Submission to the Renewable Energy Target Review Panel

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Free people, free society

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Summary

Renewable energy in the form of wind and solar, the two major subsidised supply types, remains non-commercial, at threefold the cost of electricity sourced from coal.

Globally, these and other subsidised renewable sources have shown considerable growth and now account for around three per cent of electricity supply. In Australia they amount to some four per cent of supply and are scheduled to reach 17 per cent by 2020.

Australia's coal wealth provides the nation with perhaps the world's lowest cost electricity. Australia has, however, been relegated from being among the world's cheapest locations for electricity supply into becoming among the dearest. The renewable program has been a major contributor to this.

Assuming the carbon tax is repealed, next year will see non-commercial renewables, together with feed-in-tariffs and "energy efficiency improvements schemes" bringing about an increase in the wholesale electricity price by 75 per cent. This is an average increase in household prices of 11 per cent.

The expense of wind's mandatory inclusion within electricity supply results in a serious dilution of the domestic capital stock's productivity. There is some $18.5 billion spent on renewables that require a subsidy to cover most of their costs.

Wind and other renewables should be left to stand on their own feet commercially. They have achieved their current market position only through subsidies and show no sign of reaching commercial viability without them. Their on-going subsidisation severely weakens the national economy and imposes significant penalties on consumers both directly and indirectly. This is of added importance in the context of Australia's acute budgetary problems and stringent measures are required by the federal and state governments to redress the spending excesses of recent years.

Australia's renewable program is ostensibly targeted at a reduction in carbon dioxide emissions. But whatever the merits of such a reduction, it is clear that the contribution Australia might make is negligible.

Those arguing for the retention of the subsidies to renewables claim that the program reduces overall electricity prices. It is however impossible for a subsidy to bring about a sustained reduction in prices without its rate continually increasing. In the process not only does this mean high costs to consumers who are required to fund uncompetitive renewable energy suppliers but it also would entail bankrupting the formerly commercial, unsubsidised providers.

It is also claimed that early termination of the renewables program would introduce an element of sovereign risk into Australia's investment environment. This is untrue. The withdrawal of a privilege does not constitute a government "taking" of property which would undermine investor confidence.

The privileged position of beneficiaries from renewable energy subsidies is so onerous that it is having an economically debilitating impact on the economy at large. The renewable regulations perform no positive function and therefore should, accordingly, be discontinued with immediate effect.

Introduction

Australia has among the world's lowest cost sources of electricity generation in the world. These are most significantly based on almost endless supplies of coal, which provides about 80 per cent of electricity generation. The coal is mainly conveniently located close to the main load centres.

Most of the coal used for local electricity generation is of too low a quality for profitable export (and in the case of brown coal is not even easily transportable). Because of coal's almost infinite abundance in respect to demand, coal generators' fuel costs are dominated by the extraction and transport expenses to nearby generating plant.

On current technology it is possible to generate unlimited amounts of base load power from coal at around $35 per MWh (3.5 cents per kwh), which is less than half the cost prevailing in much of the world.

Alternative energy sources are more expensive than coal – most estimates place nuclear power generation costs at $55 plus per MWh and, although some states as in the Persian Gulf and former USSR can offer cheaper gas-fuelled electricity prices, these are subsidised and therefore subject to uncertainty. Moreover, political instability in many of these places means additional risk.

Cost of different generation plant are illustrated in Table 1

Table 1 Costs of different forms of electricity generation

	Long Run Marginal Costs	
	Cost per megawatt hour ($)	**Capacity factor (per cent)**
Gas (open cycle gas turbine)	65-96	up to 90
Hydro electricity	60-150	15
Solar (photovoltaic)	190	20-22
Wave and tidal	na	25-30
Wind	80-120	30
Geothermal	70-87	80-90
Brown coal	35	80-90
biomass	70-185	n.a
Black coal	36	85-95

Sources: Various

Australian governments previously used the electricity supply industry, including generation, for job creation. But from the early 1990s governments reformed the industry and privatised a good deal of it. This led to cost savings especially through a reduction in the labour force. In Victoria employment (including contractors) involved in generation was reduced to about one quarter its previous size in spite of the sector having been expanded substantially.

The History of Renewable Regulations in Australia

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, this optimism has proven to be unfounded. Instead we have seen subsidised renewable energy sucking capital into worthless investments.

The 2001 Mandatory Renewable Energy Target (MRET) required that 9,500 GWh of selectively designated new renewable energy be used in Australia by 2010.

