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4th May, 2000

Dr Thomas Parry
Chairman
NSW independent Pricing
and Regulatory Tribunal
Level 2, 44 Market Street
SYDNEY NSW 2001

Dear Dr Parry

Please find attached EnergyAustralia's submission on IPART's Capital Contributions Discussion Paper.

Essentially, EnergyAustralia supports a policy based on the current scheme with further modifications consisting of an initial contribution more reflective of connection costs, reduction of cross-subsidies of uneconomic customers and a limited reimbursement scheme.

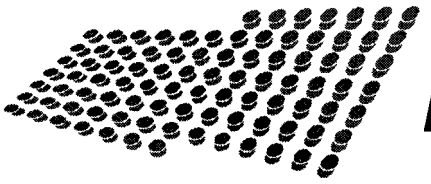
EnergyAustralia also recommends strongly that whichever capital contributions scheme is determined, the Tribunal will allow capital expenditure by distributors on customer connection related augmentations to be included in the regulated revenue cap at time of service.

If you have any queries or comments, please do not hesitate to contact Mr Tony Markus on 9269 4303 or Ms Nives Matosin on 9269 2537.

Yours faithfully

Mervyn Davies
General Manager-Network

Sydney 2000



EnergyAustralia™

Submission to IPART on capital contributions

4 May 2000

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1. Recommendation

EnergyAustralia has analysed the issue of capital contributions from a commercial, economic and social perspective. From a commercial perspective, EnergyAustralia has focused on mitigating the network business risk associated with uncontrollable factors associated with customer connections.

EnergyAustralia recommends that IPART allows EnergyAustralia's capital expenditure associated with customer connections (usually augmentation costs) to be rolled into the asset base from the date that the asset commences service. This will require an adjustment to the current capital expenditure forecasts and the allowable revenue.

Without this guarantee, the incentive created by IPART's revenue cap regime is for distributors to stop connecting customers up to the point where the IPART endorsed capital expenditure program relating to load growth is exhausted. In EnergyAustralia's case, the extent of load growth related capital expenditure has been significantly under-forecast. Consequently, once load growth related capital expenditure is exhausted all connection applications that required augmentation would be deemed to be uneconomic. As a result, without IPART's agreement to recognise the capital expenditures and associated revenues, customers seeking connection would be required to fund all associated augmentation costs.

The extent of connection-related augmentation also needs to be assessed from a social and economic perspective. This is a conflicting issue that is not within the commercial sphere of electricity networks. The extent that some customers should cross-subsidise the augmentation requirements of other customers is a matter that needs to be determined by Government and the Tribunal.

EnergyAustralia recommends maintaining the current policy as per Option 3 put forward in the IPART discussion paper with some modification including special treatment of 'uneconomic' customers and qualified introduction of reimbursement schemes. Option 3 would now consist of the following steps:

Step 1: Defining "connection" assets

- The customers contribution needs to be assessed according to whether the connection is a shallow (direct unshared connection and possible shared extension) or deep connection (includes upstream augmentation assets – ie. beyond the point(s) of connection to the system).
- Rules for assessing whether a connection is assessed as shallow or deep are contingent on the customer impacts on the capacity of the network and the customers load profile (ie. is the customer economic or is there a cross-subsidy that needs to be removed).
- EnergyAustralia supports retaining the definition of connection as up to the point where the shared network can support the load (the "point of connection").

Step 2: Assessing the viability of the connection ('economic test')

- The connection to a customer is considered economic where benefits (the total revenue) from the customer equals or exceeds the cost.
- However, the economics of capital expenditure is distorted under price regulation. Under a regulated pricing regime a network business is indifferent to "economic" or "uneconomic" connections as long as any shortfall in revenue can be recouped by regulated prices from other customers. In practice, however, if some expenditure for customer connections has been allowed into the regulatory asset base, customer connections up to this level may be deemed "economic".
- In order to meet efficiency in the allocation of capital expenditure, there needs to be some attempt to provide signals to so-called "uneconomic" customers. In making these assessments, the Working Group made the assumption that the long run marginal cost of connection is similar to the average cost of a large mature network based on the tariff by customer type. (This ignores the averaging and any cross-subsidies. It is only intended as a rule of thumb to simplify the analysis)
- There is scope to prepare this type of analysis on an individual basis for larger customers.

