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Energy in action®

Mr John Pierce
The Chairman
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

10 October 2012

By email to submissions@aemc.gov.au

Dear Mr Pierce

Transmission Frameworks Review - Second Interim Report: (EPR 0019)

AGL Energy Ltd. (AGL) welcomes the opportunity to provide the following submission to the AEMC Transmission Frameworks - Second Report dated 15 August 2012

As Australia's leading investor in renewable energy in Australia, AGL is well placed to comment on transmission policy. AGL operates across the supply chain and has investments in coal-fired, gas fired, renewable and embedded electricity generation and electricity retailing. AGL is Australia's largest private owner, operator and developer of renewable generation in Australia and has invested well over $2 billion in renewable energy and has much more in its portfolio of development opportunities. Within the next few years, AGL will own or operate approximately1,420 MW of renewable energy generation assets.

AGL congratulates the AEMC on the detailed examination of the important issue of firm access arrangements in the NEM, together with transmission planning and improvements to the connection process.

Access Models

We are pleased to note that the proposed optional firm access arrangements would achieve many of the objectives that we were seeking in our previous submissions on this issue. In our view implementation of the optional firm access arrangement is essential in facilitating efficient generation and transmission investment in the long term but is particularly relevant to the current and planned expansion in renewable technologies.

In this submission AGL provides high level comments on both the non-firm access and the optional-firm access (OFA) proposals. The submission then provides a more detailed examination of the OFA proposals, and makes some suggestions for improvement.

An enhanced transmission planning and pricing framework.

With the implementation of the optional firm access model (modified as proposed in this submission) planning for access will be market led for generators and driven by reliability standards for customers. AGL is of the view that a national planner with a broad role is inconsistent with a competitive market. The role of the national planner should be limited in scope and have a clearly defined role and objectives. It will not be necessary for the national planner to have a role in pricing for generator access; this will be carried out by the jurisdictional TNSPs'.

Improving the Connection Framework

We are also pleased to note that the proposed connection arrangements would achieve many the objectives of increasing competitive provision of these assets that we were seeking in our previous submissions on this issue by;

- clarifying that 'extensions'[1] occur in a workably competitive market and that a connection applicant can build operate and maintain the extension themselves or contract to a third party for the provision of extension services, and
- increasing the information to be provided to connection applicants and their involvement the network service provider process, for augmentations of the shared network, to place connection applicants in an improved negotiating position.

AGL is of the view that the reforms proposed by the Commission, modified as proposed in this submission, will provide an internally consistent framework which as far as is practicable is based on competitive market approach to providing generator access and will meet the Commissions objective of facilitating efficient levels of generation and transmission investment.

If you have any questions in relation to this submission please contact Roger Oakley on 86336217.

Yours sincerely,

Nicole Wallis

Head of Energy Regulation

[1] 'extensions' means the assets between the substation fence and the generator. This is the definition used by the Commission in the Second interim report. Which has also been used in this submission. It is not the same as the rules definition of "*extension*" which is part of the shared network.

Executive Summary

Section 1 - Transmission Access

Non-firm access proposal

AGL is firmly opposed to the non-firm access proposal, as it does not achieve an improvement in any of the desirable features established by the AEMC, further, it erodes the original intent of the ACCC authorisation and is inconsistent with any reasonable interpretation of the authorisation and the rules. In the event that the optional firm access proposal does not proceed, the proposed changes to the connection process should be implemented to improve the negotiating position of connection applicants and the rules should be clarified to acknowledge that generators are entitled to negotiate firm access with a network service provider. This would then better facilitate development of firm access arrangements through competitive market process as was considered possible in the ACCC authorisation of the code.

Optional-firm access proposal (OFA)

AGL strongly supports the optional-firm access proposal, however we believe that there are some components that are based on an incorrect premise, and are therefore invalid and overly complex. Network planning for access and for reliability is carried out as two separate exercises under different sets of planning assumptions. Under these conditions it is clear that planning for access is a much simpler process than described by the Commission. We have explained the basis on which we make this assertion, and have proposed an alternative pricing model which retains the desirable aims of the AEMC proposal, using a practical and simpler approach which betters align pricing with power system practicalities. This proposal also addresses the issue of lumpiness and scale which are practical difficulties that must be addressed in any pricing proposal. The pricing methodology provides a location specific and time specific incremental transmission access cost, the price is not smeared across locations or over time and therefore supports the minimisation of total generation and transmission cost.

Firm access standard (FAS)

AGL supports the inclusion of a firm access standard as a part of an optional firm access proposal however the application of scaling factors in establishing access is of concern. We therefore recommend that the optional firm access model be implemented in stages where in the first stage the requirement for planning the networks to provide firm access would be confined to a single network condition to deliver the aggregate of all agreed firm access. Although are desirable, for the purposes of describing the expected performance of the transmission network to generators and setting performance standards for network service providers, the use of scaling factors based on different operating conditions, is likely to involve a significant amount of work and cost and therefore is likely to delay the implementation of the components of the access model that are readily implementable. This delay will also create significant investor uncertainty. For these reasons the implementation of scaling factors should be separated from the remainder of the optional firm access proposal and be subject to a comprehensive review of the costs and benefits.

Performance incentives for Network Service Providers

AGL support the concept of providing performance incentives for Network service Providers however the critical element that is missing in the Commission's proposal is

the time dimension. Under the proposal, a network condition giving severe reductions in access could be continued indefinitely without penalty provided only that the access delivered was better than allowed by the scaling factor. We have provided an outline of an alternative incentive regime that addresses this issue.

Inter-regional proposals

AGL supports the intent of the proposal under OFA to allocate firm access to interconnectors, where there is remaining network capacity after transitional access has been provided to generators, to prevent further erosion of transmission capacity. We are concerned that this allocation to interconnectors may turn out to be zero in most cases and have proposed a mechanism to ensure that some level of interconnector capacity would be retained in all network planning contexts to act as a "backstop" in case the necessary coalition of interests under the auctioning of firm access proves difficult to assemble.