When Prime Minister John Howard announced the proposal to introduce an MRET scheme in 1997 he said it was for an additional two per cent of electricity that was to come from "renewable or specified waste energy". Lobbyists ensured this was redefined into the 9,500 GWh by 2010, which was in fact far more than "an additional two per cent", and was indeed over four per cent of *total* projected electricity supply.

A review of the scheme in 2004 (the Tambling Review) recommended the target be increased to 20,000 GWh by 2020. In June 2004 the Commonwealth rejected that, announcing that it did not believe expanding the target was economically justified.

State governments took a contrary view and introduced their own schemes.

The Victorian Government announced its proposals in a Press Release by the Premier (2 November 2005)[1]. This argued that there was a "lack of national leadership" by the Federal Government in not increasing the MRET scheme from the 9500 GWh target set. With an idiocy that is now fully recognizable, Mr Bracks said this, "is costing Victoria – economically and environmentally - and cannot be allowed to continue." And he set out to double *"the proportion of renewable energy used by Victorians to 10 per cent by 2010"*.

Mr Bracks said, "Victoria's aim is to facilitate the development of up to 1000 megawatts of wind energy by 2006 represents $2 billion worth of capital investment. Then there are the jobs and the other economic spinoffs that accompany such a significant outlay". One such spin-off, a subsidized blade factory, was closed within a few months.

The Rudd government in 2007 increased the Commonwealth renewables requirements to 20 per cent of total energy (quantified at 45,000 GWh of"exotic"renewables) by 2020. Labor also split the scheme into its present large scale (LRET) at 41,000 GWh and small scale (SRES) categories at 4,000 GWh.

[1] http://www.greenhouse.vic.gov.au/images/VicGreenhouse-ActionPlan.pdf

Renewable Energy in a Global Context

Most developed nations have some form of renewable requirements, without which no significant renewable energy, other than hydro-electricity and geothermal, could be commercially viable. The global production of different sources is shown in Table 2.

Table 2

World electricity production by source

TWh	2002	2009	2010	2011	2012	AAGR 02/12	GR 11/12
Geothermal	52.2	67.4	68.5	69.3	70.4	3.0%	1.5%
Wind	52.5	276.4	351.2	451.5	534.3	26.1%	18.3%
Biomass	147.1	246.8	288.9	307.6	326.2	8.3%	6.0%
solid biomass share	*108.3*	*173.9*	*207.0*	*218.9*	*232.5*	*7.9%*	*6.2%*
biogas share	*16.4*	*37.7*	*44.1*	*50.9*	*58.0*	*13.4%*	*13.8%*
liquid biomass share	*1.0*	*4.8*	*5.9*	*5.0*	*3.2*	*12.7%*	*-36.8%*
municipal waste share	*21.4*	*30.4*	*31.9*	*32.7*	*32.5*	*4.3%*	*-0.5%*
Non-renewable waste	40.5	40.1	52.0	55.7	56.0	3.3%	0.6%
industrial waste share	*19.6*	*12.7*	*23.7*	*25.5*	*25.9*	*2.9%*	*1.8%*
municipal waste share	*21.0*	*27.4*	*28.3*	*30.2*	*30.1*	*3.7%*	*-0.4%*
Solar	1.7	21.0	33.5	63.1	104.5	50.6%	65.5%
photovoltaic share	*1.2*	*20.0*	*31.8*	*60.8*	*100.4*	*55.9%*	*65.1%*
solar thermal share	*0.6*	*0.9*	*1.7*	*2.3*	*4.1*	*22.3%*	*77.5%*
Hydraulic	2705.9	3329.0	3514.3	3530.8	3663.4	3.1%	3.8%
pumpig storage share	*79.6*	*76.0*	*78.4*	*75.7*	*74.4*	*-0.7%*	*-1.7%*
Marine energies	0.568	0.527	0.558	0.561	0.540	-0.5%	-3.7%
Nuclear	2660.8	2696.1	2756.3	2580.9	2463.5	-0.8%	-4.5%
Fossil	10512.4	13500.7	14422.7	15113.0	15394.3	3.9%	1.9%
Total renewable	**2960.1**	**3941.2**	**4256.9**	**4423.0**	**4699.2**	**4.7%**	**6.2%**
Total conventional	**13213.7**	**16236.9**	**17231.0**	**17749.6**	**17913.8**	**3.1%**	**0.9%**
Total production	**16173.8**	**20178.1**	**21487.9**	**22172.5**	**22613.0**	**3.4%**	**2.0%**
Renewable share	***18.3%***	***19.5%***	***19.8%***	***19.9%***	***20.8%***		

IEA: http://www.energies-renouvelables.org/observ-er/html/inventaire/Eng/conclusion.asp

The wind and solar share, at 2.8 per cent in 2012, has risen from 0.3 per cent in 2002.