Step 3: **Funding of connection assets**

- Customers are required to fully fund the unshared or dedicated connection assets as at present. This is the portion of the extension which is considered as extremely unlikely to be used to supply other customers for at least six years.
- Customers (whose demand exceeds 100A) will also be required to make a further contribution to the connection to reflect the cost of existing network assets that will now be utilised to support that connection, as well as towards any further augmentation that may now be required. It is recommended that this be based on the distance of the customer from the nearest zone substation assessed on $ per KVA per km appropriate to the relevant network value.
- The distributor will fully fund the remaining cost of augmentation conditional on IPART allowing a return on the related capital expenditure:
  (The alternative is that once the capital expenditure program has been exhausted all customers will be required to fund in full all augmentation).
- Ownership of asset remains with the distributor on public lands. It is proposed that the customer not be given the choice of ownership of customer funded connection assets in public lands.

Step 4: **Reimbursement scheme**

- Introduce a reimbursement scheme in rural areas where assets **fully** contributed to by a previous customer are subsequently shared.
- This will be limited to a six-year period from the time of the initial connection.
- The reimbursement will be made by the distributor to the original customer on the basis of the difference in the cost initially paid by the first customer and the $ per kVA per kM rate applicable for the mains concerned.
- Records need to be maintained of the contributions and rules of thumb developed for easier administration.

2. Introduction

The issue of capital contributions is a complex issue that goes to the crux of examining what is the role of the distribution network service provider. Capital contributions needs to be viewed as a risk assessment exercise. A fundamental issue is the examination of who is in the best position to manage the risks associated with capital contributions – distributors or connecting customers.

EnergyAustralia submission focuses on:

1. Developing the ideal capital contributions policy against economic and equity criteria
2. Examining the issues associated with options canvassed by IPART.

EnergyAustralia has focused on designing a capital contributions policy that minimises business risk under the current regulatory environment.

3. Distribution network services

The business of distribution network service provider can basically be divided into two services:
1. Connection to "premises"
2. Transportation of electricity, on behalf of retailers, along a shared network.

Connection service

Under the Electricity Supply Act a distributor is licensed to connect a premise to the network. The Act allows a distributor to seek a capital contribution for connection. EnergyAustralia receives about 26,000 new connection applications per annum.

The types of connections consist of:

- Individual residential premises
- Residential developments
- High rise multi-tenanted apartments
- Small commercial sites
- Large commercial sites
- Industrial sites

The provision of connection services is now contestable. The customer can seek tenders from accredited service providers to build the connection assets.

Generally, ownership of the assets is handed over to the local distributor. The capital cost for the contributed assets is excluded from the regulatory asset base. This approach avoids customers paying twice for the same assets. However, as the owner, the network is responsible for the maintenance of the assets.

Shared network

The use of system charges is considered a monopoly service and the pricing is regulated. IPART recently released the pricing determination for networks. The regulated revenue covers operating costs, rates of return and depreciation associated with operating "prescribed" network services.

Distributors are in the best position to manage the risks associated with maintaining the operations of the shared network.

Shared vs. connection

By having a capital contribution policy whereby a distributor can seek a customer payment for connection, the vexed question arises as to what is "connection" and what is the "shared network"?

Connection can be either "shallow" or "deep" connection. Shallow connection is basically the direct unshared connection and any shared extension assets up to the "point of connection". Deep connection refers to augmentation from the point of connection into the network.

From a distributor's perspective whether an asset is defined as connection or a shared network depends on:

- Who is the main beneficiary of the assets involved in connecting a premise
- To what extent does the connection impact other users
- Who can best manage the risk associated with connecting a premise/customer to the network

A new customer connection on the network can have a number of potential impacts. Depending on the size of the load, new connections place commensurate demands on the network capacity. In cases where network planning and investment has anticipated these demands then capacity is likely to be available. This is part of a network's business role in ensuring availability and reliability on the network.

