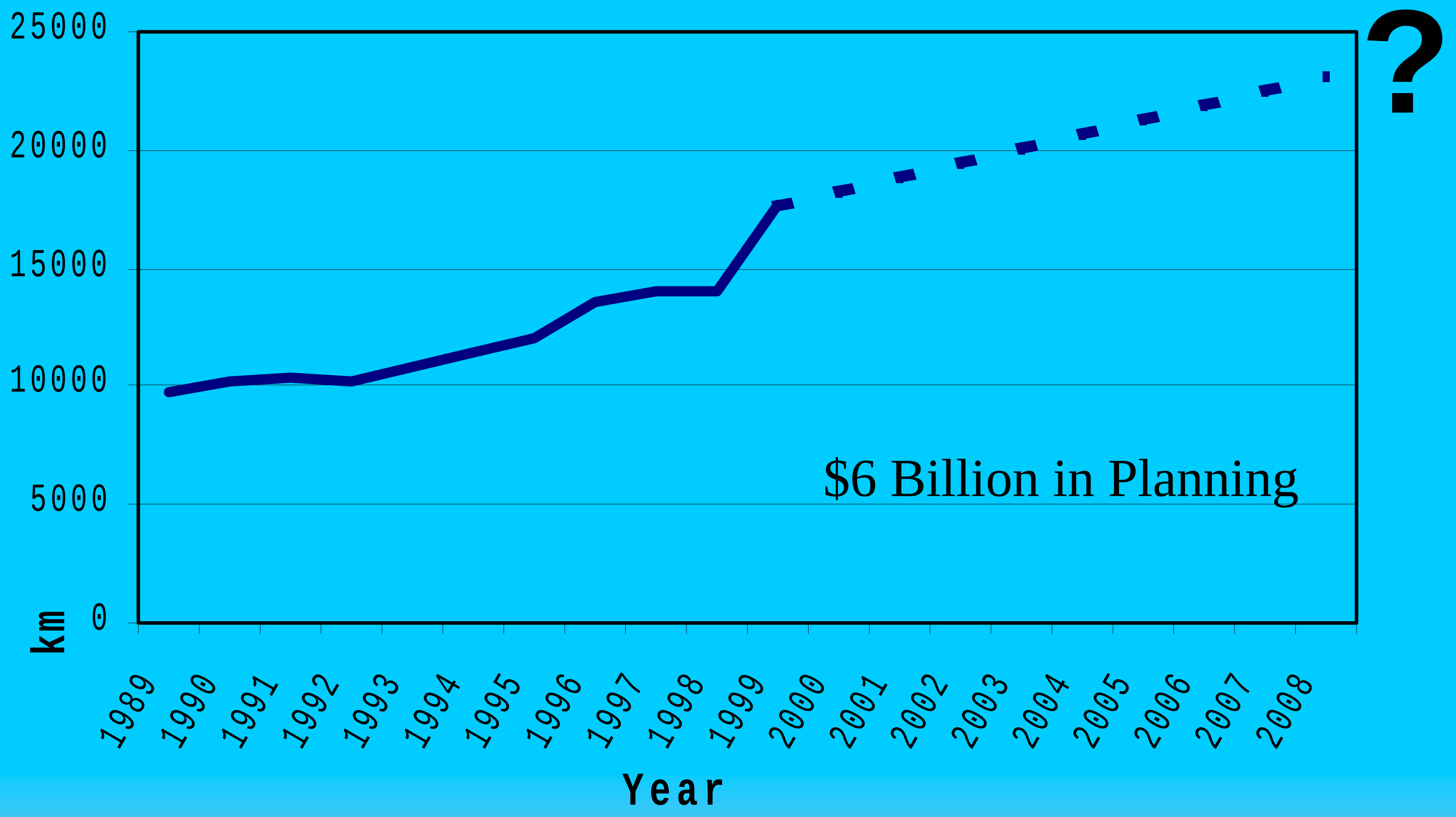
Transmission Pipelines in Australia



Source: AGA

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