

The Role of Regulation in Australia's Future Energy Mix

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Executive Summary

The Australian Federal Department of Industry's Energy Green Paper, released on 26 September 2014, outlined energy "*reform is needed to create competition, and drive innovation and prosperity*"³. The purpose of this article is to explore key factors of Australia's energy governance in shaping its future energy portfolio.

The article will begin by considering Australia's pre- and post-1990s energy regulatory frameworks, representing a fundamental shift in the character of Australian energy governance. It will then consider recent developments – which have primarily been driven by environmental objectives – and the policy and regulatory initiatives that have followed.

Electricity Generation in Australia

Australia's electricity supply is characterised by a model of generation, transmission, distribution and retail. Competition reforms conducted in the 1990s set the Australian electricity market down a path of transition, resulting in the establishment of the National Electricity Market (**NEM**)⁴. The NEM presently services around 90% of Australia's electricity demand, encompassing Queensland, New South Wales, Victoria, Tasmania and South Australia across an expansive geographic area⁵. Governments are moving towards the full privatisation of energy assets; however this has only been achieved by South Australia and Victoria⁶.

Historic Approach to Australian Electricity Generation

The pre-1990s approach to Australian electricity supply predominately resided with State Governments. Energy schemes were monopolised through a vertically integrated supply chain and controlled by a single State regulator⁷. Driven by increased State profits through higher capital expenditure, State policies reflected over-investment in 'wires and poles' infrastructure in a process

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³ Australian Government Department of Industry, 2014. *Energy Green Paper 2014 to inform preparation of a White Paper*, Canberra, Australia. Available at: http://ewp.industry.gov.au/files/egp/energy_green_paper.pdf.

⁴ Nelson, T. & Reid, C., 2014. Reconciling Energy Prices and Social Policy. *The Electricity Journal*, 27(1), pp.104–114. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S1040619013002911> [Accessed October 21, 2014].

⁵ Two other energy markets are Western Australia's *Wholesale Electricity Market*, and the Northern Territory's *Darwin Katherine Interconnected System*.

⁶ Australian Government Department of Industry, 2014. *Energy Green Paper 2014 to inform preparation of a White Paper*, Canberra, Australia. Available at: http://ewp.industry.gov.au/files/egp/energy_green_paper.pdf.

⁷ Nepal, R., Menezes, F. & Jamasb, T., 2014. Network regulation and regulatory institutional reform: Revisiting the case of Australia. *Energy Policy*, 73, pp.259–268. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S030142151400336X> [Accessed October 21, 2014].



colloquially referred to as ‘gold plating’ the network⁸. As a result, electricity pricing was not reflective of cost, and the delivery of an efficient regulatory environment was secondary⁹.

A fundamental shift was predicated by the findings of the Hilmer Report to the Council of Australian Governments (**COAG**) in 1993. The report’s objective was to review public monopolies, including the energy sector, in the interests of achieving increased efficiency through market competition¹⁰. Hilmer’s key recommendation was to unbundle vertically integrated Government-based systems by allowing private firms to enter energy markets. A liberalisation process was overseen by a COAG coordinated ‘*National Competition Policy*’ from 1994 onwards¹¹.

The National Electricity Market

Following Hilmer’s implementation, the National Electricity Law (**NEL**) was established by the *National Electricity (South Australia) Act 1996*, including subordinate legislation guiding its operation¹². The NEM began in 1998 under which generation, transmission, distribution and retail components were separated into competing entities. Since the NEM’s commencement, three core bodies have been established to administer its function¹³:

- Australian Energy Market Commission (**AEMC**) as rule-maker;
- Australian Energy Regulator (**AER**) as rule enforcer and economic regulator; and
- Australian Energy Market Operator (**AEMO**) as market operator.

The core to the NEL’s operation is the National Electricity Objective, which sets out to promote “*the long term interests of consumers of electricity with respect to ... price, quality, safety, reliability and security of supply of electricity*”. Despite such intentions, NEM household electricity prices have become a significant factor of national concern, having increased 73% between 2003 and 2013¹⁴.

High pricing is reflective of a multitude of challenges presently faced by the NEM’s electricity supply model, including aging ‘wires and poles’ infrastructure, changing patterns in energy demand, and Australia’s international obligations to address environmental issues such as climate change¹⁵. Recommendations addressing rising electricity prices have been made by various Federal and State and Non-Governmental Organisation stakeholders¹⁶.

However, the fundamental regulatory power in relation to NEM’s pricing lies with States and Territories and not with the Federal Government alone. Therefore, as with COAG’s actions following the Hilmer Report, COAG continues to play a principle role in leading State-based energy market restructure. Pricing issues have been primarily addressed via COAG’s Energy Council¹⁷, which has

⁸ Mountain, B., 2012. *The contribution of monopoly network service providers to electricity price rises in the National Electricity Market*, Available at: <https://www.ceda.com.au/media/275370/mountaindigitalfinal.pdf>.

