InterGen (Australia) Pty Ltd
Level 26
400 George Street
BRISBANE QLD 4000
Australia
ABN: 71 080 050 737
Tel: + 61-7 3001 7177
Fax: + 61-7 3001 7178

23 January 2013

Mr. Mark Allen
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

By online lodgment

Dear Mark

RE: ERC0106 National Electricity Amendment (Inter-regional Transmission Charging) Rule 2013

By way of background InterGen Australia (**IGA**) is owned by InterGen N.V. (**InterGen**) and the China Hua Neng Group (CHG), China's largest generation company. InterGen and CHG are leading developers and operators of electricity generation facilities worldwide. In Australia, IGA is the operator and majority owner of the 852MW Millmerran Power Station (**MPS**) and a 50% owner of the 840MW Callide C Power Station.

The Australian Energy Market Commission (**AEMC**) has sought stakeholder submissions to the Inter-regional Transmission Charging Second Draft Rule Determination dated 6 December 2012 (**Draft Rule**).

InterGen Australia Position

1 RATIONALE FOR INTER-REGIONAL TRANSMISSION CHARGING

IGA supports the AEMC's rationale for inter-regional TUOS, namely that customers in importing regions should contribute towards the cost of transmission assets in other regions that support electricity flows into their region. On this basis, an inter-regional TUOS charging regime (**IR-TUOS**) ensures that the costs of serving loads is better reflected in the charges that consumers pay. However, IGA is concerned that the AEMC has unnecessarily limited the application of the Draft Rule to prescribed services. This omission has the effect of excluding from the IR-TUOS calculation, network assets that materially contribute to inter-regional flows, but which are subject to non-prescribed or unregulated contracts (**unregulated assets**).

IGA believes the Draft Rule's exclusion of these unregulated assets acts to understate the true cost of an exporting region's transmission network. This is especially the case where these unregulated assets are of significant capital cost and are critical to enabling flows to other regions. An example of such assets is the Millmerran Power Station to Bulli Creek connection assets (**the MPS Interconnect**) (see

Appendix 1). These assets are an integral part of connecting the Queensland transmission network to the Queensland New South Wales Interconnect (**QNI**). The Draft Rule excludes these assets from the IR-TUOS calculation because they are unregulated, despite their shared use and importance to QNI performance. IGA contends that this arbitrary exclusion is contrary to the National Electricity Objective and the objective of the Draft Rule, that is, to enhance economic efficiency by recognising the benefit transmission infrastructure in adjacent regions provides to an importing region.

Section 2 of this submission outlines how market failure is introduced to the economic efficiency of a network when there is a change in the use of a "shallow" connection from private use to the shared pool whilst retaining an unregulated status (as occurred with the MPS Interconnect). Section 3 of this submission discusses how economic efficiency can be improved under these circumstances through the application of an IR-TUOS charge.

2 ECONOMIC EFFICIENCY

The National Electricity Objective is set out in section 7 of the National Electricity Law. It states that:

> *"The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of customers of electricity with respect to:*
>
> *(a) price, quality, safety, reliability and security of supply of electricity; and*
> *(b) the reliability, safety and security of the national electricity system."*

This necessarily requires that the pricing paradigm that is adopted for transmission results in efficient investment in new transmission. Transmission pricing will give rise to efficient transmission if:

- it results in socially efficient investment, production and consumption of power;
- it is timely;
- the resultant investments satisfy the optimal investment rule, namely
  - the investment chosen produces welfare gains; and
  - the investment is least cost (produces the greatest welfare gain per dollar of expense).

It is well understood that it is not possible to achieve these desirable outcomes with transmission pricing alone, because the market for transmission services is subject to certain 'failures'[1]; an often cited example is loop flows. As a result, transmission investment is almost universally governed through a combination of regulation and pricing, with regulation aiming to assist in ensuring that prices foster efficient outcomes. Transmission pricing in Australia accords with this model.