Flowgate support (constrained on generation)

We agree that in the case where a generator is constrained on to satisfy a constraint and a "constraint violation penalty" is applied, a model to take advantage of flowgate support would be complex to design. However in the case where a constraint equation could be satisfied without the constrained on generation, where simple regional settlement leads to inefficient outcomes we have proposed a modification to the OFA model so that the constrained on generator receives their local price and delivers an efficient outcome.

5 minute settlement

While it is not pertinent to the current consultation, we note in passing that it would be simple to apply DI settlement selectively for energy settlement, and would this overcome some distortions that are apparent under the current arrangements.

Section 2 – Planning proposals

AGL generally supports the transmission planning arrangements outlined by the Commission, noting that if the optional firm access model (modified as proposed in this submission) is implemented, the planners main role would appear to be administration of a the new market wide transmission pricing regime for customers and reviewing the TNSP plans to ensure that reliability standards are met through an efficient level of regional and cross regional transmission investment. While this will require a change in the Victorian planning arrangements and may lead to loss some of the desirable features of the Victorian jurisdictional planning, (i.e. the separation of asset ownership from planning), we believe that this will be compensated for by the improved transparency in the connection process which provides connection applicants greater access to competitive or de-facto competitive provision of shared transmission access.

Section 3 - Improving the connection framework

Negotiating framework for shared network and connection assets

AGL supports the proposals to strengthening the negotiating framework for shared network and connection assets by increasing information transparency and by providing an enhanced role for participants in the provision augmentations to the shared network and connection assets. This information is critical in facilitating connection applicants' establishment of an independent design, cost and program for construction as a

benchmark. AGL is of the view that these proposals support de facto or indirect competitive provision of shared network and connection assets during the design and costing phase, and in the project management and construction phase though the use of this benchmark.

Competitive provision of extensions

In practice extensions (connecting lines) are currently provided by connection applicants generally through a competitive tendering process, they are not covered by the rules as they are not part of the transmission system, in most states they are covered by the generator's licence.

We are of the view that the market for the provision of extensions is workably competitive. AGL understands that the Commission proposes to amend/clarify the rules to confirm that provision of extensions is through the competitive market for these services so that a connecting party can either;

- tender for the provision of extensions (connecting lines), or
- at the request of the connecting party oblige the TNSP to provide the extension as a negotiated service.

Both these objectives are supported however we believe that any changes to the rules to clarify this arrangement would be minimal.

Access to extensions

If the extension is owned by a TNSP and the rules are to be expanded to include extensions, if a third party connects , in addition to clarifying that the rules must specify, that in order to ensure that it can be operated to an unconstrained level, the line must be upgraded (if required) and paid for by the third party.

The same principles should apply where an extension is owned by a party granted an exemption by the AER. However this may need to be addressed in the exemption or the jurisdictional conditions under which ownership was established.

Transfer of extension (connecting line) assets to negotiated or prescribed services

AGL supports the conditions proposed by the Commission that allows third party owned extension assets to become part of the shared network. This may result in increased diversity in third parties owning elements of the shared network, which could include generators.

Generation and transmission cross ownership

The Commission however proposes that a single party should be prohibited from having controlling ownership of both a registered generator and a registered NSP due to the "significant" competition concerns that a generator will operate its shared transmission network for its benefit and to the detriment of other competing generators. The prohibition of ownership of both generation and transmission is not supported as it is a disproportionate to the problem of potential discrimination in access provision and is likely to discourage competition in the provision of and the operation and maintenance of transmission services.

1. Access proposal

1.1 Non-firm access proposal

AGL appreciates that in considering an important and significant reform, the "do nothing" option must always be considered, to ensure that the proposed changes represent an improvement over the status quo.

The AEMC noted in its first interim report that a framework that promotes the efficient provision of transmission services would include the following desirable features:

- TNSPs have incentives to efficiently invest in and operate their networks to meet load requirements at least cost and support a competitive generation sector;
- generators have incentives to offer their energy at an efficient price and invest in new plant where and when it is efficient to do so;
- the policies, incentives and signals that govern transmission and generation decisions are coordinated to promote consistent decision making between the regulated and competitive sectors of the NEM; and
- the safety, reliability and security of the transmission system is maintained

AGL believe that it is clear that the current arrangements fail to deliver on the first three of these desirable features to any significant extent. In particular we note the lack of coordination between the regulated and comopetitive sectors.The proposal for non-firm access will not lead to an improvement in the achievement of these desirable features.

The characterisation of the non-firm access proposal as being "status-quo" is incorrect. The non-firm access proposal would in fact represent a step backwards, as it would remove from the rules the clauses that refer to the original intent of the ACCC access decision and the intent of the code, to provide the option to generators for firm access.

Apart from the issue of firmness, the changes contemplated would likely remove the protection of access agreed when new access is being negotiated. This intention is clear in the current rules although it has not been complied with in practice. We submit that this component at least should be retained and implemented.

The removal from the rules of clause 5.4A would be inconsistent with the intent of existing connection agreements, which make provision for firm access. It is also noted that if there is an inconsistency between the rules and a connection agreement, the connection agreement prevails (unless this would adversely affect the quality or security of network service to other Network Users).[2]

AGL is firmly opposed to the non-firm access proposal, as it does not achieve an improvement in any of the desirable features established by the AEMC, further; it erodes the original intent of the ACCC authorisation and is inconsistent with any reasonable interpretation of the authorisation and the rules.

In the event that the optional firm access proposal does not proceed, the proposed changes to the connection process should be implemented to improve the negotiating position of connection applicants and the rules should be clarified to acknowledge that generators are entitled to negotiate firm access with a network service provider. This would then facilitate development of firm access arrangements through the competitive

[2] See for example, rule clause 5.2.3(b)

market as was considered possible in the ACCC authorisation of the code. A version of the optional firm access proposal previously submitted by AGL[3] would be implementable under these circumstances.

1.2 Optional-firm access proposal

AGL strongly supports the optional-firm access proposal, and we believe that it will result in significant improvements in the first three of the desirable features of an access arrangement identified above, without impacting negatively on the fourth.

AGL believes that the OFA proposal represents a significant reform in the history of the NEM, and recognises that although this is a highly desirable reform, there needs to be a carefully managed implementation to allow parties to adapt to new arrangements. In our detailed comments below, we have suggested some components of the OFA package that could be introduced as part of a second stage implementation.

