

**Senate Standing Committee on Economics**

**ANSWERS TO QUESTIONS ON NOTICE**

Resources, Energy and Tourism Portfolio

Budget Estimates

3 June 2013

**Question:** BR49

**Topic:** Australian Energy Resource Assessment 2012

**Proof Hansard Page:** 120

**Senator Bushby asked:**

**Senator BUSHBY:** Dr Pigram, thank you for assisting us this evening. I note that you have recently released your report, the Australian gas resource assessment 2012. Could you please provide a brief outline of your findings in that report in terms of the increasing role of gas in the Australian and global energy mix?

**Dr Pigram:** A couple of years ago, the minister requested that we develop Australian energy resource assessment document, which is the one I think you are referring to, and the recently updated chapter on gas resources in Australia. In that document, the numbers, from memory, are that Australia has something like 186 TCF of conventional or offshore gas, and around 30 TCF-and I will give you these numbers accurately, if I can take it on notice-for coal seam gas. This are P1 and P2 resources-that is, proven resources. In the unconventional space, to use that phrase in relation to shale gas, there is a speculative number of around 396 TCF, but I have to point out that that particular number is in fact based on an analog assessment of only four basins. It is not a robust methodology. We are working on developing a better methodology to get a better number. To give all of that some context, Australia's annual consumption of gas is one TCF a year. So there is a lot of both conventional and unconventional gas in this country potentially.

**Answer:**

Gas accounted for 23 per cent of Australia's primary energy consumption in 2009-10 and is forecast to rise to 35 per cent in 2034-35. Over the same period, the share of gas in total world primary energy demand is projected to rise from 21 to 23 per cent.

Australian gas consumption has grown by 4 per cent per year over the past decade. Gas accounted for 23 per cent of Australia's primary energy consumption in 2009-10 and 15 per cent of electricity generation. Gas consumption in Australia is projected to increase by 2.9 per cent per year to reach 2,611 petajoules (2.4 trillion cubic feet) on 2034-35.

LNG exports are expected to account for around 68 per cent of Australian gas production in 2034-35, with exports to increase to 5,663 petajoules (107 million tonnes, 5.2 trillion cubic feet) on 2034-35.

The Australian Gas Resource Assessment 2012 details conventional gas demonstrated resources of 157 trillion cubic feet (103 tcf Economic Demonstrated Resources and 54 tcf of Sub-economic Demonstrated Resources) and approximately 10 tcf of inferred resources giving a total of 167 tcf or 184,000 petajoules.

(Source: Above information from Australian Gas Resource Assessment 2012)

For shale gas, Dr Pigram mentioned the 396 tcf number from an US Energy Information Administration (EIA) report. This number has now increased to 437 tcf announced in the latest US EIA report released in June 2013. The report also represents an increase from 4 to 6 assessed basins (includes Cooper, Maryborough, Perth, Canning, Georgina and Beetaloo). The report also assigns technically recoverable shale oil resources of 17,500 million barrels to Australia. These volumes need to be considered as speculative.

The following tables provide further information.

**Table 1: Australian conventional gas resources, as of January 2011.**

<b>Conventional Gas Resources</b>	<b>PJ</b>	<b>tcf</b>
Economic Demonstrated Resources	113 400	103
Sub-economic Demonstrated Resources	59 600	54
Inferred Resources	~11 000	~10
<b>Total</b>	<b>184 000</b>	<b>167</b>

Source: Geoscience Australia 2012

Table 2 below details coal seam gas resources.

**Table 2: CSG resources, as of January 2011**

<b>Coal Seam Gas Resources</b>	<b>PJ</b>	<b>tcf</b>
Economic Demonstrated Resources	35 905	33
Sub-economic Demonstrated Resources	65 529	60
Inferred Resources	122 020	111
<b>Total</b>	<b>223 454</b>	<b>204</b>

Source: DEEDI (2011,2012), AEMO (2011), Geoscience Australia 2012