⁹ The Growth And Revenue Implications Of Hilmer And Related Reforms. Industry Commission, 1995. *The Growth And Revenue Implications Of Hilmer And Related Reforms*, Canberra, Australia. Available at: http://www.pc.gov.au/_data/assets/pdf_file/0017/8810/hilmer.pdf.

¹⁰ Ibid.

¹¹ Ibid.

¹² *National Electricity (South Australia) Regulations* and *National Electricity (South Australia) Rules*

¹³ Australian Energy Regulator, 2009. *State of the Energy Market 2009*, Available at:

[http://www.aer.gov.au/sites/default/files/State of the energy market 2009â€”complete report.pdf](http://www.aer.gov.au/sites/default/files/State%20of%20the%20energy%20market%202009%20complete%20report.pdf).

¹⁴ Swoboda, K., 2013. Energy prices—the story behind rising costs. *Parliamentary Library Briefing Book*. Available at: http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook44p/EnergyPrices [Accessed September 19, 2014].

¹⁵ Byrnes, L. et al., 2013. Australian renewable energy policy: Barriers and challenges. *Renewable Energy*, 60, pp.711–721. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0960148113003170> [Accessed August 13, 2014].

¹⁶ Examples of reports include from COAG Energy Council, the AEMC, a Senate Select Committee on Electricity Prices and the Productivity Commission

¹⁷ Formerly known as ‘Standing Committee on Energy and Resources’.

proposed a 2012 Energy Reform Package based upon four key recommendations¹⁸: strengthening regulation; empowering consumers; enhancing competition and innovation; and ensuring balanced network investment. Such recommendations may be considered a continuation of Hilmer's core findings.

In delivering energy market reform, an ongoing political challenge is aligning divergent priorities in a mixture of Federal and State responsibilities. For example, in response to the findings of a 2006 *Energy Reform Implementation Group* COAG ultimately acknowledged that “any decision on privatisation ... is a matter for individual governments”. Complexity due to conflicting jurisdictional priorities and policy objectives remains a key challenge to COAG's capacity to deliver meaningful change.

Electricity Generation and the Environment

Environmental aspects are clearly playing an increased role with respect to Australia's energy mix. A central consideration for Australian energy reform is an unprecedented energy supply from emerging green technologies, combined with changing patterns in electricity demand¹⁹. New technologies such as solar PV, wind and energy storage have combined with changes to customer behaviour through onsite generation, intelligent appliances and overall energy management systems.

The electricity generation industry is presently Australia's largest domestic Greenhouse Gas (GHG) emitter, and thus is a central area of focus for emission reduction objectives²⁰. Australia's short-term commitment to mitigating GHG emissions is underpinned by its present commitment to reduce emissions to 5% below 2000 levels by 2020 under the Kyoto Protocol²¹. The following section will now consider key environmental policy frameworks affecting Australia's future energy mix.

The 'Clean Energy Future' package

Addressing Australia's international obligations under Kyoto, the Federal Labour Government announced the Clean Energy Future (CEF) package in July 2011²². Intended to serve as the nation's climate change plan, the overall scheme supported four main mechanisms to be considered in turn.

1. Carbon Pricing

The feature point of the CEF was the placement of a price on carbon emissions. As contrasted with a regulatory approach, which would adopt mechanisms such as standard setting or emission prohibitions, Australian carbon pricing was intended to provide a market-based financial incentive to reduce emissions²³. It was established under the *Clean Energy Act (Cth) 2011* which took effect 1 July 2012.

The scheme was planned to transform into a domestic Emissions Trading Scheme (ETS) by 2014 and link with the European Union's ETS on 1 July 2015. However a successful 2013 Coalition election

¹⁸ Standing Council on Energy and Resources ('SCER'), 2012. *Putting Consumers First*, Available at: <http://www.ncbi.nlm.nih.gov/pubmed/10288387>.

¹⁹ Warburton, D. et al., 2014. *Renewable Energy Target Scheme: Report to the Expert Panel*, Canberra, Australia. Available at: <https://retreview.dpmc.gov.au/ret-review-report-0>.

²⁰ Bureau of Resource and Energy Economics, 2014. *2014 Australian Energy Update*, Canberra, Australia. Available at: <http://www.bree.gov.au/publications/australian-energy-statistics>.

²¹ Australian Government, 2014. *Emissions Reduction Fund White Paper*, Canberra, Australia. Available at: http://www.environment.gov.au/system/files/resources/1f98a924-5946-404c-9510-d440304280f1/files/emissions-reduction-fund-white-paper_0.pdf.

