

How nuclear power would impact the Australian economy

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Nuclear Energy for Australia?
Conference
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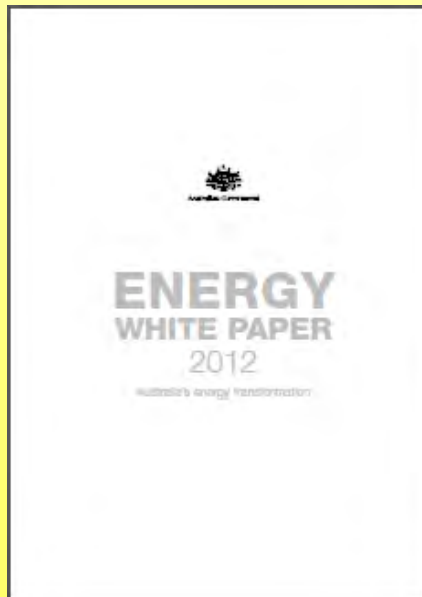
Economic Impact Areas

1. Greenhouse gas abatement cost
2. Health cost from burning fossil fuels
3. Retail cost of electricity
4. Jobs created in developing a nuclear power industry
5. Capital cost of installing nuclear power
6. Cost of delaying the introduction of nuclear power

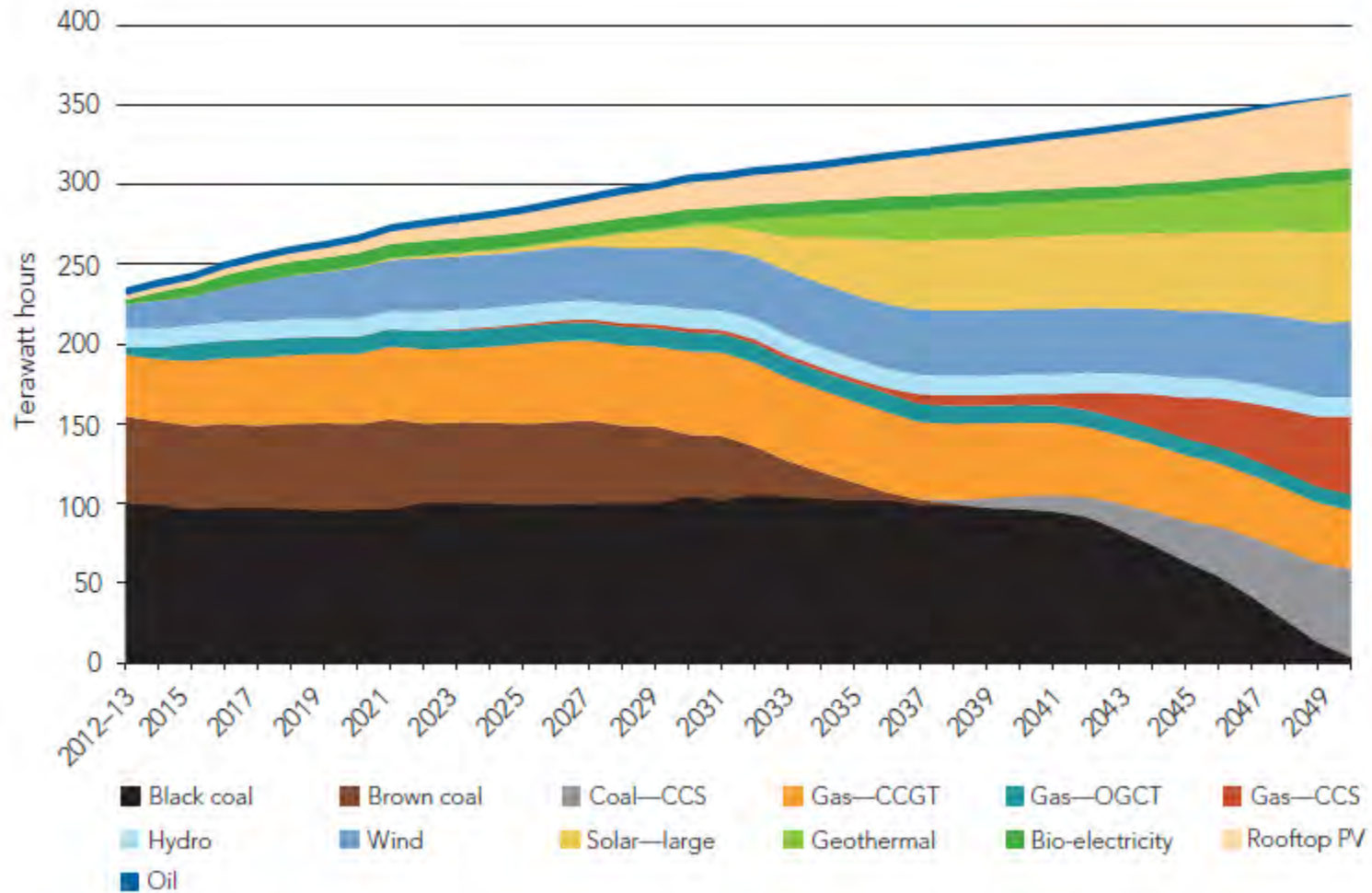


Electricity Mix Models

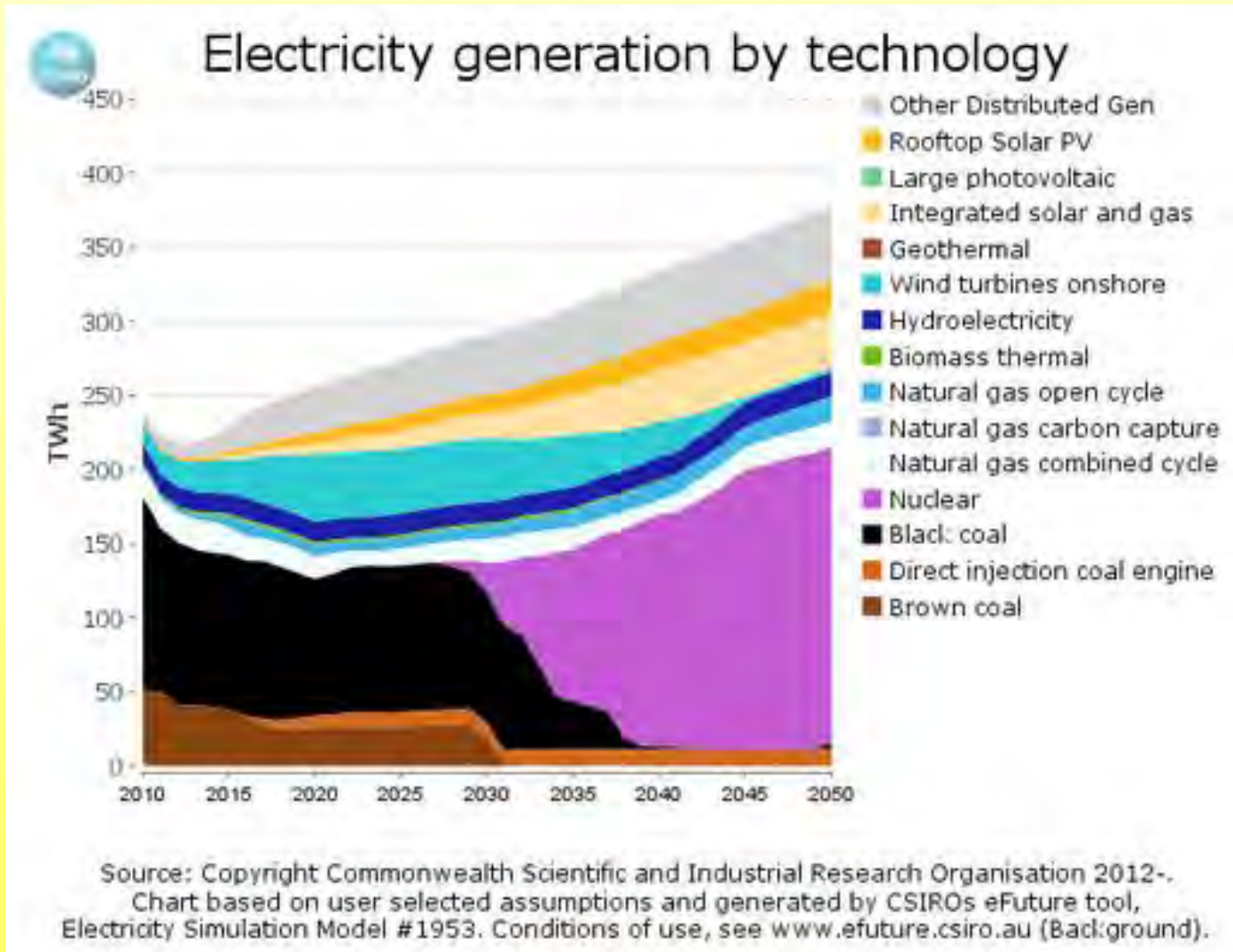
- Energy White Paper 2012 electricity generation mix model
- CSIRO eFuture default scenario with nuclear electricity generation mix model



Energy White Paper

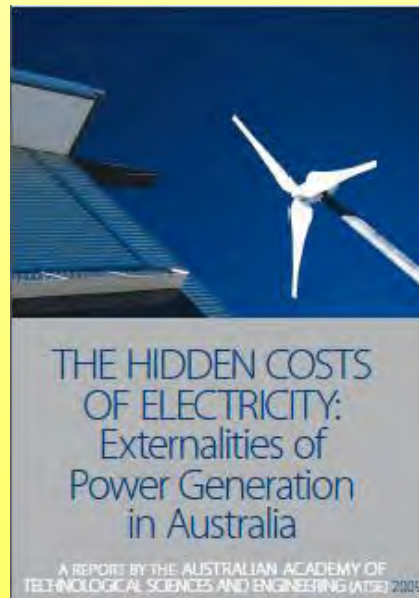
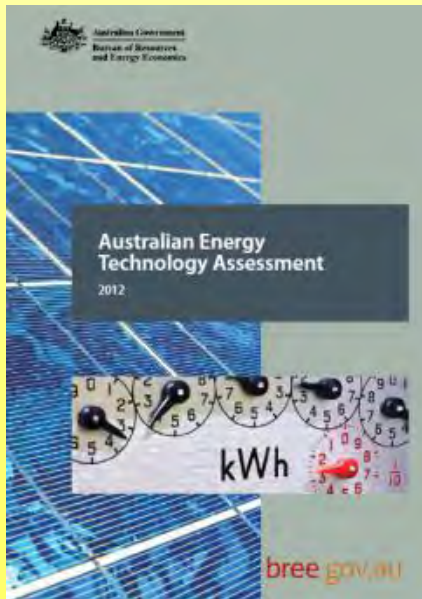


