

# **Energy Policy for Australia**

## **Submission to the White Paper on Energy**

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**March 2014**

 **Institute of  
Public Affairs**  
THE VOICE FOR FREEDOM  
70 YEARS: 1943-2013

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## Introductory Remarks

Government has a role in the energy industry but it is one that is easily overstated: it is best limited to guarding against exploitation of natural monopoly elements within the industry – which also means not creating its own monopolies. The White Paper on energy must avoid the over-reach of attempting to become a blueprint for the future. Its role is to improve resilience.

Energy has an on-going history of public ownership, at least in part stemming from a misplaced notion that it is a natural monopoly and a necessity requiring government interventions. The outcome has been deleterious and has been compounded by a determination of governments to draw from the industry to accommodate its social, environmental and industry policies. As a result an inherently low cost industry has been transformed into one that is now high cost.

Hopefully the White Paper process will bring reform but some portents within Section 1 of the Issues Paper are disturbing.

Thus, a prominent role in the paper's terms of reference is given to the supposed need to maintain analytical capability within the government. This Departmental protection goal is an unwarranted priority in the context of the market driven industry the White Paper claims to be championing. The priority is perhaps a reflection of the excessive number of goals in the Issues Paper. These encompass supplying and using energy:

- To put downward costs of business and households;
- To grow exports
- To promote low emissions energy technologies; and
- To encourage the more efficient use of energy.

Whatever may be said of the first two of these stated goals, the third and fourth are in conflict and have spawned the egregious interventions in energy policy that have created a need for a White Paper, with the fourth also adopting the discredited hubris: "I'm from the government and I'm here to help you".

It would be unfortunate if the White Paper were to be progressed as though, in the absence of government oversight, energy markets would not develop efficiently. Markets develop from the interactions of consumers with businesses, which seek to sell their goods, access inputs and reduce risks. Governments' role is to allow these processes to be pursued and to uphold the law.

Rather than a plethora of goals, the White Paper should have a single focus: to allow the market to bring about efficient production of energy with interventions limited to addressing natural monopoly situations. Anything beyond that will ensure the weaknesses presently evident will remain.

## 1. Australian Electricity Cost Blowouts

### 1.1 Australia's energy wealth

Australia is likely to have the lowest cost sources of fossil fuel powered electricity generation in the world. These are, most significantly based on almost endless supplies of coal, much of which is conveniently located close to the main load centres. The coal used for local electricity generation has no real alternative uses as it is of too low a quality for profitable export (and in the case of brown coal is not even easily transportable). Australia's low costs, on current technology, can generate unlimited amounts of base load power at around \$35 per MWh.

This is almost certainly the lowest cost power available in large quantity in the world. Other countries have abundant coal reserves but few have them as readily accessible. Alternative energy sources are more expensive. Solar is impossibly so, while most estimates place nuclear power generation costs at \$55 plus per MWh, and, although some states in the Persian Gulf and former USSR can offer cheaper energy prices based on gas, these are subsidised and therefore subject to uncertainty. Moreover, political instability in many of these places means additional risk.

Australian Governments have however shown a disregard for allowing the nation's inherently low costs to be translated into low prices. In former times the electricity industry generation was government owned (and remains so in some jurisdictions). State governments used the energy bounty as a means of subsidising employment and other ventures. Thus, in Victoria during the 1990s prior to privatisation, some 12,000 people were employed in the generators; after privatisation, notwithstanding a significant increase in capacity, this was reduced and stands today at less than 3,000, including contractors.

Milking the low costs that the industry offers has shifted. Yesteryear's government induced over-staffing (usually with a closed shop union membership) has become today's social transfers and measures to assuaging the unquenchable thirst of the environmental lobby for subsidies and favours.

Studies have shown in recent years Australia to have faced cost increases far in excess of those of overseas countries. The following chart assembled by the NUS Group<sup>1</sup> illustrates this for 2012, the year the carbon tax was introduced. In that year Australian prices increased by 27 per cent as a result of the carbon tax and network price increases and Australian prices were 60 per cent above those of Canada, the energy riches of which are rather less than those of Australia.

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<sup>1</sup> <http://www.kraftaffarer.se/meralasing/2012E&GSurvey.pdf>

**Table 1 NUS Consulting: Electricity Prices 2012**

<u>2012 Rank</u>	<u>2011 Rank</u>	<u>Country</u>	<u>Cost (US¢)/kWh</u>	<u>One Year Percentage Change</u>
1	1	Italy	20.23	18.4%
2	2	Germany	15.15	-5.8%
3	7	Portugal	13.63	12.1%
4	4	Spain	13.52	1.4%
5	3	United Kingdom	12.45	-12.3%
6	5	Belgium	11.92	-9.7%
7	13	Australia	11.68	27.8%
8	8	Netherlands	11.28	-6.9%
9	6	Austria	11.05	-12.6%
10	12	Poland	9.30	0.3%
11	16	South Africa	9.13	23.1%
12	11	United States	8.89	-6.2%
13	14	France	8.76	5.1%
14	9	Finland	8.64	-17.7%
15	10	Sweden	7.95	-22.6%
16	15	Canada	7.58	1.4%

In the 2009 NUS survey<sup>2</sup>, Australia was the cheapest source of electricity, excluding South Africa where supply was heavily subsidised.