However, the number of customer connections, location and growth in demand is not controllable by a distributor except to the extent that capital contributions policy and tariffs can influence customers' decisions. The network forecasts as best as possible, the future demands and plans the network capital expenditure accordingly.

The risk faced by distributors occurs when customers (unusually large or atypical for the location) and/or more than forecast number of customers wish to connect to the network in a constrained area or if a remote customer wishes to connect. In this type of situation the network may be required to invest in upstream augmentation in order to maintain capacity and reliability of the network. However, the extent of augmentation related to new connections cannot be exactly anticipated by network businesses.

The dilemma arises in deciding:

- To what extent should the network fund this augmentation and to what extent the customer?
- What is connection and what is augmentation?

EnergyAustralia's position is that customers should be responsible for funding direct unshared connection costs and a proportion of some shared costs. The distributor should primarily be responsible for funding the augmentation costs since such assets may benefit other customers. The primary business of the distribution network service provider is to provide transportation services – therefore ensuring appropriate augmentation is a part of maintaining a reliable network service.

The NSW distributors do face specific risk related to the Tribunal's regulatory approach. Unless these risks are addressed then the business is best served by having customers pay the full cost of connection and augmentation. This issue is examined in the next section under ***Risk and return.***

4. Designing a capital contributions policy

The issues of network connections can create tension between economic, social and equity issues. While many would view access to electricity as a social right, there are economic and commercial issues that are now part of the operating framework for utilities. A capital contributions policy needs to be assessed against a number of key criteria.

The factors to consider in designing a capital contributions policy are:

- Economic signals
- Equity
- Simplicity
- Risk and return

Economic signals
A capital contributions policy needs to provide economic signals about resources allocation or else is explicit in recognising any cross-subsidies. (In setting the capital contributions policy - IPART needs to be explicit about what objectives it is attempting to achieve).

Locationalpricing signals: A customer's decision to connect to a network will be impacted by the cost of that connection. The cost of connection ideally will reflect the efficient costs of providing connection to that customer. This cost influences behaviour about location. If a customer had a choice of location (such as residential property developers, commercial and industrial premises) one of the factors weighing up the decisions will be the cost of network connection.

EnergyAustralia supports the charging of direct capital contributions to customers for direct connection services and a component for some shared assets.

Allocating resources: Funds for capital expenditure need to be allocated to the most productive use (allocative efficiency). Placing a cost on connection provides a signal to customers about their impact on network costs. Without such price signals, there would be a significant drain on the capital expenditure programs for the distributors. This would either be at the expense of other capital expenditure programs or, if allowed by the regulator, would lead to an increase in prices for all customers (This is a policy decision beyond the realm of the distribution businesses).

Ideally, once a customer has connected to the network, the ongoing network prices need to reflect a customer's incremental impact on the network. In areas with constrained level of capacity the incremental prices (variable charge) would be high in peak periods to encourage demand management. In areas with spare network capacity, variable charges would be low to encourage usage. Network pricing can be designed to influence usage and ultimately the capital expenditure requirements for augmentation of the network.

EnergyAustralia supports the use of a test to distinguish between 'economic' and 'non-economic' connections.
For large customers the economic test should be conducted using actual estimated costs and revenue.

Dynamic efficiency: A regulated utility needs a degree of certainty and transparency in the regulatory process in order to encourage a long term outlook and innovation in the networks. This needs to be provided through guidelines on how capital expenditure will be recognised by the regulator in prices including the treatment of connection related capital expenditure.

EnergyAustralia recommends that the Tribunal provide guidelines to distributors on allowing a return on customer connection related capital expenditure incurred by the distributor.

Equity
Under strict application of marginal pricing principles, the incremental customer would be responsible for network augmentation. This is obviously unfair to customers since it is a timing decision when to apply for a connection. As a timing decision it is a risk that is outside of a customer's control. Moreover if short run marginal costs pricing principles are used, it will send perverse economic signals, even if implemented with a reimbursement scheme.

