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Sophie Dunstone
Committee Secretary
Senate Select Committee on Electricity Prices
Parliament House
Canberra
ACT 2600
Email: electricityprices.sen@aph.gov.au

Dear Ms Dunstone

Submission to the Senate Select Committee on Electricity Prices

Thank you for the opportunity to provide a submission to the Senate Select Committee on Electricity Prices.

Please find attached ACCI submission on the subject matter.

Thank you.

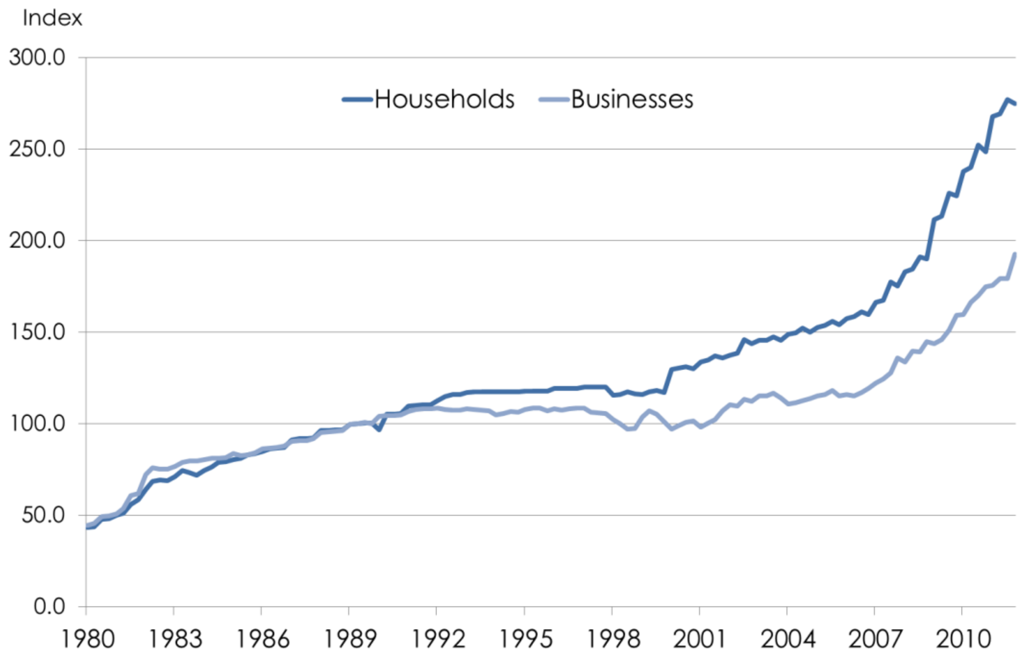
Yours sincerely,

Greg Evans
Director of Economics and Industry Policy

ACCI Submission to the Senate Select Committee on Electricity Prices

ACCI considers that the introduction of the *Clean Energy Future Plan* will add significant regulatory price pressures amid the rising trend in electricity prices. Since 2006, electricity prices for both households and businesses have increased significantly. As shown in Figure 1, electricity prices paid by households have outpaced those incurred by business users. In real terms, electricity prices have increased around 48.5 per cent for households and around 37.2 per cent for business users since the March quarter of 2006, which far outpaced the 18.8 per cent increase in general prices. The Australian Energy Market Commission (AEMC) estimated that over the period between 2011-12 and 2013-14, retail electricity prices are projected to increase by 29 per cent in nominal terms, and around 19 per cent in real terms.

Figure 1: Trend in electricity prices for households and businesses



Source: ABS, Cat. No. 6401.0 *Consumer price indexes*, Table 5, June 2012, ABS Cat. No. 6427.0 *producer price indexes,* Table 12 and 13, June 2012.

Drivers of electricity prices increase

High capital investment in network infrastructure

A significant driver for electricity prices increases since 2006 is rising network costs due to the high capital cost of investment in electricity distribution network. According to the Australian Energy Regulator (AER), transmission network investment over the current regulatory period (i.e. 1 July 2010 to 30 June 2015) is forecast at $7.4 billion and $35 billion for distribution networks. These forecasts represent an increase on investment in the previous regulatory periods of around 82 per cent in transmission and 62 per cent in distribution (in real terms)[1].