**Table 2 NUS Consulting: Electricity Prices 2009 and 2010**

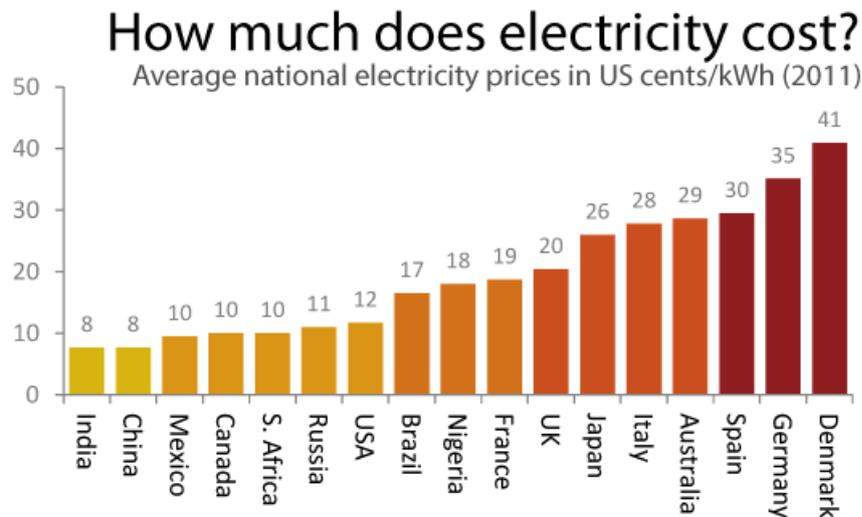
<u>Country</u>	<u>2010 Rank</u>	<u>2009 Rank</u>	<u>Cost (US¢)/kWh</u>	<u>Percentage Change</u>
Italy	1	1	15.72	+8.7%
Germany	2	2	12.98	+8.6%
Austria	3	3	11.84	+0.6%
Spain	4	4	11.52	+4.0%
United Kingdom	5	5	11.31	+8.2%
Netherlands	6	6	11.07	+6.5%
Belgium	7	7	10.32	+7.4%
United States	8	8	9.27	-0.9%
Poland	9	9	8.66	+4.4%
Finland	10	12	8.47	+20.6%
Sweden	11	10	8.29	+6.9%
France	12	11	7.62	+5.7%
Canada	13	13	7.27	+10.0%
Australia	14	14	6.88	+5.2%
South Africa	15	15	6.40	+32.8%

Further data on different electricity costs (this time covering 2011) is provided by reneweconomy<sup>3</sup>. In US cents the estimated prices are as follows.

<sup>2</sup> <http://www.buddeblog.com.au/news-and-views/nus-electricity-report-and-cost-survey-2010/>

<sup>3</sup> <http://reneweconomy.com.au/2013/graph-of-the-day-average-electricity-prices-around-the-world-24207>

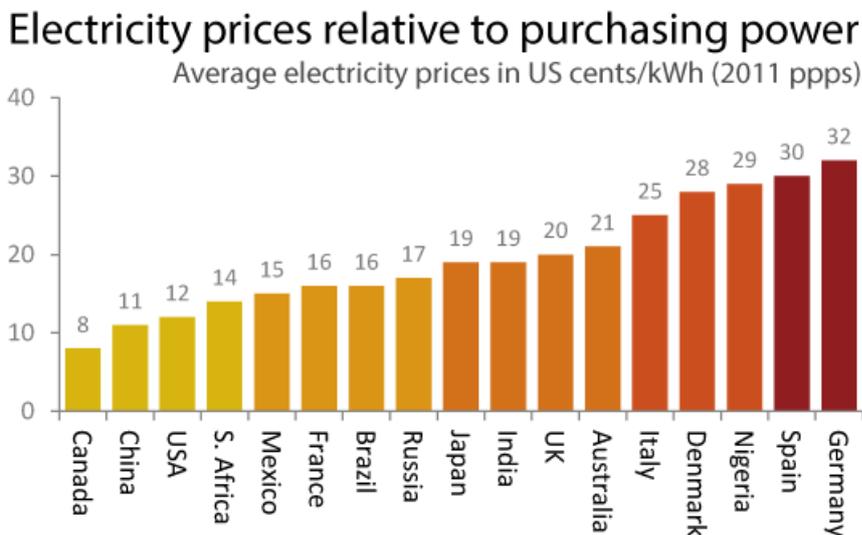
**Chart 1 Estimated Electricity Prices Selected Countries**



Data: average prices from 2011 converted at mean exchange rate for that year  
 Sources: IEA, EIA, national electricity boards, OANDA [shrinkthatfootprint.com](http://shrinkthatfootprint.com)

The same data adjusted for purchasing power also shows Australia now as high cost.

**Chart 2 Estimated Electricity Prices Selected Countries**



Data: average prices from 2011 converted to USD using purchasing power parities  
 Sources: IEA, EIA, UN [shrinkthatfootprint.com](http://shrinkthatfootprint.com)

## 1.2 The Causes of the Cost Blowout in Electricity

### 1.2.1 Cost Composition

Even in 2009, the Australian industry had cost impositions through renewable schemes and mandatory energy efficiency cost requirements, which were introduced at both the state and federal levels of government.

Some indication of the penalty resulting from regulations is available from information on retail prices published annually by the AEMC. Table 3 covers the national average. It shows environmental policies add 29 per cent to households' costs. The carbon tax was responsible for 60 per cent of those costs and, on present legislation, its impact will increase year-by-year. A 2013 OECD report with Australian Treasury input indicated the carbon tax would need to be 10 times the EU rate and twice the \$38-per-tonne level officially posited by Treasury to allow Australia to meet its ostensible objective of a 5 per cent carbon reduction in greenhouse gas emissions.

The government has announced its resolve to abolish the tax no later than July of this year.

**Table 3 Assembling the Electricity Costs: National Average**

		2012/13 Base year	2013/14 Current year	2014/15	2015/16
<b>Environmental policies</b>	c/kWh	4.67	4.81	4.98	2.64
Carbon	c/kWh	2.70	2.83	2.95	0.73
LRET	c/kWh	0.56	0.57	0.56	0.65
SRES	c/kWh	0.83	0.55	0.33	0.24
Feed in Tariffs	c/kWh	0.47	0.48	0.71	0.81
Energy Efficiency Improvements Scheme	c/kWh	0.11	0.38	0.42	0.21
<b>Regulated networks</b>	c/kWh	8.25	8.71	8.92	9.15
Transmission	c/kWh	1.65	1.42	1.46	1.49
Distribution	c/kWh	6.60	7.29	7.47	7.65
<b>Wholesale and retail</b>	c/kWh	7.86	7.97	8.20	8.48
Wholesale	c/kWh	4.77	4.53	4.68	4.87
Retail	c/kWh	3.08	3.43	3.52	3.61
<b>Total</b>	c/kWh	<b>20.78</b>	<b>21.48</b>	<b>22.10</b>	<b>20.27</b>

The estimate of regulatory costs in Table 3 is conservative and likely to understate the regulatory share of costs for a number of reasons.