Although we are strongly in favour of the OFA proposal, we believe that there are some components that are based on an incorrect premise, which are therefore invalid and overly complex. This submission explains the basis on which we make this assertion, and then makes a number of suggestions to overcome these deficiencies, to better align the proposal with power system practicalities, and to reduce complexity.

1.3 Detailed comments / suggestions on OFA

1.3.1 AEMC access pricing proposal

AGL agrees with the aims of the proposed access pricing mechanism which are understood to be:

- introduce an incremental charge per MW for firm access, and
- ensure access costs are based on the transmission costs for provision of access

Our support for both of these aims will be further expanded later in this submission.

AGL has assessed the practicality of the proposed access pricing arrangements and has had extensive discussions with other industry participants, including generators and TNSPs. It is our view that the proposed arrangements are unnecessarily complex, and more importantly, are based on a false premise. This submission outlines the basis for this view, and then describes an alternative model which retains the desirable aims of the AEMC proposal, using a practical and simpler approach.

False premise

The AEMC proposed access pricing approach appears to be based on the false premise that access pricing would use a cost estimate based on the access under consideration *and* a series of hypothetical access provisions stretching into the future.

This false premise is expressed for example in the first sentence of section 3.6 of the second interim report:

> "Providing new or additional firm access would increase the network capacity that the TNSP is required to provide under the firm access standard, either immediately or at some point in the future (where spare capacity could be utilised), thus imposing new costs on the TNSP."

[3] AGL Submission to the AEMC TFR First Interim Report – Appendix 2

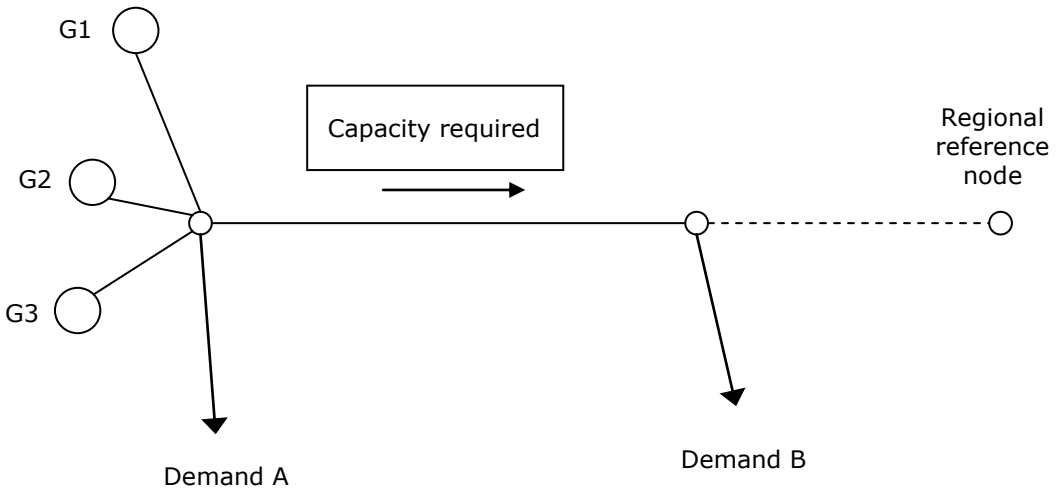
The following two sections describe further the nature of this false premise.

Not all firm access requires network augmentation

The AEMC firm access pricing method has an implicit assumption that all firm access for a generator will make demands on the transmission network and will therefore impose a network costs. We submit that on the contrary there will be some opportunities to provide firm access at locations where customer demand is dominant and hence where the generator access makes no demands on the transmission network. In fact, generator installation at such a location will relieve demand on the network and provide some reliability benefits for customers.

This is demonstrated in the example shown in Figure 1, which shows three generators connected to a node with a local demand A. It is clear that if the minimum value for demand A is greater than the aggregate firm access for the three generators, then the aggregate firm access is satisfied by the local demand and the network capacity required for firm access is zero.

Figure 1 Generator access example



We further submit that the usage of such low cost opportunities for firm access is consistent with the NEO, since it has the potential to minimise the total cost of the generation and transmission investment. Hence the pricing process should provide the pricing signals to give such investment the right incentive.

No need to forecast future access requests

The above simple example can be extended to demonstrate that there is no need to forecast future network events or access requests in evaluating a particular access request.

We note that there is no rational basis for making an assumption regarding future firm access requests at any particular location. The past is likely to be a poor indicator of potential future access requests at any given location. Consider the situation described above where a preponderance of local demand provides a benefit in terms of low-cost firm access. Such an opportunity may lead to a high rate of new firm access provision, but only for a limited period during which this cost advantage remains. When the

amount of access available at low cost is consumed, then the rapid growth is likely to cease abruptly, as other locations become relatively more desirable. Hence a forecast based on past growth is particularly likely to prove wrong.

An assumption of high future growth in access provision would lead to the estimation of high future costs, which would then impact on current access seekers, despite the continuation of high growth being inherently unlikely in these circumstances.

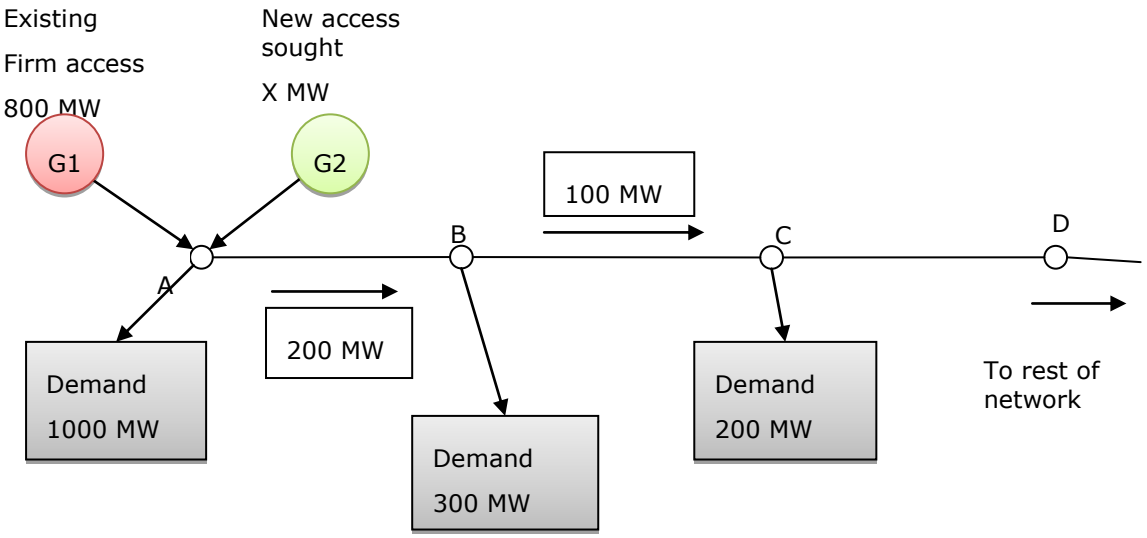
The dangers of access pricing based on forecasts

