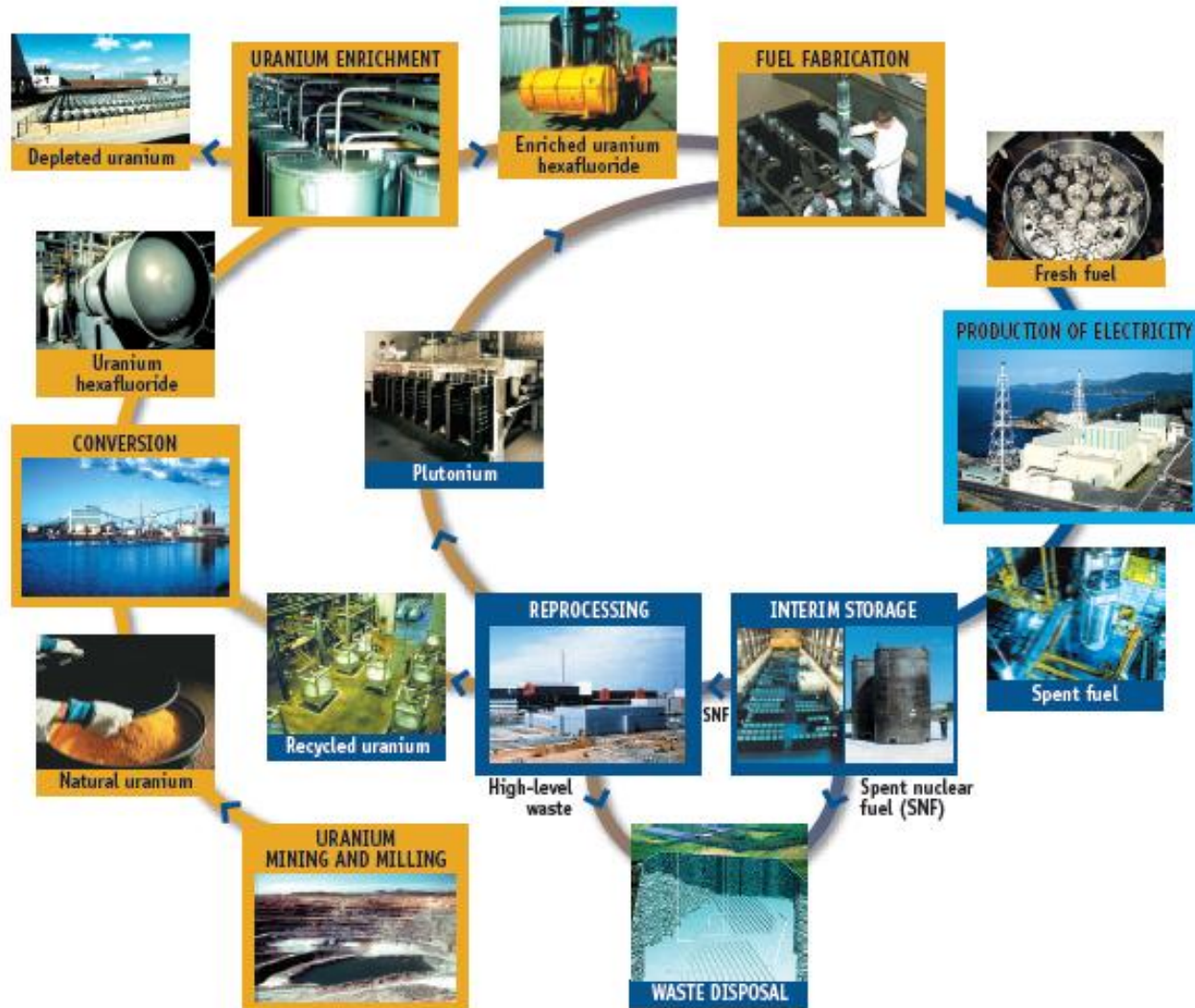