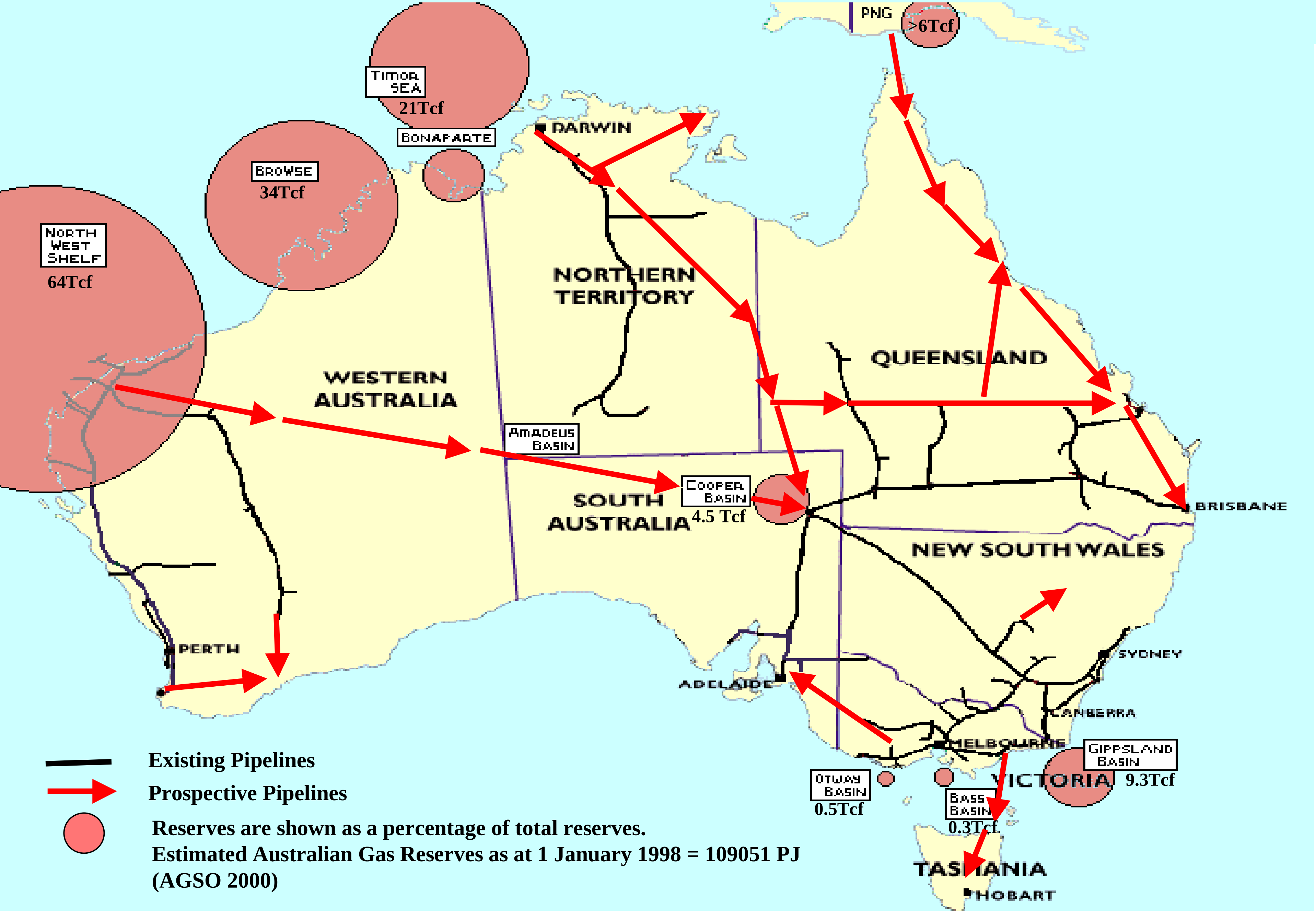
Australia's Natural Gas Transmission Pipelines and Basins



