Major Energy Users Inc.

Australian Energy Regulator

Transmission Guidelines

Supplementary Comments on the Draft Pricing Guidelines

by

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June 2007

Assistance in preparing this submission by the Major Energy Users Inc was provided by Headberry Partners Pty Ltd and Bob Lim & Co Pty Ltd.

Major Energy Users Inc acknowledges the financial support provided by the Advocacy Panel in preparing this submission.

The content and conclusions reached are entirely the work of the Major Energy Users Inc and its consultants.

Introduction

At the meeting of MEU representatives and the AER on 13 June 2007, various aspects of the MEU submission on AER pricing guidelines were discussed. At the meeting the AER requested that MEU amplify on a particular aspect relating to co-location of generation with load. This followed on from the observation made by the AEMC that there needs to be an incentive for load and generation to co-locate to reduce the need for augmentation of the shared network.

There are few purely "entry only" connection points provided by TNSPs. Whilst a generator connection is predominantly for the injection of power to the network, there are times that these assets are used for importing power for use by the generator when it is not exporting power, and therefore for this period, the assets must be classed as exit assets. The AEMC notes quite clearly that if an asset is used even occasionally for importing power, then the connection must pay for the use of the network providing this service. Such costs would include TUoS and general and common services.

There are many connection assets which are purely "exit only", as there is no injection of power at these points. With the trend to encourage more embedded major, minor and micro generation facilities, there will be increasingly a reduction in pure exit points.

The AER guidelines need to recognise the reality that entry points also provide an exit service, and that over time more exit points will become part entry and part exit connection points.

The MEU response

The MEU supports an approach which leads to increased common usage of TNSP (and DNSP) assets by consumers and generators. Increasing common usage has the potential to create very substantial savings by avoiding new transmission network augmentations.

However, for this to be made possible in line with the AEMC's Final Pricing Rules determination and principles, a number of impediments arising from the current allocation of costs and the resultant pricing used by TNSPs would need to be removed and/or made clear in the AER pricing guidelines:-

1. Costs for TUoS and general and common services (G&CS) are allocated to consumers based on their demand at the consumer connection point to the electricity supply system. This means that even if a generator located next door to a demand point, neither generator nor load get any benefit

from providing what is seen as the outcome desired by the AEMC's final determination. To overcome this, the MEU suggested in its submission, that TUoS and G&CS charges should be calculated at the connection point with the shared network (ie between the entry/exit point assets and the shared network).

2. For times when generation and load are connected to the same entry/exit point, there will be times when the generation is not providing full output and so the connection point to the shared network will be an exit point. Equally, there will be times when the load is low, and the connection point is an entry point. Under the current approaches used where demand is the driver of the cost of the shared network assets (consistent with the AEMC's final pricing rules determination), the fundamental view is that if the demand is used only occasionally, then the connection point attracts the full value of the TUoS and G&CS, regardless of the time this demand might have occurred. This means that co-location provides little or no benefit.

   Where a connection point is a "pure entry" point there is no TUoS or G&CS charges as generation is excluded from incurring deep connection costs. Where a connection point is a "pure exit" point it attracts the full value of TUoS and G&CS charges. There are many connection points that are "pure exits" and no adjustments are required to the allocation of TUoS and G&CS. There are very few connection points which are "pure entry" points as few generators have black start capability, and so for a period they use their connection points as exits from the shared network when generation is down and the demand of the generator's own parasitic loads are greater than output – this usually occurs when a generator is shutting down, is not generating and when it starts up. The AEMC has pointed out that even if a load uses a connection point infrequently, then it should pay full value for the TUoS and G&CS it uses. On this definition, generators would be exposed to significant costs when they use the shared network for maintaining parasitic loads for their auxiliary equipment.

   The MEU considers that whilst this is **not** the intent of the AEMC decision, it is the **logical** (albeit anomalous) outcome.

   To overcome this anomaly, the MEU suggests that where there is a shared entry/exit point, the amount of power transferred in both directions at the connection point be used as the allocator to determine the amount of TUoS and G&CS charges to be allocated for a shared entry/exit.

   Thus a large generator would be exposed to the full amount of TUoS and G&CS for its peak demand incurred by its auxiliary equipment, but

factored by the amount of power exported compared to the amount of power imported. For example, if the generator was rated for 100 MW export and it operated at this rate for 90% of the time, and for the remaining 10% of the time it was importing at 1 MW for its auxiliaries, then the TUoS and G&CS would be reduced to (10% of 1 MW)/[(10% of 1 MW)+(90% of 100MW)] = 1/901 = 0.11% of the TUoS and G&CS charges it would be exposed to for its 1 MW demand metered at the connection point of the entry with the shared network.

In the case of co-located generation and load, the same approach would apply. For example, if a load of 100 MW operating at 95% of the time was connected to a shared entry/exit point with a generator of 100 MW operating for 90% of the time, with a demand of 1 MW for 10% of the time, then the TUoS and G&CS allocated to the connection point would be (95% of 100MW + 10% of 1 MW)/[(95% of 100MW + 10% of 1 MW) + (90% of 100MW)] = 95.1/185.1 = 51.4% of the TUoS and C&CS allocated on a demand of 101 MW. This would be further allocated between the load and the generator in proportion of 1% to the generator for its 1 MW and 99% to the load.

The MEU sees that this approach is equitable and provides incentives to co-locate. Additionally such an approach would provide incentives not to bypass existing assets.

3. Currently there is no incentive on a load to introduce self generation. The load attracts full TUoS and G&CS even if the actual demand is for a short period of time when the co-located generation is not operating. An incentive would be for the self generator to be operating most times, and to schedule down time when the system demand is low. The MEU suggested that the allocation of TUoS and G&CS charges should be based on flows incurred at system peak times, and suggested that flows should be measured on 10-20 peak system days between the hours of 11 am to 7 pm. Under this regime, the incentive on self generation would be to ensure the generator was operating at these critical times. If it did then the load would attract no TUoS and G&CS charges (as there would be no flow to the load) but a failure of the generator at these critical times would result in TUoS and G&CS charges being allocated, driving an incentive not to be using the network at the critical periods.

Conclusion

This supplementary submission clarifies and expands on the MEU concepts for an equitable method for allocating costs where assets are used for both injection of power and the receipt of power.