Once a customer has contributed to shared assets there needs to be recognition of the customer's contribution. This can be achieved by either:

- Adjusting the customers tariff for the portion on shared assets
- The distributor making a contribution to the customer to compensate for the contribution. The customer would be placed on an existing tariff.

Both approaches are administratively complex, generally involve arbitrary assumptions using average costs and prices, and compromise economic price signalling objectives.

The dilemma occurs about decisions on uneconomic connections. Should these be funded by other customers through higher prices or through other means such as government subsidies?

For equity purposes, EnergyAustralia supports the continuation of the current capital contributions policy whereby the distributor funds the customer connection related augmentation pending allowance for recovery of the these costs from customers through the regulated revenue cap. This will require an adjustment to the current determination.

EnergyAustralia seeks clarification and certainty from the Tribunal about its stance on uneconomic connections.

Simplicity
The effectiveness of a capital contributions policy is dependent on the ease of implementation and administration and level of understanding by customers.

The capital contributions policy needs to be relatively straightforward to enhance understanding by customers and contractors. The administration of the policy also should be as simple as possible in order to reduce transaction costs for all parties.

There needs to be rule-of-thumb guidelines on certain issues such as defining connection point and connection assets augmentation.

There are major transitional issues associated with changing over the current policy to a new policy which would need to be considered if there were to be a change in policy. This is a strong argument against change.

*EnergyAustralia supports continuation of the **current** policy with **modifications** to the rules for contributions to the connection assets to better **reflect** the actual cost of connection and the application of an 'economic' test.*
*Completely changing the policy now after only two years would cause major disruptions within **EnergyAustralia** and require lengthy and expensive education and training campaigns.*

Risk and return
Even as regulated business, the network distributors face business and regulatory risks. These risks are can be listed as:

- regulatory risk – uncertainty of future regulatory decisions
- revenue risk – uncertainty about the return on investments
- stranding risk – customers moving and leaving assets stranded
- compliance risk - due to administrative complexity.

The following is a hypothetical situation to help assist understanding of the regulatory and revenue risk now faced by distribution businesses under the current regulatory regime:

*Say you were given responsibility for investing $1 million for 10 years on **behalf** of **a friend**. You looked into investing into a distribution network (ie a **managed fund** that invests in utilities infrastructure) and you were told that:*

1. *Your money would not be earning any interest until 1 July 2004.*
2. *At 1 July 2004, the principal of your investment may be written down or even written off.*
3. *When your investment does start earning interest on 1 July 2004 there is no guarantee of the rate of return. Currently it is 7.5% and while linked to 10 year bonds with some premium for market risk. The level of the market risk is not certain and subject to regulatory discretion,*

This would not be a good investment when the current lo-year bond rate is 6.4% and rising? Yet this is the risk the distributors and ultimately the NSW taxpayer is subject to right now.

EnergyAustralia has no control over the number and type of customer connections. Obviously any attempt to forecast the impact of customer connections is fraught with difficulties. It is a risk that has certainly not been factored into the rate of return under

the Weighted Average Cost of Capital and Capital Asset Pricing Models. As a result it is a risk that needs to be explicitly recognised and compensated for.

To mitigate, to some extent, the business risk associated with customer connections EnergyAustralia recommends that the Tribunal allow customer connection related capital expenditure funded by EnergyAustralia into the regulatory asset base at the time the asset comes into service. This requires an adjustment by introducing a trigger mechanism into the current determination.