2.1 Shallow and deep investment

Australia has adopted a separation of shallow and deep transmission investment in order to meet this broad objective. Similar arrangements exist in most global deregulated power markets. Interconnected parties are required to pay for the costs of connecting to the high voltage network with assets appropriately sized for their expected consumption or production, and in accord with the requisite connection standards. The connection assets that are dedicated to the connection service and which are not used by other network customers are defined as 'shallow' assets. The connected party is required to pay for these assets through an unregulated negotiated connection agreement. Connection assets can, as in the instant case, include significant new transmission lines. The deciding criterion is whether the assets are sole use rather than shared.

[1] The term 'failures' is used in the economic sense to describe factors that differentiate the market in question from theoretical market forms where pricing alone delivers efficient outcomes.

All other transmission assets, i.e. those that are shared, are defined as 'deep' and costs are recovered from all network customers through transmission use of service charges (**TUOS**). This separation of shallow and deep is an important feature of transmission pricing arrangements. It basically ensures that:

- decisions to connect to the grid are private and unregulated, minimising intervention in those decisions and therefore maximising likely access to the market; and
- noting that connection by a third party to the grid can have impacts on other users, subjecting any and all investment decisions on shared assets affected by the connection decision to an aggregate market efficiency test.

A typical example might involve a new generator connecting to the network at a node, which has the effect of limiting access to an existing generator (i.e. constraining off the second generator). The decision to connect is unregulated, the decision over whether to enhance the existing network to allow both generators to operate (or alternatively to leave the incumbent generator constrained off) is essentially governed by regulation which tests whether the augmentation is socially efficient.[2] It may well be more socially efficient to leave the second generator constrained off, even though that may result in the second generator losing value.

2.2 Problems with Shallow and Deep Connections

Although the shallow and deep separation is an effective component of the transmission pricing framework, it is not without its problems. It is predicated on a bright line separation between sole use assets that are only used by the interconnected party (typically the shallow assets) and all other assets including those shared by only a few customers that are deep. Under the model, overall efficiency of investment in the power market is reduced if:

- customers are required to pay and adhere to shallow (sole use) charges for assets that may be shared in the future even after the assets become shared; or
- all customers are required to pay the transmission costs that are incurred solely to meet the demand for transmission services from specific customers (i.e. directly attributable costs become 'socialised').

The latter is the essential rationale for shallow and deep asset classification. To illustrate the former, under the 'shallow' model, a first mover is faced with paying all connection charges. Subsequent parties choosing to connect at or near the same point may then face lower connection charges because of the assets paid for by the first mover. This is a particular problem with wind farms which tend to cluster in windy locations. In economic terms, second movers can free ride on first movers. It is commercially preferable to move second, with the results that all investment is delayed. Free riding is an example of a market failure.

2.3 MPS Interconnect

The MPS Interconnect is a clear example of a shallow connection asset transitioned to shared use. The profound nature of the change in this instance is somewhat unusual. Typically, the problem arises when a connection asset is used by one or two additional customers; in this case, the assets in question became a core part of the trunk network (i.e. 'shared'[3] by many network customers).

---

[2] This is an example of an investment externality where the cost or benefits of an investment are felt by a third party that is not involved in the investment. Externalities are a common cause of market failure.

[3] The notion of 'sharing' a trunk transmission asset is complex. Typically, a network customer is deemed to be using a share of an asset if load flows over that asset change in response to a change in generation or consumption by that network customer. However, this is only one notion of sharing, and it is not clear that it necessarily reflects the share of the economic value of the asset derived by each network user.

The economic consequences are the same. If network customers deem that connection assets could transition to shared use without an accommodating change in its regulatory status (including a reduction in the payment of connection charges), then they will have an incentive to delay connection, resulting in investment inefficiency.