CSIRO eFuture

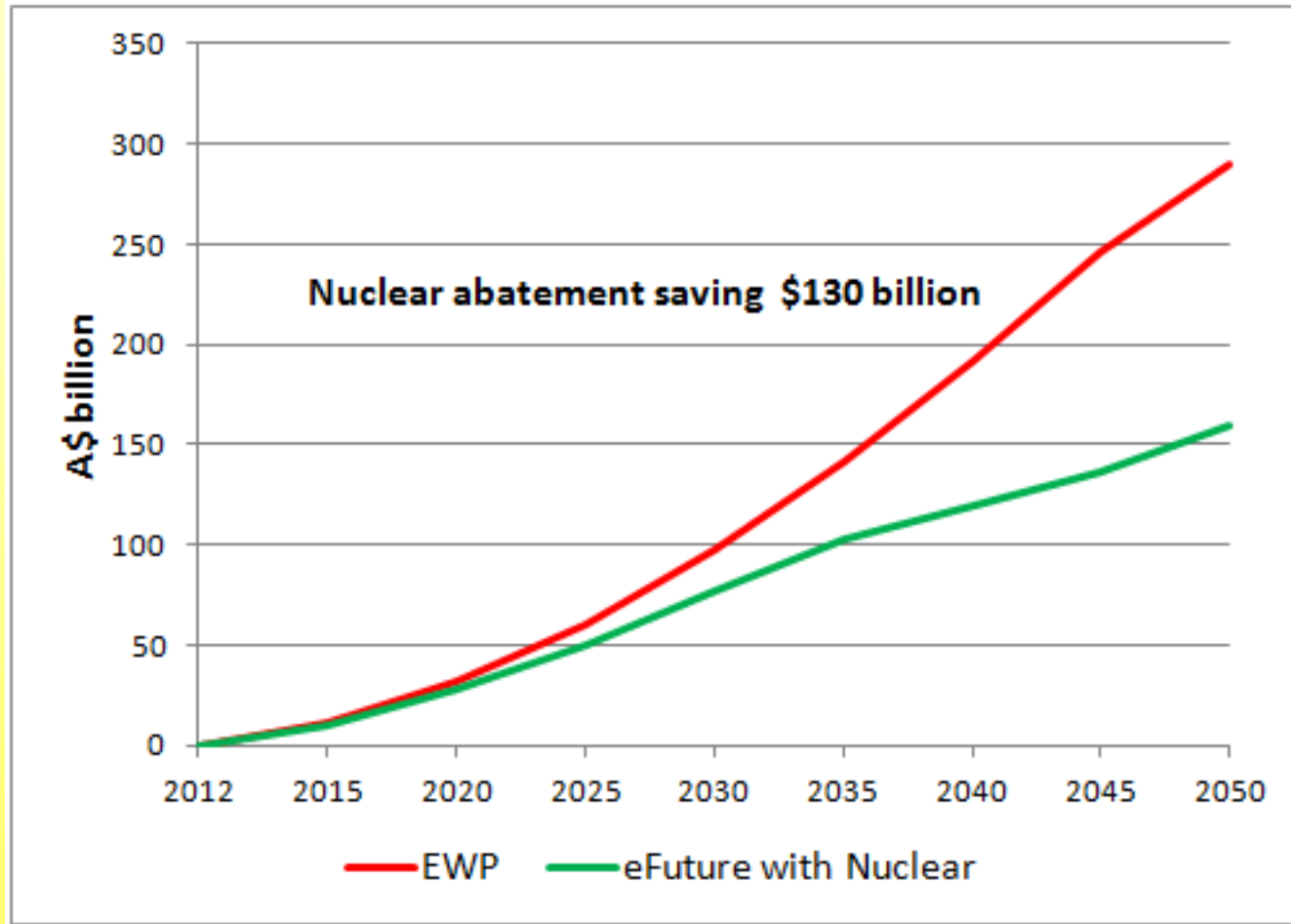


Primary Source Data

- BREE AETA data for LCOEs, emission intensities, capacity factors, projected carbon price and capital costs
- ATSE – The Hidden Cost of Electricity
- Brown and Pang Australia's nuclear power workforce