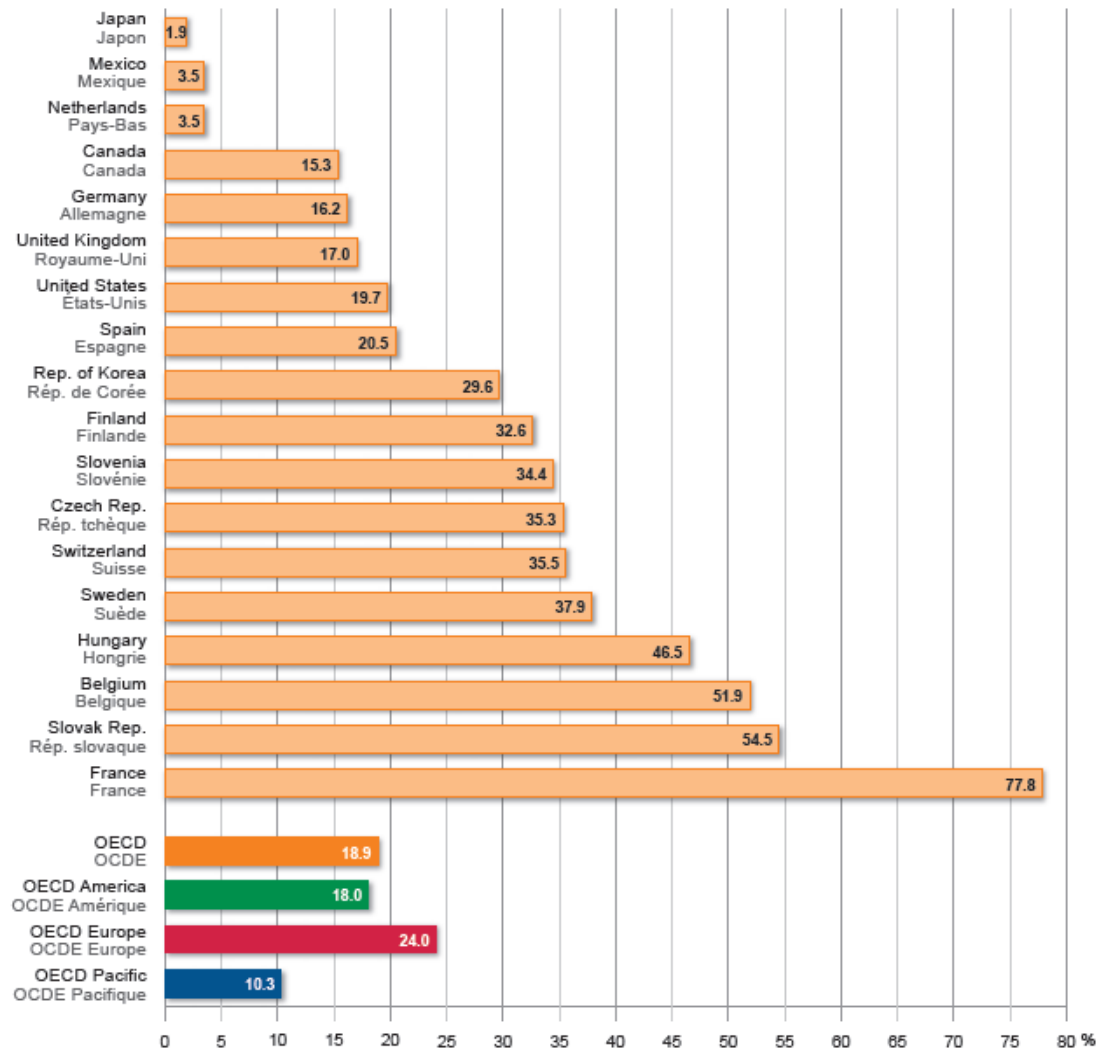
Nuclear Power for Australia?

