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1 May 2000

The Chairman
Independent Pricing and Regulatory Tribunal
PO Box Q290
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NSW 1230

Dear Professor Parry

PRICING OF CAPITAL CONTRIBUTIONS TO ELECTRICITY NETWORKS

I refer to the "Pricing of Capital **Contributions** to Electricity Networks" discussion paper issued by the **IPART** Secretariat. **Advance Energy** thanks the **Tribunal** for the opportunity to comment on this paper. Please accept the attached submission as Advance Energy's comments on the relative merits of the options for capital **contributions** raised in the **paper**.

Advance Energy believes that the current **arrangement** is susceptible to misinterpretation and gaming, and has lead to outcomes where due to the nature of our rural service area, which extends into less densely populated **areas**, we are required to **fund** uneconomic augmentation and shared connection costs, particularly in remote rural **areas**. The capital cost of funding these "shared assets" places upward pressure on **average** network charges.

We urge the Tribunal to give **consideration** to a framework and methodology which would allow for an appropriate resolution of these issues and which avoids the flexibility of the current arrangements.

Advance Energy **has** been an active **participant** and generally supports the capital contribution framework as proposed by the Capital Contributions Working Group (CCWG) and Capital Contributions **Implementation Working Group (CCIWG)**. However Option **3**, as proposed by the Tribunal in its discussion paper, is **also** of particular interest to Advance Energy, as a viable alternative to the proposals put **forward** by the CCWG and CCIWG. We believe that this alternative approach could overcome* some of **the** problems with **the** current pricing arrangement, provided that pure **engineering** based definitions can be agreed upon, which at the same time would overcome the potential complexity and additional administration which may arise under the application of the **proposed** economic test.

Irrespective of the framework, which is finally adopted for pricing of capital contributions in NSW, we strongly urge the Tribunal to **provide** clear certainty to the NSW distributors of the treatment of asset values for any new **system** investment post 1 February 2000, which would be **constructed** to connect uneconomic customers. To do otherwise may lead to a disincentive for a distributor to provide investment **funds**.

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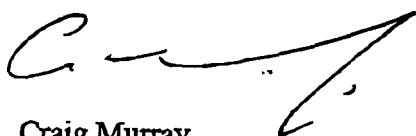
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As a general comment, Advance Energy has previously raised its concerns in relation to the **current** capital contribution **determination**, and the absence of clear assurance **from the** Tribunal in terms of asset values, in our recent September 1999 submission and in the joint NS W distributor submissions to the **recent** pricing review.

We look **forward** to the round table **discussion** to be hosted by the Tribunal **on 9 May 2000**. **In** the mean time should you have any questions or wish to discuss this submission further please contact **Mr** Terry Miller on (02) 6338 3578 or Mr Lawrence **Zulli** on (02) 6883 4547.

Yours **sincerely**



Craig Murray
Managing Director

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1. Introduction

We refer to the “Pricing of Capital Contributions to Electricity Networks” discussion paper issued by the Independent Pricing and Regulatory Tribunal. Please accept this submission as Advance Energy’s comments on the major issues raised in the paper. The submission focuses on the relative merits of the options presented in Section 6.1 of the paper.

2. Option 1 - Continuation of the Current Guidelines

Advance Energy does not support the continuation of the current approach to pricing of capital contributions. Advance Energy has expressed its concerns in numerous individual and joint representations to the Tribunal and in public fora in relation to the current capital contribution determination and the associated guidelines.

The present determination requires the distributor to fund uneconomic network augmentations and shared connection assets, placing upward pressure on average network prices. This is particularly relevant to Advance Energy, where the rural system is often characterised by long radial low capacity lines, with low volumes particularly in less populated areas and where, in many cases, a significant proportion of the capacity in the “shared network” is specific to one or a small number of dominant load customers. Advance Energy has funded significant uneconomical network augmentations since December 1996, wherever large customer loads locate in a remote part of our rural distribution network, which was designed to supply small rural farming and residential loads only. In these cases, Advance Energy has little or no opportunity to ever recover a commercial return on the assets. It is our understanding that this was not the original intention of the Tribunal’s determinations.

At the heart of the problem is the interpretation of the “Connection Point”, as defined in Determination 10 (1996) and the amended Determination 5.4 (1997):

- *‘... the nearest point on the network capable of supporting the customer’s load’.*

This definition was meant to differentiate between customer connection related works and augmentation works on the general network. IPART determined that the customer would fund the cost of connection works, whereas the distributor would be responsible for the costs of network augmentation. The latter to form part of the total capital works program for the distributor to be recovered through network charges.