2.4 Correcting the Market Failure

The market failure created by this problem is easily corrected, by transferring the connection agreement assets into the shared pool as and when they become shared (subject perhaps to a materiality test). The case for a transfer is particularly compelling when the connection assets in question are clearly part of a least cost trunk network upgrade under the regulatory test, as in the MPS Interconnect case[4]. This contrasts with, for example, the case of a second generator seeking to share the connection assets of a first generator, which might conceivably be managed by a private agreement. Unfortunately, although the National Electricity Rules make some provision for such a transition, it is solely at the discretion of the Transmission Network Service Provider (**TNSP**) to exercise that discretion.

Ideally, the assets should be transferred into the 'deep' pool at a value equal to depreciated actual cost (derived from the payments to date under the prior connection agreement) and the existing connection agreement should cease[5]. The TNSP would be indifferent to the transfer since it still recovers its return on and of capital.

3 APPLICATION OF THE DRAFT RULE TO UNREGULATED ASSETS

In circumstances where a clean transfer of use from a shallow to a deep connection does not occur (as in the MPS Interconnect case) then applying other regulatory tools where available, such as that proposed by the Draft Rule, can act to improve the overall economic efficiency of network use.

The Draft Rule seeks to introduce a Modified Load Export Charge (**MLEC**) for charging for inter-regional TUOS, such that customers in an importing region contribute to those transmission assets in the exporting region that are necessary to support the interconnection transfers. This change is being developed to address what is perceived as a source of inefficiency, namely that under the existing arrangements, network customers that give rise to network costs do not face those costs. This rests on the notion of causation and its linkage to allocative and dynamic efficiency.

The Draft Rule would apply only to prescribed transmission services which excludes unregulated network assets (e.g. the MPS Interconnect agreement). The AEMC should extend the Draft Rule change to include unregulated assets that are clearly in shared use, for the following reasons:

- The fact of the review itself indicates that there is a perceived allocative and dynamic inefficiency associated with failing to allocate the costs of network services to customers that benefit from those services. Undoubtedly, the MPS Interconnect current connection asset cost allocation and pricing give rise to precisely the same allocative and dynamic inefficiencies. They may even be worse in that no other network customers pays for the assets, despite the undoubted benefits they receive. From an efficiency perspective, excluding shared unregulated assets from the rule change is arbitrary.
- The augmentation of the MPS Interconnect assets substantially enhanced the capabilities of the QNI. Accordingly, it is appropriate that it is considered in a review of inter-regional transmission pricing. That is, in so far as the exclusion of the connection assets from the 'deep' pool of Powerlink assets is inefficient for the reasons set out above, that inefficiency is substantially alleviated by inclusion of unregulated assets in the MLEC because the assets in question are instrumental in QNI's performance.

[4] See "Final Recommendation – Emerging Network Limitations Darling Downs Area" issued by Powerlink in July 2003
[5] Or be adjusted to exclude any of the assets now in the deep pool.

- The MLEC rule can be extended to the assets in question without substantial administrative complexity, for example by treating them as a separate TNSP (noting that the MLEC rule needs to be robust to the addition of new TNSP, even if they are small). Furthermore, the algorithms for determining MLEC payments can be easily extended to include the unregulated MPS Interconnect.
- The circumstances of MPS are somewhat unusual, not in respect of sole use assets becoming shared, but because of the extent of the change in its status and its intimacy to QNI. For that reason, extending the rule to unregulated assets will substantially address the inefficiencies caused by the exclusion of these assets from the deep pool without resulting in a large number and range of assets that have to be considered in the MLEC calculations.

IGA accepts that the MPS Interconnect is governed by an unregulated contract between MPS and Powerlink. Irrespective of the genesis of that contract and subsequent events that took place when the MPS Interconnect was augmented, it remains the case that excluding these substantially shared network assets from TUOS charges (or IR-TUOS charges) and allocating their costs to a single network user gives rise to allocative and dynamic inefficiency. Ideally, the NER should be amended to address the issue. Notwithstanding this, since the current inter-regional TUOS charges are in the process of being amended in order to foster greater efficiency and the assets in question are significant contributors to QNI performance, the Draft Rule should be extended to ensure that the MPS connection assets fall within its ambit.