A look at some of the issues

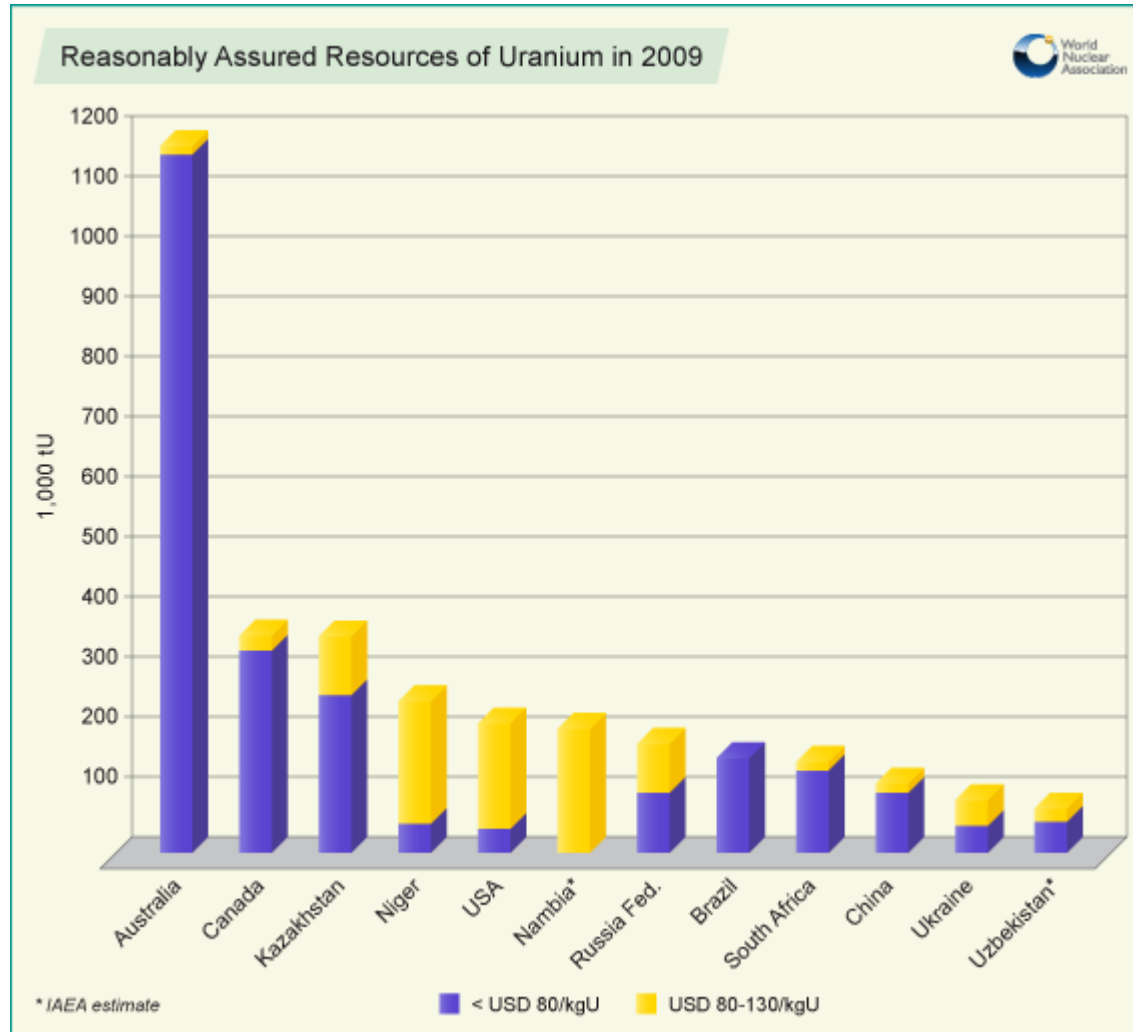
The nuclear fuel cycle



Share of nuclear energy in OECD

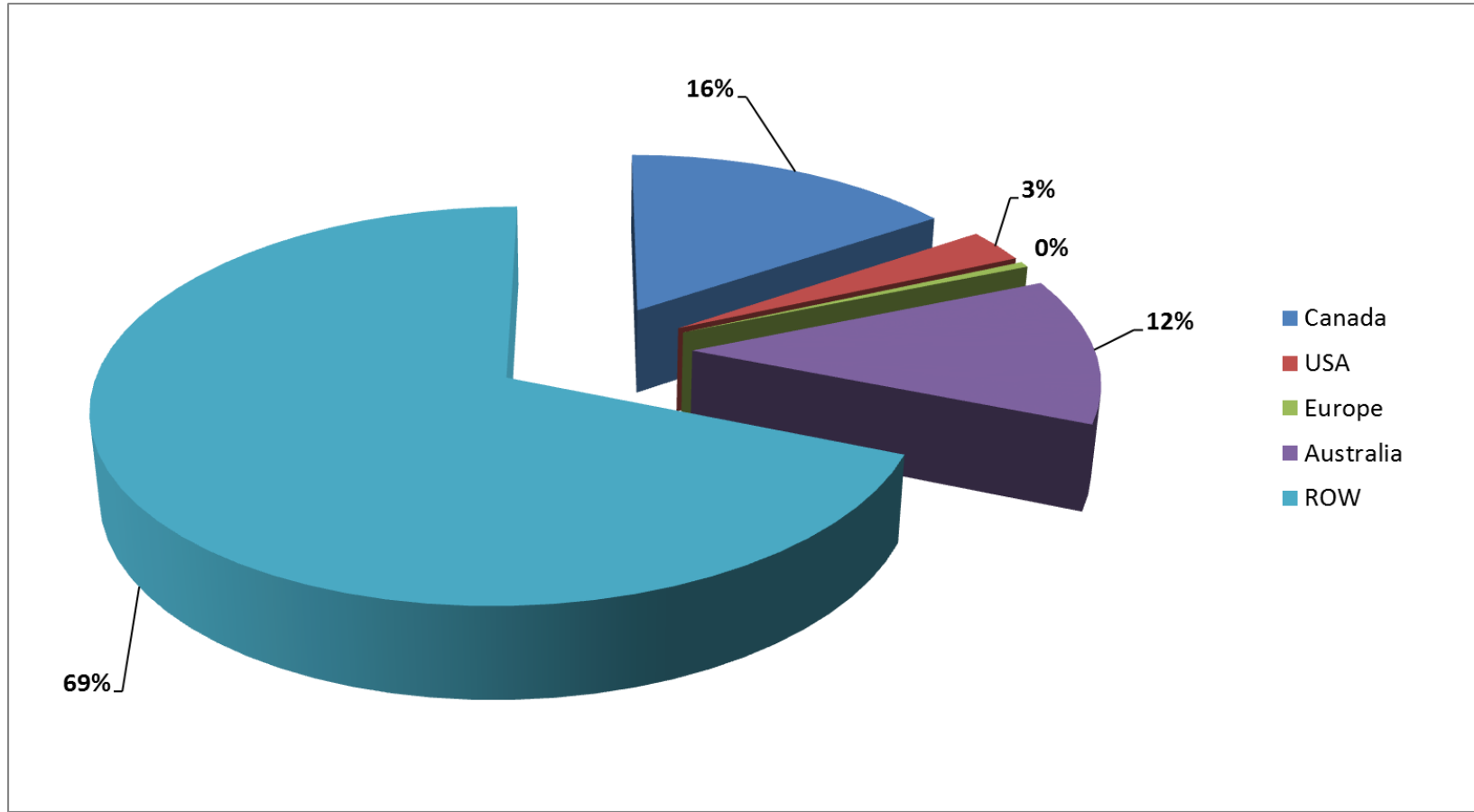