We believe the present definition of the Connection Point is subjective and interpreted differently by customers, distributors and the IPART Secretariat. The range of interpretations extends from one where the Connection Point is said to be the point in the network where the remaining capacity is sufficient to meet the new load requirements of the customer, to the other extreme where the Connection Point is, said to be the nearest available set of “wires” irrespective of the size of the wires or the available capacity, if any, or the type of phase configuration needed to support the new load connection ie single or three phase connection. It has been our experience in dealings with the IPART Secretariat that they have interpreted the Connection Point to mean the latter but we understand that it has not consistently stated this to the other distributors. The end result of all of this is that it creates confusion and provides inappropriate direction to the distributor in terms of deciding on the appropriate contribution from the customer.

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The latter interpretation of the **Connection Point** has led to an incentive for applicants **to connect large** loads to remote constrained parts of **the** rural distribution network, because of other cost drivers such as the availability of cheap lands, closeness to raw resources., etc, in the full knowledge that Advance Energy is obligated to fund the significant costs of augmentation if the network is constrained. The difficulties arise when this network augmentation work (**and/or** shared connection assets) cannot be readily justified on economic grounds but, if the network augmentation was funded by direct **contribution from** the connection applicant, these assets **would** be economic to maintain and operate.

A good example of the inappropriate pricing signals created by **the** current determination occurred recently when Advance Energy undertook **significant** network augmentation of one of its **rural** distribution feeders, involving the complete reconstruction of 25 **kilometres of line** at a cost of \$700,000, to connect a single viticulture based customer, with a relatively high peak demand but poor annual load factor. The augmentation was necessary because the network between the nearest sub-transmission substation and location of the winery was optimally planned and designed to supply existing and future small rural farm loads **in** that area and was not adequate for this large spot load. The expected returns, collected through **network** charges, over the economic life of the customer will never recoup **the** initial capital outlay but would be **sufficient to recoup** the operating and maintenance costs. **The primary** cost driver for the customer **in** this case was the availability of relatively inexpensive land knowing **full** well that Advance Energy **would** be required to meet the network augmentation costs under the current determination.

In the above case, the "Connection Point" should have been defined as that point on the network where sufficient capacity was available to service the customer to ensure that the customer's quality of supply, would be in accordance with the distributors' published standards. **In** rural areas the voltage level would generally determine this, **as** constraints are driven more by voltage rather than amperage. **If** this customer had chosen to locate where existing **infrastructure** would have sufficient capacity available to service the expected demand, then these significant augmentation costs and the need to increase average network **prices** to recover a return on the investment would have been avoided.

The above example is one of **numerous** other examples since December 1996, where Advance Energy has contributed to uneconomic investments as a consequence of **the** present regulatory **determination**. There have been approximately 1,400 (uneconomic) rural connections since the implementation of the determination. Advance Energy's network customer base is **120,000**.

Advance Energy approached the **IPART** Secretariat, following the issue of the amended Determination in 1997, concerning the application of the augmentation exception provisions for this **type** of rural investment. The **IPART** Secretariat indicated that the exception did not apply, and that the deemed connection point for large spot loads in remote rural areas was the nearest part of the network **irrespective** of available capacity and that Advance Energy was required to fund the investment because the assets would be shared. It was with some surprise that we learnt latter that this **ruling** was not necessarily consistently applied across the industry. This is indicative of the confusion regarding **the** interpretation of the current provisions. Further, **from** a network planning perspective, these types of investments are difficult to foresee and would not have been included **in the** original revenue **path**.

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Another major concern with the present determination involves the ruling where two adjoining landowners provide *separate* applications for connection. In this case, it is generally necessary for the network to be extended to get supply to the applicants and because the extension is deemed to be shared, Advance Energy is obligated to fund the extension. However, in accordance with the associated Guidelines to Determination 5.4, 1997, if the landowners apply jointly then the extension is funded jointly by the applicants. Advance Energy has yet to receive a joint application from landowners since the implementation of the determination.

Determination 5.4, 1997 also removed the scheme to partially reimburse previous customers by new customers who are connecting to those assets that were previously funded by customer contributions. This has created extreme inequities for those customers who have previously made contributions because new customers can connect to these assets at no capital cost. Advance Energy has fielded numerous complaints from customers in this regard.