First, the table is prepared on a "bottom up" basis. The estimated costs of the retail component, in particular, are likely to be somewhat overstated as they are based on the regulated price. In Queensland almost half of retail contracts were at unregulated prices, that were discounted from the regulated price. This is a more serious overestimate in other states, especially Victoria, where over 80 per cent of customers are on unregulated tariffs. The 3.43 cents per kwh retail margin estimated nationally is inferred at over 6 cents in Victoria (where the combined wholesale and retail is given at 11.83 cents). Retail margins are in fact likely to be under 3 cents.

Secondly, in addition to the costs that are identified as directly due to the regulatory policies, there are a host of consequent regulatory costs that the suppliers are required to incur. These back-office costs are there to ensure that the provisions governments so readily impose on the industry are met. Such provisions include the requirements to buy specific forms of electricity and to offer services like light bulb replacement.

### 1.2.2 Renewables regulations

Renewable energy is defined to include wind, small and large scale solar, some forms of bio-energy, wave, geothermal and so on. The various costs are estimated in Table 4.

**Table 4 Costs of different forms of electricity generation**

**Approximate long run marginal cost and capacity factors**

Energy type	Cost per megawatt hour <sup>(a)</sup> (\$)	Capacity factor <sup>(b)</sup> (per cent)
Gas (open cycle gas turbine)	65–96 <sup>(c)</sup>	2–90
Hydro-electricity	60–150	15 <sup>(d)</sup>
Solar (utility scale photovoltaic)	190	20–22
Wave and tidal	unknown <sup>(e)</sup>	25–30
Wind	80–120	30
Geothermal	70–87 <sup>(f)</sup>	80–90 <sup>(g)</sup>
Brown coal	35	80–90
Biomass	70–158	~ <sup>(h)</sup>

<sup>(a)</sup> The long run marginal cost establishes the cost of generating one megawatt hour of

The renewables regulations have a history dating back to 2001, when Prime Minister Howard agreed that electricity suppliers would be required to ensure “exotic” (mainly wind and rooftop solar) renewables would supply “2 per cent of additional energy”. This was quantified to a (far greater) total of 9,500 GWh.

A 2004 review by Grant Tambling recommending the total be increased to 20,000 GWh was rejected by the Howard Government but then raised to 20 per cent of total energy (quantified at 45,000 GWh of “exotic” renewables) by the Rudd government in 2007. Labor also split the scheme into its present large scale (LRET) and small scale (SRES) categories.

The cheapest form of non-hydro renewables is wind and its cost is \$110 per MWh compared to coal at \$35-38. The RET is split into two components LRET at 41,000 GWh and SRES at 4,000, which are ramping up to those levels by 2020. The end of 2013 saw the LRET target at its half way mark.

The underlying cost of coal generated electricity is around \$40-45 per MWh, (after factoring in peak needs) the 41,000 GWh from large scale renewables is estimated to come at a premium over conventional sources of \$80 per MWh and the 4,000 GWh from small scale supplies at a premium of \$180 per MWh. If the remaining energy supply, comprising gas and hydro as well as coal, costs an average of \$45 per MWh, the 2020 renewable premium increases the average wholesale price by 42 per cent<sup>4</sup>. On top of this are the additional consequential costs of the regulatory paperburden and from fortifying the transmission lines.

Compared with conventional supplies, the cost of the LRET component of 41,000 GWh is \$3 billion. For the SRES, comprising photovoltaics, the cost is about twice that of wind (even higher costs are

<sup>4</sup> [(0.02\*(175/45))+(0.205\*(75/450))]

involved with large scale solar farms where additional direct subsidies from state and Commonwealth governments cover 80 per cent of their costs). Small scale solar brings an added component of \$2 billion. To the \$5 billion 2020 cost of the impost two additional expenses must be added:

- The need for back-up as a result of the intermittent nature of the exotic renewables; and
- The costs of the administration in retailing and networks to ensure the correct energy is bought and accounted for.

These two factors would add \$1 billion and perhaps \$2 billion to the cost bringing the renewables to \$6-7 billion premium over the cost of energy to the consumer. In addition, there are state measures, like the NSW Solar Bonus Scheme, which is to terminate in 2016 and involves consumers paying those installing eligible solar appliances 15 fold the value of the electricity they produce.

The cost impost of renewables at 2020 can be calculated based on aggregate energy supply. Recent closures of energy intensive facilities, at least in part due to the impositions, have forced re-estimations of total energy demand. If for 2020 this is now estimated at 200,000 GWh (down from 220,000 GWh in 2013) it would comprise, on current estimates, 155,000 from conventional supplies in addition to 41,000 from large scale renewables and 4,000 from small scale supplies.

Present policy represents a deliberate penalisation of energy users. It creates direct costs to consumers. And more significantly it represents a huge impost to energy intensive businesses, causing a misallocation of resources that severely detracts from the net income of Australians. Ironically, this creates at most a trivial reduction in global demand for energy intensive outputs and no appreciable effect on aggregate levels of greenhouse gas emissions if, indeed, this is the rationale the renewable measures are targeted at.

Investment in wind and other subsidised electricity generation, according to the renewable energy lobby group the Clean Energy Council, has been \$18.5 billion. By contrast, the market value of comparable generating capacity in Macquarie Generation coal plants is said to be less than \$2 billion and a brand-new brown coal plant of 3300 megawatt capacity would cost under \$10 billion.

Wind lobbyists claim that such costings do not take into account that wind is free whereas fossil fuel plants have to pay for their energy. But that is also untrue. Wind plant maintenance at about \$12 per megawatt hour exceeds the fuel plus maintenance costs of a Victorian brown coal power station.