The dangers of using forecasts for pricing become clear by examining the way in which the cost of providing access changes with the aggregate level of access provided.

For the purpose of this discussion we will ignore the issues of lumpiness and scale-efficiency in network investment (although these are significant issues which we will address later).

Consider a node initially dominated by local customer demand (node A) where an existing generator G1 has 800 MW of firm access, and a new generator G2 is seeking a level of firm access. The network has capability to provide flow into node A for reliability purposes, which can also (at no extra cost) allow flow *from* node A, as indicated in Figure 2.

Figure 2 Access pricing example

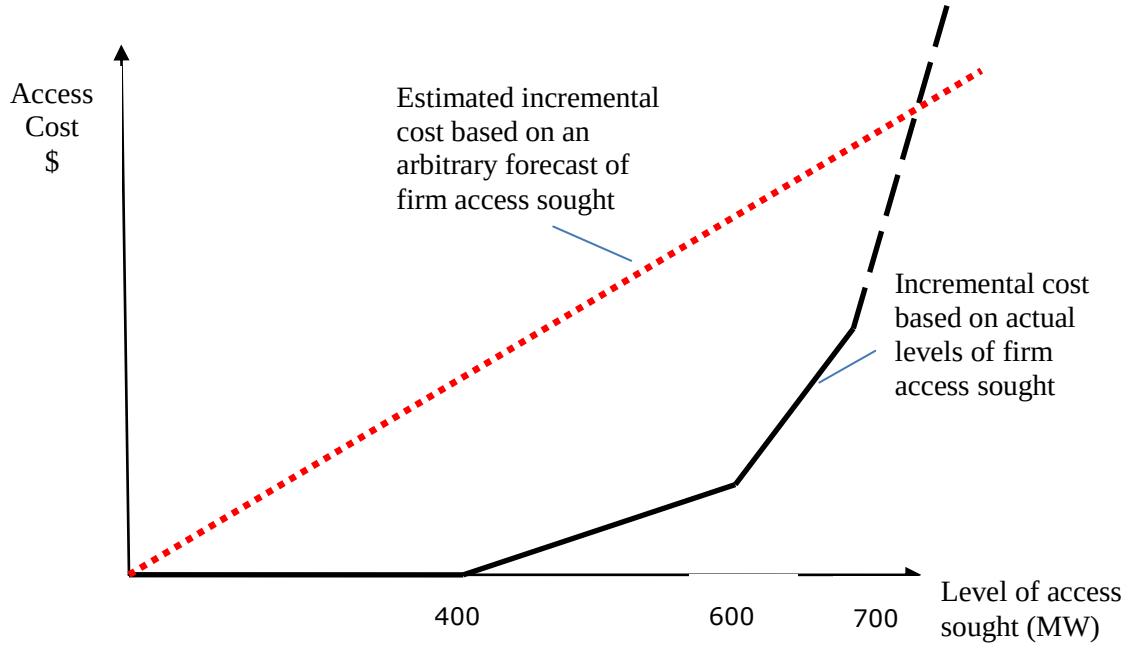


The variation of cost in providing firm access level X is described in the following table –

G2 access level X MW	Situation	Incremental Cost
0 < X ≤ 200	Access provided by local demand at node A – no transmission service involved.	$0/MW
200 < X ≤ 400	Access provided by local demand at node A and existing network capability A to B.	$0/MW
400 < X ≤ 500	Access requires augmentation of network from node A to B to provide G2 with access to demand at node B.	Incremental cost of augmentation of network from node A to B.
500 < X ≤ 600	Access requires augmentation of network from A to B to provide G2 with access to demand at B. No augmentation required from node B to C as this part of the network is within its existing capability.	Incremental cost of augmentation of network from node A to B.
600 < X ≤ 700	G2 access requires network augmentation from node A to B as well as from node B to C. This is needed to provide G2 with access to demand at nodes B and C.	Incremental cost of augmentation of network from node A to B, plus Incremental cost of augmentation of network from node B to C.
700 ≤ X	Access requires network augmentation from node A to B as well as from node B to C. This is needed to provide G2 with access to demand at nodes B and C. Potentially augmentation required from node C to D and beyond	Incremental cost of augmentation of network A to B, plus Incremental cost of augmentation of network from node B to C, plus any augmentation costs from node C to D and beyond

The variation of access cost with the level of access sought is illustrated in Figure 3.

Figure 3 Access cost variation with level of access



It is clear from this characteristic that any incremental cost based on a forecast of future firm access requirements will be dominated by the arbitrary assumption of future firm access levels, rather than being determined by the actual firm access being sought. The adverse effect of this method, especially with a generator seeking a lower level of access (in this example, less than 400 MW) is clearly evident. Such an outcome would provide incorrect locational signalling and yield economically inefficient outcomes (by either not utilising spare or low cost network capacity; or by undertaking uneconomic expansions which are mispriced as they are subsidised by the earlier connections).

The above discussion has demonstrated the falseness of the premise that provision and pricing of firm access requires a forecast of future events, and an estimate of the potential costs of these future events. AGL believe that this incorrect view originates from a misunderstanding of the network planning approach that would be required to support the firm access arrangements.

To examine the real nature of the cost consequences of firm access, we will take a short detour to describe network planning under firm access.

1.3.2 Network planning with firm access

As acknowledged in the second interim report, under the optional firm access proposal network planning for reliability of supply to customers will continue unchanged.