Reserves are shown as a percentage of total reserves.
Estimated Australian Gas Reserves as at 1 January 1998 = 109051 PJ
(AGSO 2000)

Natural Gas in Thermal Electricity Generation

	1996-97	2004-05	2014-15
NSW	1.8%	2.2%	11.7%
Vic	2.3%	2.5%	6.3%
Qld	0.7%	19.1%	28.5%
SA	47.8%	63.1%	69.6%
WA	40.0%	50.1%	55.9%
NT	83.7%	84.9%	86.2%
Australia	8.5%	14.9%	23.0%

Source: NIEIR

Evolution of power production

Source: Heat & Power Assoc UK

PLANT	PRIMARY ENERGY	CONVERSION EFFICIENCY	TRANSMISSION LOSS	USEFUL ENERGY
CENTRAL POWER	GAS/OIL COAL NUCLEAR	50%	10%	40%
DISTRICT HEATING+CHP	GAS/OIL COAL	80%	5%	75%
SMALL SCALE CHP+100kW	GAS/OIL	82%	2%	79%
MICRO CHP -5kW	GAS/OIL	90%	0%	90%

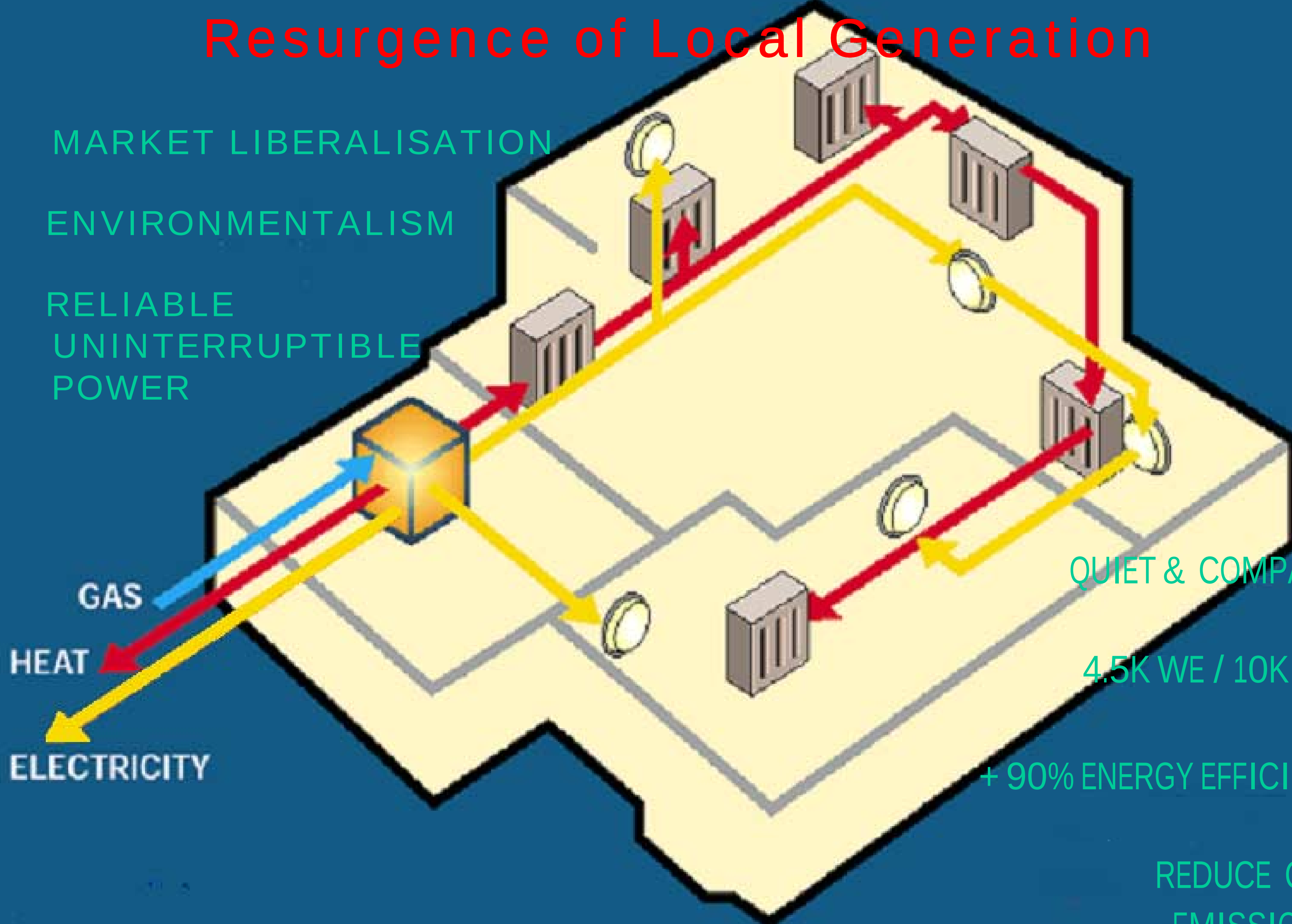
Source: Powerline GES

Resurgence of Local Generation

MARKET LIBERALISATION

ENVIRONMENTALISM

RELIABLE