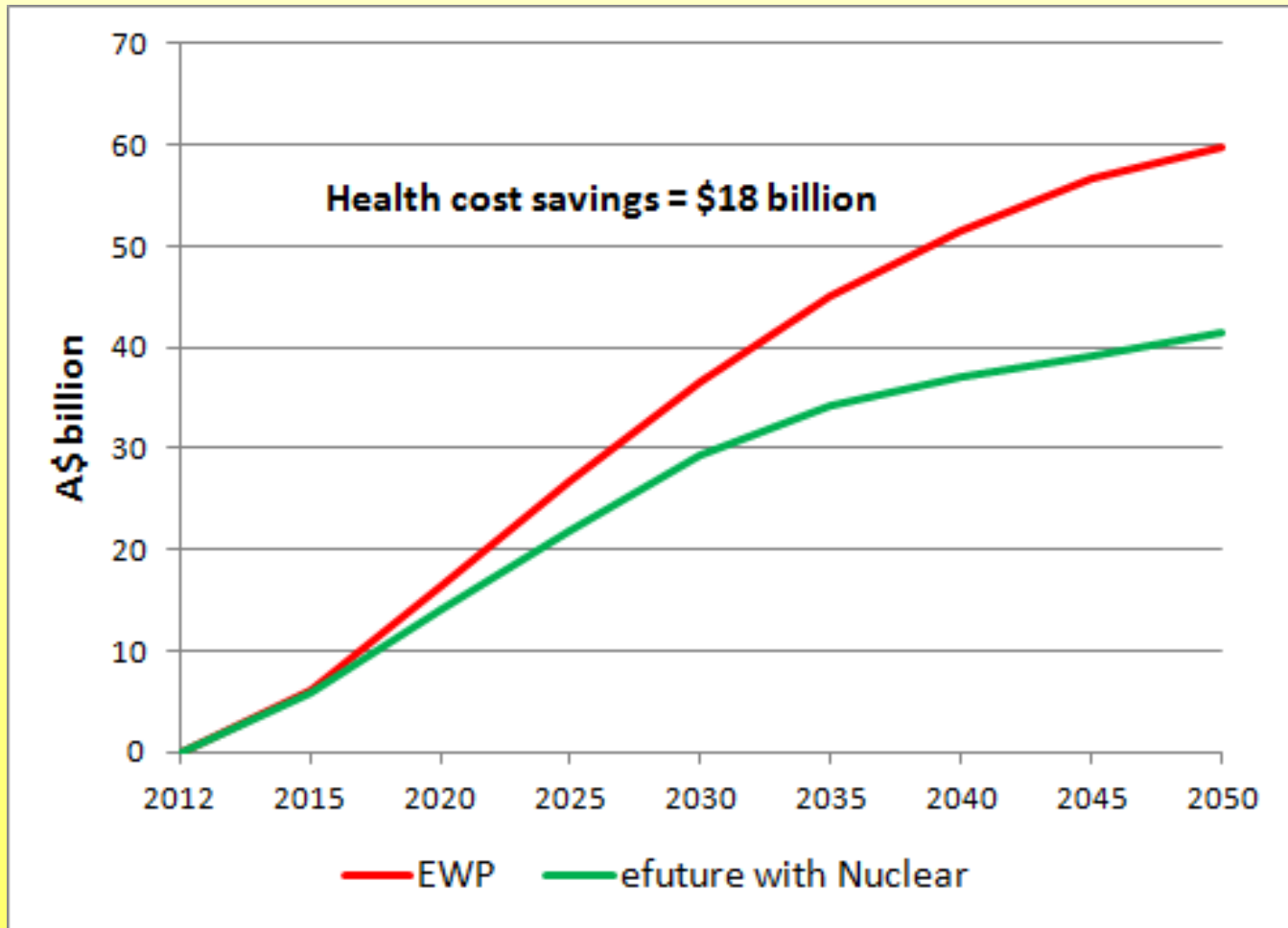


Greenhouse Gas Abatement



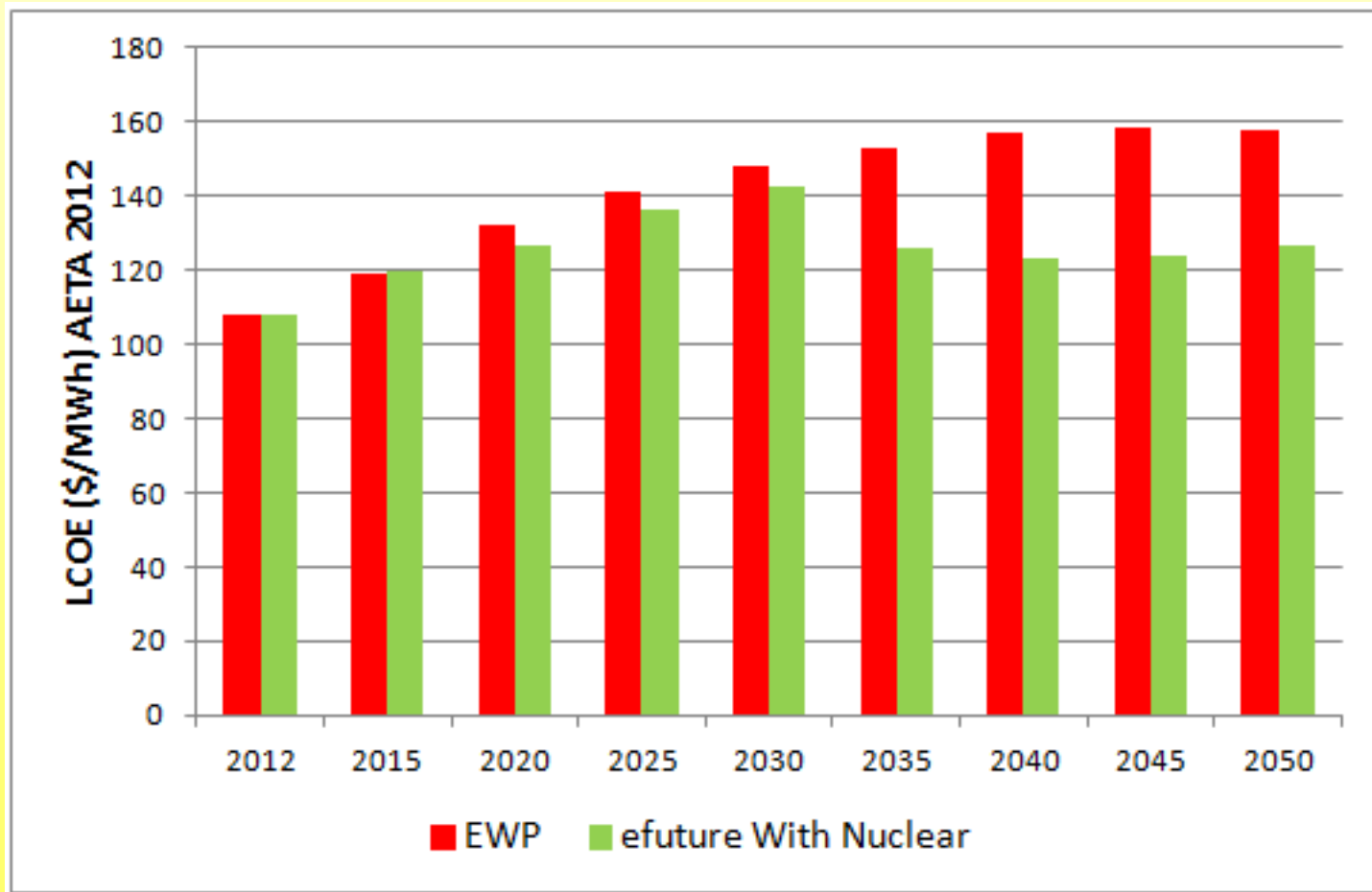
Cumulative Abatement Cost from Electricity Sector