Reserves of uranium





Uranium production (2012)





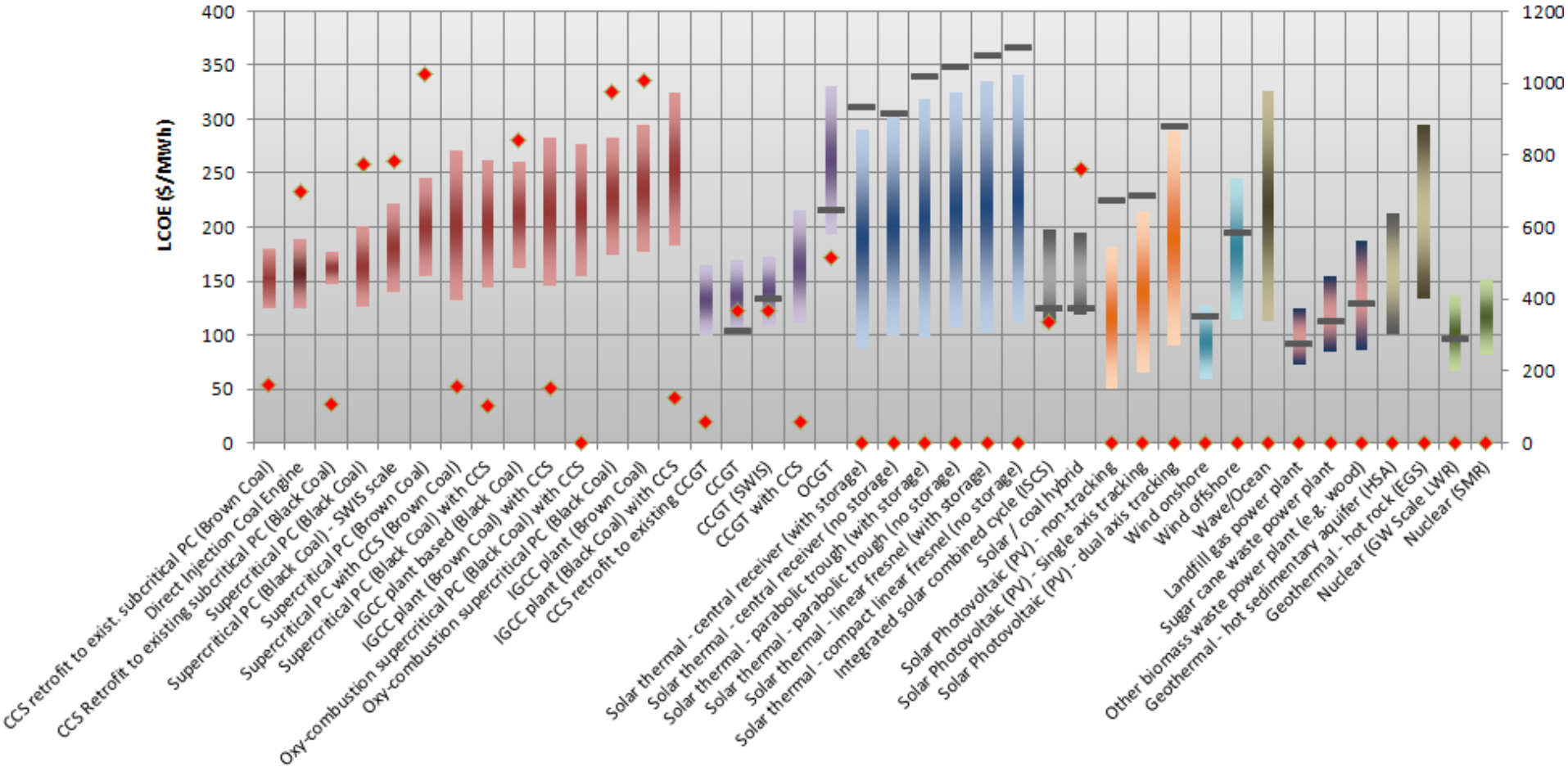
So why doesn't Australia use nuclear power?