²² The Australian Government, 2011. *Securing a Clean Energy Future*, Canberra, Australia. Available at: <http://www.acci.asn.au/Files/Government-Carbon-Tax-Plan>.

²³ Webb, R., 2011. *Securing a Clean Energy Future: some economic aspects*, Canberra, Australia. Available at: http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1112/12rp05.

campaign – strongly focused on repealing the ‘carbon tax’ – saw a change in Government and its eventual abolition under the *Clean Energy Legislation (Carbon Tax Repeal) Act 2014*²⁴.

2. Energy Efficiency

A measure through which the CEF intended to reduce emissions was via efficiency gains in industrial electricity use, which represents approximately 80% of Australia’s energy²⁵. The *Energy Efficiency Opportunities Act 2006 (Cth)* and associated regulations mandated reporting by corporations exceeding certain energy use limits, and was expanded to incorporate Australia’s electricity generation sector in 2011²⁶. Driven in part by the new Government’s objective to deregulate and reduce cost burdens on businesses²⁷, the *Energy Efficiency Opportunities (Repeal) Bill 2014* was passed on 11 September 2014 with retrospective effect to 29 June 2014²⁸.

3. Land Use

The Carbon Farming Initiative (**CFI**) was intended to incentivise participants in agriculture and forestry to lower their carbon footprint under the CEF. Initiated under the *Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth)*, participants accrue create carbon credits via vegetation replanting schemes and the sequestration of carbon in rural soil, to be sold in foreign or voluntary domestic markets²⁹.

The *Carbon Farming Initiative Amendment Bill 2014* is presently before the Australian Senate with the intention of establishing CFI as a component of the Emissions Reduction Fund (**ERF**), the Government’s intended mechanism for purchasing carbon abatement³⁰. The Bill purports to “*build upon and streamline*” CFI as a key feature of the Direct Action Plan, which is the Coalition’s key climate change scheme and presently the subject of political negotiation³¹.

4. The Renewable Energy Target

First introduced by the Coalition in 2001 as the Mandatory Renewable Energy Target (**MRET**), on the basis of bipartisan support. The Renewable Energy Target (**RET**) was expanded in 2009 with the aim of achieving a 20% Australian renewable energy supply by 2020. In 2010, the RET was divided to comprise of two sources of supply: a large-scale RET scheme (**LRET**) for significant electricity generators such as wind farms; and the small-scale RET (**SRES**) scheme for household supply, including rooftop solar systems³².

²⁴ Australian Government Department of Environment, 2014. Repealing the Carbon Tax. *Climate Change*. Available at: <http://www.environment.gov.au/climate-change/repealing-carbon-tax> [Accessed October 20, 2014].

²⁵ Department of Industry, 2013. Context for the EEO Program. *Energy Efficiency Opportunities*. Available at: <http://energyefficiencyopportunities.gov.au/about-the-eeo-program/about-the-program/context-for-the-eeo-program/> [Accessed October 20, 2014].

²⁶ Ibid.

²⁷ Department of Industry, 2014. Energy Efficiency Opportunities Program. *Energy Efficiency Opportunities*. Available at: <http://eex.gov.au/energy-management/energy-efficiency-opportunities/> [Accessed October 20, 2014].

²⁸ Department of Industry, 2014. Repeal of the EEO Act. *Energy Efficiency Opportunities*. Available at: <http://energyefficiencyopportunities.gov.au> [Accessed October 20, 2014].

²⁹ The Australian Government, 2011. *Securing a Clean Energy Future*, Canberra, Australia. Available at: <http://www.acci.asn.au/Files/Government-Carbon-Tax-Plan>, p.31.

³⁰ Parliament of Australia, 2014. Carbon Farming Initiative Amendment Bill 2014. *Bills and Legislation*. Available at: http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bid=r5280 [Accessed October 20, 2014].

³¹ Hunt MP, G., 2010. *The Coalition’s Direct Action Plan*, Available at: <http://www.greghunt.com.au/Portals/0/PDF/TheCoalitionsDirectActionPlanPolicy2010.pdf>.

