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25 February 2011

Australian Energy Market Commission
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By email: submissions@aemc.gov.au

Reference: ERC0106: Draft Rule Determination - National Electricity Amendment (Inter-regional Transmission Charging) Rule 2010, 2 December 2010

Further to the above draft Rule determination, enclosed is a submission from the Department of Primary Industries Victoria (DPI).

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AEMC Reference ERC 0106 Rule Proposal – Inter-regional Transmission Charging

Submission by Department of Primary Industries Victoria

25 February 2011

Overview

The Department of Primary Industries Victorian (DPI) understands that the AEMC has proposed a draft rule change that would establish an inter-regional transmission charging mechanism in the form of a "load export charge" which would:

- be made up of the locational Transmission Use of System (TUOS) service charge, the non-locational TUOS service charge, and the common service charge
- be recovered on the same basis as they are charged - that is, the locational TUOS service charge imposed on a region should be recovered from the locational TUOS service charge and similarly for the other components
- be implemented via the National Electricity Rules (NER) which would set out the principles for the load export charge with additional implementation details set out in the Australian Energy Regulator's (AER) pricing methodology guidelines and Transmission Network Service Provider's (TNSP) pricing methodologies
- result in no change to the way Settlement Residue Auction (SRA) proceeds are returned to customers.

DPI is generally supportive of the concept of a "load export charge" where it has the purpose of improving cost reflectivity of electricity transmission pricing within the National Electricity Market (NEM) and is consistent with the national electricity market objective (usually referred to as the NEO) which:

> is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system[1].

Efficiency defined

Notably the NEO focuses on efficiency in terms of investment and electricity use. It caveats this focus by requiring a long term perspective. There are a number of ways in which the efficiency objective could be met. These include:

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[1] National Electricity (South Australia) (New National Electricity Law) Amendment Act 2005, section 7.

- Productively efficient outcomes where a combination of outputs are maximised with respect to inputs
- Allocatively efficient outcomes where all willing consumers are supplied where the willingness to pay (demand) exceeds the cost to supply
- Scale efficient outcomes where production of a particular good or set of goods is at the lowest long run average cost
- Dynamically efficient outcomes where supply is produced at the lowest cost over time through the introduction of new technology and processes to reduce costs over time.

In general there is usually some level of trade-off between these forms of efficiency. For example scale efficient production may be significantly greater than the quantity for which consumers are willing to pay, and hence production at that level would not be consistent with allocative efficiency.

However, DPI is concerned that the draft rule change as proposed by the Australian Energy Market Commission (AEMC) to give effect to the Load Export Charge is unlikely to be consistent with the NEO in that it is unlikely to produce any significant efficiency benefits or efficiency gains in both the short and long term.

The draft rule change, as proposed, in effect is largely a potential shift in unavoidable fixed costs from one or more regions to other regions. While this may have merit from an equity perspective, equity considerations are not included within the NEO.

In the view of DPI it has little or no merit from an efficiency perspective, which is the basis of the NEO. The DPI considers that the proposed draft rule could be easily amended such that it meets the original intention of the Ministerial Council on Energy (MCE) and at the same time be consistent with the NEO.

AEMC Rationale

The AEMC rationale for proposing the draft rule change is that the existing arrangements result in implicit cross subsidies as customers do not contribute to the costs of transmission assets in other regions that support electricity flows to their region. The AEMC then claims that the proposed load export charge would increase the cost reflectivity of transmission charges in that it would reflect the costs incurred in the use of the transmission network in each region to conduct electricity to the adjoining network.

In terms of the NEO, the AEMC states that it 'is satisfied that the Draft Rule will, or is likely to, contribute to the achievement of the NEO because the Draft Rule promotes allocative efficiency and dynamic efficiency and hence would be in the long term interest of consumers with respect to the price of supply of electricity' (2010, p. 15).

