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Australian Energy Market Commission
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Dear Sirs,

Options paper: Scale Efficient Network Extensions – ERC0100

International Power (IPRA) appreciates the opportunity to comment on the options paper in relation to Scale Efficient Network Extensions (SENE).

As a general overview, we remain to be convinced that the introduction of this concept into the Rules would be in accordance with the National Electricity Objective. While we appreciate that under some conditions the SENE concept may result in savings in the cost of network construction, there is clearly a risk that in particular cases the adoption of the SENE concept may result in wasteful expenditure (where the network constructed remains underutilised over an extended period).

It is therefore clear that the SENE concept cannot be evaluated as consistent with the NEO per se, but rather can be assessed only on the basis of forecasts of whether net savings or net costs will predominate over time.

We are not able to make this judgement and hence cannot support the SENE concept as consistent with the NEO.

While we neither support nor oppose the SENE concept, we do wish to make a number of comments, on two bases –

1. We propose some detailed design provisions that should be applied if the Commission determines that, on balance, the SENE concept should be implemented, and

2. We comment on some provisions that have been suggested in the context of SENE, but actually represent principles that have wider relevance and should be considered for application in the shared network, especially if adopted in the concept of SENE, but also in the wider review of the transmission framework even if the SENE concept is not implemented.

1. Design provisions if SENE concept is implemented

The National Electricity Rules are explicitly aimed at providing a market environment which does not favour one technology over another. In this regard we support the form of decisions that have been made by various Governments, where any discrimination between generation technologies, for example in relation to climate change, has had its effect outside the NEM, not through it.

Any provision introduced into the Rules which discriminates between generator locations would risk implementing a de facto discrimination between technologies, since some locations are clearly associated with specific technologies. We therefore contend that if any form of SENE provision is introduced, it should as far as practicable avoid creating a situation that favours specific locational decisions for one class of generators.

In other words, the aim of the provision should be to reduce the transmission cost in relation to a group of generators, each of which is located where it would have located absent the SENE provision, rather than to influence their locational decisions toward a "centrally-planned" favoured location.

If this aim is adopted, it will have a number of consequences for the detailed design of any SENE provision –

- The number of potential SENE locations contemplated in planning should be large, to avoid herding generators into "centrally-planned" corridors. Only a few of these potential SENEs may be built, with the choice based in each case on there being a substantial commitment by a generator or by a voluntary grouping of generators to a particular SENE development.

- These potential locations for SENE developments should be based on the considerations that would influence generators in making individual locational decisions, and hence the process should **not** involve the economic concepts embedded in the RIT-T test, which explicitly and deliberately exclude the market prices that are a major consideration for commercial locational decisions

- The cost allocation and charging methodology should not distribute the benefits of a SENE to the generators using it, unless and until the SENE is sufficiently subscribed to have a net benefit over "stand-alone" connections. Charging based on individual "stand-alone" costing should prevail until that time to minimise the distortion of locational signals arising from the SENE.

- As generators connecting to the SENE will face the risk of ongoing charges based on the cost of a (hypothetical) network extension for their exclusive use, they should have the degree of certainty of access that such a network extension has the technical capacity to provide (please refer to our submission to the Transmission Frameworks Review in relation to certainty of access)

We note that while the cost allocation proposed above is intended to avoid distortion of location signals, there are non-price attractions that an existing SENE would provide and which may prove unavoidable. The existence of a SENE would likely reduce both construction times and construction risks for later users and hence creates a bias in favour of that location. While this may result in a different location for a subsequent generator from that which would otherwise be most economic, there are benefits in this for customers, in that it favours the rapid utilisation of the SENE, reducing risk and cost for customers if, as proposed, they bear the residual cost of the SENE.

Although the cost allocation proposed above is specifically intended to avoid distortion of locational signals, it does have another characteristic which may make a SENE provision more consistent with NEO. Compared with the options contemplated so far, this proposal would in general raise a larger proportion of a SENE's cost from those generators using it, leaving less to be funded in the early days by customers.