The IEA puts the share of different jurisdictions' electricity sources as illustrated in Figures 1, 2, and 3:

Figure1. US

Structure de la production d'électricité – 2012 / *Structure of electricity production – 2012*

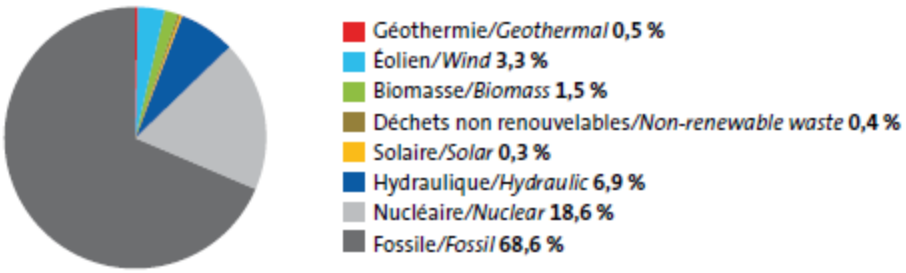


Figure 2 EU

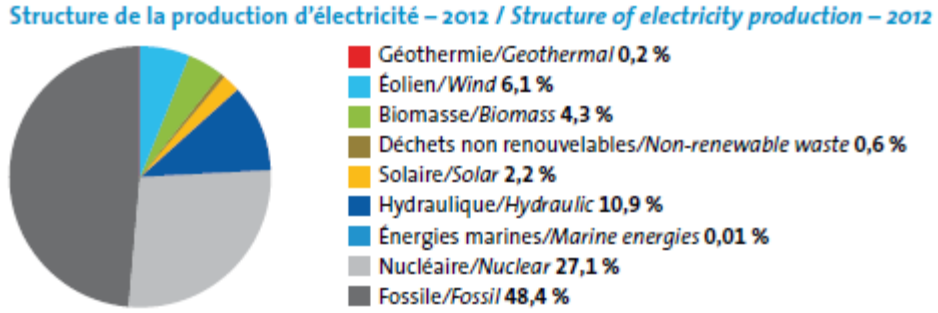
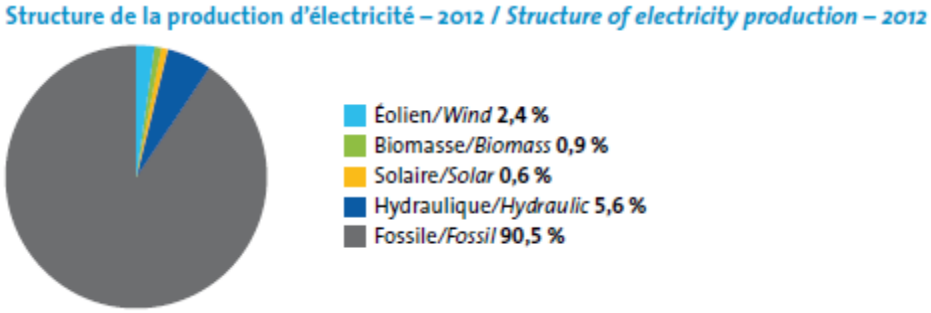