Subsidies to renewable energy were once touted not only as a key to reducing emissions of carbon dioxide but also as paving the way to a future source of electricity that would become competitive in price and reliability with fossil fuels. After two decades of increasing subsidies, this optimism has proven to be unfounded. Instead we have seen subsidised renewable energy sucking capital into worthless investments.

Subsidies on existing Australian renewable plants are planned to run for 15 years. A guarantee by government to provide subsidies that far into the future is irresponsible. Those benefitting from such favours cite "sovereign risk" as a means of ensuring their abrogation. This overstates conceptions of the degree to which financial markets and others see government's abilities to pre-commit their successors. Spain, previously the poster child of renewable subsidy excesses, has shown the way forward by eliminating previously promised subsidies without the Spanish

government suffering a reputational penalty. Australia needs to abandon its own renewable schemes and allow the energy market to operate on commercial terms.

The Issues Paper asks respondents to comment on

- ways to encourage a lower emissions energy supply that avoids market distortion or causes increased energy prices;
- the need to review existing network tariff structures in the face of rapidly growing deployment of grid-backed-up distributed energy systems, to ensure proper distribution of costs;
- additional cost-effective means, beyond current mandatory targets and grants, to encourage further development of renewable and other alternative energy sources and their effective integration within the wider energy market;
- how the uptake of high efficiency low emissions intensity electricity generation can be progressed;
- any barriers to increased uptake of LPG in private and commercial vehicles and CNG and LNG in the heavy vehicle fleet; and
- any barriers to the increased uptake of electric vehicles and advanced biofuels.

Most of these are unnecessary questions more relevant to those seeking to force or “nudge” businesses in a particular direction and have undertones of a centrally planned economy.

- Short of a comprehensive, binding global agreement, there is no case to encourage lower emissions and no means of doing so that avoids increased energy prices. It follows that there is no case for additional targets and grants. Quite the contrary, a sensible energy policy would eradicate those cost-enhancing measures presently in place. And there is no case to promote the uptake of “high efficiency low emissions intensity electricity”. The only such known source is the remaining capacity of hydro-electricity; removal of the regulatory restraints on this valuable source of low cost electricity is required and there should be no impediments to the development of other sources should they prove competitive.
- Subsidies to renewables have created a change of circumstances for the financing of energy networks. No user of renewables would wish to be islanded from the network but those users are now free-riding in the insurance the networks provide – and they are also contributing to additional costs because the location of the most economic renewable resources is remote from users. This requires a restructuring of the tariff to recognise a greater fixed charge as being necessary.
- There are no barriers to using LPG in fleets. Indeed, the advantage these fuel sources receive in lower taxes creates distortions and should be removed.

#### **1.2.4 Network Regulations**

Network prices are regulated and have risen very rapidly: over the six years to 2012/13 the Productivity Commission estimates they doubled<sup>5</sup>. The high costs are attributed to a number of factors, including excessive standards being set (the PC notes one extension was based on a value 150 times greater than customers’ estimated willingness to pay). There is also a misalignment between profit allowed and the efficiency of the network, something the Productivity Commission, and every previous inquiry has offered suggestions to rectify.

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<sup>5</sup> [http://www.pc.gov.au/\\_data/assets/pdf\\_file/0011/123005/02-electricity-overview.pdf](http://www.pc.gov.au/_data/assets/pdf_file/0011/123005/02-electricity-overview.pdf)

One matter that is clearly evident is the greater efficiency of private networks over those owned by governments. This has long been evident but the P.C. has offered a quantification and finds, on average, public sector owned networks have operating costs 80 per cent higher per kilometre served than private sector networks, with the gap greatest for networks supplying the denser markets. The reasons for this are the familiar ones: the public sector tends to have politically connected management, is susceptible to pressures from the government and often has goals other than the profit maximising ones that characterised businesses owned by private shareholders.

Victoria's "poles and wire" networks are all privately owned and operate far more cost-effectively than those of other states. Indeed, former Prime Minister Julia Gillard, though a lifelong socialist, urged New South Wales and Queensland to privatise their networks and thereby match Victoria's cost reductions.

### **1.2.5 Retail considerations**

In electricity supply, Victoria is widely regarded as the most competitive jurisdiction in the world.

Supply comes from dozens of generators including from three major businesses producing within the state.

And yet, according to information published by the Australian Energy Market Commission (AEMC), Victorian households' electricity prices are similar to those of other Australian states. This is paradoxical because Victoria has Australia's most competitive retail market, the only one that's fully deregulated, and competition drives down high retail margins. According to AEMC data, the present year's national average price of wholesale and retail are 9.06 cents (5.26 wholesale and 3.8 retail) but Queensland has a combined wholesale and retail cost at 6.75 cents, NSW 6.81 while in Victoria the cost is put at 11.83 cents. This data infers cost levels of Victoria's private sector provision that are excessive.

The Victorian Essential Services Commission has sought to make allowances for gaps in the data. It has suggested that AEMC measured average prices charged in Victoria might be overstated by as much as 14 per cent.

State policies do have some cost augmentations in Victoria. Among these is the mandatory roll-out of "smart" meters. Although this may eventually prove beneficial, it has added considerable costs. However, even after adjusting for most of the meter rollout costs, the apparent retail cost premiums in Victoria remain twice those of other states. Most of this stems from comparing the prices of the 20 per cent of Victoria's consumers who have not taken advantage of market price offers, with those in other states where most people remain on regulated prices.

Other reasons for the apparent Victorian retail margins are cost-raising effects of Victorian regulatory measures which have to be recouped in higher prices. These measures include:

- "Consumer protection" requirements that no retailer may charge late fees and difficulties imposed on retailers seeking to disconnect non-paying customers.
- Additional hidden costs of the "smart" meter rollout, with retailers required to move from four meter readings per year to 17,520.