Health Cost Savings

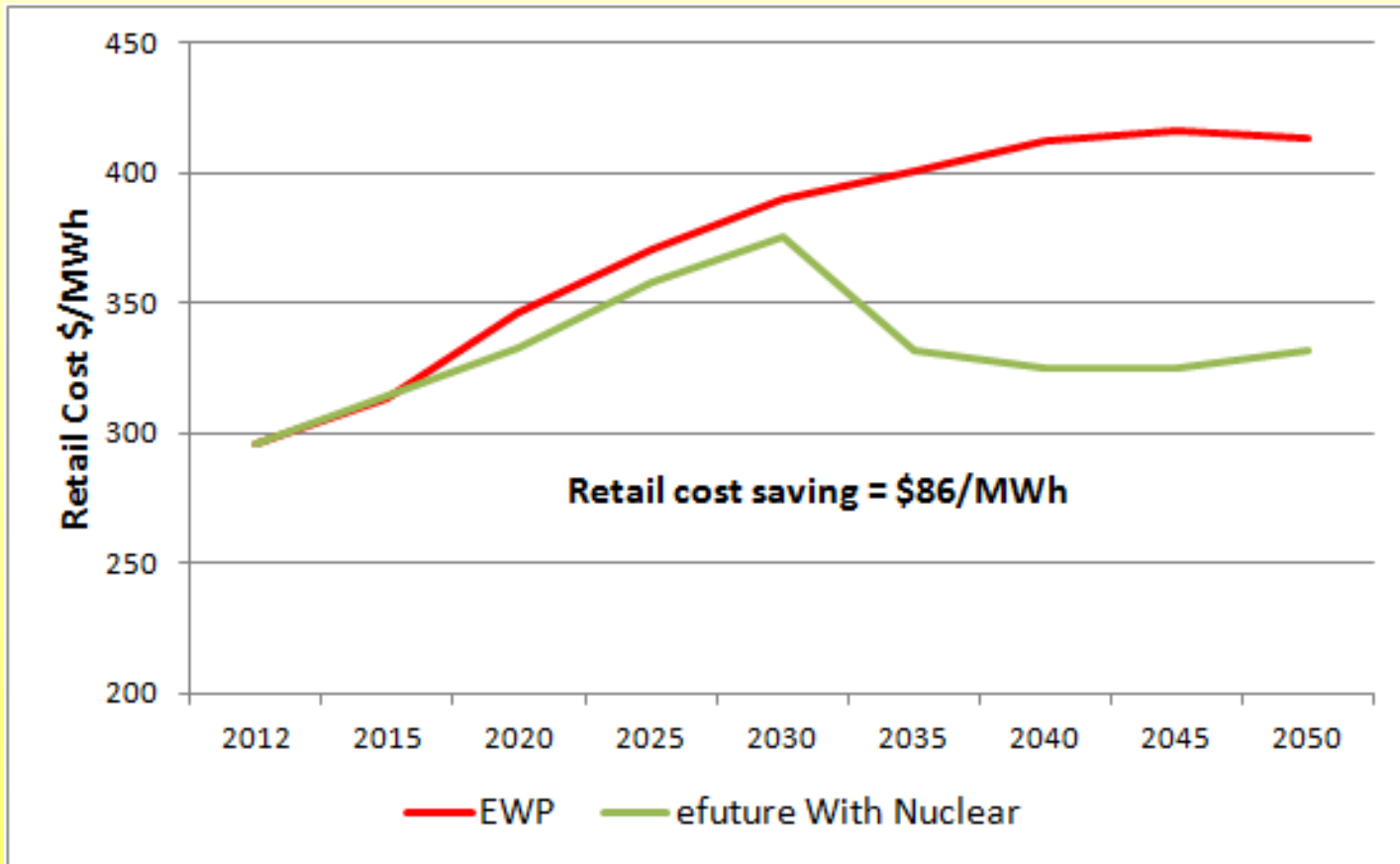


Cumulative Health Cost from Electricity Generation

Volume-weighted Average LCOE in Period