- ▲ Plenty of cheap(ish) coal and gas
- ▲ No price on carbon emissions (soon)

AUSTRALIAN ENERGY TECHNOLOGY ASSESSMENT 2012

2030 TECHNOLOGIES *

kgCO₂e/MWh



LCOE# includes, where relevant, allowance for:

- Carbon Price
- CO₂ transport and sequestration cost
- Plant capital cost (EPC basis) within battery limits
- Owners costs excluding interest during construction
- Fixed and variable O&M
- Fuel costs
- Economic escalation factors

LCOE excludes:

- Decommissioning costs
- Project residual value
- Network connection costs and augmentation
- Effects of taxation
- Financing costs
- Plant degradation

LCOE Sources of Uncertainty

- Capital Cost
- Operating cost
- Fuel cost
- Carbon cost
- Sequestration cost

Legend

- ◆ Emission Intensity (kgCO₂e/MWh)
- 2012 LCOE mid-point (where technology is available in 2012)

Note: * Default region is NSW except brown coal technologies (VIC) and SWIS scale (as specified)

Levelised Cost of Electricity (LCOE)

Further Information:

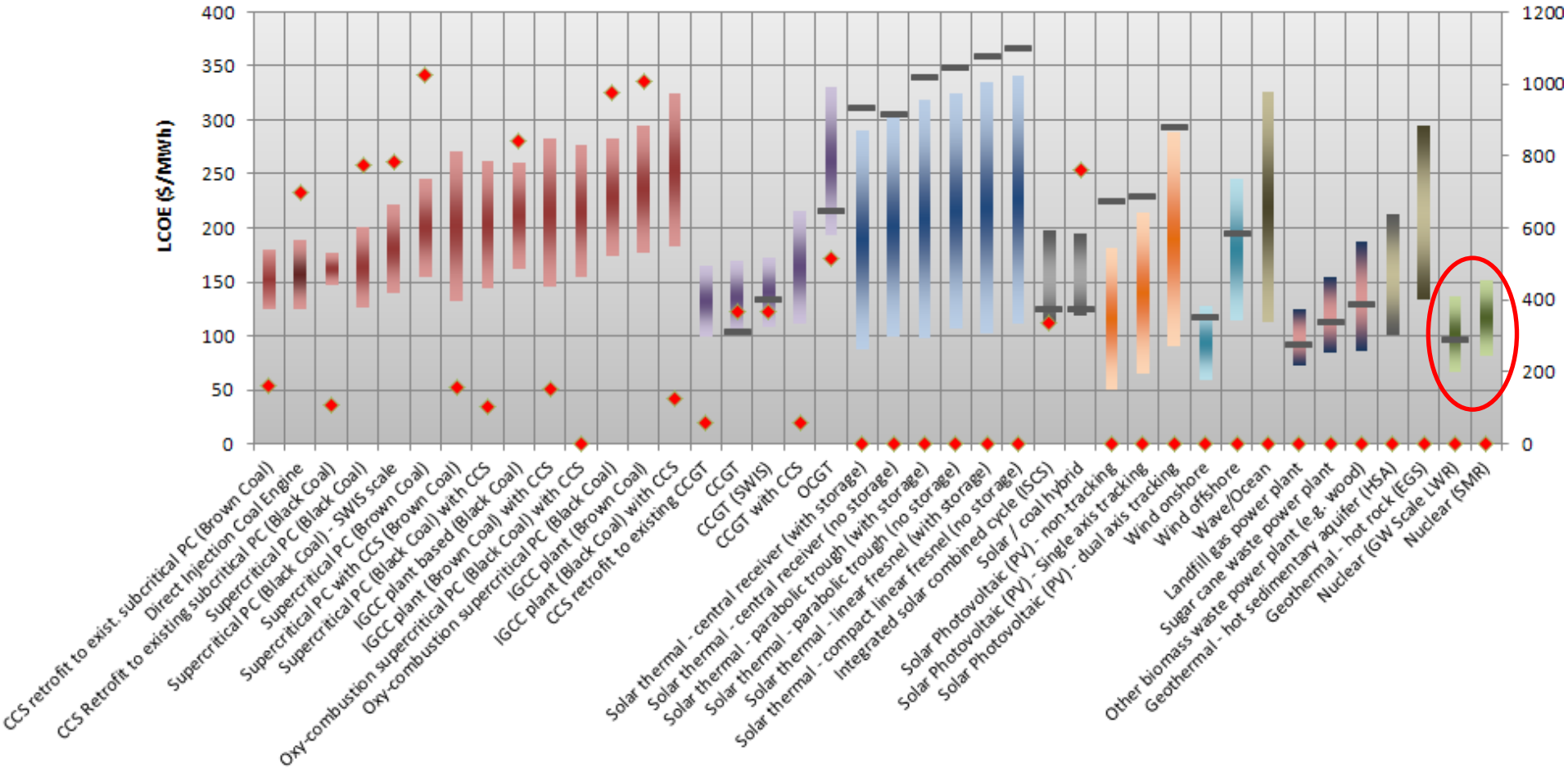
www.bree.gov.au

31 July 2012

AUSTRALIAN ENERGY TECHNOLOGY ASSESSMENT 2012

2030 TECHNOLOGIES *

kgCO₂e/MWh



LCOE [#] includes, where relevant, allowance for:	LCOE excludes:	LCOE Sources of Uncertainty	Legend
<ul style="list-style-type: none"> Carbon Price CO₂ transport and sequestration cost Plant capital cost (EPC basis) within battery limits Owners costs excluding interest during construction Fixed and variable O&M Fuel costs Economic escalation factors 	<ul style="list-style-type: none"> Decommissioning costs Project residual value Network connection costs and augmentation Effects of taxation Financing costs Plant degradation 	<ul style="list-style-type: none"> Capital Cost Operating cost Fuel cost Carbon cost Sequestration cost 	<ul style="list-style-type: none"> Emission Intensity (kgCO₂e/MWh) 2012 LCOE mid-point (where technology is available in 2012)

Note: * Default region is NSW except brown coal technologies (VIC) and SWIS scale (as specified)

[#] Levelised Cost of Electricity (LCOE)