- Costs associated with the operations of the energy Ombudsman in Victoria who has been particularly receptive to complaints, even vexatious ones. Retailers incur all the Ombudsman's costs as well as their internal complaint handling costs.
- The low \$20 maximum early contract termination fee which compares with a cost reflective fee proposed for NSW at \$45-130.

Politicians and bureaucrats fail to understand that costs loaded onto firms do not simply mean lower profits. Firms that cannot recoup those costs go out of business. We are seeing this with energy intensive firms that compete with overseas rivals unencumbered by Australia's various carbon imposts. But electricity retailers face only domestic competition so the many regulatory burdens governments have put in place emerge as higher customer prices.

Competition in all industries brings lower prices – South Australia has now followed Victoria's lead in deregulating household electricity prices and seen consumers benefit. Ironically, one of the nation's many regulators, the Australian Competition and Consumer Commission, is actually suppressing competition in retail electricity by restricting door-knocking sales.

### **1.2.6 Consumer Protection**

Ministers at the Council of Australian Governments meeting on 7 December 2012 sought a paper at which would examine the regulations under which the Consumer Advocacy Panel "allocates grants to ensure it continues to operate in the interests of energy consumers". No evidence is provided to suggest that the public will be better served if money is diverted from incomes/through higher energy charges to provide the advice that the program proposes.

The consultants commissioned to address the issue have published an interim report. This expands the scope and size of the proposal as initially envisaged.

As announced, the new body was to have staffing of 9.5 people. The review panel has upped this to 15 Full Time Equivalents with a budget of \$5-7 million a year to cover:

- Administration
- Consultancy fees and "capacity building", seed funding to state based consumerist groups matched dollar for dollar by state governments; and
- Project funding for existing advocacy organisations.

In this respect the body would build upon and absorb the extant Consumer Advocacy Panel, which already funds NGOs for analysis and advice on the energy market. The body will supplement work of the already established Consumer Challenge Panel, providing an additional source of, "commentary and insights from a consumer impact and interest perspective".

In principle, there is little justification for a body representing consumers in competitive industries. Consumers represent themselves in their purchasing decisions and suppliers' rivalry prevents the exercise of exploitative market power. In competitive markets, like energy retailing and generation, firms have vital interests in assessing consumers' needs and meeting these cost-effectively. An interceding body is likely to seek benefits that cannot be justified on cost grounds.

This balanced outcome might not occur with "natural" monopolies where rivals cannot move in to exploit any super-profitable opportunities. But governments already have regulatory agencies to prevent this.

Arguments rationalising the proposal are threefold.

- First, it is maintained that energy services are “essential”. But this is equally true of food, shelter, petrol and a host of other goods and services.
- Secondly, it is claimed the energy market is especially complex. All markets are complex, which is why central planning cannot work. But markets for homogenous goods like gas and electricity have far fewer complications than markets for goods and services where suppliers have considerably more options for sourcing inputs and have numerous outlets for their products. For example, the food market involves firms seeking out consumers’ needs and preferences in taste, nutrition, convenience; assembling dozens of product inputs from across the world, inputs that the consumer will not recognise; getting the goods to retailers and selecting retailers; informing and persuading consumers about the merits of the particular offerings.
- Thirdly, it is said there is an asymmetry of information between energy suppliers and users. But this asymmetry in energy pales into insignificance compared with some other goods and services. Contrast energy with, for example, motor vehicles which comprise thousands of components that must be meshed together into assemblies with many variations in performance standards, design life, price, reliability, and so on.

Nor is there empirical evidence of need. For over a dozen years, millions of dollars have been allocated from electricity ratepayers to groups claiming to represent consumers. But there is no evidence that this has brought cost lowering outcomes.

Indeed we have the wasteful situation where taxpayers fund consumerist bodies that then appeal to other taxpayer bodies. A farcical outcome is seen in the privatisation of Macquarie Generation with the taxpayer funded Consumer Action Legal Centre campaigning against a major industry rationalisation, claiming that in taking AGL’s market share to 24 per cent, this would provide monopolistic market power. Even more disturbing is the ACCC, seeking to demonstrate it has a genuine role to play, opposing the purchase. Well-funded government agencies will create their own work and manufacture evidence to justify this.

In reviewing the proposed new consumer advocacy body, submissions from 17 taxpayer funded organisations sought additional public support. It is hardly surprising that organisations which stand to gain from increased public funding view the initiative favourably. But such funding is at the expense of the consumer/taxpayer and should be subject to strict cost benefit measures.

Governments need to ask, what additional information would funding the consumerist bodies bring? How would we ensure that their personnel are truly representative of the consumer and that their internal work and grants do not become monopolised by anti-business activities traditionally seen with inner-city personnel that populate consumerist agencies?

## **2 Institutional Issues: Security of Supply**

The Issues Paper asks a number of questions on security of energy supplies. Some of these are addressed in the preceding section. Some have answers that are not easy to be precise about but which can be provided in general terms.

Reliability standards would appear to have driven a great deal of the cost increases experienced in distribution. Such standards, whether they are determined by state or federal regulators should be better aligned to the levels of cost/reliability tradeoffs that consumers value.

The security of supply for liquid fuels would require building a national stockpile in accord with the IEA program. Such a stockpile is difficult to arrange unless it is to be frozen and used only in dire emergencies. In any other situation the stockpile is likely to result in a reduction of commercial stockpiles. As a 90 day stockpile appears to be a condition of IEA membership, Australia should consider leaving the organisation. It provides no value other than as a Parisian venue for public servants' visits and allows an interventionist inclined agency to place unwelcome pressures on Australia. The estimated cost of \$6.8 billion building the stockpile is one that governments will not and should not pay.

The OPEC oil crisis was the spur to the stockpile requirements and, though future crises will doubtless occur, the present constellation of global liquid fuel resources means that particular event will not be replicated.

Energy security is best left to market forces – those firms that see the possibility of shortages emerging from time to time will ensure a flexibility to take advantage of these. Of course, if governments prevent the price impacts of shortages when they occur, this will exacerbate any adverse effects of them and reduce the incentive of private providers to meet unexpected demands.