UNINTERRUPTIBLE
POWER



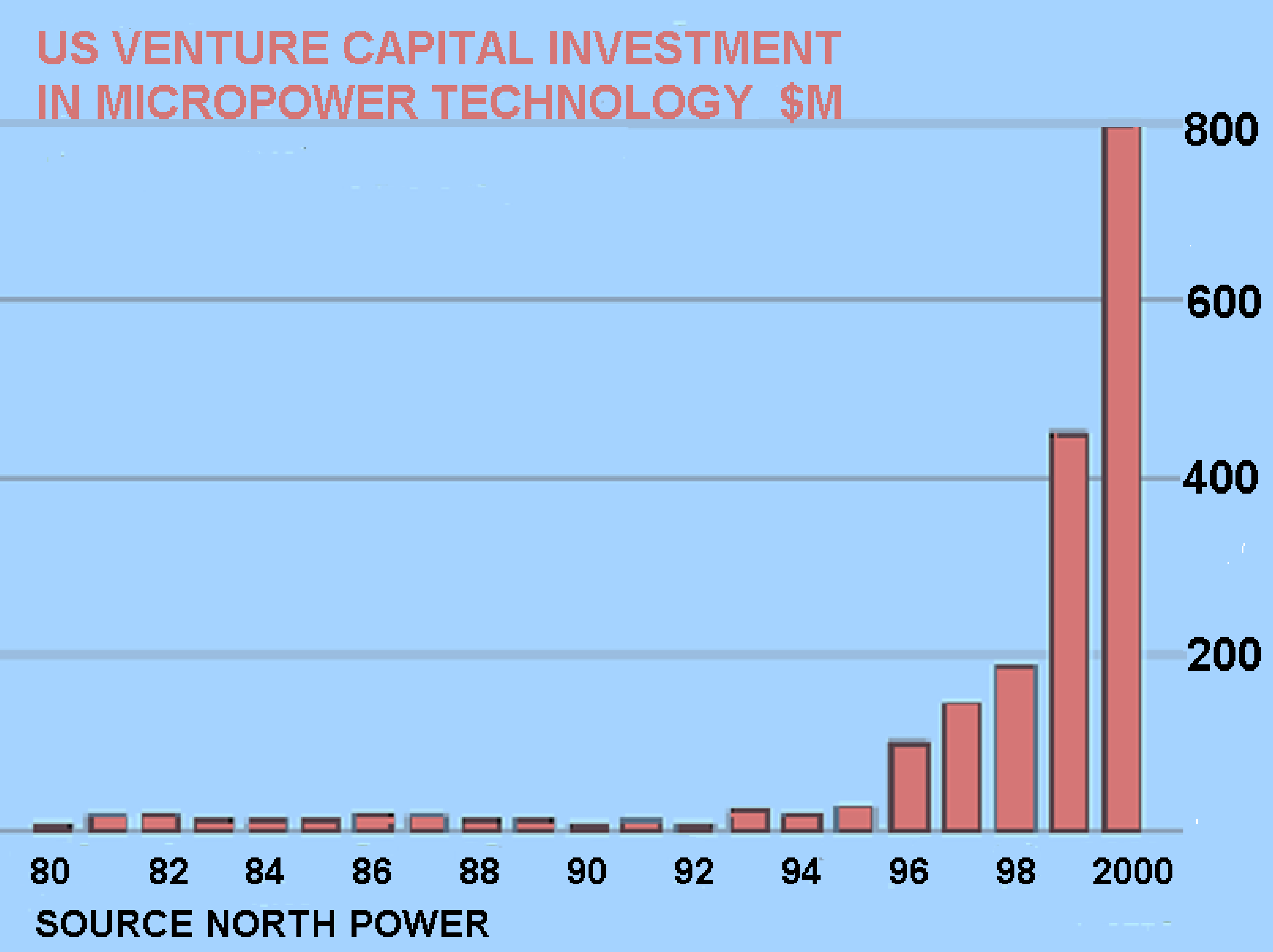
QUIET & COMPACT

4.5K WE / 10K WH

+ 90% ENERGY EFFICIENCY

REDUCE CO2
EMISSIONS
BY 70 – 85 %

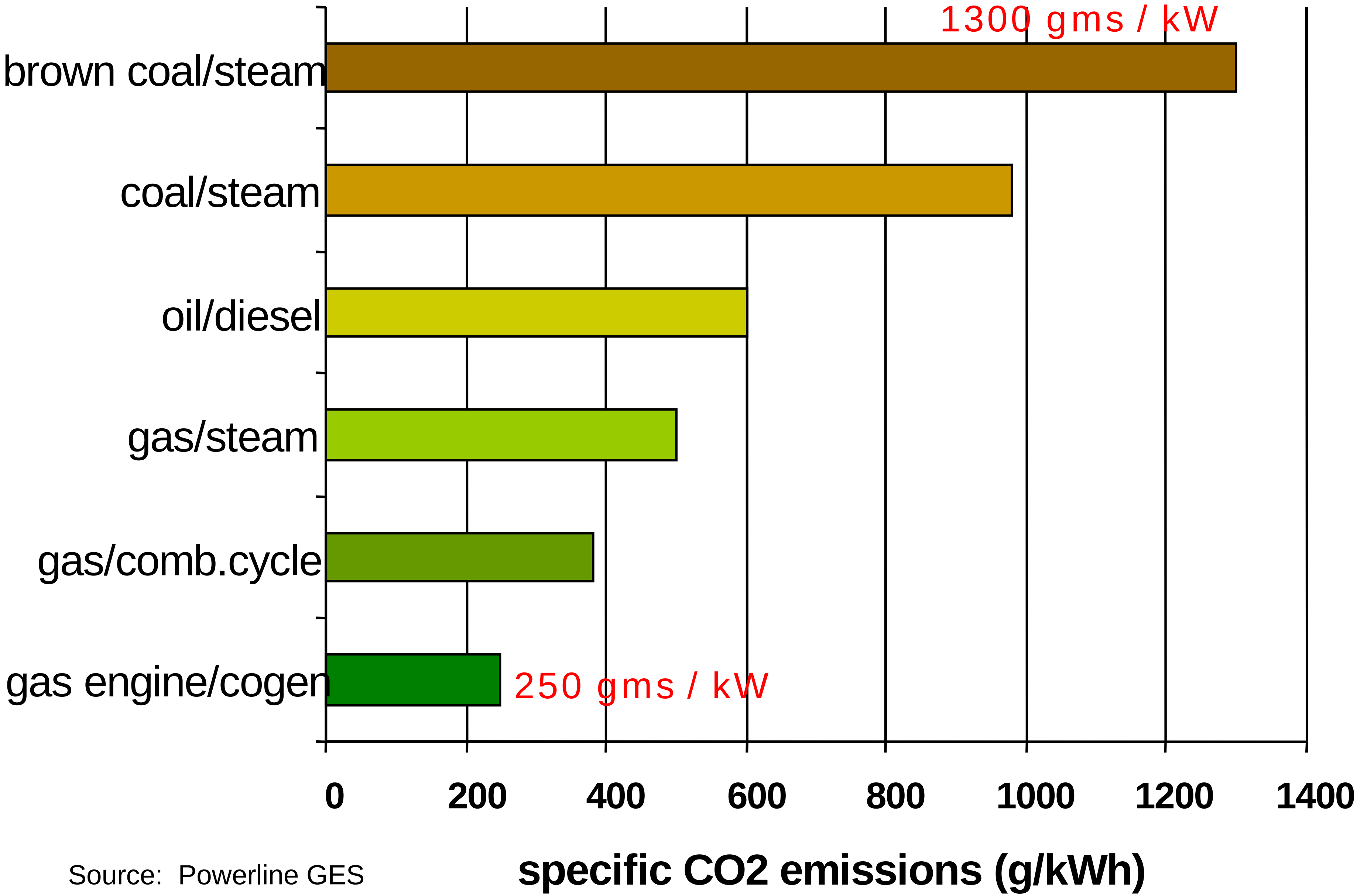
Source: Powerline GES


US VENTURE CAPITAL INVESTMENT
IN MICROPOWER TECHNOLOGY $M
800
600
400
200
80
82
84
86
88
90
92
94
96
98
2000
SOURCE NORTH POWER

Natural Gas Greenhouse Benefits

- Full Life Cycle Assessment - lower emissions than coal and diesel fuels
- Important role of natural gas in future emissions trading arrangements
- International abatement role through LNG exports, Kyoto protocols

CO2 Emission by Electricity Production



Source: Powerline GES

Market Reform

NCP reform resulted in:

1. Separation of production, transmission, distribution, and retail
2. Widespread privatisations in Vic, WA, SA, Cwth