[1] AER 2011, *State of Energy Market 2011,* Australian Energy Regulator, Melbourne.

The AER noted that the factors driving higher levels of investment vary across networks and depend on a network's age and technology, load characteristics, the demand for new connections, and licencing, reliability and safety requirements. For example, AusGrid in NSW is expected to increase its distribution network investment by 116 per cent to around $8.5 billion in the current regulatory period compared to the previous period; while Ergon Energy in QLD is expected to increase its investment by 33 per cent to around $5 billion.

While there may be some valid reasons for some of the acceleration in network cost increases, the current regulatory framework has generated excessive investment in infrastructure under the guise of reliability. While some areas of the Australian electricity markets are competitive, the distribution and transmission infrastructure remain heavily dominated by a handful of companies in each state and this situation is unlikely to change in the near future. Although these network companies are regulated by the AER to restrict their ability to extract monopoly rents, regulatory imperfection, deficiencies in the design and conduct of economic regulation have led to excessive returns being allowed on investment and in turn encourage over investment in networks, which account for part of the recent electricity price increases. It is also the case that higher network charges have stemmed from the uptake of expensive and inefficient renewable power.

In 2011, the AER has conducted an internal review of its regulatory framework in the national energy Rules for setting energy network charges and found several features of the framework were leading to consumers paying more than necessary for electricity. ACCI supports proposals to change the Rules in order to strengthen incentives for efficient operation and investment by the network service providers operating in the National Electricity Market, and also to reduce excessive profits that are produced at the expense of higher electricity prices. The AER has submitted the Rule change proposals to the AEMC and the final determination is expected to be released by October 2012.

The role of RET and carbon tax

Current climate change policies are also playing a major role in driving up electricity prices. With the introduction of an economy-wide carbon price from 1 July 2012, the national Renewable Energy Target (RET), which is expected to run until 2030, will now operate in conjunction with a carbon price for a considerable period.

Unlike higher network charges, which stem from problems associated with regulatory arrangements and their oversight, greenhouse mitigation policies are entirely at the policy discretion of government and are unambiguously designed to make electricity charges higher than they otherwise would be. The Productivity Commission has noted that with an effective emissions trading scheme in place and assuming international action, an explicit target for renewable energy would not only fail to achieve any additional carbon abatement, but would also most likely lead to higher electricity prices[2].

Under the 20 per cent RET by 2020, liable entities, mainly electricity retailers and very large electricity users, are required to surrender renewable energy certificates (REC)[3] representing a proportion of their electricity purchases. The REC price adds to wholesale electricity prices to allow for the existence of more expensive renewable energy in the market. According to one American study by the Electric Power Research Institute (2010), the cost of the most efficient non-hydro renewable energy is at least more than double the cost of conventional coal-fired electricity generator as indicated by the levelised cost of electricity (LCOE), a widely used measure of the cost of different

[2] Productivity Commission (PC) 2008, '*What role for policies to supplement and emissions trading scheme*?' Productivity Commission Submission to the Garnaut Climate Change Review, May.

[3] RECs are issued to accredited generators of renewable electricity or each MWh of renewable electricity generated. From 1 January 2011, The RET is split into two schemes - the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES).

electricity generation technology. According to the LCOE of various electricity sources in Australia estimated in 2010[4]:

- Coal fired electricity (without CCS) is estimated to be around $78 to $91 per MWh;
- Combined-cycle gas turbine (without CCS) is estimated to be around $97 per MWh;
- Wind is estimated to be around $150 to $214 per MWh; and
- Medium sized (five megawatt) solar photovoltaic systems are estimated to be around $400 to $473 per MWh.

It also needs to be considered that renewable energy is highly intermittent in its availability and because of its inherent unreliability it does not displace any fossil fuel based generation capacity.

