

PUBLICLY OWNED ELECTRICITY RETAILERS: AN ENVIRONMENTAL ECONOMIC ANALYSIS

APRIL 2008

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INTRODUCTION

Reducing the environmental stresses associated with power generation and consumption is central to societal efforts to avert climate change. So it is useful to look at the NSW Government's current proposal to restructure the electricity industry from an environmental economic perspective, inquiring into its likely impacts on the prospects for energy efficiency and the reduction of carbon emissions.

This paper considers the consequences of selling the retail licenses of Energy Australia, Integral Energy and Country Energy to the private sector. It does not consider the consequences for employment in the electricity-supply industry, about which workers and unions in the industry are understandably deeply concerned. Nor does it consider economic questions about whether it is an appropriate time to be selling state assets, given the uncertainties associated with yet-to-be-announced emission reduction programs, or whether vertical integration is really necessary to encourage investment in generation capacity (and the implied admission that past efforts to 'unbundle' the electricity sector were a mistake). Its focus is on the environmental economic aspect, particularly on how changes to the ownership structure of electricity retailing would be likely to impact on energy efficiency and consumption.

THE ENERGY EFFICIENCY IMPERATIVE

Given the contribution of electricity generation and consumption to Australia's ecological footprint, finding ways to reduce energy use must be central to our efforts to combat climate change. Such efforts, whether aimed at reducing absolute levels of energy use, or at the energy intensity of economic activity, are typically referred to as Energy Efficiency Programs.

Such programs have been commonplace since the 70s, though they were initially aimed at energy security rather than environmental benefits. One of the original purposes of energy efficiency was to reduce supply side costs by reducing the need to invest in new electricity generation or transmission. Investment on the demand side was regarded as having a lower cost than investment in additional supply capacity. This original 'least cost planning' approach has even stronger rationale now when the environmental costs of expanded output are brought into consideration.

The International Energy Agency's Demand-Side Management Program divides Energy Efficiency Programs into Resource Acquisition Programs (e.g. helping low income earners buy more efficient refrigerators) and Market Transformation Programs (e.g. legislation requiring all refrigerators to have efficiency labelling). It is also worth adding another category, or broadening the scope of Market Transformation programs, to include programs to promote more fundamental shifts in cultural attitudes to energy use (such as 'switch off the lights' campaigns.). Together these measures to promote energy efficiency indicate the formidable task that has fallen to governments in the past, and will likely continue to do so in the future.

The recently completed Inquiry into Electricity Supply in NSW (the Owen Report) considers a number of such measures, partly with a view to their environmental benefits, but mostly with a view to how greater energy efficiency reduces the need for greater generation capacity. The Owen Report gives an indication of the considerable breadth and depth of the efficiency improvements that we must collectively achieve to reduce emissions. However, it tends to underestimate the impact that improved energy efficiency could have on the need for new base load plant in electricity generation. The report seems to dismiss the opportunity to reduce overnight load, contrary to the views of other specialists who emphasise that the need for new base load could be obviated by phasing out off-peak hot water arrangements, as the Federal government is now committed to doing.

The case for government to take a leading role in promoting Energy Efficiency Programs results in large measure from the pervasive tendency to 'market' failure' in electricity supply and demand. There had been earlier hopes, particularly in the U.S.A, that market forces alone would generate the necessary reductions in energy use and improvements in energy efficiency, but this view is now widely regarded as overly optimistic. In the case of Australia, the Owen Report noted that:

"The Inquiry has found evidence that some of the barriers which limit the uptake by households and businesses of investments in energy efficiency constitute a failure of the market."

This tendency towards market failure provides a clear case for government intervention. The McKinsey Global Institute, cited in the Owen Report, estimates that over 80 per cent of cost-effective energy efficiency opportunities will not be realized without public policy interventions.