Figure 3 Australia



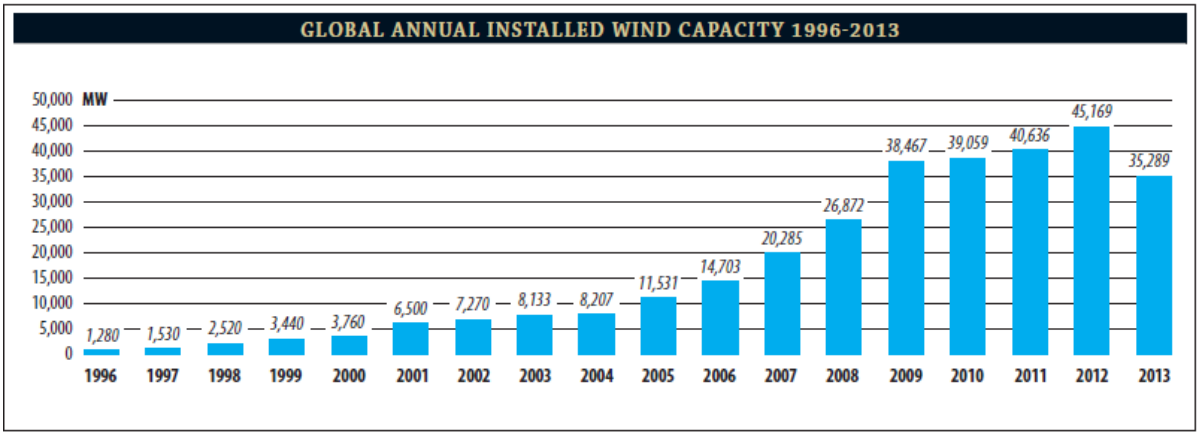
While wind capacity has continued to increase across the world, the rate of construction has fallen. In 2013 for the first time since 1996, less capacity was installed than the previous year.

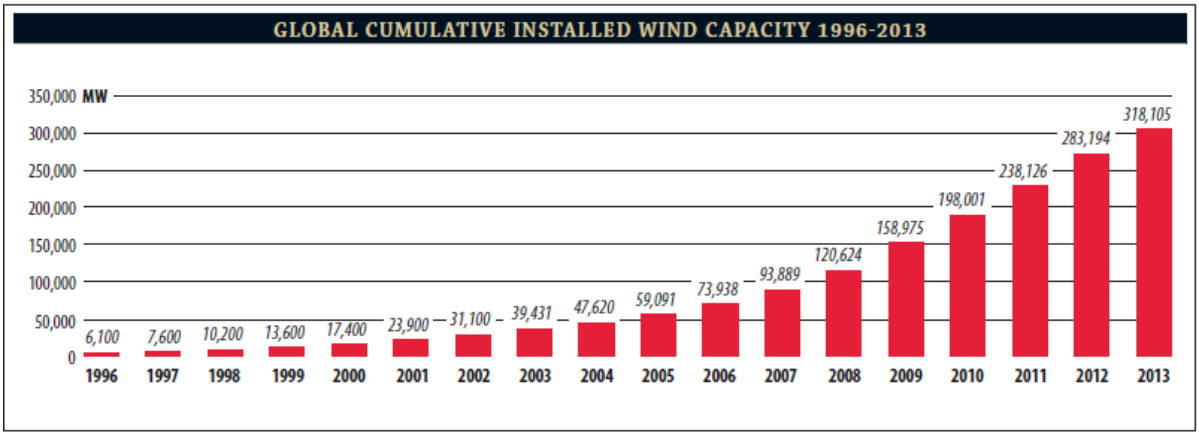
Blomberg estimates the decline started earlier, with spending falling from $318 billion in 2011 to $280 billion in 2012 and $254 billion in 2013[2]. Few countries are showing any increased appetite for additional subsidies to renewable energy – Germany and Spain, two leading wind/solar promoters have vastly reduced the incentives for this form of energy (in Spain's case previously committed subsidies have been retrospectively reduced).

Figure 4 illustrates annual additions to capacity.

[2] http://www.commdiginews.com/environment/renewable-energy-in-decline-less-than-1-of-global-energy-11004/#dpMYqorSyT6tkDCj.01

Figure 4





Source: http://www.gwec.net/wp-content/uploads/2014/04/GWEC-Global-Wind-Report_9-April-2014.pdf

In Australia, the AEMO planning document[3] has wind, which at the turn of the century was virtually absent from generation, having grown to 9 TWh in the national market in 2013/14 (four per cent of the supply).

AEMO's estimate puts wind at 36 TWh in 2020/21 (16 per cent of supply). Wind capacity is forecast to grow from 2641 MW in 2013/14 to 11,184 MW in 2020/21. The contributions of biomass and solar is currently negligible and forecast by AEMO to reach one per cent of supply by 2020/21. Over the same period intensity of CO2-e is estimated to fall from 0.886 to 0.742 per GWh.

Electricity Price Developments

Studies have shown Australia to have faced cost increases in electricity far in excess of those of other countries. The following table assembled by the NUS Group[4] illustrates this for 2012, the year the

[3] http://www.aemo.com.au/Electricity/Planning/National-Transmission-Network-Development-Plan, (see modelling results)

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. Australian prices rose to 60 per cent above those of Canada, the energy riches of which are rather less than those of Australia.

