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**The Regulatory Framework**

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## **1. Introduction**

The topic I will address today is “The Regulatory Framework.” In my presentation, I will first explain the background to the transmission network access regime introduced in Australia. Second, I will discuss the regulatory approach the Australian Competition and Consumer Commission (the Commission) is adopting as it prepares for its role regulating transmission network revenues in the National Electricity Market (NEM). Third, I will briefly discuss the Commission’s draft decision on the revenue cap for New South Wales and ACT electricity transmission services. Finally, I will discuss a number of emerging issues that may impinge on the ability of the Commission to effectively regulate transmission network revenues in the NEM.

## **2. Background to access regulation**

While the generation and retail sectors are progressively being opened up to competition in Australia, the electricity network required to transport electricity from generators to end users (whether transmission or distribution systems) are natural monopolies. In these markets, there exists an imbalance of the relative bargaining position of network service providers (NSPs) and consumers of the service. Consequently, prices can be distorted above economically efficient levels with a resultant adverse impact on economic efficiency and community well being.

There was an acceptance in the development of the NEM that networks play a significant part in encouraging upstream and downstream competition. Access to the services provided by the monopoly transmission and distribution NSPs is essential for entry into the generation and retail sectors.

Other nations, notably the United States, for decades have recognised the need for access to the services of natural monopoly providers in order to boost upstream and downstream competition.

The introduction of Part IIIA of the *Trade Practices Act* in 1995 established a legal framework in Australia for access rights to services provided by nationally significant infrastructure. Part IIIA is based on the notion that competition and efficiency are increased by overriding the ability of owners of monopoly facilities to determine the terms and conditions on which they will grant access to the services of their facilities. The focus in Part IIIA is upon access to facilities of national importance, in order to promote competition in an upstream or downstream market. Part IIIA establishes three approaches to third party access.

1. The first is by having an essential facility service *declared*, such that disputes over the terms and conditions of access not resolved through commercial negotiations can be subjected to compulsory arbitration by the Commission. There are elements of this framework in the current telecommunications and airport arrangements.
2. The second is through having the designated Federal Minister recognise an existing State-based access regime as effective.
3. The third enables the owner of an essential facility submitting an access *undertaking* for Commission acceptance, which sets out the terms and conditions that the facility owner will provide access to third parties.

The electricity supply industry in Australia followed this latter route, with the National Electricity Code Administrator (NECA) submitting to the Commission an application for an Access Code for electricity related services provided by transmission and distribution facilities in the NEM.

### **3. Network regulation in the Australian Electricity Supply Industry**

The network pricing section of the National Electricity Code (the Code) (chapter 6) proposes establishing uniform mechanisms for pricing access to networks whereby:

- the Commission will determine asset values, rates of return and revenue caps for transmission networks; and
- the states and state regulators, such as IPART in New South Wales and the Office of the Regulator - General in Victoria, will determine asset values, rates of return, and revenue caps for distribution networks.

The Commission assumes responsibility for the regulation of transmission network revenues in the NEM on a progressive basis, commencing 1 July 1999, when it assumed responsibility for the New South Wales and ACT transmission network.

The Commission will oversee a transmission revenue regulatory regime using a revenue cap methodology based on some incentive based variant of CPI-X. The Code provides guiding principles on the operation of the revenue cap that the Commission must take into account such as:

- an equitable allocation of efficiency gains between users and owners of the system;
- providing owners with a sustainable commercial revenue stream;
- prevention of monopoly rents;
- fostering efficient investment within the transmission sector and upstream and downstream of that sector;
- fostering the efficient use of existing infrastructure;
- promotion of competition in upstream and downstream markets;
- providing reasonable certainty and consistency over time of regulatory outcomes; and
- reasonable recognition of pre-existing government policies regarding transmission asset values, revenue paths and prices.

### 3.1 Draft Regulatory Principles

As national regulator for transmission, the Commission is responsible for developing national guidelines and rules for application of those guidelines. In May this year, the Commission released the *Draft Principles for the Regulation of Transmission Revenues (Draft Regulatory Principles)* which establishes guidelines as to how the Commission will regulate the industry. The *Draft Regulatory Principles* is available from the Commission's Internet site:

[www.accc.gov.au](http://www.accc.gov.au).