The important fact that is relevant is that the same generator, operating into the same transmission network will have the same effect on customer reliability regardless of whether or not it has firm access. Hence the network reliability studies do not need to give any regard to whether or not a generator has firm access.

Furthermore, network reliability studies will provide no information on whether or not the transmission network is adequate to provide the aggregate firm access that has been

agreed, or is being sought. This is because the power flows used in these studies are an undifferentiated mix of flows originating from both firm and non-firm generation.

In order to study the adequacy of the network to support firm access, separate network analysis will be needed. The basic techniques of network analysis will apply, but different conditions will need to be studied, as described below.

While the techniques for network reliability planning are well established (although different in different regions), the techniques for access planning are yet to be developed. This will be a matter requiring consultation, we expect. However the following observations provide clarity of how access planning will differ to reliability planning:

- access planning analysis will be based on all relevant firm generators, operating to the full extent of their firm access. Non-firm generators will not impact on the analysis.
- access planning analysis will be specific to a group of firm generators that compete for use of a common flowgate. Separate analysis will be needed for each such group of generators.
- access planning analysis will recognise the variability of network capability, as affected by various weather conditions and network conditions, and will specify reasonably arduous conditions.
- access planning analysis will recognise that the power flow that the network needs to accept is the total flow from the firm generators *less* the local customer demand. Hence, low demand periods may be critical to the analysis.

Access planning analysis is not only separate from reliability analysis; it is also related to quite different circumstances. Each form of analysis will indicate a required network capability for a particular component of the network. It is very important to recognise that these requirements are independent of one another and are *not* additive.

The network capacity that is required at any particular location will be determined by whichever form of analysis calls for the greater capacity[4].

Different parts of the network may be dominated by the requirements for either reliability or firm access. In some locations these different requirements may be closely matched and the dominant requirement may change from time to time.

From this discussion it is evident that providing firm access cannot result in a delayed cost from a future reliability analysis, since the fact of firm access will play no part in that reliability analysis.

However it might be thought that the access analysis in later years might lead to network costs that are attributable to the original provision of firm access.

In order to clarify this point we need to consider the flows imposed on a flowgate due to firm access provision. As noted in the last dot point above, this flow comprises the components from each of the relevant group of generators LESS the reduction in flow due to local customer demand.

[4] These capacity requirements may need weather correction to make them comparable.

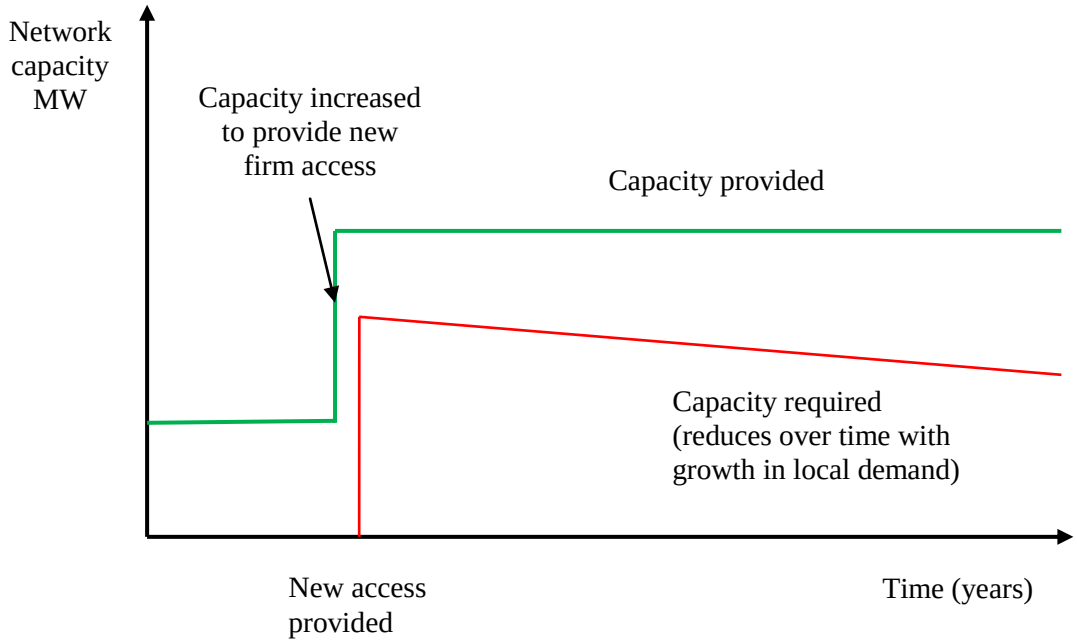
Earlier we considered the consequences of this fact in determining the impact of an access request on network augmentation requirements. We now consider the consequences of this fact in relation to repeated analysis over a period of years.

Consider a case where the access agreed with each of a group of generators (grouped because they compete for use of a common flowgate) remains constant over a period of years.

The flow that the flowgate needs to accommodate, under access analysis, will be changed only by changes in local customer demand. In general, naturally, this demand is likely to increase, thus reducing the network capability needed for the flowgate.

It is conceivable, although unlikely, that this local demand might reduce. However, it would be unreasonable to expose a generator seeking access to a risk of additional cost due to a change in customer behaviour. The only case where a delayed cost may be a justified inclusion in the pricing process is where a demand reduction is highly predictable in both timing and magnitude. We submit that such circumstances will be vanishingly rare. The more typical situationwith local demand growth is illustrated below.

Figure 4 Changes in network capacity with time



It should be noted that the capacity required would increase if new firm access were agreed, but any cost would be attributable to that new firm access seeker, and not the original firm access.

This analysis does not imply that delayed costs will not occur at such a flowgate, but rather that they will not be attributable to the access agreed earlier. For example:

- In later years, a reliability analysis may indicate a need to augment the flowgate capacity that was originally set by access analysis. In this case the relevant analysis (the later reliability analysis) is unaffected by the firm access, and would give the

same result whether the generator is firm or non-firm. Hence this future cost is not attributable to the firm access.

- In later years, if additional firm access is sought at a location that already has one or more firm generators, then analysis of access adequacy may indicate a need to augment the flowgate. This cost is attributable to the new access seeker, not to the original form access holder.

