The inclusion of environmental protection in the National Electricity Objective

Research for and advice to the Public Interest Advocacy Centre in relation to the Governance Review of Australian Energy Markets

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Table of Contents

1 Introduction

The Public Interest Advocacy Centre is preparing a submission to the Review of the Governance of the Australian Energy Markets. In the development of its submission, we have been asked to prepare briefing and advice addressing the issue of bifurcation of economic regulation, and the inclusion of broader considerations such as explicit environmental protections in the objectives of the electricity law. This document deals with the second issue.

2 The Inclusion of environmental protection in the National Electricity Objective

2.1 Introduction and background

We have been asked to contribute perspectives on the question of whether environmental protections in general – and greenhouse gas emission reduction in particular – should be included as part of the National Electricity Objective.

Background

A recent paper[1] provides background on the history of the inclusion of environmental objectives in federal and state laws and regulations on energy and essential services. They note state legislation (the IPART Act 1992, the Queensland Electricity Act 1989, the State Owned Corporations Act (NSW) 1989) and federal/national energy codes (the National Grid Protocol 1992) and policy statements (COAG's National Energy Policy 2001) had various degrees of explicit recognition of environmental protection, and in some case greenhouse gas emission reduction, objectives. Indeed scanning through various Ministerial Council on Energy policy statements and reports, words such as "sustainable", "greenhouse gas" (and their derivatives) are frequently to be found. Nevertheless environmental protection is not mentioned in the National Electricity Objective.

Environmental and most consumer advocates have argued that environmental protection and specifically greenhouse gas abatement should be included in the National Electricity Objective. Market participants have generally lined up for or against this based on their vested interests. Consumer groups have generally supported the inclusion of environmental objectives, though some have also agitated against environmental obligations that could have adverse energy price impacts.

[1] Total Environment Centre 2013. "Reforming the National Electricity Objective to improve environmental outcomes in the NEM. Discussion Paper.

Regulators have tended to be silent on this issue, although the Chairman of the AEMC, in testimony to a Senate Inquiry[2], likened environmental objectives to social objectives and suggested that these are best left to governments, not economic regulators to decide and so should not be included in the National Electricity Objective. In our opinion this view tends to be shared by many economic regulators in other parts of the world. However, Dr Crossley's research shows that energy legislation internationally typically reflects

2.2 Issues to be considered

The National Electricity Objective is set out in Section 7 of the National Electricity Law:

"The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
(a) price, quality, safety, reliability and security of supply of electricity; and
(b) the reliability, safety and security of the national electricity system."

This phrase or shortened versions of it ("the long term interest of consumers") is oft-repeated in regulatory documents and is taken to be the guiding rationale for decisions on the economic regulation of networks and for rules relating to the design of the wholesale electricity market.

The issue that we are asked to consider, is the merits of some sort of explicit greenhouse gas objective to be reflected in the electricity law and therefore considered explicitly by regulators and policy makers in their decisions on the design and operation of wholesale and retail markets and the regulation of electricity network monopolies.

[2] The Senate Select Committee on Electricity Prices, 2012. Reducing energy bills and improving efficiency.

2.3 Framework for evaluation

Greenhouse gas emissions from the production of electricity in Australia account for around 30% of Australia's annual emissions of around 570 million tonnes of CO2-equivalent. This is one of the most emission-intensive electricity systems in the world.

The Australian Government, and jurisdictional governments, have said that they wish to reduce emissions and this objective seems to enjoy the support of all the main political parties in Australia's governments. Australia is of course a signatory to the Kyoto Protocol and the United Nations Framework Convention on Climate Change

It is inconceivable that a meaningful reduction in Australia's greenhouse gas emissions can be achieved without a substantial reduction in emissions from the production of electricity. Electricity production is also an activity where inexpensive abatement is likely to be found. Governments concerned to reduce Australia's emissions are therefore likely to wish to focus particularly on the electricity sector.

Our understanding of the contemporary economics of electricity production in Australia leads us to conclude that future generation capacity expansion is likely to be dominated by renewable generation even without policy support. Wind and large scale solar now present lower long run (fully absorbed) costs than fossil fuel alternatives. And likewise distributed solar produces electricity at the point of use for households, and increasingly also for large consumers, far more cheaply than electricity provided from the grid.

However, new renewable resources are not able to produce electricity more cheaply than the variable cost of the installed fossil fuel generators, which set market prices. It is also difficult to imagine that this will ever be the case, given the capital intensity of renewable resources.[3]

[3] Those operating costs may be negligible, capital outlays need to be recouped. While these outlays have decreased rapidly in renewable technologies, they can still be expected to be above the variable operating costs of the more efficient fossil fuel plant, for many years into the future.

For these reasons while the electricity sector is likely to progressively decarbonise even without policy support, this is unlikely to be at the rate needed to meet Australia's emission reduction objectives. Our understanding, based on trends in other countries, is that emission reduction objectives are likely to become ever more stringent and this will translate into ever rising demands for emission reductions from the electricity sector.