5. Assessment of options

EnergyAustralia has assessed the options according to the described key criteria. A dot point summary is contained in Appendix 1. The matrix table provides a summary of EnergyAustralia's assessment:

Criteria	Current policy	"NPV" approach
Economic efficiency	Strong locational signals for direct connection. Weak signals on the impact on distributors augmentation costs.	Strong signals to customers on the total impact on the network costs. However, the strength of the augmentation signal may be perverse, by discouraging customer investment that would otherwise be economic.
Equity	Fair to charge customer direct cost of connection. However, all customers may be paying higher prices for 'uneconomic' assets - assuming full capex is allowed into the regulatory asset base and average across all customers. Existing policy requires some form of economic test or else explicit recognition of cross-subsidisation (as currently occurs anyway with incumbent customer base).	Economic signals may be too strong where the customer-funded augmentation also benefits other customers who free-ride on the incremental customer. Risk occurs for customer who is the *"straw that breaks the camels back"*. These risks however may be eliminated by setting thresholds.
Simplicity	Simple to administer apart from tightening definitions of connection point and shared extension. Policy has been in place for two years and is now operating reasonably well.	Arbitrary assumptions made about average tariffs representing "long run marginal cost". Unlikely in most cases due to prices based on ODRC values and existing cross-subsidies in the network prices. Complex system to administer for the 26,000 applications received by EnergyAustralia each year.

Continued		
Risk and return	The uncertainty surrounding the roll forward of connection related capital expenditure into the regulatory asset base deems customer connections to be uneconomic once the existing regulated capex is exhausted.	
	Distributor manages risk of augmentation but the regulatory risk needs be accounted for otherwise the incentive for the distributor is to stop connecting customers unless customer pays for all the costs.	Concept of an "economic test is flawed as there is no incremental revenue under the revenue cap approach. Imposes augmentation risk on customer that is a timing issue. Distributor is able to better handle this risk through recouping it through regulated revenue. The distributor is able to diversify the augmentation risk, as between customers (existing and new) and over time (as load density grows). The customer cannot do this. Increased burden on distribution capital expenditure program estimated at between $10-$15 million.
Contestability policy	Facilitates easy administration of the contestability for connection assets.	More difficult to administer the contestability policy for connections assets.

Appendix 1: Assessment of options

Option 1: Current guidelines

Advantages of this scheme

- Customer funds up front connection costs to the customers
- Clearer locational price signals
- Simple to administrator with no reimbursement scheme
- Relatively clear segmentation of contestable connections from non-contestable services - easier to administer and facilitates contestability

Disadvantages

- Risk - No additional revenue for capex that exceeds the forecasts made at the time of the revenue cap determination
- No penalties on customers for imposing 'uneconomic' augmentation on distributors
- Subjective decision on defining direct connection assets
- Scope for customer funded assets to become privately owned and result in inset networks and possibly stranded assets and sub-optimal network planning
- Opportunities for customer gaming in assessing shared or augmentation asset and in applications from joint and related parties.
- Lack of reimbursement policy can encourage customer gaming
- As a result of these issues generally leads to "when in doubt EnergyAustralia pays" approach

Option 2: Economic test approach

Advantages

- Intended to be a more transparent and less subjective method
- Reimbursements scheme attempts to reduce inequities and reduce avenue for gaming
- "Uneconomic" customers are now required to pay an appropriate share of connection and augmentation costs according to the NPV of their contribution to the connection
- Less scope for customer funded assets to become privately owned and result in inset networks and possibly stranded assets through sub-optimal planning

Disadvantages

- Under a revenue cap the incremental revenue is zero. (The NPV calculations should include zero revenue against costs - all applications would be uneconomic)
- EnergyAustralia may be required to fund a much larger share of the connection cost. (increase burden on capital expenditure program estimated at between $10- $15 million)
- This additional capex is not recognised in the current determination and not certain how capex is to be rolled forward in the next determination
- Assumption CCWG that existing tariffs include some allowance for connection costs needs to be heavily qualified - in EnergyAustralia's case the revenue cap has under-forecast customer connection numbers
- Reimbursement policy has potential for an administrative nightmare in urban areas
- Much time and effort will be required to implement any new proposal particularly in the management of connection contestability
- The transitional arrangements to a different policy will inevitably be difficult
- NPV can be administratively complex
- The assumption the marginal cost of connection is about the same as the average tariff is an arbitrary one
- Opportunities for gaming still exist - eg in the assessment of the expected revenue
- Risk that IPART will micro-manage the determination of the revenue offset