Another key environmental issue is the integration of renewable energy sources, such as wind and solar power, into the electricity supply system. This integration is essential in the transition to a more sustainable industry. However, because wind is of variable strength and effective solar heat also subject to variation, reliance on these renewable energy sources creates additional difficulties for electricity capacity and cost. The supply variations can have a random character, albeit predictable to some extent in the short to medium term, creating a problem for an electricity supply system that has difficulty accepting hour-to-hour variations. One form of energy management that is useful in these circumstances is increasing demand-side interactivity, seeking to encourage and match variations in demand with supply-side variations. Such matching requires a high degree of trust and cooperation between

the retailer and households. This creates another strong argument for public ownership, given the incentives that would otherwise exist for private owners to exploit opportunities to increase consumption at times of high price, i.e. when there is increased system constraint.

Two other features of energy markets also indicate a special case for public intervention. These concern the technological complexity and sheer scale of the operations involved in electricity supply. The technological complexity of the Energy Efficiency Programs means that there is an important role for the government in driving innovation. Technological innovation is potentially important in adapting the industry to the circumstances created by environmental stress. An example is the prospect of carbon sequestration technology being developed to allow coal to be used for electricity generation in a less environmentally damaging way. This is a technology that currently has highly uncertain prospects and that necessarily depends on public sector involvement. The sheer scope and size of some of the operations also means that the government may be the only body capable of funding or managing them. Thus, in the long-term drive to develop an electricity supply sector that is compatible with the environmental imperative to reduce emissions, the government has a pivotal role to play.

Indeed, even if the government were to divest all of its electricity industry assets, it would still need to remain a very active player in the market, driving innovation and market transformation. The electricity industry is too important to the fight against global warming for this role to be limited to short-run, one-off types of intervention. The government must be committed to a long-run relationship with the market and to play a dynamically evolving role in response to the shifting challenges of global warming. The typical free-market arguments for privatisation, namely that a large number of small players interacting freely in a minimally regulated market will deliver socially optimal outcomes, becomes increasingly non-sensical in this context.

Thus, from an environmental economic perspective, the question is not whether the government should be involved in the electricity industry and market, but to what extent and in which ways. This paper argues that, in addition to a strong regulatory role, there is a strong case to be made for continuing government ownership of the public electricity retailers.

THE SIGNIFICANCE OF RETAILERS

Retailers have always been at the front line of driving Energy Efficiency Programs, and are well placed to help deliver important environmental benefits, if their incentives are properly placed.

Retailers are the portal through which consumers engage with the electricity industry. With a close and trusted relationship with their consumers, they are a natural place for consumers to turn to for help in using energy more efficiently. As electricity prices rise, as they must with any emission reduction program, retailers are also natural place for consumers to turn to with help in managing their power bills more intelligently – through smart meters for example. Retailers have a long history of acting in this role, either as vertically integrated utilities, or in their current unbundled form. The Owen Report notes that the public retailers have already

between them installed more than 250 000 smart meters, for example. There is no reason to expect that the public retailers would not continue with this sort of contribution to the challenges of global warming into the future.

As well as helping consumers manage the transition to a more sustainable economy, retailers are well placed to help governments with their efforts. In the same way that the Owen Report argues that there are economies of scope with respect to profits of the 'Gentailer' model [integrated generator and retailer arrangements], there are economies of scope to be gained with respect to the environment in Energy Efficiency Program design and delivery. It was traditionally thought that retailers were best suited to the delivery of the more front-line resource acquisition programs, while governments had the size and power to implement broader market transformation programs. However, it is becoming increasingly recognized that these two streams are complementary.

Public ownership therefore allows governments to take a whole-of-industry approach to energy efficiency, and to be more ambitious in the scope of their program design and delivery. Public ownership also allows the government to directly engage with the market, and enables it to achieve its aims without depending on complex and indirect regulation.

Furthermore, having direct control over electricity retailers through ownership could prove to be very useful in an inherently uncertain environmental economic future. It is not known with any certainty how the current climate crisis will play out, or what policy responses will be required going forward. Public ownership gives the government the ability to act more freely, decisively and quickly if circumstances require. Sacrificing this freedom, even taking the supposed benefits relating to investment in generation capacity at face value, would be an unnecessary and undesirable decision.

PRIVATE RETAILERS' INCENTIVES

Privatisation would also tend to turn retailers into potential opponents of regulation and reform. This is not to impugn the motives of the participants or potential entrants into this industry: rather, it is to note the inherently contradictory character of the incentives that privatisation would engender.