³² Relevant legislation includes: *Renewable Energy (Electricity) Act 2000*; *Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000*; *Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge) Act 2010*; *Renewable Energy (Electricity) Regulations 2001*; *Renewable Energy (Electricity) Regulations 2001 - STC Calculation Methodology for Solar Water Heaters and Air Source Heat Pump Water Heaters*; *Renewable Energy (Electricity)*

The RET has contributed to the robust development of renewable energy supply in Australia, providing 13% of Australia's energy supply in 2012. However, as with carbon pricing, the RET has received vocal Coalition denunciation for contributing to high electricity prices (despite a number of reports to the contrary)³³. As a response, the Government subsequently called for a RET review in February 2014 chaired by Mr Dick Warburton AO LVO, released on 15 August³⁴. Citing transformation in Australian electricity markets and the availability of lower cost emission abatement options, the Warburton review called for an amendment of the RET encompassing recommendations for the LRET and SRES³⁵:

1. Amending the LRET by either:
 - a. Closing it to new entrants ('grandfathering'), with 2030 as the final year of operation; or
 - b. Allocating the LRET a share of growth in electricity demand to 20% equivalent, set annually.
2. Amending the SRES by either:
 - a. Abolition immediately upon announcement; or
 - b. Phased out by 2020

The Warburton review's findings presently reside with the Coalition Government pending a decision on which (if any) recommendations it will adopt. Given each of the review's findings translate to a downscale in the RET; its future is presently subject to investment insecurity, driving a 78% decrease in LRET investment last quarter³⁶.

On 22 October 2014, Federal Minister of Industry announced Government's preference to downsize the RET back to "a real 20%" by 2020, from its present 41,000GWh target to approximately 27,000GWh³⁷. The Clean Energy Council, Australia's peak body for overseeing clean energy interests, has been critical of this position, stating it "would lead to the decimation of the renewable energy industry and drive up power prices for consumers"³⁸. The Opposition has been forthright in its dissent to significant modifications, as have minor parties such as the Australian Greens and the Palmer United Party. Given the RET has traditionally been a bipartisan policy mechanism, the continuance of the scheme would be important in achieving a credible Federal policy on climate change³⁹.

In proceeding with the repeal or imminent modification of each of the previous Government's four main CEF package mechanisms on climate change – without as yet delivering an alternative – the Coalition Government has drawn criticism for its failure to commit to climate change policy beyond its 2020 requirements under Kyoto.

Amendment (Transitional Provision) Regulations 2010; Renewable Energy (Electricity) Amendment (Transitional Provisions) Regulations 2009.

³³ Bureau of Resource and Energy Economics, 2014. *2014 Australian Energy Update*, Canberra, Australia. Available at: <http://www.bree.gov.au/publications/australian-energy-statistics>.

³⁴ Warburton, D. et al., 2014. *Executive Summary: Renewable Energy Target Scheme: Report to the Expert Panel*, Canberra, Australia. Available at: https://retreview.dpmc.gov.au/sites/default/files/files/RET_Review_Report_Exec_Summary.pdf

³⁵ Ibid.

³⁶ Conroy, J., 2014. Cabinet rejects Warburton report. *The Australian*. Available at: <http://www.theaustralian.com.au/business/latest/cabinet-rejects-warburton-report/story-e6frg90f-1227083747347>.

³⁷ Maher, S., 2014. Ian Macfarlane pushes for RET to be reduced to real 20 per cent. *The Australian*. Available at: <http://www.theaustralian.com.au/national-affairs/ian-macfarlane-pushes-for-ret-to-be-reduced-to-real-20-per-cent/story-fn59niix-1227098536502>

³⁸ Clean Energy Council, 2014. Government proposal on Renewable Energy Target would devastate industry. Clean Energy Council. Available at: <http://www.cleanenergycouncil.org.au/media-centre/media-releases/october-2014/141022-government-proposal-on-RET-would-devastate-industry.html#sthash.XpHtRwUK.dpuf>.

³⁹ Wood, T., 2014. Energy green paper scores "pass" on electricity, "fail" on climate. *The Conversation*. Available at: <http://theconversation.com/energy-green-paper-scores-pass-on-electricity-fail-on-climate-32105> [Accessed October 20, 2014].

Being a global phenomenon with global implications, Australia's carbon tax repeal and expected RET modification has drawn criticism from the US and Europe in the lead up to Australia's hosting of the Group of Twenty (**G20**) economic summit in mid-November, with potential implications to Australia's sovereign risk. Further, as exhibited by the RET's robust contribution to renewable energy, the delivery of credible and reliable environmental policy has significant implications for Australia's domestic energy mix.

Conclusion

As compared with Australia's pre-1990s approach, characterised by State-owned entities whereby electricity price was not reflective of cost and regulatory frameworks were secondary, the role of regulation in Australia's energy generation mix is gaining increasing importance. Market liberalisation through deregulation has remained a central focus of reform since the Hilmer Report of the early 1990s. However, barriers presented by Australia's federal framework remain a significant obstacle to delivering meaningful energy reform. The requirement to address climate change with certainty in policy objectives is clearly a modern essential not just to drive innovation and investment in Australia's domestic energy mix, but also to address Australia's international objectives.