Energy security is also facilitated by not placing impediments on the search for and development of the resources and their alternatives. Policy towards tight gas is important in this regard and is addressed in section 5.

### **3 Workforce issues including national skills development needs**

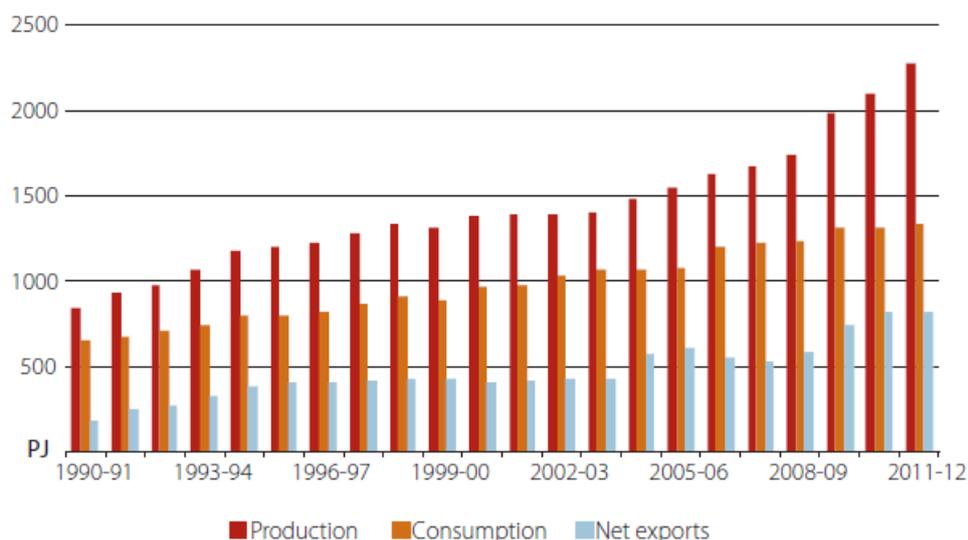
Australia has a reasonably well-functioning and highly resourced training and educational network. The energy industry like every industry requires some skills that are unique to it. But the development of these draws heavily from a range of skills required in the economy. Some, like undersea plumbing and power station, construction and operations, are highly prized. But individuals are sufficiently rewarded to have every incentive to develop the necessary areas of expertise to ensure the specific skills are in place.

It is possible that there are caveats in the skilling processes of Australian educational institutions or that some training schemes require attention. This is, however, unlikely, and indeed when the Issues Paper addresses the gaps it confines itself to “alternative transport fuel, renewable energy, energy management and other clean energy industries”. In other words it seeks to augment employment opportunities in areas which are utterly dependent upon government subsidies. This would impose a double whammy on the community in unnecessarily subsidising fashionable activities which have no market support and then subsidising the skills said to be required to have such activities conducted.

## 4 Gas

### 4.1 Available resources

Gas production and consumption has risen strongly in recent years, having more than doubled to some 1300 pj over the past two decades.



Gas has seen its share of electricity generation increase from 5-6 per cent to approaching 20 per cent over the same period.

BREE reports Australian inferred gas reserves are over 900,000 pj of which 80 per cent are coal seam and shale.

### 4.2 Regulatory issues

The probable reserves of unconventional coal seam and shale gas in Victoria, New South Wales and Queensland dwarf the conventional gas reserves in offshore Victoria and the Cooper Basin and may approach the magnitudes found off the North West Shelf. The unconventional gas is extracted by fracking - fracturing rock to allow gas and oil to escape.

Fracking throughout its 60 year history has never resulted in public harm. But the O'Farrell and Naphthine Governments in New South Wales and Victoria have bowed to counterfeit scares alleging that fracking will create environmental problems, largely centred on pollution of ground water. While there have been a number of claims that the extraction measures involve risk, none of these have been sustained. Indeed, there are now upwards of two million wells sunk in the US without material damage. In addition to these considerations, the bulk of activity for unconventional gas in Australia is presently centred on coal seam gas, which unlike shale gas extraction rarely involves fracking.

Metgasco has reported a typical list of chemicals includes:

- Fuel, lubricants, industrial and welding gasses;
- Solvents;
- Biocides to prevent algae growth;
- pH buffers;

- Neutralisers; and
- Cleaning agents.

There are also speciality chemicals such as:

- Corrosion inhibitors;
- Friction modifiers to improve the drilling process

The concentration of total additives is typically less than 2%, and all of the chemicals are removed from operations and placed in approved industrial waste disposal sites. Nitrogen foam fracturing known as BTEX is also sometimes used. The following identifies chemicals used in fracking and other common usage.

Name	Chemical	Commonly found in
Acetic Acid	Acetic Acid	Vinegar
K-35	Sodium Carbonate	Washing Soda
K-34	Sodium Bicarbonate	Baking Soda – in all baked goods
FE-2	Citric Acid	Lemon Juice
GasPerm1100	Ethanol	Alcohol
Hydrochloric Acid	Hydrochloric Acid	Pool chemical
HAI-150	No hazardous materials	
GEL-STA I Stabiliser	Sodium Thiosulfate	Anti fungal and Tinea treatment
KCL Potassium Chloride	Potassium Chloride	Fertiliser
NF-6	Vegetable Oil	Deep Frying
NF-6	Aluminium Stearate	E573 in chewing gum, instant coffee, baked goods
Caustic Soda	Sodium Hydroxide	Drain Cleaner
SP Breaker	Sodium persulfate	Bleach Hair Cosmetics
HC 2A		Foaming agent used in shampoos and other toiletries
BC-140	Monoethanolamine borate	In cosmetics for controlling viscosity
BC-140	Ethylene glycol	Brake Fluid
BE-6	2-Bromo-2-nitro-1,3-propanediol	Used as preservative in cosmetics
CAT-3 Activator	EDTA/Copper Chelate	Fertiliser
WG-11	Guar Gum	E412 used as a thickener in salad dressings, barbecue sauces
BE-7	Sodium Hypochlorite	Laundry Bleach, Solid Pool Chlorine
	Sodium Hydroxide	Dishwashing tablets, Drain Cleaner

The industry faces a bewildering array of regulations and bans on exploration.