In particular the AEMC notes that the Draft Rule promotes efficiency through:

- ‘allocative efficiency - the load export charge improves the cost-reflectivity of transmission charges by requiring customers that benefit from imported energy to contribute to the transmission costs of the exporting region. In the long term this would lead to more efficient use of the transmission system by existing and future customers, improving allocative efficiency
- dynamic efficiency - the load export charge would promote dynamic efficiency by minimising any potential barrier to coordinated planning of investment in transmission network infrastructure by ensuring that all customers that may benefit from an investment would be able to contribute to its cost’ (2010, p. 15).

On analysing these statements it appears that the AEMC may have erred in its assessment with respect to the NEO.

Cross subsidies

The fact that electricity is transported through one part of the network to get to another part of the network without payment for the common costs of the network through which it is being transported does **not** make a case for the existence of cross subsidies.

The existence or otherwise of cross-subsidies was considered by Faulhaber in his seminal work on cross-subsidies in public enterprises. Faulhaber noted that:

> If the provision of any commodity ... by a multicommodity enterprise subject to a profit constraint leads to prices for the other commodities no higher than they would pay by themselves, then the price structure is *subsidy-free* (1975, p. 966)

In this case commodities are substituted by transmission services. Hence the question of the existence of cross-subsidies requires that the provision of transmission services intra-regionally in the absence of interconnection between regions would have lower costs than the provision of transmission services across the same region where interconnection with other regions exist.

There is no evidence to suggest that this is the case with the possible exception being the assets that are directly involved with the interconnection of regions – the so called interconnectors. This is because the investment in intra-regional transmission assets was traditionally undertaken on a region by region basis, with the jurisdictional planning body in each region responsible for planning to the local jurisdiction. While inter-regional planning occurred at the boundaries, intra-regional transmission investment was primarily focussed on delivering services to consumers within each region. Inter-regional investments were taken into account where they provided benefits to intra-regional planning (imports) but intra-regional investment was not generally undertaken to aid inter-regional capability (exports) as it was generally beyond the scope of the jurisdictional planning requirements on the jurisdictional planning body.

In essence, intra-regional transmission investments within each region have been largely undertaken to support intra-regional transmission capability. Once undertaken for this purpose these investments are in economic terms sunk

(cannot be unwound). In the absence of interconnection, each region would face the requirement to pay all of the costs of intra-regional investment except for assets specifically associated with inter-regional transfers. However it is quite likely that without the inter-regional transmission capability that intra-regional investment would have been required to be greater[2]. Rather than providing a cross-subsidy, it is likely that the interconnection of regions is providing a benefit to each region through shared infrastructure leading to lower costs compared with stand alone transmission systems.

Hence the AEMC rationale on which the proposed draft rule change is based, that the existing arrangements result in implicit cross-subsidies, is not substantiated by the facts and the manner in which intra-regional transmission systems have been planned and constructed historically.

Efficiency

The AEMC claims that the proposed load export charge will improve allocative and dynamic efficiency. On analysing the AEMC claims, it would seem that the proposed arrangements will not enhance either allocative or dynamic efficiency.

Allocative efficiency

Cost reflective pricing implies that prices for services reflect the economic costs of service provision.

The AEMC claims that allocative efficiency will be improved because the load export charge will improve cost reflectivity of transmission charges to customers within importing regions. The basis of the AEMC position appears to be that as importing regions pay nothing currently to exporting regions, and that they should pay something, that a load export charge that requires the importing region to pay something is more cost reflective.

The AEMC position seems based on a presumption that any charge is better than no charge regardless of whether the proposed charge reflects the economic cost of the service provision.

The proposed load export charge is to include locational and non-locational prescribed transmission use of system charges and the common service charge. Non-locational and common service charges are not attributable to specific customers by location and are by definition not cost reflective – they do not reflect the economic costs of inter-regional transmission transfers from one transmission region to another.