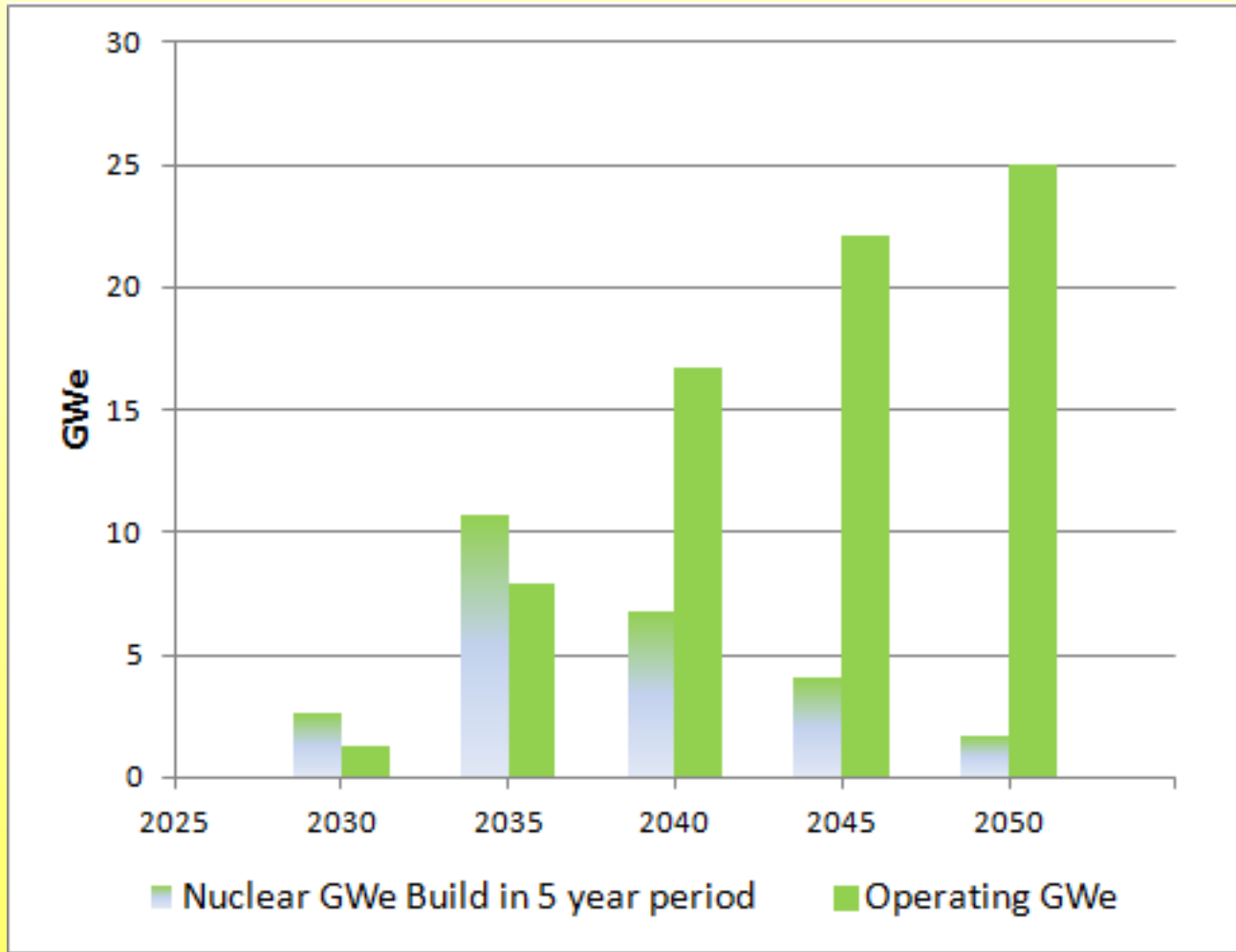


Retail Electricity Price



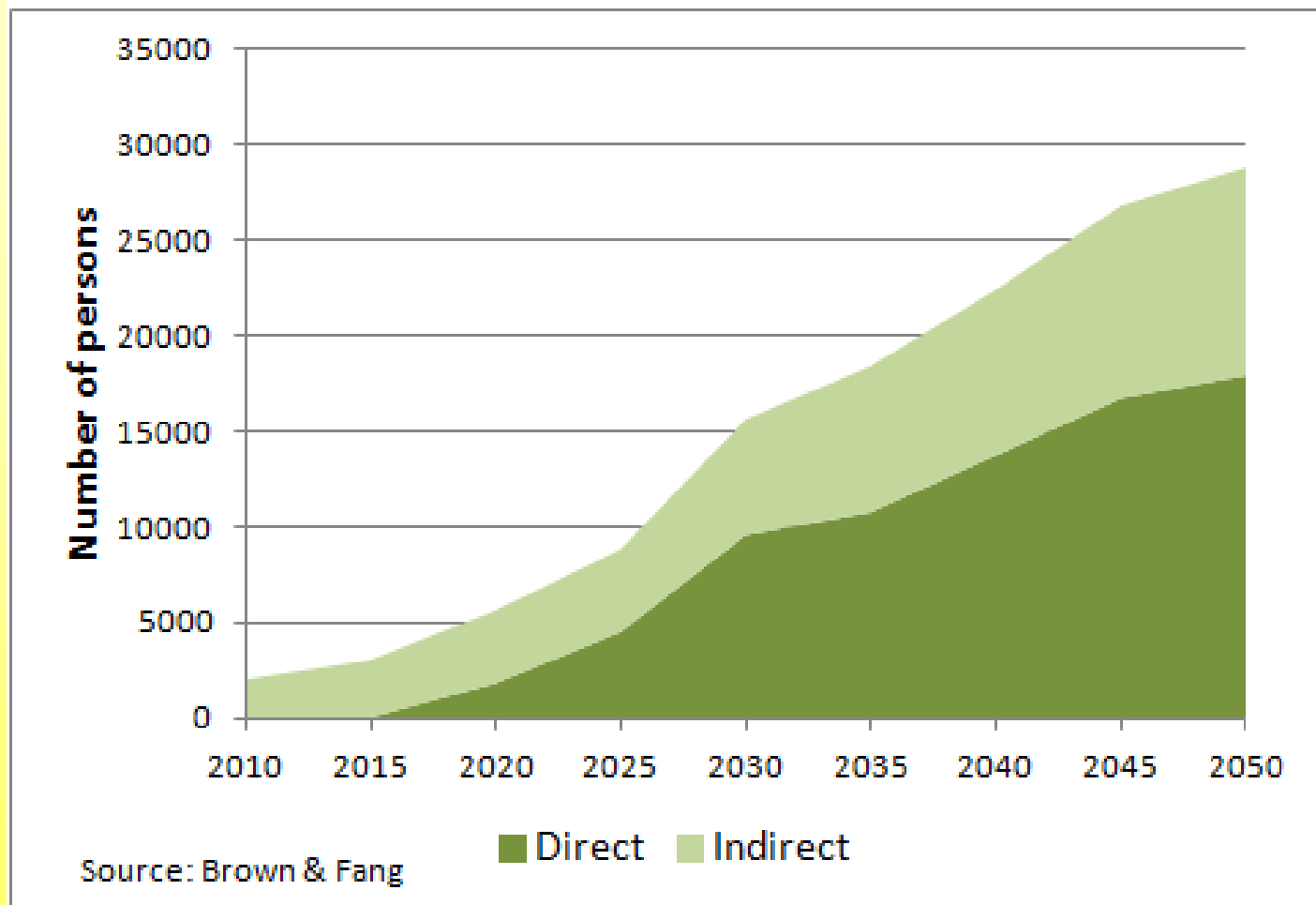
Estimated Average Retail Electricity Prices in Period Shown