In assuming its role as regulator of transmission revenues in the NEM, the Commission's aim is to adopt a regulatory process that eliminates monopoly pricing, provides a fair return to network owners, and creates incentives for managers to pursue ongoing efficiency gains through cost reductions. In achieving these aims, the Commission is aware of the need to ensure compliance costs are minimised and that the regulatory process is objective, transparent and light handed.

The transmission regulation framework outlined in the *Draft Regulatory Principles* is a building block approach based on forecasts of cost of service over the regulatory period. The building block approach calculates the AARR (Aggregate Annual Revenue Requirement) as the sum of the return on capital, the return of capital, and operating and maintenance expenditure, that is:

$$\text{AARR} = \text{return on capital} + \text{return of capital} + \text{O\&M}$$

$$\text{AARR} = (\text{WACC} * \text{WDV}) + \text{D} + \text{O\&M}$$

where WACC = weighted average cost of capital;

WDV = written down (depreciated) value of the asset base;

D = depreciation allowance; and

O&M = operating and maintenance expenditure (including administrative costs).

While the assessment of operating and maintenance expenditures is relatively straight forward, assessment of the other elements is not. Determining these elements of the accrual building

block raises significant issues with respect to providing NSPs with a fair and reasonable return, while at the same time promoting economic efficiency and an objective, transparent regulatory process.

It is therefore imperative that the regulator comes up with accurate revenue cap decisions. The Commission implements the following procedures to ensure this is the case. First, the Commission conducts a transparent and open process in the determination of revenue caps for transmission NSPs. The Commission invites stakeholders to put information forward to try to persuade the regulator and also consults stakeholders to understand the implications of its regulatory decisions. Second, the Commission attempts to gather the most accurate financial data it can in determining regulatory parameters.

### *3.2 Determining a fair rate of return on the asset base*

In determining a rate of return, the Code requires the Commission to consider the weighted average cost of capital (WACC) for each transmission network. The WACC is the weighted average of the cost of equity and the cost of debt, each cost weighted by its proportion in the company's financial structure. Interested parties strongly endorsed its adoption, along with the building block approach, in their submissions to the Commission on its May 1998 *Regulation of Transmission Revenues Issues Paper*. The building block approach combines a rate of return with a regulatory asset value.

Given the capital-intensive nature of electricity network businesses, the return on capital component of the regulated revenue could account for 50 per cent or more of annual aggregate revenue. As relatively small changes to the rate of return can have a significant impact on the total revenue requirement and ultimately end user prices, it is important that the regulator sets the rate of return at a level which reflects a commercial return for the regulated businesses.

Setting a rate of return below the cost of funds in the market could make continued investment in developing the network difficult or unattractive for the owner. This would create pressure for the regulated business to reduce maintenance and capital expenditure below optimum levels and undermine the quality of service offered to users. Conversely, if the regulator set the rate of return too high, the regulated businesses would earn a return in excess of their cost

of capital. This would distort price signals to consumers and investors, resulting in a misallocation of resources and sub-optimal economic outcomes.

In the *Draft Regulatory Principles*, the Commission has adopted a nominal post-tax WACC approach. In addition, the Commission will set the WACC on the basis of financial market benchmarks, taking into account the level of commercial risk involved in establishing the transmission infrastructure.

### 3.3 *Return of capital*

To encourage continued investment in natural monopoly industries, investors will require an assurance that they will earn a reasonable (risk adjusted) return on their investment capital, as well as the return of capital, provided the market continues to value the services produced with that capital.

The building block approach for determining the AARR for TNSPs includes an allowance for depreciation. Such an allowance recognises the need to recoup the outlay involved in the purchase of the asset, over its useful life. Under the building block approach total revenue earned from the regulated assets consists of the depreciation charge and the allowed return on assets.

Traditional linear depreciation schedules, whether applied in a nominal or a real framework, do not always provide a suitable revenue profile. The key problem associated with the use of linear depreciation profiles is that there is typically a jump in tariffs/revenues when a major asset reaches the end of its useful life and is replaced by another.

The Commission therefore proposes a *competitive depreciation* profile in the *Draft Regulatory Principles*. There are two aspects to the proposed depreciation profile:

- the smoothing of revenue paths (via the competitive depreciation approach) designed to avoid inter-generation pricing disparities; and
- adjustments to reflect the impact of future potential stranding of identified assets (i.e. possible redundant assets).