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[2] As an example the Heywood interconnector between Victoria and South Australia commissioned in 1990 provided access for South Australia to cheap brown coal generation in Victoria and provided additional competitive benefits with respect to gas supplies into South Australia. In the absence of the interconnector, the South Australian transmission system would have required additional investment to support additional generation within South Australia.

Hence while the AEMC claims that the load export charge as proposed will improve allocative efficiency because of improved cross reflectivity of charges, this is patently not the case. To the contrary, the load export charge will be made up mostly of unavoidable fixed costs which are not related to the provision of inter-regional transmission transfer capability. Rather than improve allocative efficiency, it is highly likely that the load export charge will lead to charges for inter-regional transfer services that are well in excess of economic costs. This will mean that the cost of services to the importing regions will be overpriced and not all willing consumers will be supplied even though their willingness to pay exceeds the true economic cost to supply.

Hence DPI considers that the load export charge as currently designed will not promote increased allocative efficiency but rather is likely to lead to reductions in allocative efficiency.

Dynamic efficiency

The AEMC states that:

> the load export charge would promote dynamic efficiency by minimising any potential barrier to coordinated planning of investment in transmission network infrastructure by ensuring that all customers that may benefit from an investment would be able to contribute to its cost

DPI notes that recovery of sunk costs, and in particular the unavoidable fixed costs, has no bearing on the coordinated planning and investment in future investments. Hence changing which customers pay for the recovery of sunk costs will not promote efficient future investment nor enhance dynamic efficiency. To the contrary, the imposition of sunk and unavoidable fixed costs, on customers in other regions represents an excessive allocation of costs to those customers and is likely to lead to resistance from those customers to any future investments promoting inter-regional transfers where the underlying costs under the load export charge exceed the benefits from any new investment. This would lead to a reduction rather than an increase in dynamic efficiency.

Proposed amendments

While DPI considers that the draft rule change currently does not meet its intended objectives, DPI also has the view that the draft rule change could be amended to achieve the original MCE objectives and to be consistent with the NEO. In particular DPI notes the following issues which detract from the Load Export Charge's ability to promote efficient investment and use of electricity:

- The draft rule change does not differentiate between existing sunk investments and future investments
- The draft rule change does not differentiate between investment to support enhanced intra-regional transmission capability and inter-regional transmission capability

- The draft rule change proposes to incorporate components of non locational and common service charges which by definition cannot be allocated on a cost reflective basis
- The draft rule change does not specifically limit charging to assets that are demonstrably involved in transferring electricity between regions
- The draft rule change proposes charging on a proportionate usage basis, which may be misinterpreted in a manner that is inconsistent with the benefits and rationale for transmission investments

Hence DPI proposes that the draft rule change be reformulated to promote a load export charge as follows:[3]

1. Historical (sunk) transmission investments be excluded from the calculation of load export charge except for interconnection investments that were clearly and transparently undertaken to promote interregional transfers
2. Future transmission investments be included only to the extent that they demonstrably support interregional transfers between regions
3. Non-locational and common service charges are by definition not cost reflective, and the incidence of them have no price signalling or other economic efficiency benefits and so they should be excluded from the calculation of the load export charge
4. The load export charge should be calculated on the basis of the projected benefits in terms of transmission capability to each region at the time of the investment, not on a proportionate usage basis.

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[3] Proportionate usage of transmission assets is an ambiguous and flawed method for assessing the value of transmission assets to each region. Transmission assets are largely a fixed cost measured in terms of installed capacity. The marginal costs associated with the provision of transmission are negligible. As an example, the provision of the Heywood Interconnector between South Australia and Victoria was designed to maximise peak imports to South Australia when it was committed. In the current environment with large amounts of wind investment in South Australia, the Heywood Interconnector is likely to see significant exports from South Australia to Victoria, particularly during offpeak periods. These offpeak exports, while constituting significant network usage, impose negligible, if any, additional costs on the provision of transmission services in South Australia. Imposing costs on Victorian consumers as a consequence of this offpeak usage would not be an efficient outcome.