3. Transmission and distribution regulated (3rd party access) under National Code
4. Market deregulation moving to residential levels - different timetables in each state / gas vs electricity

Co-incident with:

1. Pipeline grid expansions
2. Foreign investment surge

Gas Market Reform

- Partially complete
- Regulation is heavy handed, unbalanced, and intrusive
- Competition between producers limited (except WA)
- Increased number of retailers - convergence
- Four transmission companies --> Three
- More pipelines planned but ……………..

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Regulation Reform Today

- Code shortcomings recognized
- Multi-jurisdiction concerns
- Gas Users Group vs Vencorp
- Greenfields Projects initiative
- Code review late this year
- Political fallout from reform
  – California
  – South Australia

Issues

- Pipeline code regulation reform
- Barriers to market growth
- Greenhouse gas abatement measures
- Energy market convergence issues
- Basin-on-basin competition
- National Energy Policy

Issues (cont'd)

- Energy security
- Review of depreciation of long lived assets
- New retail market rules - consistency
- Energy Credits Scheme introduction
- Public image of gas
- Major gas projects facilitation

A Prediction

- Natural gas will meet the market
- Natural gas will beat the market
- New transmission pipelines will be built
- Existing pipelines will carry more gas
- Regulation impact on transmission will be moderate

APA is in the Gas transmission business

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www.pipelinetrust.com.au

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