Contrasting characteristics of the two planning process

Before continuing the discussion of access pricing we will briefly compare and contrast the two parallel planning processes that are required with optional firm access. The following table summarises some of the differences.

Input	Effect on reliability studies	Effect on access studies
Customer demand	Will generally increase the capacity required of the network	Local demand near relevant generators will reduce network capacity required. Remote demand has no effect
Connection of a non-firm generator	May increase network capacity required	Will not increase network capacity required
Connection of a firm generator	May increase network capacity required	May increase network capacity required (unless aggregate firm access remains below local demand)
Assumed weather conditions	High temperatures generally increase demand and reduce the capacity of certain network elements, making augmentation more likely	High temperature will reduce the capacity of certain network elements making a need for augmentation more likely, but will also increase local demand, easing the load on the network. Mild temperature will reduce local demand to a minimum, which will place greater reliance on network for firm access.

We note that the second interim report has relied on the concept of "spare capacity" in relation to network adequacy. Given that the need for two separate analysis processes under OFA is now clear, the concept of a single value of spare capacity is untenable. A flowgate will potentially have spare capacity in a study of supply reliability, but this has no relevance in relation to adequacy of firm access provision. In this context a different spare capacity, if any, will be assessed.

Hence, under OFA the identification of spare capacity will be meaningful only if it is qualified as being in the context of a reliability study or alternatively in the context of an access study.

The AEMC proposed access pricing regime was based on the expectation that the agreement of firm access would lead to a series of future costs. From a closer consideration of the necessary network planning regime, it is now clear that this expectation was incorrect.

With this concern removed, it is evident that a simpler and more accurate pricing method, based on facts rather than forecasts, should be applied.

1.3.3 Alternative access pricing proposal

AGL propose that an alternative access pricing approach be adopted, which is simpler to implement, and more accurately reflects the actual planning processes. Before describing the proposed approach, we will outline some important principles and practical difficulties.

Principles for access pricing

The access pricing method, as with any rule change, should be consistent with the National Electricity Objective. In this context we believe that the method must serve an economic purpose, not simply shift costs between segments of the market.

AGL agrees with the AEMC that price signalling to support locational decisions by new generators is the appropriate purpose for the pricing method. The cost of obtaining network access is one of many costs related to a generator investment that will vary with location. Additional location specific considerations will be the level of transmission losses, land availability and cost, fuel/energy source availability, access to water and others. The aim of introducing locational-specific transmission ionvestment costs is to ensure that the generator's planning process takes into account all the resource usages that it will cause.

As noted earlier we also agree with the AEMC propositions that the access price should be an incremental price (that is a price per unit of access agreed), and that the price should be based on transmission costs.

In addition to these principles, we would add that the price determined should be specific to the time and place at which access is being sought. The price should not be "smeared" across different locations, nor across different times. This principle is necessary to ensure that the price signal supports the minimisation of the total cost of generation and transmission.

Practical difficulties with pricing

The practical implementation of the above principles is complicated by the following aspects of the transmission network:

- It is often impossible (or seriously inefficient) to increment network capability by only the amount needed, and the practical level of augmentation may be much larger than the estimated requirement,
- It is often necessary to implement a higher incremental cost augmentation before a lower incremental cost one (see our discussion later on augmentation in a meshed network),
- There are often substantial cost savings that can be achieved by anticipating future needs, (recognising there is a risk of stranding if the forecast is wrong).

In addition to these aspects of the transmission network itself, there is the further complication as discussed above, in that the cost of providing access at a given location is a strongly non-linear function of the aggregate quantity sought. This provides a strong incentive for a generator to be priced on an early increment of usage rather than a later one.

On the other hand, one practical difficulty considered in the second interim report, namely a series of future costs resulting from the provision of access now, has proved on examination to be baseless and some simplification results from this.

Simplification is important here, because the use of pricing as a locational signal implies that pricing for a given generator's access will need to be conducted at more than one prospective location so that the signal of differential pricing can be utilised. A complex pricing process might make this activity unduly time consuming and costly.

Outline of access pricing proposal

Having regard to the principles described above and the practical difficulties outlined, the proposal for pricing is as follows:

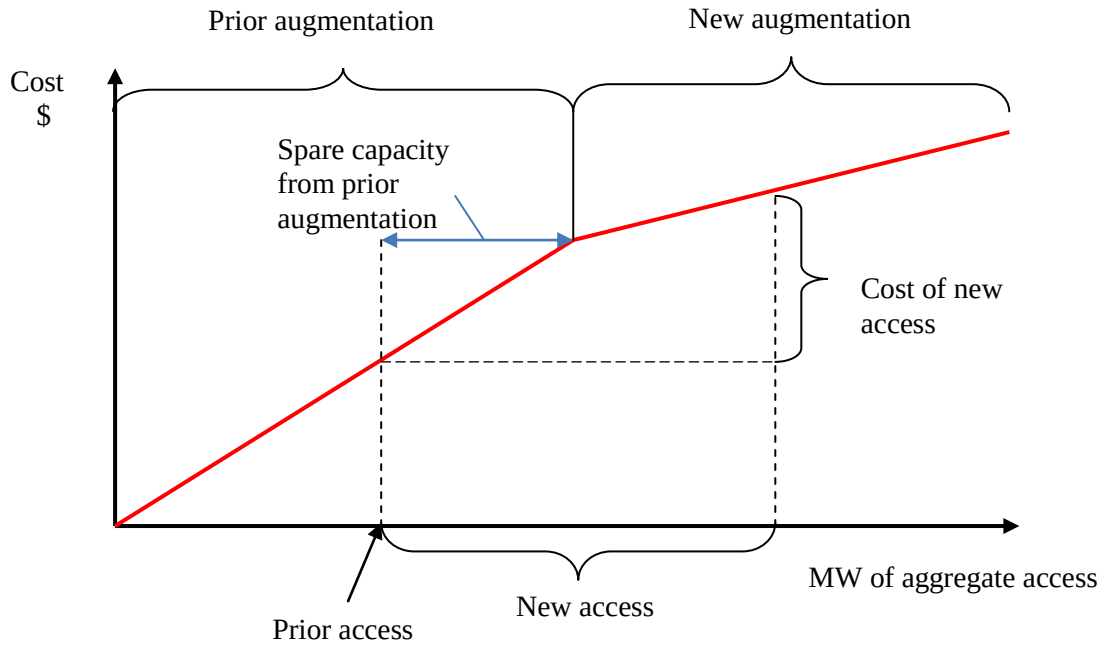
- The price is a rate per MW of firm access acquired
- The price applies to a generator, or a group of generators gaining firm access at the same node and the same time
- The price is the sum of the relevant incremental costs for each of the network links that are shown in the access planning study to have flows due to the access at the relevant node
- The relevant incremental costs are:
    - Zero if the relevant network assets existed when the OFA regime commenced,
    - Zero if the relevant network assets were constructed since OFA commencement on the basis of a reliability analysis,
    - The price per MW of flowgate capacity increase, as determined at the time of construction, multiplied by the relevant generator participation factor, for assets constructed since OFA commencement on the basis of a previous access adequacy analysis, where the new access provision relies on that spare capacity, but with the MW quantity limited to the spare capacity utilised,
    - The price per MW of flowgate capacity increase, multiplied by the relevant generator participation factor, for assets constructed to support the relevant access provision, but with the MW quantity limited to the extent to which the current access provision relies on the new assets (i.e. the component not supported by prior spare capacity).
- The incremental cost of increasing flowgate capacity may be either the cost of augmentation (if the augmentation was not contemplated for reliability purposes) or the cost of advancing the augmentation (if the augmentation was contemplated at a later date for reliability purposes).