In New South Wales, the government has banned mining close to towns and in prime agricultural land. It claims the exclusion zones comprise only a small per cent of the state but they contain the lowest cost prospects.

The NSW upstream gas sector is well regulated and must comply with a number of acts including:

- Petroleum (Onshore) Act;
- Environmental Planning and Assessment Act;
- State Environmental Planning Policies;
- Native Titles Act (both State and Federal)
- National Parks and Wildlife Act;
- Native Vegetation Act;
- Rivers and Foreshores Improvement Act;
- Rural Fires Act; and
- Water Management Act and Water Act.
- Fisheries Management Act
- Threatened Species Conservation Act

Regulatory impediments in NSW have meant the state, though having similar potential to Queensland, collected a mere \$120,000 in gas royalties last year compared with \$850 million north of the Tweed. In addition, the government has not upheld the law effectively and allowed environmental activists to undertake wanton destruction of property and prevented businesses going about their affairs peacefully.

In NSW, farmers have claimed that fracking conflicts with the use of agricultural land. But this is also nonsense – wheat grows and cattle graze unaffected and oblivious to the gas beneath them being extracted.

The Victorian government has gone further than NSW and has completely forbidden development of any unconventional gas reserves in the state while it undertakes endless rounds of reviews. Peter Reith was commissioned to head an inquiry into the activity. This, like every other responsible study, found fears of inadvertent harm were groundless and any risks were easily prevented – indeed, there is already a Commonwealth/State 18 point “leading practice” framework.

The Reith report advised that fracking should be allowed to proceed immediately. It pointed out that the minerals belong to “the crown” and value in them is shared under a known royalty regime between the government and the discoverer, with landowners being fully compensated for any damage, inconvenience and disturbance from the activity. In addition it warned that a gas reservation policy for local consumption would simply divert the product to firms seeking below-cost inputs and deter exploration.

Unfortunately, Mr Reith also advocated additional, potentially harmful regulatory measures.

Among these was a call for a new regulatory authority, the Gas Commissioner. Designed to promote better acceptance of drilling and fracking, this also incorporates an “independent water science program” to scrutinise and report on whatever it fancies, new guidelines, bans on certain chemicals, full disclosure of the chemicals being used and independent monitoring.

The Reith report also advocated requiring the Exxon/BHP joint venture that produces and markets Bass Strait gas to cease selling as a single unit. The objective is to force the two firms to compete with each other in the hope that this will drive down prices. Whether or not this would eventuate, and be desirable in the light of the report claiming that prices need to rise, a forced divestiture sets ugly precedents for future joint ventures.

In addition the report promotes further and unnecessary government resources being created to forecast consumer demand for gas and transportation capacity.

To placate different interests Reith also recommended syphoning off some of the royalties to a regional fund and doubling, to \$20,000 per well, the de facto royalty that is paid to the landowner. The report advocated a lower royalty rate and a royalty holiday - measures that are surely unnecessary for an industry anxious to start exploration on established terms.

Tragically, the main thrust of the Reith Report in concluding that fracking should go ahead has been set aside by a timid Victorian Coalition government, which has put in place a further review process leaving current bans in place. In South Australia, the current ALP Government and, though somewhat less fulsomely, its Liberal Opposition has followed Queensland’s example and declared itself “open for business” on development of unconventional gas.

The corporatist state's pervasive role within the business decision making framework is paralysing innovation. We need to find ways that allow decisions to move forward under the rule of law without parties having only an incidental interest in developments being able to recruit government regulatory barriers to block them. And we need to resist creating new increments of regulation whenever a fresh situation arises.

### **4.3 Gas reservation**

Requiring the setting aside of a proportion of production for domestic use can only mean imposing a cost increase unless, of course, there is no premium from overseas sales, in which case there is no reason to put in place a set-aside policy. While there is precedent for such approaches with WA gas, it is highly unusual to, in effect, impose an export tax on a product with the revenues hypothecated back to domestic consumers of the same product. It is difficult to identify such policies ever having the desired effect of creating a sustained and viable value-adding secondary industry.

A number of distortions are created by a domestic reservation policy:

1. The producers have to incur higher costs to the degree that the overseas price exceeds the domestic price. This reduces the profitability of prospective projects and will choke off some developments. Commonly, the mechanism for this will follow from supplementary costs of a requirement to "prove up" additional resources so that 10-20 per cent can be allocated to sales that are less profitable.
2. By definition, if supplies are reserved for certain purposes, that reservation also involves the supplies attracting a lower price than they would otherwise receive. Were that not the case there would be no need for the regulation.
3. Some administrative costs would be required to ensure any set-aside was genuine.

The alternative of reserving production areas for domestic use also has potentially costly disadvantages. It creates a two-tier supply market with the reserved tier being valued at a discount to the presumably more profitable export tier. This is almost certain to bring a reduced level of development to the domestic tier.

Manufacturers' calls for a gas reservation policy are made in the knowledge that this would bring a discount, at least in the near future, on the price charged. Those calling for such action would not be supportive of similar measures that required a domestic reservation over their own outputs.

## **5 Ownership Issues**

### **5.1 Issues in Principle**

Privatisation has never been popular electorally. There is a range of reasons for this.

Many people believe a business that is under political control can be forced to provide services below cost, some feel a sense of satisfaction in shared ownership, and others consider private ownership may unduly cut costs.

In a recent survey published by Essential Media, 58 per cent of Australians disapproved of privatisation. Similar views are seen in opinion polls across the world. Even so, across all countries - even communist ones such as China - governments have divested businesses they once owned.