One of the stated aims of privatisation is to change the underlying incentive structure of the privatised entity. The natural incentives of private retailers would become oriented to profit maximisation, and any public service role would become dependent on regulation. In the case of electricity retail, input costs are identical, and the quality and reliability of the electricity service is dependent on the generators and the network. As such, there is little scope to compete on price, and competition tends to centre on organisational efficiencies and economies of scale. This leads to a focus on market size and market share. Retailers thus have a natural incentive to encourage consumers to consume more electricity and to consume it less efficiently.

Regulation could potentially be used to counter this anti-environmental tendency, but historical experience shows that privatised entities quickly lobby for decreased regulation (since they have a strong financial incentive to do so) and there is no

reason to expect that this would be any different in the electricity industry. At the very least, privatisation would set retailers up against the government in a competitive tussle over regulation. The stakes are too high for us all not to be pulling in the same direction.

A third tension – in addition to those created by the priority of profit maximisation and the competing interests over regulation - relates to the sale price of the public assets. If there is a strong prospect of private electricity providers having to operate a highly regulated environment, the price they will be prepared to pay for the privatised assets is likely to be substantially reduced. The way to maximise the attractiveness of the assets, and therefore their sale price, is to give a government guarantee that the prospective private providers will not be subjected to environmental and other regulations. However, governments cannot properly limit the scope for future policy changes in this way. Moreover, in current economic and environmental circumstances, giving such a guarantee would be socially irresponsible and politically untenable. The effect of this is that the sale price of the assets is unlikely to be attractive from a revenue-generation perspective – certainly not in comparison with the continuing contribution to State revenues from an industry that remains in public hands.

TOWARDS COOPERATIVE ENERGY-EFFICIENCY OUTCOMES

In general terms, there are two options for driving change in of electricity consumption. One is market price. The other is cooperative negotiation between electricity suppliers and consumers. In the former case, increasingly expensive electricity will drive change consumption, but this will impact harshly on low income households. It is these households that spend a higher proportion of their income on electricity consumption, that often cannot afford the full market prices of new energy-efficient appliances and that live in rental housing where they do not have full control over the form of household electricity consumption. The rationale for the cooperative alternative is evident. Working together, suppliers and households can develop consumption and supply plans that can produce more sustainable long-term outcomes than would arise in a simple free market context. It is the capacity of a public provider to engage in the latter strategy that gives it the edge from a sustainability perspective.

Publicly owned electricity retailers, both in Australia and overseas, have a demonstrated capacity to work with society to promote energy efficiency. Selling them off would change their incentive structure. It would remove them from the team actively seeking solutions to global warming, and place them in opposition. Rather than selling them off and vertically integrating them with generators in larger and more powerful profit-driven entities, public policy should be going in the other direction. Public policy should be seeking to strengthen the existing alliances between retailers, consumers and the government.

Focus needs to be placed on the retailers' role of representing consumers in a complex electricity market, helping them to achieve efficiency and value for money, as the public face of government direction and strategy. At the very least, the government should not seek to limit its capacity to act directly and decisively in the electricity industry in the future. The publicly owned retailers have made a valued

contribution to the environment cause in the past, and now is not the time to be cutting such highly-capable players from the team, let alone selling them to the opposition. For the sake of the environment, the publicly owned electricity retailers should remain in public hands.

CONCLUSION

Given the challenges ahead, it is vital for electricity retailers to be closely aligned with social efforts to manage climate change. We need electricity retailers who will work with consumers to encourage energy efficiency and reduce overall electricity consumption levels. Looking at the issue from this environmental economic perspective, this paper has demonstrated that selling the public retailers to the private sector would run counter to this imperative. It would also make it more difficult for the government to take a whole-of-industry approach to reducing emissions. The NSW Government should place environmental economic concerns at the forefront of its thinking, and reverse its decision to sell the public electricity retailers.

Note: Special thanks to Tom Keily for his research assistance and help in drafting this paper and to Ben Spies Butcher and John Kaye for helpful comments on an earlier draft.