We believe that the definition of "connection point" is ambiguous, leads to misinterpretation by customers and distributors alike, is susceptible to gaming and leads to the provision of little or no economic locational signal to the customer in terms of the costs of connection. The major flaws and our concerns with Determination 5.4, 1997 and its associated Guidelines, were also conveyed by the NSW distributors in their joint submission to the Tribunal in September 1998¹, a summary of which is repeated below:

❖ Inappropriate economic signals

More customers request network connection than would be the case otherwise, resulting in their cross subsidy by other electricity consumers.

❖ Inconsistency of interpretation

There is wide confusion amongst the DNSPs and within the IPART Secretariat on the interpretation of Determination IO, the subsequent guidelines issued by IPART in March 1997 and the amended Determination 5.4, July 1997. Of particular concern is the precise meaning of

"connection costs are the cost of works for assets fully dedicated to the customer, up to the nearest point on the network capable of supporting the customers load".

This phrase is interpreted differently by customers and DNSPs, with the range of interpretation extending from one extreme of the continuum to the other.

❖ Numerous unique tariffs

IPART say that the DNSPs should charge customers a unique tariff in instances where the DNSP has funded the asset. This would be an administrative nightmare, as each DNSP would then have a multitude of tariffs operating. This is impractical and would also result in higher average tariffs for some customers. The purpose of capital contributions has been to avoid differential tariffs. In the case of the rural residential customers located from 10 km to 30 km from a large town in the example cited above, the per unit cost of

¹ 'Pricing for Electricity Networks Submission by the NSW Distributors'

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electricity would have been over 30¢/kWh. Political pressure could be expected to be applied if this price was charged.

❖ *Perverse Incentives*

The current interpretation of Determination 10 (1996), and in particular the guidelines could potentially lead to perverse outcomes by customers who wish to connect. In the guidelines issued by IPART to the original Determination, IPART said that if two customers provide a joint application to the DNSP for connection (ie, a single letter of application on behalf of both customers who are neighbours) and that single application requires the DNSP to extend the network - then the customers pay the full cost of the extension even though the asset is shared between the two customers. However, in accordance with the guidelines, if the two neighbouring customers apply separately to the DNSP (ie. two letters of application) and an extension is required (which is a shared asset) then the DNSP pays the cost of the shared component, Effectively this means that the joint application approach is redundant as customers would be unlikely to provide a joint application because this approach would require the customers to pay the full cost whereas the latter approach (separate applications) requires the DNSP to pay. Potential connectees who have been informed of the rules would provide separate applications in all instances.

3. Option 2 – The proposals of the Capital Contributions Working Group

Advance Energy was an active participant in the CCIWG and the preceding CCWG. In our September 1999 submission to the general pricing review, we indicated our general support of the findings and recommendations contained in the CCIWG Final Report'. We continue to support the proposed capital contribution framework, which was endorsed by all stakeholders represented, as one that would provide an appropriate balance between the pricing objectives of efficiency, equity and simplicity.

The following proposals from the Final Report are of particular interest to Advance Energy:

- The introduction of a **dominant** load concept in the determination of customer contributions for augmentation works.

As stated above, funding of **significant** augmentation works on rural power lines is of particular concern to Advance Energy, particularly where large spot loads such as mining, large **irrigation** installations and **food** processing industries, choose to locate in remote parts of **the** network which have been historically de-signed to supply small rural residential and **farming** loads. A dominant customer, as proposed by the CCIWG, is one where the proposed load is out of context or atypical for the area of supply, and is of such a magnitude or impact as not to **have** been contemplated when the network supplying the area was originally planned, **designed** and built, *and/or* subsequently modified.

We agree with the CCIWG **recommendation that from** a perspective of simplicity, transparency, and equity and in terms of dynamic and allocative efficiency, augmentation costs should be recovered **from** dominant customers who impose them,

² 'Submission to the Electricity Industry Commission'

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The CCIWG has recommended a 100 Ampere threshold for rural networks **which** we believe is an appropriate threshold to delineate customers causing high augmentation costs **from** those smaller rural residential and **farming** customers, **which** normally **require** marginal network augmentation. Other augmentation works **to** supply **the** residential class customer would be funded by **the** distributor. We believe that **this** engineering definition is simple, readily applied, and would **provide** efficient and equitable outcomes for customers.

- The introduction of an 'economic' assessment test to determine the contribution **from** the distributor towards the cost of a new connection.

We agree **that** the level of contribution **from** the distributor should be based on the extent to which marginal network **revenues from** the new connection exceed the associated marginal cost of supply. The level of contribution would be standard for each tariffed network class of customer and the contribution **from** the distributor would derive an appropriate **commercial** return, implicit in the allowable network revenue.