Further Information:
www.bree.gov.au

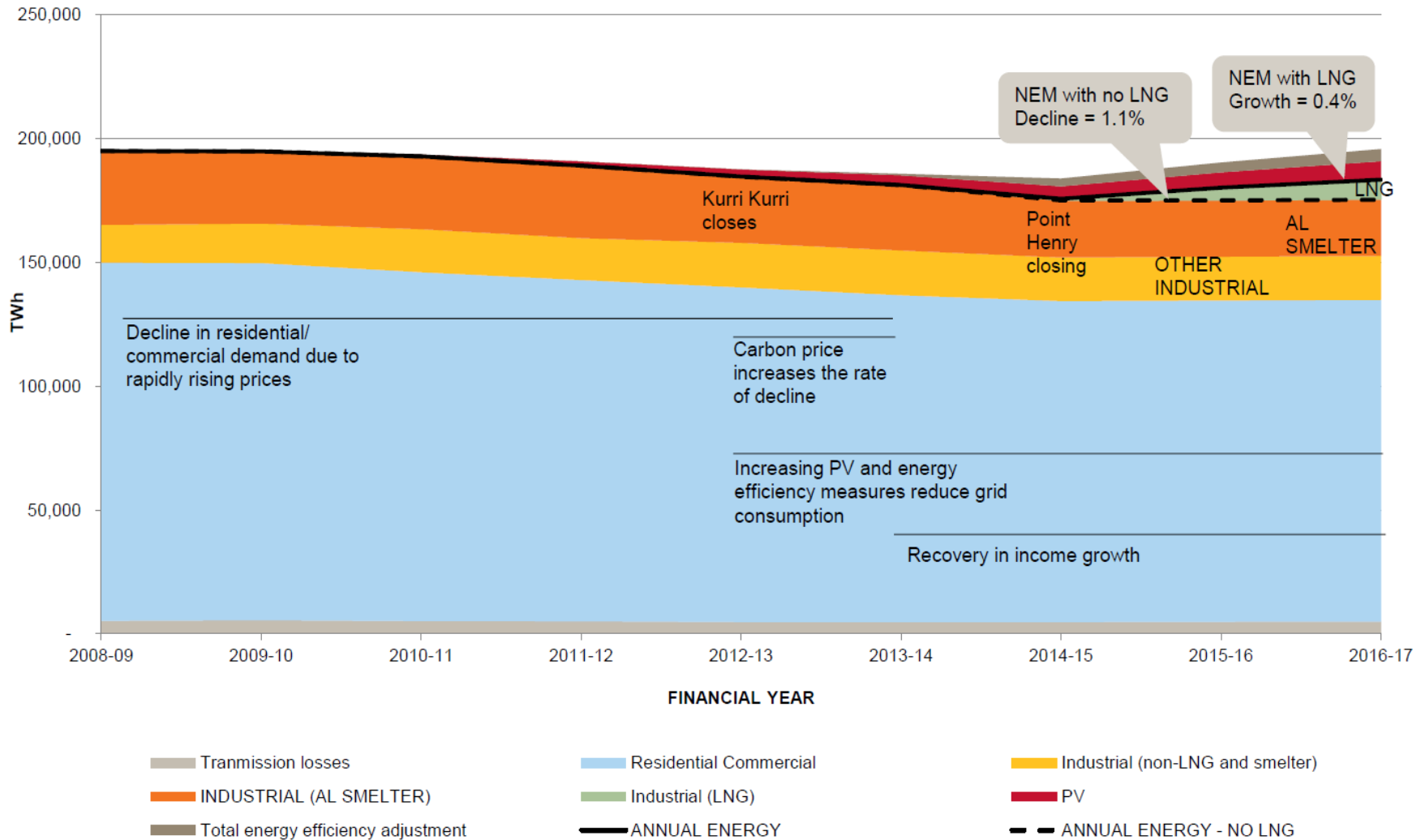
31 July 2012



So why doesn't Australia have nuclear power?