This proposal deals with the lumpiness on network investment by applying the incremental cost of any network augmentation to only the usage level required for the access. This will often leave some the cost of the network augmentation not funded by the generator(s). This is a common feature with the proposal in the second interim report. It is also a characteristic of current network planning and funding arrangements that customers bear the cost of such unavoidable over-capacity due to lumpy investments.

In relation to this we note that the aim is to give an appropriate locational signal and not to shift costs from customers to generators needlessly.

The effect of combining an incremental cost based on a past augmentation for the purpose of access, with the incremental cost of a new augmentation to complete the access provision, is illustrated in Figure 5.

Figure 5 Combined incremental cost



One complexity has so far been omitted from this proposal, namely the issue of scale efficiency. This differs from the lumpiness of investment in that lumpiness is a consequence of the technology of the network, whereas scale efficiency relates to a choice.

There are two related questions here; who should decide whether a scale-efficient alternative design should be adopted, and who should bear the additional cost.

AGL notes the ultimate beneficiaries of a scale-efficient design, if it succeeds, are the electricity customers. We therefore suggest that the decision should be made on the customer's behalf by a regulatory body (perhaps by the AER).

This leaves the question of whether any special provision needs to be made in the pricing regime in relation to scale-efficient alternative designs. If the augmentation proposal is genuinely scale-efficient, it will have a lower cost per unit of capability and hence reduce the price to generators seeking related access under the proposed incremental pricing regime. Hence, as long as the regulatory body satisfies itself that the alternative is genuinely scale-efficient, no special provision is needed in the access pricing mechanism.

Optional group access acquisition

As noted earlier, it is characteristic of the cost profile of access provision that early users may have a cost advantage over later users. In general this is desirable in incentivising the harvesting of "low hanging fruit" prior to more expensive options.

However it also has the potential problem of encouraging non-genuine queuing for access.

To deal with this potential queuing problem, it is proposed that there should be arrangements for voluntary grouped acquisition of firm access. This would be separate from any arrangements, as outlined in the second interim report, for grouped exercise of access in settlement.

The elements of this proposal are:

- The possibility of a grouped acquisition of access at a stated location would be advertised following an initial approach to a TNSP, at the stage where a preferred location has been determined by the prospective generator
- Any generator or prospective generator would be free to join the group, subject to the condition that, if the grouped acquisition proceeds, they will commence payments for access from a common date applicable to the whole group (regardless of whether they have generation capacity to make use of the access at that date)
- The pricing for the group acquisition would be the incremental cost determined for the total firm access sought by the group
- Any generator that chooses not to be part of the group could separately negotiate for access at the same location, subject to the conditions that:
    - the access would be provided later than the grouped access, and
    - this separate access would be separately priced (and hence potentially more expensive)

Generator impact on network capability

The above discussion has taken the network capability as a given, under specific conditions such as temperature, wind speed, voltage level network elements in service and generating patterns.

However, we understand that under some specific conditions, the connection of a generator may not only use part of the network capability, but may also change that capability itself. This we understand to be characteristic of networks that are limited by stability considerations rather than thermal limits.

In case of non-firm generators causing such a problem, it is also necessary to provide economically efficient location signals. The efficient outcome is to require the non-firm generator to pay for restoring any network capability that their presence removes, irrespective of their choice to be non-firm.

However, the situation where the connecting generator chooses to be non-firm is less clear. The efficient choice would appear to be to require the non-firm generator to pay for restoring any network capability that their presence removes, despite their choice to be non-firm.

Consequences of network augmentation in a meshed network

In the staff report accompanying the second interim report, it is evident that the effects of network augmentation in a meshed network have been misunderstood.

The important consideration here is that the transmission network is operated to limits which are based on the situation that would apply following the failure of some network element (the "critical contingency").

In order to illustrate the consequences of this fact, we will use the example discussed in the staff report in section 6.2.2, namely a situation where there are four identical lines

operated in parallel and one is augmented. For the purpose of this discussion we will assume that only thermal limits are relevant.

If one of these four lines was increased in capability by 1000 MW (as postulated), the critical contingency would become be the loss of the upgraded line and there would be *no* increase in overall network capacity.

The general pattern of the consequences of upgrading in a meshed network can be seen by considering the upgrading progressively of all four lines in this example.

Number of lines up-rated by 1000 MW	Increase in network capability (MW)
1	0
2	< 1000*
3	< 2000*
4	3000

* The increase in capability is less than 1000 or 2000 because in the post contingency situation the flows will divide between the up-rated and original lines according to impedances. Hence one or the other will be fully loaded before the other reaches its capability, thus leaving some unusable capacity

These considerations would be automatically taken into account in our proposal for access pricing, because this is based on the costs and the capability effects of actual augmentations. This is a further consideration supporting our pricing proposal as discussed above.