Table 3 NUS Consulting: Electricity Prices 2012

2012 Rank	2011 Rank	Country	Cost (US¢)/kWh	One Year Percentage Change
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%*

Even prior to the carbon tax Australian prices had been increasing but in Table 4, the 2009 NUS survey[5], Australia was the cheapest source of electricity, excluding South Africa where supply was heavily subsidised.

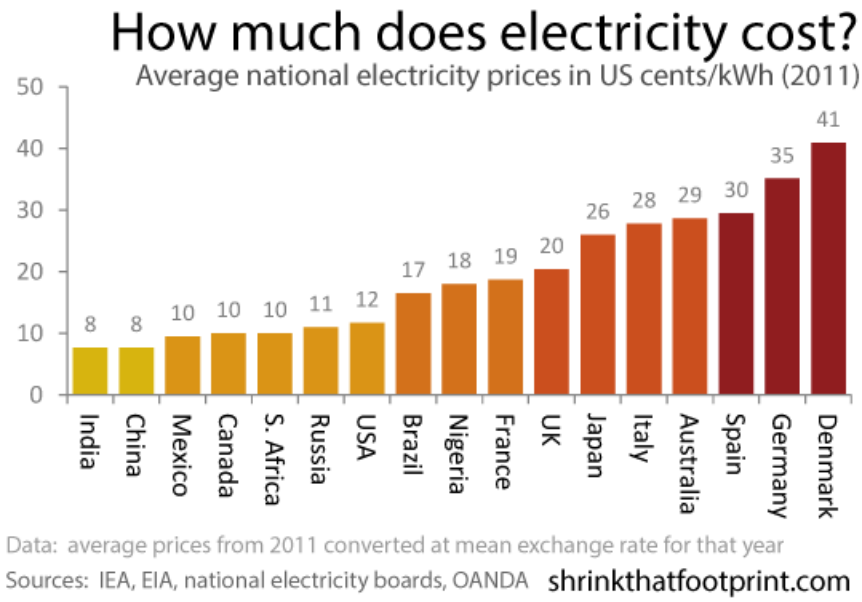
[4] http://www.kraftaffarer.se/meralasning/2012E&GSurvey.pdf
[5] http://www.buddeblog.com.au/news-and-views/nus-electricity-report-and-cost-survey-2010/

Table 4 NUS Consulting: Electricity Prices 2009 and 2010

Country	2010 Rank	2009 Rank	Cost (US¢)/kWh	Percentage Change
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[6]. In average US cents the data offered are as follows.

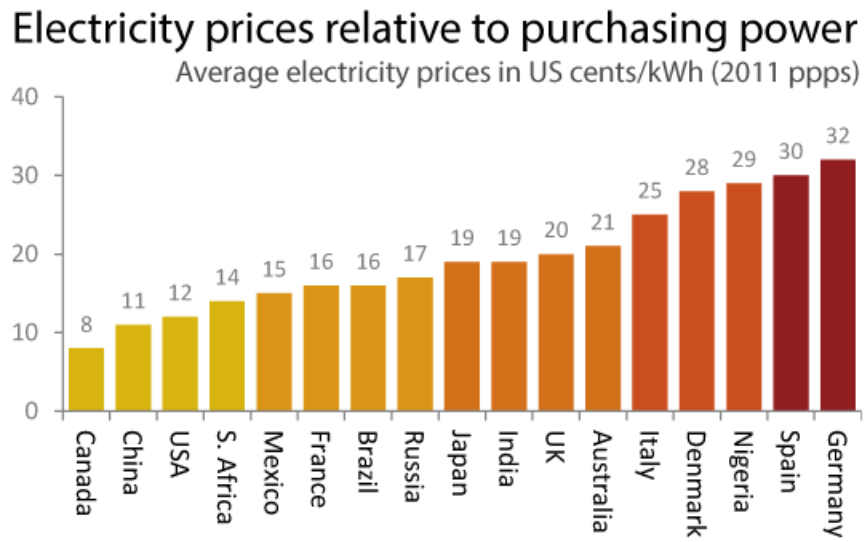
Figure 5 Estimated Electricity Prices Selected Countries



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

[6] http://reneweconomy.com.au/2013/graph-of-the-day-average-electricity-prices-around-the-world-24207

Figure 6 Estimated Electricity Prices Selected Countries



The Causes of the Cost Blowout in Electricity

Cost Composition of Electricity supply

By 2009, the previously very competitive Australian industry was required to carry burdensome impositions through renewable schemes and mandatory energy efficiency cost requirements introduced by state and federal governments.