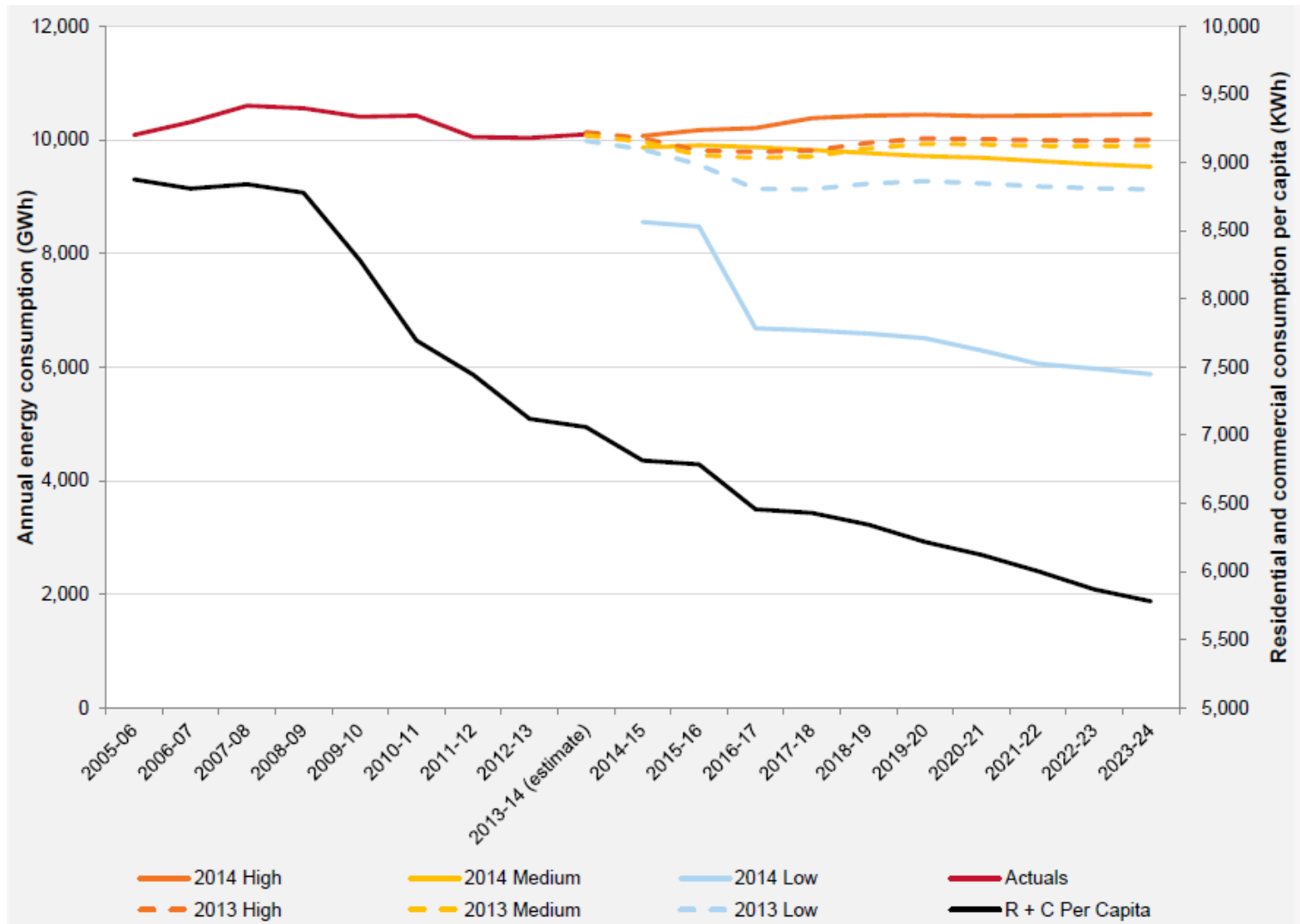
- ▲ Plenty of cheap(ish) coal and gas
- ▲ No price on carbon emissions (soon)
- ▲ **Falling electricity demand**