In some cases, as with Labor's privatisation of the Commonwealth Bank in 1991, government ownership is recognised as serving no purpose and, instead, hamstringing management.

Under Jeff Kennett, the Victorian government raised \$30 billion from asset sales (\$60 billion in today's money). Electricity accounted for the bulk of this.

Although the prime motivation for privatisation is often to provide funding for improvident governments, privatisations also and more fundamentally tap into the greater efficiency of shareholder-owned businesses. Government ownership brings with it poor value due to unprofitably low prices to certain customers, politically centred development and featherbedding with unproductive jobs.

State comparisons offer some confirmation of the superiority of private ownership. Comparisons of this nature cannot be made by examining wholesale power prices as a guide to generator efficiency because the linkages in the national market tend to equalise prices. There is no longer any serious body supporting the case for public ownership of generators, which are factories little different for other such facilities. The management of these facilities in Victoria and South Australia has been one of impressively improving assets that were increasingly run down under government ownership and vastly improving their reliability notwithstanding (or perhaps because of) a vast reduction in employees.

As previously stated, the Productivity Commission report into electricity networks estimated the government-owned networks are 80 per cent more costly in terms of dollars per kilometre of line. And the Energy Supply Association of Australia puts the networks in Victoria and South Australia well ahead of Queensland in terms of system reliability.

## **5.2 Transmission**

Transmission costs in Victoria have been remarkably stable at around 1.27 cents per kwh over the past four years. This is a low cost made all the more creditable since transmission business SPI Powernet incurs a specific tax, equivalent to about 20 per cent of its revenue, as a means of Victorian Government's subsidy to aluminium smelters.

In South Australia, where the transmission network has also been privatised, costs have edged up over the past four years by 40 per cent from 2.35 cents per kwh to 3.28 cents. The South Australian non-metropolitan coverage has a lower density than that of the other states with resultant increases in average costs, though this should not have brought the rather steep increase that has been experienced. Part of the state's increased costs may result from an expansion of the network to accommodate wind generation capacity, which has increased markedly in recent years. South Australia now has around half of the national wind generation capacity.

Queensland's government owned transmission business has seen costs increase 29 per cent in the past four years from an average of 1.82 cents to 2.34 cents. Over that same period, NSW transmission costs have increased from 1.76 cents to 2.35 cents per kwh an increase of 34 per cent.

Transmission costs are shown in Table 5 below.

**Table 5 Transmission costs (c/kwh)**

NSW	Qld	SA	Victoria	
2010/11	1.76	1.82	2.35	1.27
2011/12	2.08	1.97	2.87	1.12
2012/13	2.21	2.19	3.08	1.24
2013/14	2.35	2.34	3.28	1.27

### 6.3 Distribution

As with transmission, there is a marked difference between Victoria and the other states with Victorian costs only half of those in NSW and not much more than that compared with Queensland and South Australia. Like Victoria, South Australia’s network is privately owned.

Differences in load profile, population density and network planning criteria mean that comparisons are less than straightforward. South Australia’s peaky demand increases average costs when they are expressed in terms of cents per kwh. South Australia also has a more dispersed population linked to the distribution network than other states (and estimates 70 per cent of asset costs supply only 30 per cent of the population). Nonetheless, it has seen its average costs grow 40 per cent 2010/11 to 2013/14, rather more than other states and twice that of Victoria. Some of the more recent cost increases may reflect cyclical investment patterns.

Though geographic differences are doubtless present, the data offers a clear indication of savings available in states other than Victoria. Table 6 identifies the different costs

**Table 6**

	Distribution costs (c/kwh)			
	NSW	Qld	SA	Victoria
2010/11	10.75	9.53	8.32	5.82
2011/12	12.84	10.56	10.74	6.19
2012/13	14.34	11.97	10.72	6.53
2013/14	14.19	12.99	11.78	6.96

### Policy Proposals

Energy is a vital factor in the direct wellbeing of consumers. More important still, for Australia it is a key component of economic development. Our minerals and agricultural processing industries are natural fits to the resource endowment that Australia has and cheap energy whilst part of that endowment is also crucial to its development.

Irresponsible government actions have impaired the value of our energy resources. This can be seen in four key areas:

- Retaining ownership of energy businesses in networks where such ownership is verifiably inefficient and always likely to remain so;
- Placing taxes and regulatory imposts on energy suppliers to force them into costly measures in pursuit of government determined efficiency, consumer consultation and greenhouse reducing measures;
- Impeding access to land for gas exploration and development
- Suppressing prices to certain customer groups, thereby weakening incentives to supply and maintain industry resilience.

It is difficult to specify policies to rectify these impairments since any measures employed rely on government action, the cause of the problems in the first place. In the past, as with the post-Hilmer competition policy payments, governments were rewarded (and occasionally punished) for their attention to pursuit of an agreed set of principles. But the use of government to combat government deficiencies is oxymoronic. Indeed, if a previous Commonwealth Government had attempted more forcefully to exert pressure on states to promote a goal it favoured, energy saving measures, the outcome would have been even more perverse than that which has eventuated. In this respect confidence in the outcome of the White Paper is diminished by the Issues Paper, which continues to promote market interventions in many places associated with green energy and energy efficiency.

It also has to be said that providing incentives for governments to do things that are in the interests of their own consumers is logically questionable.

One solution, an application of competitive federalism would allow each jurisdiction to set its own regulatory measures. This is appropriate when activities can migrate to states which impose less onerous conditions on business. No-uniformity is one obvious drawback of this approach, moreover it is difficult to apply in a federal system which guarantees freedom on inter-state trade and where a state's consumers' losses (at least in inter-linked markets) are mitigated by the availability of interstate supplies.

A useful starting point, in line with the Government's deregulation initiative, is to announce the early sunset of all regulatory measures and discriminatory charges and taxes on energy supplies at the Commonwealth level. This would be accompanied by an invitation to State Governments to adopt similar programs. In the absence of such a measure the best that can be hoped for is to have the process unveil costs of poor decisions in the past as counsel for future decision makers.