The relevant question therefore is how policy should be developed and implemented in the governance and regulation of the electricity sector, to achieve rapid decarbonisation. Emission reduction policy will have significant impacts on both the demand-side and supply-side of the electricity sector . On the supply-side we can identify:

- Resource allocation: arrangements for access to land and water for the development of renewable generators; coal and gas development and access arrangements (and possibly in due course for the sequestration of CO2); arrangements for closure of existing fossil fuel generators and land remediation.
- Capital allocation: ensuring capital markets are able to provide the substantial equity and debt needed to meet significant renewable investment requirements.
- Wholesale market design: dealing with renewable generation intermittency and market design in the context of a supply-side increasingly dominated by generators with zero or close to zero marginal costs.
- Network access and regulation: arrangements for renewable generator access to transmission and distribution networks

On the demand side:

- Retail market design: the design of retail arrangements in the context of increasing opportunity for distributed generation and storage.
- Network tariff design: arrangements to deal with sunk costs of stranded distribution networks and the design of tariffs that incentivise efficiency and balance competing interests between centralised and decentralised production.
- Consumption efficiency: arrangements to promote efficiency improvement in electricity products and building standards.

Emission reduction policy must be informed by these (and of course the many others not mentioned here), just as energy policy must be informed and shaped by emission reduction policy. The relevant question, therefore, is how "joined-up" decisions will be made in the pursuit of governments' emission reduction policy and in pursuit of its energy policy.

The concepts of Transaction Cost Economics[4] applied to administrative arrangements for electricity provides a conceptual framework to systematically think this though. Specifically, it provides a way to answer the question whether it is better (i.e. more efficient and effective) to achieve co-ordination by bringing emission-reduction policy within the locus of energy ministers and utility economic regulators, or is it better for emission reduction policy to operate in relative isolation from energy policy, much as say health policy is separated from education policy?

Will greater integration of emission reduction policy into energy policy muddy the waters, distract policy makers from the pursuit of efficiency and diminish their ability to achieve the long term interest of consumers ? Or will greater integration ensure that the many regulatory and policy decisions affecting the industry and consumers achieve environmental and energy objectives more efficiently ?

Transaction Cost Economics with its three principal cost categories (search costs, bargaining costs and enforcement costs) can be applied here:

- Search costs: what arrangement of environmental and energy policy will deliver the best informed decisions in each area?

[4] See for example: Coase, Ronald H. 1960. The problem of social cost. Journal of Law and Economics, 3: 1-44. ; Williamson, Oliver E. 1979. Transaction-cost economics: The governance of contractual relations. Journal of Law and Economics, 22(2): 233-261 and Williamson, O.E. 1985. The economic institutions of capitalism : Firms, markets, relational contracting. New York, NY: Free Press.

- Bargaining costs: what market and regulatory arrangements will best achieve environmental and energy policy objectives?
- Enforcement costs: how can environmental and energy objectives be enforced most efficiently?

The application of a TCE paradigm means systematically thinking through the various activities and focus areas of energy policy makers and utility economic regulators to assess the extent to which search, bargaining and enforcement costs will be minimised in the delivery of both energy and environmental policy.

Our judgement, in the absence of having done this but based on our long experience at the metaphorical coal-face of energy and regulatory economics, is that emission reduction is very deeply integrated with the design and operation of energy markets and systems of network regulation. Indeed this is somewhat obvious given the fact that emissions are so significant from the energy sector. Therefore, we suggest, it is inevitable that effective co-ordination will require that emission reduction policy be deeply integrated into energy policy and regulation.

Indeed this seems to be the conclusion that policy markers have come to elsewhere - particularly in Great Britain and continental Europe - where rapid emission reduction objectives have translated into administrative departments (and political leadership) bringing together energy and climate change. This has then flowed through into the accountabilities of economic regulators, despite some level of reticence from the regulatory community in many cases.

In Australia, the nature and extent of such climate-energy policy integration and the best way to achieve it having regard to the involvement of both the states in Commonwealth in energy and emission policy adds additional complications that will need to be considered.

Finally, there has been considerable focus on the inclusion of environmental/greenhouse gas abatement objectives in the NEO, as the mechanisms to ensure environmental objectives are reflected in energy market governance and regulation. However, we question whether all that much (in terms of environmental

protection) is to be gained from this. As the Total Environment Centre observed, environmental (and in some cases greenhouse gas emission reduction) objectives have previously featured in state legislation and in industry codes. It seems hard to argue that this had improved environmental/greenhouse gas outcomes then, relative to outcomes now.

Similarly, despite the apparent importance of the NEO and the frequency with which regulators and policy makers allude to it, in fact the demonstrated outcomes in the National Electricity Market seem to be very far from the "long term interest of consumers", certainly in respect of prices. Simply stating an objective in legislation does not imply successful implementation.

Effort directed at how environmental and energy objectives can be successfully integrated, where beneficial, in deed not just in word, will be helpful.