There is a further advantage of this cost allocation proposal. That is that for most users of a SENE, the charge they incur will not depend on where they fall in the sequence of entry. This will minimise any incentives to manipulate placement in a queue of intending users.

We have suggested above that a large number of SENE locations should be identified to avoid unduly influencing locational decisions. A further consideration is that the decision to build a SENE rather that a stand-alone connection should not lead to a change in the timing of connection or the construction risk faced by the generator. Hence the SENE proposal should be "on the shelf", and ready for use without further analysis, to avoid imposing delays that would be particular to the SENE alternative.

2. Concepts raised in the context of SENE, but with wider application

Through the development of the SENE proposal, a number of concepts have been introduced which we believe to be more generally applicable to the transmission network. We note in particular –

- The proposal that the quantity of access agreed between a network service provider and a generator should be subject to the capability of the network to provide that access together with all access previously agreed,

- The proposal to give specific meaning to the concept of "partial access", that is a generator having an agreed power transfer capability that is intentionally less that its output capability,

- The proposal that compensation provisions should be associated with partial access

2.1 Access limited by network capability

The concept that the aggregate of all agreed access (to generators) should be supported by network capability would provide a significant degree of certainty to those investing in generation. The reduction in risk, relative to the current ill-defined arrangements, would remove an obstacle to timely and economic investment in generation. However the application of this concept to only a part of the network, such as a SENE, would fail to properly capture these benefits and would create ongoing problems as the separate and defined nature of a SENE may evaporate as the network is further developed.

It may be argued that this intention, to have access supported by network capability, is already present in the Rules, and we support that view, but our observation is that this aspect of the Rules has not been applied in practice.

One possible reason for this failure is that the concept of network capability is not a simple one, and the Rules fail to give it any specific meaning. The problem is that the capacity of any part of the network to transmit power depends on many circumstances, both within the network itself and in the environment in which it operates. These include for example voltage levels, temperature, wind speed and contingency events to which that the network is currently exposed.

It follows that the issue of determining whether or not the network can support a proposed new generator access will be uncertain and exposed to a variety of interpretations unless there is a protocol in place to guide the evaluation. The Rules do not deal with this need at present.

We contend that if such a protocol were provided then it would be possible to ensure that any new generator access agreed did not conflict with any existing access agreement, at least under the defined measurement conditions. This may naturally require network augmentation to support new access in some cases, which is consistent with our view of the intention of the current Rules.

Clearly, network capability is also impacted by planned or forced outages of network elements. This proposal does not seek to protect generators from this risk, and thus cannot be described as "firm" access. But these outage risks are more predictable than the risks of conflicting access being granted to new entrant generators, and hence there are less adverse consequences from requiring generators to manage them.

2.2 Giving meaning to partial access

The Rules, in 5.4A(d), explicitly allow for a generator to have access with a power transfer capability that is less than the plant capability. We support this intention. However, the current Rule is ill-defined in two regards. First, as discussed above, the relationship between the agreed power transfer capability and the network capability is unclear. Second, there is no provision that distinguishes a generator with full access from one with partial access.

We believe that a provision for partial access, if properly defined, would be consistent with the national Electricity Objective. In some cases the provision of full access may be uneconomic. One example would be a generator where the predominant mode of operation would be operation in substitution for one or more other generator(s) with which it shares network capability. Another example would be an intermittent generator expected to reach its full capability only rarely.

For a generator to gain full access may involve cost to the generator; in the case of a SENE (if implemented) through a cost allocation, but more generally through locating a generator where demand dominates, potentially at additional cost, or though network augmentation to support the access.

On the other hand, for a generator to choose partial access, there must be a cost saving.

If generators are to make an efficient choice between alternative levels of access, then there must be commensurate benefits for a generator that chooses a higher level of access. We propose that a generator that chooses partial access should have specific obligations imposed through its connection agreement.

Before suggesting the detail of these obligations we will consider the compensation regime that has been contemplated in relation to the SENE concept.