The approach links the long-term depreciation profile to a measure of the rate of technological change. The revenue smoothing minimises inter-temporal price distortions (inter-generation price shocks). It also minimises potential geographical price distortions linked to the vintage of assets serving neighbouring systems.

### *3.4 Benefit sharing*

The Commission appreciates the form of regulation used and the incentives it creates will have a major impact on market outcomes. The regulatory regime adopted should ensure efficiency gains are passed on to final consumers, while providing effective incentives to the service provider to maximise efficiency.

If regulation adjusts prices to simply allow the service provider to recover costs and achieve a normal rate of return on investment, the service provider will have little incentive to be efficient in the provision of such services; indeed there may be an incentive to reduce efficiency.

The Commission believes with the ability to retain cost reductions as profits, the service provider has a strong incentive to be more efficient in the provision of network services. However, effective natural monopoly regulation involves not only providing positive incentives for improved efficiency but also ensuring there is sufficient disincentive to avoid inefficiency and the provision of poor quality service. These incentives can be achieved by offering financial rewards for improvements in long term cost efficiency above those determined by the regulator, and penalising, through reduced profits or losses, failure to achieve service standards and benchmark efficiency improvements.

### *3.5 Service standards*

Under a CPI-X revenue cap regulatory approach, there is a risk a monopoly TNSP may try to reduce costs and hence increase profits by reducing the quality of services offered. Quality of service monitoring by a regulator, assisted by penalties for non-performance, can ensure TNSPs maintain service quality. The Commission believes under effective incentive based regulation, the TNSP will have sufficient income to maintain the assets necessary to provide an explicit level of service. There is also a need for some benchmark comparisons between



networks on service standards. These matters are discussed in the *Draft Regulatory Principles*.

#### **4. Draft decision on TransGrid's transmission network revenue cap**

As noted earlier, the Commission assumes responsibility for regulating NSW and ACT transmission network revenues from 1 July 1999. In May this year, the Commission released its draft decision on TransGrid and energyAustralia's transmission network revenue cap.

The draft decision proposes the maximum revenue that may be earned in the provision of electricity transmission in NSW and ACT in the forthcoming regulatory period. TransGrid is the main provider of transmission services in these jurisdictions, while energyAustralia provides some transmission services in NSW in parallel to TransGrid's network.

The Commission conducted this review in conjunction with IPART, the NSW state regulator. The Commission's decision draws on consultancy reports, the analysis of data and information submitted to the Commission and submissions from interested parties.

If adopted, the Commission's draft decision will result in a reduction in TransGrid's revenue, which in turn should result in lower prices for TransGrid's customers. The Commission in its draft decision adopted an opening asset base for TransGrid of \$1 845 million for regulatory purposes, a figure provided to the Commission by IPART. This compares to NSW Treasury's valuation of TransGrid of \$2 064 million using the depreciated optimised replacement cost method.

The Commission has chosen to apply a pre tax real WACC of 7.25 per cent to TransGrid. This equates to a post tax nominal return on equity of approximately 11.5 per cent. The Commission believes these figures are close to the mid point of a feasible range.

The draft decision is available from the Commission's Internet site. The Commission held a public forum on the draft decision in June and called for submissions. The Commission will

consider the issues raised at the public forum and submissions from interested parties before making a final decision, which the Commission expects to release in September.

The NSW Government recently submitted a derogation from the Code to the Commission for authorisation, which delays the implementation of the Commission's regulatory arrangements for NSW transmission. The derogation proposes that in the interim period July 1999 until January 2000, the Commission will administer the existing IPART regulatory arrangements and from February 2000, the Commission will administer its own regulatory arrangements.

The Commission recently provided interim authorisation to this derogation. The Commission is currently conducting a public consultation process regarding authorisation of the derogation and welcomes feedback.

## **5. Emerging issues**

There are a number of issues in need of address if the potential benefits of electricity reform and the move to a NEM are to be fully realised and passed on to all customers.

### *5.1 Interconnection*

There are outstanding issues concerning interconnection. The Australian electricity supply industry traditionally consisted of state based vertically integrated public utilities. As such, at present there is little interconnection between the jurisdictions of the NEM.