In a June 2011 report[5] to EUAA, Deloitte Access Economics estimated that the impact of the RET and carbon price policies, both in isolation and in conjunction, are projected to impose substantial costs on electricity users (see Table 1).

Table 1: Electricity price outcomes of the RET and carbon price

Policy Scenarios	2020		2030	
	$/MWh	% increase from no policy case	$/MWh	% increase from no policy case
No RET and No carbon price (No policy case)	42.7	-	54.6	-
RET without carbon price	46.1	8.0	56.0	2.6
Carbon price only				
Carbon price-5, with trade	63.2	48.0	83.4	52.7
Carbon price-5, without trade	79.4	85.9	168.7	209.0
Carbon price-25	90.8	112.6	120.7	121.1
Carbon price and RET combined				
Carbon price-5, with trade	77.6	81.7	92.9	70.1
Carbon price-5, without trade	94.2	120.6	171.8	214.7
Carbon price-25	100.2	134.7	123.0	125.3

Note: Electricity prices are average NEM pool prices expressed in 2010 dollars. Carbon price scenarios are based on emissions reduction target of 5%, without and with international permit trading, and 25 % below 2000 levels by 2020.
Source: Deloitte Access Economics, June 2011.

As indicated by the Deloitte Access Economics modelling, the RET is an expensive policy measure and will not be effective in bringing forward low cost baseload generation. Instead, the RET brings forward expensive off-the-shelf technologies, which are less likely to have a strongly declining cost path over the long run.

[4] PC 2011, *Carbon Emission Policies in Key Economies*, Research Report, Canberra, p.81.
[5] Deloitte Access Economics 2011, '*Assessing the impact of key climate change policies on energy users*', A Report for the Energy Users Association of Australia, Sydney, June 2011.

Carbon tax price pressures

The recent regulated retail electricity price increases announced by state regulators also indicate that:

- In NSW, of the 18.1 per cent increase in electricity prices from 1 July 2012, 8.9 percentage points of the price increase is due to the carbon tax;
- In QLD, carbon tax has pushed up the electricity prices by 11.2 per cent from 1 July 2012; and
- In ACT, of the 17.74 per cent increase in electricity prices from 1 July 2012, 14.2 percentage points of the price increase is due to the carbon tax.

In addition to the RET and the carbon pricing mechanism, both Federal and State Government also imposed a variety of targeted climate change measures aimed at lowering GHG emissions, increasing energy efficiency and increasing capacity in renewable energy sources, which have an indirect impact on electricity prices. For example, the Feed-in tariffs (FiT) schemes operate in the ACT, NSW, SA, WA, VIC and QLD allow small solar and wind power users to sell production into the electricity grid at a premium rate, in which this cost has contributed to higher electricity prices for all energy users. The NSW Independent Pricing and Regulatory Tribunal (IPART) noted in its March 2012 report on FiT that:

> "…the generous subsidies offered by governments contributed to a much higher than anticipated uptake of PV in NSW, and led to higher than anticipated costs. The former NSW Government responded by reducing the feed-in tariff under the Solar Bonus Scheme from 60 c/kWh to 20 c/kWh in October 2010, and the current Government suspended the scheme to new participants in April 2011 before closing it to new participants in July 2011. Nevertheless, the large costs of the Solar Bonus Scheme will be recovered through electricity prices over the coming years. This means that all electricity customers in NSW will face higher electricity prices to cover the costs of the Solar Bonus Scheme…"[6]

The Productivity Commission estimated in 2010, the subsidy equivalent for the FiT range from $2.2 million in WA and the ACT to $42.6 million in NSW, with the combined subsidy equivalent for all jurisdictions at around $96 million[7].