- The re-introduction of **the reimbursement** scheme for equitably sharing between customers the cost of connection assets that were initially dedicated and customer funded, but have subsequently been connected to by other customers. The reimbursement to the original customer to be provided by subsequent **connecting** customers.

We also **agree** with the CCIWG recommendation that the Tribunal provide an assurance to distributors of the treatment of **asset** values for any new investment that would be constructed **to** connect uneconomic customers. If **this assurance** is not provided it will materially affect the investment **profile in rural areas and** would be to the detriment of customers and the maintenance of service standards. **Uncertainty** and the risk of disallowed investment **through** an economic valuation approach at the next regulatory review provide little encouragement for distributors to make these investments.

4. Option 3 – Modification of the Current Guidelines

The implementation of the CCIWG **proposals** may result **in** considerable change and add an additional level of complexity for **determining** capital contributions as compared to current pricing arrangements. This unfortunately would be the compromise in re-balancing current arrangements towards the pricing **objec** tive of economic efficiency.

Option 3 is of particular interest to **Advance** Energy, as a viable alternative to the **proposals** put forward by **the** CCIWG as a means of overcoming the problems with the **current** arrangement and the additional complexity and administration required under an economic test, provided that the following is implemented:

- There is a strict tightening of the present definition **of the connection** point along pure engineering concepts to eliminate the present "flexibility" **with the** current definition.

It is our recommendation that the connection point for rural areas be **defined** either in terms of the dominant load **concept** as introduced by the CCWG or in terms of the impact of the new customer connection **on** voltage constraints in the general network and to the customer's site.

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All **NSW** distributors are required to publish their **electricity supply standards** under a Code of Practice **recognised** by the Ministry of Energy and Utilities. This published document details what the customer may expect **from** the distributor **in terms of quality and reliability of supply standards**, which may be an appropriate base on which to determine the new technical **definition** of the connection **point**.

In rural areas, an appropriate definition could be based on the published voltage range standards which for Advance Energy is $\pm 6\%$ of nominal voltage at low voltage (**240/415** volts) or within $\pm 5\%$ of nominal **voltage** at high voltage distribution (**11 kV** or **22 kV**). That is, **the** connection point could be defined such that the application of a new customers load does not cause a **supply** variation at the customers terminals, or any other customer supplied by the feeder, to vary by more than the range specified in the distributors' electricity supply standards. The works required to ensure that the voltage to all customers connected to that part of the network remains within the specified voltage range, would determine the **connection** point on the network.

- ❖ A very clear and unambiguous distinction between shared and dedicated connection assets is made by **the** Tribunal **in** consultation with the ESI, which is supported by appropriate illustrations in **IPART** guidelines, such that customers would be required to contribute on pro **rata** basis to **shared** extension assets
- ❖ **The** re-introduction of the reimbursement scheme to resolve the equity problem as discussed above.

Advance Energy would be agreeable to the proposal where it would **fund** the upstream augmentation of the network beyond the new **definition** of the connection point, as these investments generally improve the quality and reliability of supply to all customers connected to that part of the network **The funding** by the distributor would be limited to one transformation beyond the connection point.

Option 3 in many ways would address the many concerns expressed by the NSW distributors in their first joint submission to Tribunal back in September 1998.

Advance Energy would be pleased to **work** with the **IPART** Secretariat and other **stakeholders** to derived more appropriate technical definitions of the connection point and the distinction between shared and dedicated network, for implementation by 1 July 2000. It would be inappropriate to have a transitional period to the new definition(s).

5. Option 4 -Modification of the CCIWG Proposals

This approach was discussed by the CCTWG as part of its deliberations but was considered to be inappropriate for **NSW**.

It is **an** economically inefficient approach leading to the proliferation of cross subsidies to smaller customers. Fixed revenue **offsets** provide little relationship between the economic **benefits** of a specific customer and the costs of the connection.

This approach was adopted in South Australia because it has only one distributor, with a **sizeable** metropolitan element. The same cannot be said for **the** rural distributors in NSW.

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6. Choice of Approaches

Prior to 1996, capital contribution policies varied widely between the NSW distributors, which was exemplified by the **number of** customer complaints. One of the objectives of Determination 10, 1996 was to ensure that some form of common approach was adopted by the distributors.

There may be some merit in the Tribunal's proposal to allow distributors some flexibility in the approach to capital contributions that they may apply in their service area but for the sake **of consistency**, the rural based distributors should employ the same policy for connections to its rural distribution feeders. The same could be said for the application of a universal policy for the predominantly metropolitan-based distributors.