Chapter 5 of the Code establishes several avenues for planning and undertaking interconnection, including regulated and unregulated options. Regulated assets earn a regulated return in accordance with chapter 6 of the Code, while unregulated assets earn a return through transactions in the market. Chapter 5 describes decision processes and criteria, under which interconnectors may become part of a transmission NSP's regulated asset base. In essence, an augmentation may receive approval to enter the regulated asset base (before it is built) if it passes a "Customer benefits test" administered by NEMMCO.

The rules governing interconnection came into the spotlight when NEMMCO rejected the application for the proposed South Australia - New South Wales interconnector to be a regulated interconnector. Indeed, NEMMCO found the *Customer* benefits test to be highly volatile, which would make it difficult for any proposed inter-regional augmentation to satisfy the criterion.

NEMMCO approached the Commission to undertake a review of the criterion to determine whether new interconnectors shall be able to derive regulated revenues in the NEM. The preliminary view of Commission staff is that a market benefit augmentation test is appropriate. This entails a wider measurement of net benefit than the original test outlined in the Code. The test proposed by Commission staff would capture benefits accruing to generators. It could also measure benefit to parties up and down the value chain, for example fuel suppliers and consumers of manufactured goods. It could also measure those incidentally affected by changes in the electricity market, for example, shareholders, taxpayers and employees in related industries. The “market benefit” test therefore includes the consumers and producers of electrical energy and includes the consumption and provision of network services.

In late July, the Commission received an application from NECA for authorisation of the Code amendments on the regulatory test. The Commission will make a decision on authorisation of this regulatory test soon, once it completes the public consultation process.

One element flagged by the Commission staff paper is whether the test for regulated interconnectors requires a “market failure” element. The objective behind this suggestion is the desire to ensure the market encourages the most efficient least cost solution for meeting energy needs. The Commission does not favour a test that provided a systemic bias in favour of regulated network solutions, if there were better demand side, supply side or even unregulated network alternatives. The question is how to best create the incentives for this without curtailing, or inefficiently delaying needed investment.

## 5.2 *Network Pricing Issues*

Once the revenue cap is determined, it is then translated into transmission charges. There are a number of outstanding issues concerning the transmission network pricing arrangements.

Currently 50% of Transmission Use of System (TUOS) charges must be allocated to transmission customers at connection points using cost reflective network pricing and the balance must be allocated to transmission customers on a postage stamp basis.

This methodology raises issues of:

- the appropriate balance between cost reflective network pricing and postage stamp allocation of costs for TUOS charges;
- the extent of any cross subsidies in the postage stamp component of the TUOS charges; and
- the incidence of TUOS charges, and whether they promote cost reflectivity and efficient usage, investment and location signals.

NECA have finalised a review of network pricing that looked into these issues. As the outcomes of NECA's review have obvious implications for the Commission's regulatory work, the Commission is keen to ensure the issues outlined above are adequately addressed.

In late July this year, NECA submitted their review recommendations to the Commission for consideration as amendments to the NEM Access Code. The Commission has called for submissions on this issue and will shortly release an issues paper.

The debate on the most efficient approach to pricing for electricity networks is an issue of ongoing concern for the Commission. Some have proposed nodal pricing as an alternative to the current zonal pricing regime. The Commission sees attraction in nodal pricing as a medium term market objective. However, nodal pricing will not solve the entire electricity network pricing problems. This is because the settlements surplus that arises from line losses and congestion is unlikely to recover more than 30% of a (heavily constrained) network's costs and is more likely to be around 10% for most of the Australian networks. Consequently, the recovery of network costs will still require TUOS (like) charges. Hence, the issues of cost reflective network pricing versus postage stamp prices and generator versus customer charges remain.

## **6. Conclusion**

In this paper I highlighted the background to the transmission network access regime introduced in Australia. I also outlined the regulatory framework in the Australian electricity supply industry and the approach the Commission is adopting as it assumes responsibility for the regulation of transmission network revenues in the NEM. In that regard the Commission is committed to implementing incentive based regulation.

Finally, there are a number of emerging issues such as network pricing. These issues must be addressed if the potential benefits of electricity reform are to be fully realised and passed on to all customers.