

**Senate Standing Committee on Economics**

**ANSWERS TO QUESTIONS ON NOTICE**

**Treasury Portfolio**

Supplementary Budget Estimates

21 – 22 October 2009

**Question: sbt 46**

**Topic: Costs of Future Carbon Capture & Storage**

**Hansard Page: E23 (22/10/09)**

**Senator LUDLAM asked:**

**Senator LUDLAM**—I gather it will be a bit difficult to model the costs of future carbon capture and storage when the technology has not been commercialised anywhere yet, but for the purposes of your modelling, can you provide us with information on the basis of your assumptions about the future cost of renewable technologies which are falling quite rapidly?

**Ms Quinn**—Once again the cost of renewable technologies was obtained through research and discussion with people in the industry, both internationally and domestically. We asked for submissions from people on the cost of renewable energy. We had quite a lot of discussions with people in different components of the renewable energy sector and a lot of that was fed through to the consultants used in the report, which includes ACIL Tasman and MMA. That built on a body of work that had previously been done through the National Emissions Trading Taskforce with other states and also the Garnaut review analysis of alternative technologies.

**Senator LUDLAM**—Could you possibly provide those on notice for us as well, including the future cost estimates of renewable technologies across the board.

**Ms Quinn**—Sure.

**Answer:**

The future costs of renewable technologies are expected to decline through time as these new technologies are further developed and efficiencies improve. The following consultant reports regarding the future costs of renewable energy technologies are available on the Treasury website at this address:

[http://www.treasury.gov.au/lowpollutionfuture/consultants\\_report/default.asp](http://www.treasury.gov.au/lowpollutionfuture/consultants_report/default.asp) :

- Projected Energy Prices in Selected World Regions – ACIL Tasman
- Impacts of the Carbon Pollution Reduction Scheme (CPRS) on Australia's Electricity Markets – McLennan Magasanik Associates (MMA)

Capital costs in ACIL Tasman's report are assumed to deescalate each year. For renewable technologies, costs range from \$2,000 per kilowatt (kW) for hydro power to \$5,000 per kW for solar thermal power and geothermal power in 2008.

Capital costs in MMA's report are assumed to deescalate and efficiency improves each year. For renewable technologies, costs range from \$2,134 per kW for wind power to \$4,640 per kW for concentrating photovoltaic power in 2010.

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The technology assumptions used in are the result of wide consultation with the following industry experts:

ACIL Tasman	Electric Power Research Institute (EPRI)
AEMO (formerly NEMMCO)	Future Fuels Forum participants
Alstom Power Systems	Geodynamics
Australian Energy Regulator (AER)	Griffin Energy
Australian Gas and Light Company (AGL)	Hydro Tasmania
British Petroleum (BP)	InterGen
Carnegie	International Power
Chevron	Lawrence Berkeley National Laboratory (LBNL)
Department of Climate Change roundtable consultations: industry, non-government organisations and agriculture/forestry sector	McLennan Magasanik Associates (MMA)
Department of Resources, Energy and Tourism	National Generators Forum
Energy Development Limited	Origin Energy
Energy Supply Association of Australia (ESAA)	PB power
	TruEnergy