2.3 Compensation related to partial access

We support the general proposition that a compensation regime should be associated with partial access. However, consideration of the compensation proposal in the options paper has led us to the view that the compensation regime should have a different form and a different purpose.

In the options paper a compensation regime is contemplated where the event leading to compensation is a generator with partial access generating in excess of its partial access quantity.

We will show by example that this concept fails to provide appropriate advantages to a generator that chooses full access relative to one choosing partial access. We then propose an alternative where compensation is not intended as a routine event, but rather as a mechanism to ensure compliance with an obligation under a connection agreement.

Consider two generators as follows –

	Capacity MW	Access MW
Generator A	100	100
Generator B	100	50

The generators share part of the network which has a capacity of 150 MW, thus supporting the access agreed with both.

Consider an outage condition that reduces the network capability to 100 MW; both generators disorderly bid their whole capacity and are dispatched to 50 MW each.

Since Generator B has not exceeded its access quantity, no compensation would be payable under the contemplated regime, and yet it is clear that generator A has been denied any benefit associated with its greater access quantity.

A variety of other conditions of congestion can be considered and in each case generator A either gets no benefit or get too little benefit in relation to its greater access agreement.

Consider now an alternative in which Generator B, in the presence of relevant congestion is obliged to offer availability that is no higher that its agreed access. In this case the offers would be for 100 MW at Generator A and for 50 MW at Generator B, and in the case of disorderly bidding of price, they would be dispatched for 66.6 and 33.3 MW respectively.

Clearly, under this regime, Generator A would be gaining a proportionate benefit in relation to its greater access quantity.

On a superficial level it might be objected that this regime would limit competition in the market. However, on closer consideration this is not the case. This is because –

- The availability withheld could not, in any case, have reached the market because of the congestion,
- The prices of generators constrained off by congestion would not affect the market price to customers, even in the absence of disorderly bidding, and
- The current market arrangements strongly incentivise disorderly bidding in the case of congestion, and hence there is no longer any economic basis for competition among the affected generators.

2.4 Proposed condition for partial access

On the basis of the discussion in the last two sections, we propose that where a connection agreement provides partial access, it should also impose the following conditions –

- The generator is free to offer its full availability to the market whenever there is no relevant congestion, but
- In the presence of relevant congestion it must offer no more than its partial access quantity, and
- At any time that it fails to comply with this obligation it will owe compensation to the Network Service Provider equal to the additional revenue gained from non-compliance (the NSP should be obliged under Rules to use these funds to compensate other generators adversely affected by the non-compliance)

The effects of this regime would be that the network is fully utilised when there is adequate capacity, but when congestion applies there are appropriate benefits to generators that have high access quantities relative to those who have chosen lesser access.

Under this regime, compensation would not apply in general, but only in the case of a failure to comply with a contractual condition.

While this proposal in relation to partial access could clearly be applied in the case of a SENE, if these are implemented, the principles are equally applicable to access to the shared network and should be applied generally. If fact there are likely be anomalies emerge if this rational access regime were applied locally in a SENE development but not more generally. This is because subsequent network development following a SENE development may make the SENE an indistinguishable part of the shared network over time.

We do not propose to set out implementation details for this proposal here as they are not appropriate in this context, but we believe that there are no issues which could not be managed. We also note that this discussion has not dealt with the concept of enhanced access whereby priority access rather than proportional access may be able to be procured. This possibility was raised in the Transmission Frameworks Review and we refer you to our submission to that review for our initial views on the matter.

3. Summary

In summary, IPRA –

- Neither supports nor apposes the implementation of the SENE concept,
- Believes that certain design principles detailed above should be applied if the SENE concept is adopted, to ensure that the NEM operates on a principle of technology neutrality as far as possible,
- Believes that some concepts in relation to generator access that were put forward in the context of SENE can be modified to provide an efficient regime of partial access which is applicable with or without the SENE concept.

If you have any questions in relation to this submission please call Ken Secomb on 03 9617 8321.

Yours sincerely,

Stephen Orr
Commercial Director