AEMO's 2014 electricity forecasts





Forecast for Tasmania





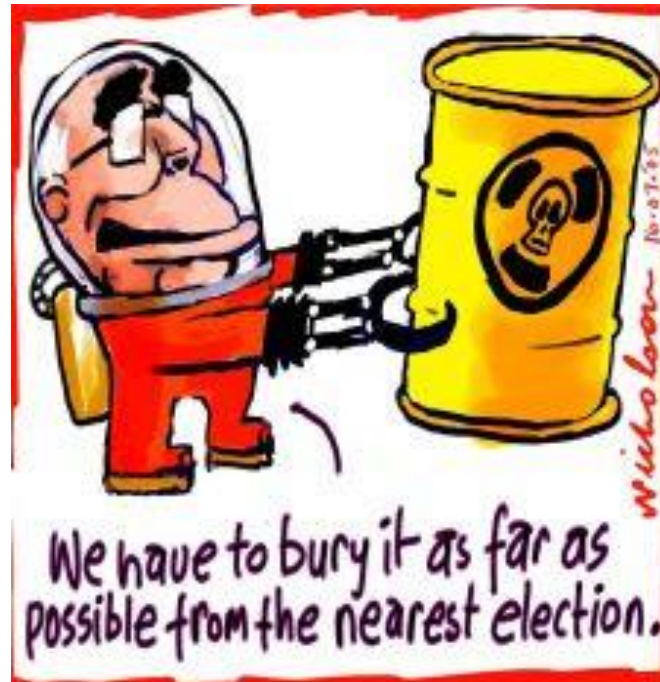
So why doesn't Australia have nuclear power?


- ▲ A lot of cheap(ish) coal and gas
- ▲ No price on carbon emissions (soon)
- ▲ Falling electricity demand
- ▲ **Politics**
 - ▲ There is a bipartisan position, but

Political bipartisanship ...



Political bipartisanship ...





ACOLA study of nuclear attitudes identified...

- ▲ Six pathways to attitude formation
 - ▲ Historical
 - ▲ Cultural
 - ▲ Political
 - ▲ News media
 - ▲ International influences
 - ▲ Education



ATSE Nuclear Conference

- ▲ *Nuclear Energy for Australia?*
- ▲ Two day conference in July 2013
- ▲ Attended by some 200 national and international experts and delegates
- ▲ The conference examined the opportunities and threats of nuclear and other energy options available to Australia
- ▲ Five key conclusions



ATSE Conference conclusions

- ▲ Nuclear is a viable technology for Australia
- ▲ Nuclear energy would help reduce our emissions
- ▲ The risks of nuclear energy are well studied and manageable
- ▲ Australia must be prepared
- ▲ Social and political acceptance is crucial



ATSE Energy Position Statement

- ▲ To support its sustainable development and future prosperity, Australia must move to low emission energy systems that are affordable, secure and reliable.
- ▲ A lack of a bipartisan political agreement is driving policy instability and uncertainty and hampering investment in energy.
- ▲ The fact that one of the few issues that political parties agree on is that nuclear energy is excluded from consideration as a generation option is a key problem.



So what should we do?

- ▲ ATSE Action Statement in preparation
- ▲ Three **draft** recommendations:
 - ▲ Nuclear energy should be an option for future base load generation.
 - ▲ Encourage open, informed community debate and understanding of the issues.
 - ▲ Undertake a comprehensive study to evaluate the social, environmental and economic potential of nuclear energy for Australia.



Thank you