Some indication of the penalty resulting from regulations is available from information on retail prices published annually by the AEMC. Table 5 covers the national average. It shows the environmental policies adding 29 per cent to costs to households. The carbon tax was responsible for 60 per cent of those costs.

Table 5 Assembling the Electricity Costs: National Average

		2012/13 Base year	2013/14 Current year	2014/15	2015/16
Environmental policies	**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
Regulated networks	**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
Wholesale and retail	**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
Total	**c/kWh**	**20.78**	**21.48**	**22.10**	**20.27**

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 include back-office costs to ensure that the provisions governments impose on the industry are met. Among such provisions, in addition to the obligations to buy specific forms of electricity are requirements to offer services like light bulb replacement.

Renewables Regulations' Economy-wide Costs and Impositions on Commercial Electricity Suppliers

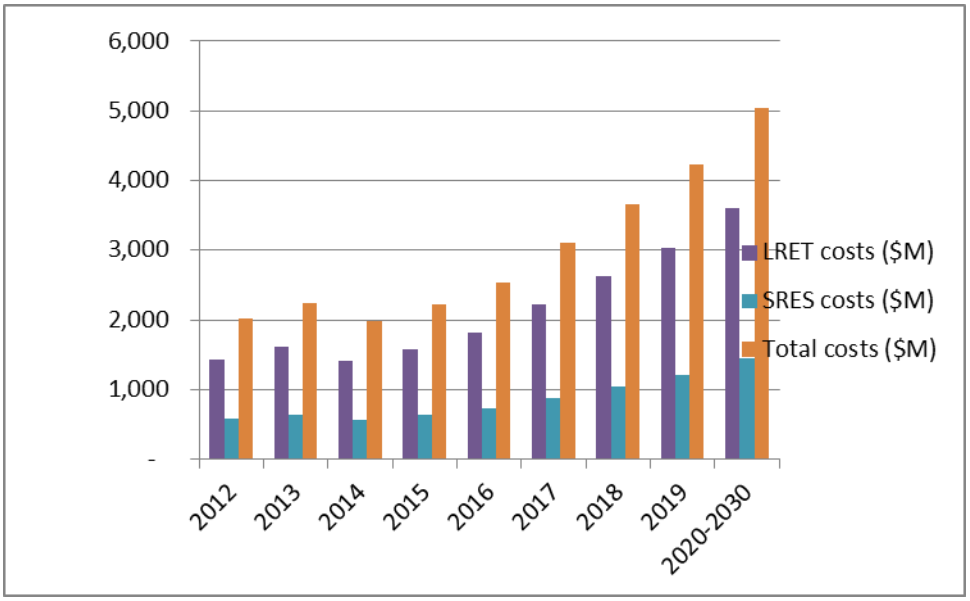
Renewable energy is defined to include wind, small and large scale solar, some forms of bio-energy, wave, geothermal and some other sources, the costs of which were shown in Table 1. Wind is the cheapest form of non-hydro renewables and its cost is $110 per MWh compared to coal (the lowest cost black coal is similar to brown coal at $35-38 per MWh).

Compared with conventional supplies, the 2020 annual cost of the LRET component of 41,000 GWh is $3 billion. For the SRES, comprising photovoltaics, the cost is about twice the wind cost (even higher costs are 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.

Figure 7 depicts the estimated[7] annual subsidy.

[7] Estimates based on subsidy of $88 and $360 per MWH for wind and SRES respectively; and coal based cost of $40 per MWh with average of commercially supplied electricity - coal, hydro, gas -at $45 per MWh

Figure 7



By 2020, the renewable program would, if left unchanged, have imposed a total economy-wide cost of some $23 billion and its costs would continue.

Added to these costs is 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 annual 2020 renewables burden to $6-7 billion premium over the cost of energy to the consumer.

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

Compared to an underlying cost of coal generated electricity of around $40 per MWh, (after factoring in peak needs) the combined effect of the two classes of renewables boost the average wholesale price considerably. Thus, on the basis of the AEMC data, LRET, SRES and the feed-in tariffs plus “energy efficiency” schemes add 2.02 cents per kwh to the price. That amounts to a 75 per cent increase to the 2014/15 estimated wholesale price (net of the renewable components). In terms of household prices, renewables mean an increase of 11 per cent. Of course, the effect on living standards is far higher than this since the costs are also incorporated in prices for all goods and services, which increased by higher energy costs.