4 SUMMARY

The AEMC has considered that the introduction of an IR-TUOS charge will help to better achieve the National Electricity Objective. It will[6]:

- promote pricing efficiency by recognising the benefits from a transmission network that flow across state boundaries
- over time, improve investment decision making by removing a disincentive from TNSPs in pursuing expenditure that provides benefit to customers in neighbouring regions; and
- be more consistent with a regional beneficiary pays approach than the current arrangements.

However, the Draft Rule fails to identify all transmission assets that enable interregional flows. It falls short of its intended purpose by omitting those unregulated assets that materially facilitate interregional flows, thereby giving rise to a greater degree of allocative and dynamic inefficiency than is necessary. As the AEMC is proposing a more preferable rule[7], there is scope for the AEMC to accommodate a broader definition of eligible network services that contribute to interregional flows.

We trust that the AEMC will carefully consider the issues we have raised in relation to this Rule change. If you have any enquiries regarding this submission, please feel free to contact Robert Pane on 07 3001 7124

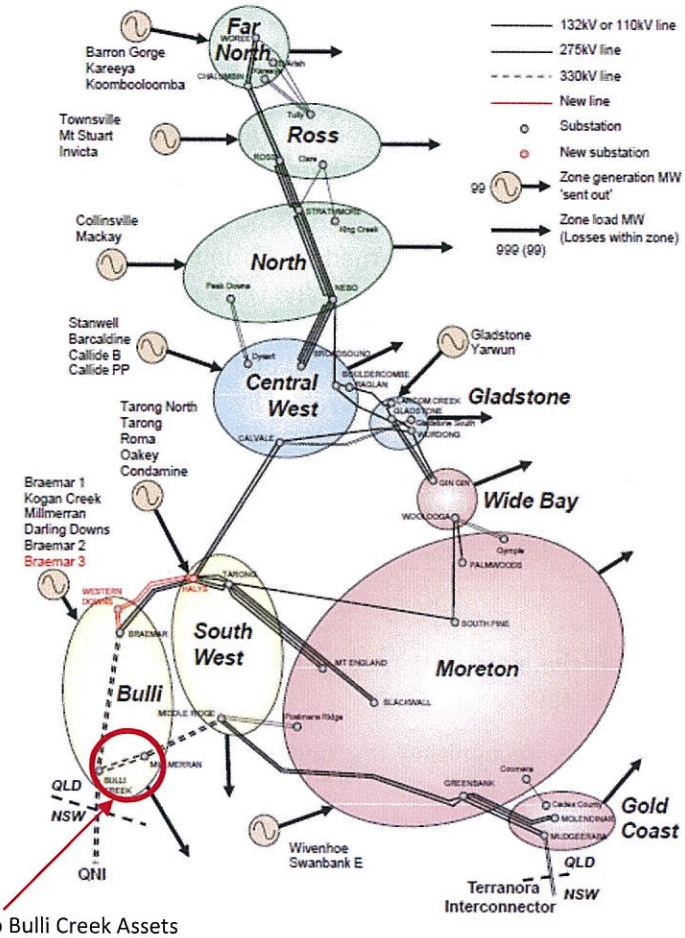
Yours sincerely,

Sam Bristow
General Manager, Trading & Development
InterGen (Australia) Pty Ltd

[6] Second Draft Rule Determination, National Electricity Amendment (inter-regional transmission charging) Rule 2013, Page 10 Section 3.1

[7] *Ibid.*, Page 6 Section 2.1

Appendix 1 – Location of the MPS Interconnect



Millmerran to Bulli Creek Assets

Source: Powerlink 2012 Annual Planning Report