Proposed Nuclear Build



Estimated nuclear construction cost of \$87 billion

Jobs Created

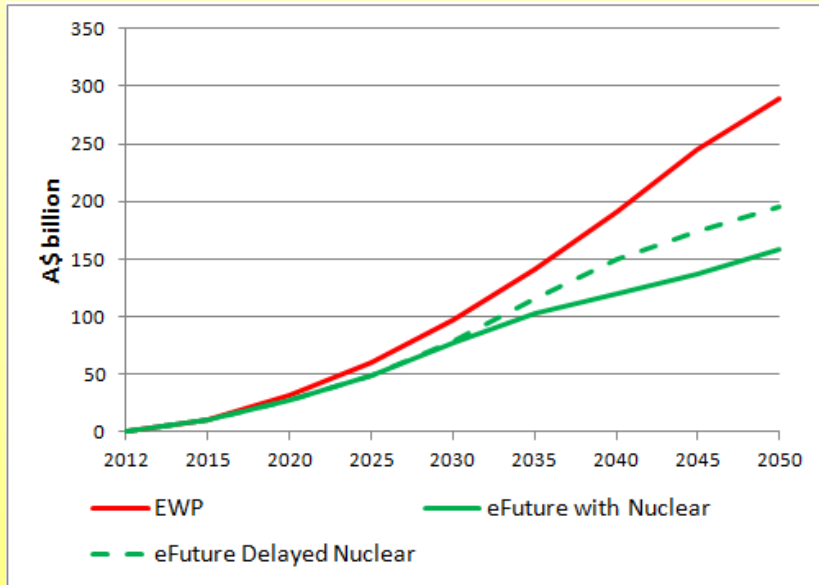


Employment Opportunities in Building 25 GW of Nuclear Power Plants

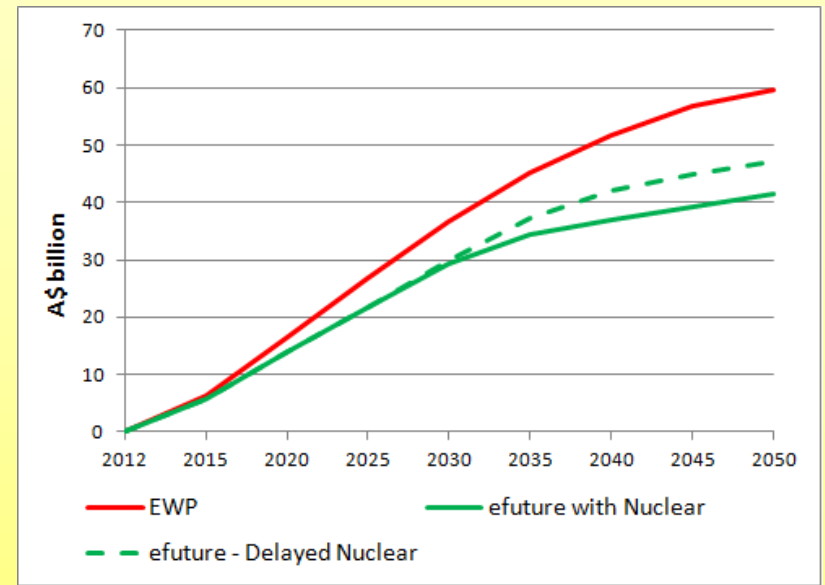
Capital Costs to 2050

- **EWP range \$195-225 billion**
 - Gas \$50-60 billion
 - Renewables \$100 billion
 - Coal (mainly CCS) \$45-65 billion
- **eFuture range \$175-235 billion**
 - Nuclear \$85-100 billion
 - Gas \$10-15 billion
 - DICE Coal \$5 billion
 - Renewables \$50-90 billion
 - Distributed Generation ~ \$25 billion
- **AEMO 100% renewables - \$219-332 billion**

Cost of 5 Year Nuclear Delay



Abatement



Health

\$8 billion for every year that nuclear is delayed after 2025

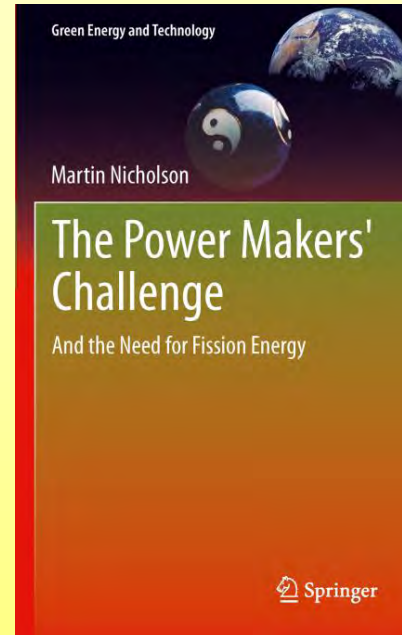
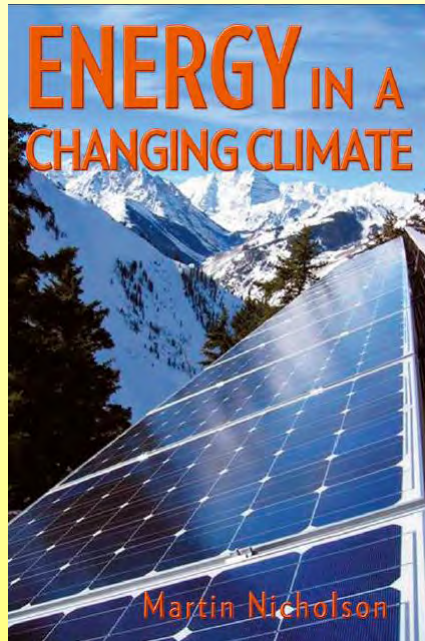
Summary Benefits out to 2050