In addition, are the further consequential costs of the regulatory paperburden and from having to build transmission lines, often at considerable expense to remote areas.

On top of the direct costs burden to household consumers there is a huge impost to energy intensive businesses, which can be double and more that which is carried by households. The outcome is 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 policy at which the renewable measures are targeted.

The price effect on major energy users is far greater than this - in some cases double the 12 per cent increase that households directly incur.

And for businesses, especially those with options of relocating overseas or in competition with foreign suppliers, even a minor increase in energy costs has massive repercussions. This is because business decisions are conditioned by profitable opportunities and risks. Profit is the residual after all other costs are met. If it comprises 10 per cent of sales value and if electricity costs are 6 per cent of total costs, a 20 per cent cost increase adds only 1.2 per cent to overall costs. But it also reduces profit by 12 per cent and, as evidenced by recent announcements to close or mothball aluminium smelter capacity, that is more than enough to dictate locational decisions.

Beneficiaries of subsidies maintain that the support to wind ensure that these turbines generate whenever they can and that this reduces the pool and contact price of energy. Sometimes these contentions are accompanied by seemingly sophisticated analysis and commissioned research with impressive looking wavy lines.

A moment's thought is enough to demonstrate such notions to be fallacious. Subsidised power can and likely does drive down prices in the pool which are reflected in contract prices. It does so in the same way as heavily subsidised confectionery would drive down the price of commercially produced, unsubsidised confectionery. In the case of a homogenous good, like electricity, this is more readily seen than with products that are differentiated within the same general market.

There are many examples of such price reducing activities having knock-on effects – a classic case was in the 1970s when British steel prices were held down by the government of the day and led to steel prices being depressed throughout the then European Free Trade Area.

But such price reducing effects depend upon the subsidisation continuing. And in the case of capital intensive assets like power stations, they bring premature closure and constrained replacement. If the price is to remain low the subsidies must therefore increase. Such intervention within economies is a perilous road to ruin. It means we are replacing low cost facilities with higher cost facilities thereby wasting capital, increasing consumer taxes or charges and reducing industry competitiveness.

Much has been written about the contribution that wind and solar have made to Australian energy supply, especially in the recent hot spell. About 10 per cent of electricity supply comes from renewable sources, two-thirds of this being unsubsidised hydro-electricity, with one-third from wind/solar which needs subsidies to cover more than half of its costs.

During heatwave conditions in the five days to 18 January 2014, wind actually contributed three per cent of electricity supply across the Australian National Electricity Market. Nobody knows the contribution of rooftop solar but it could not conceivably have been more than 1 per cent.

Windmills produced at an average of 23 per cent of their capacity during the January heatwave. This was below their year-long average of about 30 per cent because the hot spell, as is often the case, was characterised by still air. Fossil fuel plants are available 95 per cent of the time. Gas plants (and hydro-electricity) can be switched on and off at very short notice to fill the peaks in demand. As a result they generally earn more than the average plant on the electricity spot market. The inherent unreliability of wind and solar as supply sources also brings increased risks of blackouts or the expense of building mainly dormant back-up generation plant.

The below-par performance of windmills in high-demand periods means they not only require a subsidy but are also less valuable than other plants because their availability is reduced when they are most needed and when the price is highest. Accordingly, windmills actually earn less on average than other plants in the electricity spot market. Indeed, during the recent heat wave, wind power earned an average of $123 per megawatt hour in Victoria and $182 in South Australia while the average price was respectively $209 and $285 in the two states.

The Renewables Contribution

In December 2012 there was about 3,200 megawatts (MW) of wind capacity in Australia. That's about six per cent of generating capacity, but wind supplied only three per cent of total electricity supply because of its intermittent nature.

Investments 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 only $2 billion and a brand-new brown coal plant of 3300 megawatt capacity would cost less than $10 billion. Those facilities supply energy at one-third of the cost possible with renewables.

Wind promoters 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 is about $12 per megawatt hour which is more than the fuel plus maintenance costs of a Victorian brown coal power station.

In order to reach the Renewable Energy Target another 8,800 megawatts of wind generation capacity is required but only 1200 MW was committed or under construction in December 2012.