Declining productivity trend in electricity supply sector

Figure 2 shows that between 1974-75 and 2009-10, multifactor productivity (MFP) growth in the Australian electricity supply (ES) sector averaged around 1.3 per cent per annum, with three distinct growth phases:

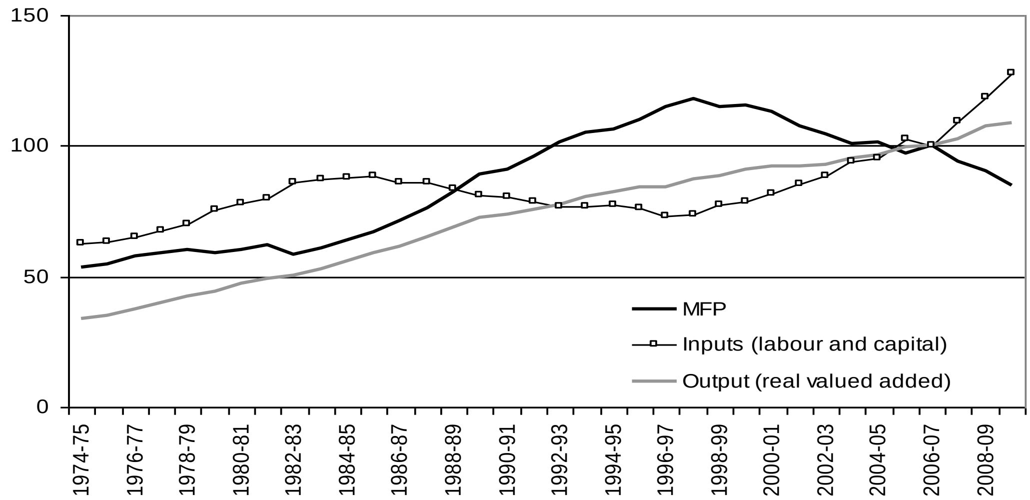
- Moderate MFP growth phase (1974-75 to 1985-86): MFP growth in electricity supply is estimated to be around 2.0 per cent per annum (p.a.) due to strong growth in output (5.3 per cent p.a.) that exceeded growth in combined inputs of labour (1.0 per cent p.a.) and capital (5.8 per cent p.a.);
- Rapid MFP growth phase (1985-86 to 1997-98): MFP growth in electricity supply is estimated to be around 4.9 per cent per annum (p.a.) due to declining or negative inputs of labour (-5.8 per cent p.a.) and slow capital input growth (0.6 per cent p.a.) and continuing positive albeit slower growth in output (3.3 per cent p.a.); and

[6] IPART 2012, '*Solar feed-in tariffs*', Energy- Final Report, March 2012, p. 8.
[7] PC 2011, '*Carbon emission policies in key economies*', Research Report, Canberra, Appendix D, p.16.

* Negative MFP growth phase (1997-98 to 2009-10): MFP growth in electricity supply is declining at around 2.7 per cent p.a. due to a strong capital input growth (4.7 per cent p.a.) and a sharp turnaround in labour inputs from a strong decline to a sustained growth (4.3 per cent p.a.), but a further slowdown in output growth (1.8 per cent p.a.).

Figure 2: Electricity supply – inputs, output and multifactor productivity (1974-75 to 2009-10)

Index 2006-07 = 100



Source: Topp, V. and Kulys, T. 2012, '*Productivity in Electricity, Gas and Water: Measurement and Interpretation*', Productivity Commission Staff Working Paper, Canberra, p. XIX.

Since the late 1990s, the electricity supply sector, which includes electricity generation, transmission, distribution and onselling electricity and electricity market operation, has recorded negative productivity growth. The negative productivity growth is due to a rapid growth in capital input and a turnaround of labour shedding to net hiring, with both substantially exceeding growth in output. Factors that might explain the declining productivity trend include:

* Rising capital expenditure;
* Growth in peak demand in recent years;
* Hidden quality changes – underground versus overhead electricity cabling; and
* Changes in source of electricity generation due to climate change policy.

Amongst the reasons often attributed to rising capital expenditure in the electricity supply sector include the need to: meet growing peak demand for electricity especially during the summer months; delivering rising standard of supply; respond to the electricity needs of growing population; and replace ageing infrastructure[8].

Over the past ten to fifteen years, the ratio of peak summer demand to annual average electricity demand has been trending upwards in most states, with the problem particularly acute in South

[8] Topp, V. and Kulys, T. 2012, '*Productivity in Electricity, Gas and Water: Measurement and Interpretation*', Productivity Commission Staff Working Paper, Canberra, p. 37.