1. GHG Abatement savings = \$130 billion
2. Health cost savings = \$18 billion
3. Retail electricity cost down 20%
4. Create 29,000 nuclear industry jobs
5. No increase in capital cost
6. Nuclear delays could cost \$8 billion per year

Any Questions?



Thanks for attending



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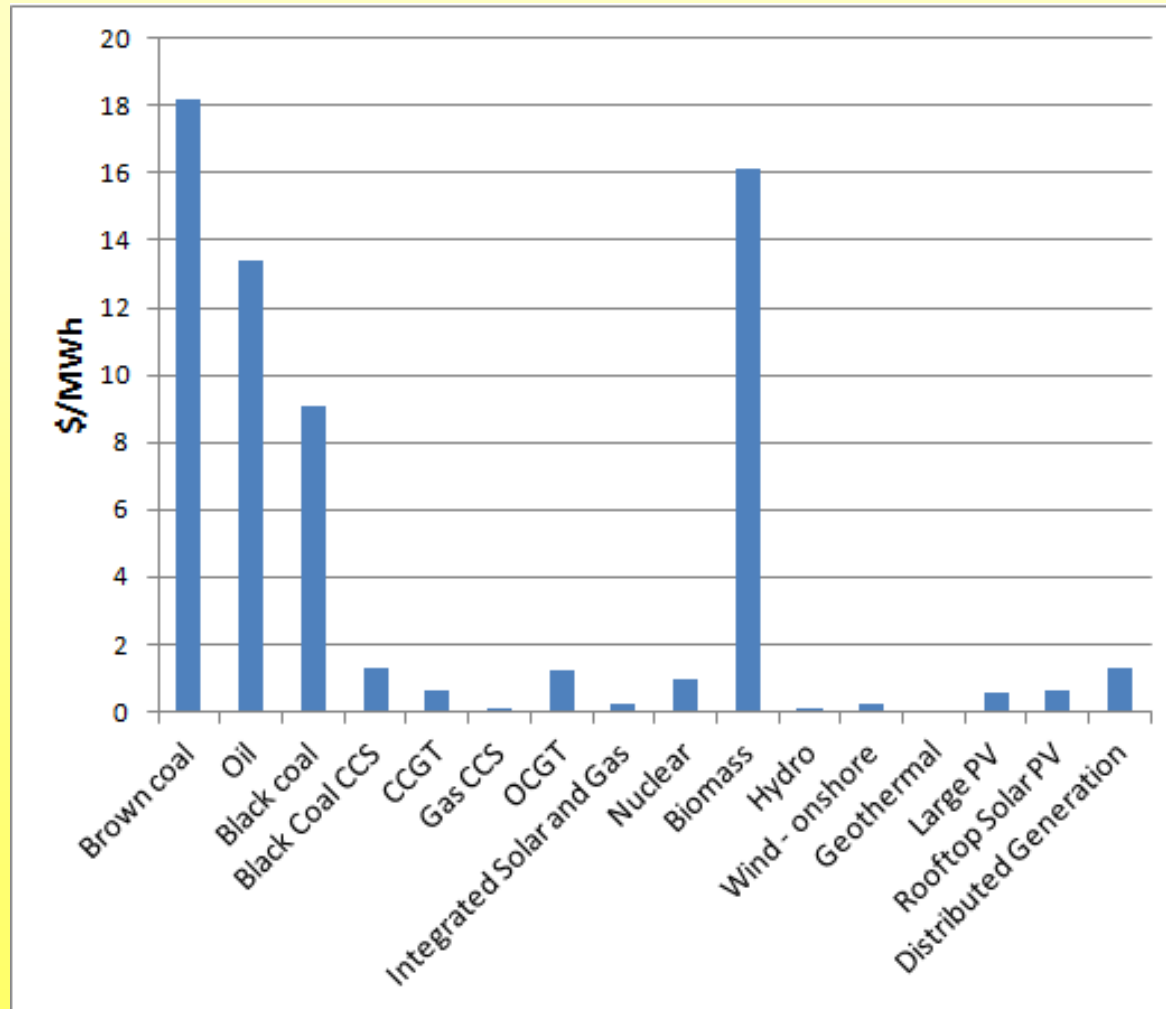
Website: www.energyinachangingclimate.info

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Assessment Approach

- Analysed every 5 years from 2010 to 2050 for both models
- Calculated volume-weighted average LCOE
- GHG emissions – kg/MWh
- Health costs - \$/MWh
- Retail electricity prices – based on VWA LCOE
- Employment opportunity – based on 25 GW
- Capital costs - \$/kW build from BREE

Electricity Generation Health Costs by Technology



Carbon Prices 2013 to 2050

Figure 2.2.1: Carbon prices, 2013 to 2050



Source: Treasury estimates from MMRF model, 2011.