In its December 2012 review, the CCA noted that due to the slowdown in build rate the RET target was looking ambitious. It was, however, reassured by the presence of the Clean Energy Finance Corporation which said it was ‘in a position to facilitate the flow of funds into the renewable energy industry, and encourage projects that otherwise may not have gone ahead'.

Subsidies on existing Australian renewable plants are planned to run for 15 years. But Spain, previously the poster child of renewable subsidy excesses, has shown the way forward by eliminating all previously promised subsidies. Australia needs to abandon its own renewable schemes and allow the energy market to operate on commercial terms.

Policies for the Future

Addressing the Review Panel's Terms of Reference

The Terms of Reference seek information on the extent on which the formal objects of the Renewable Energy Act are being met. The objects of the Act are

(a) to encourage the additional generation of electricity from renewable sources; and

(b) to reduce emissions of greenhouse gases in the electricity sector; and

(c) to ensure that renewable energy sources are ecologically sustainable.

With regard to the third of these there is a variety of views about whether the renewable energy sources (primarily wind farms) are ecologically sustainable. Many suggest windfarms' bird kill rate is unacceptable and others consider wind generators have additional detrimental health and visual features.

On the more substantive first two objectives, it is clear that the subsidies have led to more generation from renewable sources. There was virtually no additional capacity from commercial hydro-electricity, the government having foreclosed Tasmanian dams, the only remaining large scale additional potential for this.

In displacing fossil fuelled generated electricity these non-commercial renewable sources, by far the greater part being wind with solar a distant secondary supply, will have reduced emissions of greenhouse gases. However the cost of doing so has been considerable. It represents a tax on carbon dioxide from other suppliers at the equivalent of about $40 per tonne. This is rather greater than the $24 carbon tax but less than the $74 tax required by 2020 which was estimated by the OECD's paper co-authored by the Australian treasury (and far below the level of tax of $250 per tonne the Garnaut report thought necessary by 2050).

The issue is what is the value of reducing Australian carbon dioxide emissions? Clearly there is no value unless all countries are doing so in a concerted manner. This is plainly not the case.

Options for Modifying the Scheme

Options for modifying the scheme include:

1. The "Twenty Per Cent" proposal, which reduces the renewables total to a genuine 20 per cent by 2020 as initially intended. This would imply a maximum of 33,000 GWh of subsidised renewables, reducing the 2020 annual cost to $3.7 billion.
2. A variation of this would allow only the existing and committed projects to proceed as subsidised. This would mean about 15,000 GWh and an annual cost rising to $1.7 billion by 2020.
3. The full costs could be saved if the program were to be totally abandoned, forcing renewables to immediately compete without subsidy, as their adherents always claimed they would eventually be able to do.

Beneficiaries of the subsidies argue that terminating the renewable subsidies would constitute "sovereign risk" and adversely affect investment generally. But we are already seeing previously guaranteed income streams from overseas renewable schemes facing early termination. Importantly in Spain the government has reduced the subsidy on wind and other renewable energy and has reduced the duration of the subsidies.

Moreover, sovereign risk has previously been imposed on the fossil fuel generation business. Based on emission levels prevailing (around 1.2 tonnes of CO_2 per MWh for brown coal; 0.85 tonnes for black coal and 0.5 for gas) and a market price of, say, $42 per MWh, the carbon tax at $24 per tonne imposed discriminatory taxes on fossil fuel plant. On brown coal plant this was around 70 per cent; 50 per cent on black coal and 28 per cent on gas.

These abrupt levels of taxation increases are clearly punitive and drastically reduced the value of the assets themselves, as recognised by the government in cushioning this by granting emission credits. Even so, the firms would have incurred losses on their investment but there were no claims of sovereign risk.

Sovereign risk involves a “taking” of property and shoud be avoided because, ethical issues aside, it creates great uncertainties for investment, especially investment with long payback times. But sovereign risk from the government withdrawing a favour is different from when it takes a property. No investor can reasonably expect a subsidy to prevail for 15 years as is notionally the case with windfarms and other exotic renewable facilities. And there would be few precedents for a government committing its successors to what would become 24 years of worthless expenditure.

If removal of such favourable and lengthy regulatory provisions was considered to constitute reimbursable sovereign risk, the motor vehicle manufacturers now abandoning production in Australia would have a case for compensation. Nobody, not even the tariff protected businesses made such claims. As former Commonwealth Treasury Secretary John Stone famously said, ‘Favours freely given by government can just as freely be taken away'. The termination of the renewable energy requirements should be done immediately.