Australia. The increasing problem of peak demand is generally attributed to the growing penetration and ownership of air-conditioners and household appliances in residential buildings.

Gas turbine peaking plants are usually used to meet the peak electricity demand as it can be called on to operate in a very short notice, even though their operating costs are more expensive than baseload generators. Topp and Kulys (2012) estimated that between 1997 and 2010, an additional 6300 MW of peak generation capacity was required, which represented around 13 per cent of current electricity generation capacity. While it is important to meet peak summer demand during extremely hot periods, the additional peaking capacity sits idle for the majority of the year. The peaking capacity investment represents an investment of around $6.2 billion or 6 per cent of total capital investment in the electricity supply sector over the same period. In addition, ENERGEX claims that 13 per cent of their network capacity is only used for a few hours a few times a year[9]. Topps and Kulys (2012) estimated that around one half of the decline in the level of MFP between 1997-98 and 2009-10 is due to the increase in the ratio of peak demand to average demand.

Since the late 1990s, Government policy on climate change has also driven electricity generation capacity away from low cost coal-fired generators to more expensive combined-cycle gas plants and non-hydro renewable generation capacity. A large share of Australia's current generation capacity is accounted for by a comparative small number of large coal-fired power stations built in the 1970s and 1980s. 38 per cent (101 out of a total of 264) of the power stations in operation in 2009-10 were constructed after 2000. However these plants only accounts for 27 per cent of overall generation capacity.

The cost disadvantage of combined-cycle gas generation and renewable energy sources relative to coal-fired power, as indicated by the levelised cost of electricity discussed above, has contributed to the loss in measured productivity the electricity supply sector during the last 10 to 15 years. Topps and Kulys (2012) argued that continued investment in combined cycle gas turbines in preference to coal-fired generation to meet new baseload demand growth and the growth in renewable energy sources will but further downward pressure on the electricity supply sector's measured productivity in the near future.

Perversely, government greenhouse mitigation policies have skewed investment away from the latest and most efficient ultra-supercritical coal fired plants which have been installed internationally. These plants are nearing emissions levels of gas fired generation but they have been resisted in Australia leading to negative impacts for the economy and all energy consumers.

Conclusions

ACCI has argued that the trend of increasing electricity prices since 2006 has put significant cost pressure on both large and smaller energy users and eroded their competitiveness. The problem is particularly acute since the onset of the global financial crisis amid the strong Australian dollar; weak international and domestic demand and reducing scope in pricing which put pressure on profit margins and business ability to expand and invest.

It is on this basis that ACCI has been a strong opponent on the introduction of a carbon tax in the absence of similar policy being implemented in our major trading partners as the implementation of an economy-wide carbon pricing will put further upward pressure on electricity prices as discussed

[9] ENERGEX website, http://www.energex.com.au/sustainability/sustainability-rewards-programs/what-is-peak-demand (accessed 6 September 2012).

above. For this reason we also strongly oppose other measures including the RET, feed-in tariffs and wasteful budgetary support for programs including the Clean Energy Finance Corporation.

While it has been argued by some that increasing electricity prices will encourage energy users to reduce their electricity consumption, in reality businesses especially smaller enterprises have limited capacity to reduce their energy use in their business processes or improve energy efficiency. Thus increase in electricity prices will increase their operating costs, reduce their profit margins and affect their business viability, given the limited capacity of smaller businesses to pass on any cost increase to their customers, especially in the last four years when households have started to reduce their discretionary expenditure.

Australia faces a perform storm of extremely poor energy policy leading to much higher prices for energy users than is necessary. The policy shortfalls include:

- Ineffective regulatory oversight over an extended period which fosters overinvestment and leads to bloated operating budgets;

- A raft of expensive greenhouse gas abatement programs including the carbon tax, RET and unsustainable budgetary support (in the order of $23 billion to 2020) for other large scale green programs; and

- The skewing of generation options away from our inherent advantage afforded by our domestic coal fired capacity.