1.3.4 Firm Access Standard

AGL supports the inclusion of a firm access standard as a part of an optional firm access proposal. However, some details of the proposal concern us, and we recommend as follows:

- That the requirement for planning the networks to provide firm access should be confined to a single network condition, and hence not involve usage of a pre-determined set of scaling factors for different operating conditions.
- That the use of scaling factors based on different operating conditions for the purposes of describing the expected performance of the transmission network to generators and setting performance standards for network service providers, be separated from the remainder of the OFA proposal to form a later stage, with implementation subject to a comprehensive review of the costs and benefits of these components of the package.

The follow discussion addresses the reasons for these recommendations.

The effect of pre-determined scaling factors on network planning

The effect of pre-determined scaling factors in network planning is to create a bundling of products so that the choice faced by a generator seeking access is needlessly limited. We believe that the consequences of this are inconsistent with the National Electricity Objective. The following discussion will support this contention.

We note firstly, that the effects of different network conditions, such as outage of particular network elements, vary greatly from location to location because of differing network configurations. Unless scaling factors are made so restrictive that they are meaningless, there will always be locations where a particular operating condition is unusually difficult to meet.

Such a difficult operating condition may have a low probability of occurrence, for example may apply only 1% of the time.

Consider the situation of a generator seeking access where the cost of access under most normal operating conditions (those termed NOC1, NOC2 etc. in the report) is low, but the cost of providing a fixed scaling factor under a particular operating condition (NOCx) is high.

Their choices are:

- scale back their firm access level until the particular operating condition can be met at low cost, thus limiting the quantity of firm access that a particular configuration of the network can provide, with this reduction based only on a low probability event, or
- accept the increased cost of the desired access level, thus incurring substantial cost for the sake of increased access provision only for a particular low-probability event, or
- seek access at another location.

If given the choice, a generator in this situation would likely chose to unbundle the access and choose lower cost access for the majority of the time, while accepting the small risk of significantly reduced access under the critical operating condition.

We conclude that the bundling implied by fixed scaling factors results in outcomes incompatible with the NEO, in that it increases the cost of access, and/or reduces the quantity of access that a given network can provide, without allowing an economic choice by the generator seeking access.

The better solution, we believe, is to provide information to the generator regarding the foreseeable effects of different network conditions of the access provided, without forcibly bundling a mixed product and hence limiting the generator's choices.

We expect that TNSPs, if freed from the obligation to assess access for a large suite of network conditions, would be able to assess the particular conditions most likely to restrict access in a commercially significant way, and advise the prospective generator accordingly. The generator would then have the choice of accepting the access with this forecast limitation, or alternatively choosing super-firm access (at additional cost) to protect against this risk.

The simpler process we propose thus provides the prospective generator with a greater range of choices, and allows them to make the decision that suits their business best.

Aside from the major concern noted above, we also question whether network planning based on a variety of network operating conditions is practically achievable in any reasonable time scale.

As described earlier in this submission, the analysis of the adequacy of the network to support agreed access must be separate from existing network planning (which is designed to assure reliability of supply).

We expect that the need to support both forms of analysis will rapidly lead to a workload at least twice the current network planning workload even if the evaluation of access is limited to a single defined condition (as we suggest). The addition of a significant number of alternative network conditions for this analysis is likely to take the workload beyond the capability of the available resources.

A further issue of practicability relates to the need to define the relevant operating states. We note that the list of flowgate limits under different network conditions would run into many thousands for the NEM. The task of reducing this complexity to a manageable number of conditions while maintaining accuracy and meaningfulness appears very challenging. Even if this task should prove manageable, we contend that it would be unwise to attempt it in parallel with the already significant task of implementing the essential components of the OFA proposal.

We therefore propose that the use of scaling factors for different network conditions for any purpose should be included as a potential second stage to be implemented subject to detailed consideration of the costs and benefits.

In the absence of scaling factors the firm access standard would reduce to a single standardised way of evaluating the adequacy of the network to deliver the aggregate of all agreed firm access.

Uses for defined access under different network conditions

Above, we have made the case that the application of scaling factors for access under different network conditions would be contrary to the NEO.

In two other contexts, we see such scaling factors as desirable if they were to prove practicable.

The first use that we support is for informing a generator seeking access of the characteristics that would pertain to that access. The second use that we support is in setting standards for the actual delivery of access by Network Service Providers.

Both of these uses are separable from the main components of the OFA proposal.

Given the high degree of difficulty that we see in defining access over the range of network conditions, we propose that these uses for the information should be included in the OFA proposal as desirable objectives, but needing further consideration of costs and benefits prior to a decision to proceed.

Information for generators on future access

We note that under the current market conditions, the ability of a generator to understand and respond to changing network conditions is a competitive advantage. In this context, we suggest, the type of information that might be provided through scaling factors linked to network conditions may be seen as a potentially useful supplement (if they were to prove practicable) but not as an essential component of the OFA regime.

Based on this view we have proposed that this aspect not be included in any recommendation for initial implementation of OFA, but rather for later consideration.

In the absence of formal scaling factors, we suggest that Network Service Providers would be able to supply information to a generator seeking firm access on selected network conditions judged to be of commercial significance. Commercial significance

relates to both the likelihood of the network condition arising and to the effect on access if it arises.

The extent of such analysis and the cost of providing it would be a matter for negotiation between the generator and the NSP.

Performance incentives for Network Service Providers

AGL support the concept of providing performance incentives for Network service Providers.

However, as noted above, we do not believe that the concept of fixed scaling factors based on network operating conditions can be achieved in a reasonable time scale, if at all.

But further we note that the proposal would have serious deficiencies even if this central concept were workable. The critical element that is missing is the time dimension. Under the proposal, a network condition giving severe reductions in access could be continued indefinitely without penalty provided only that the access delivered was better than allowed by the scaling factor.

We submit that an important objective of an incentive regime for NSPs should be to minimise the duration of any circumstance that limits network access. This should include planned outages, to ensure that the work is adequately resourced, and forced outages, to ensure that appropriate urgency is applied when restoring the failed element.

We suggest that an effective incentive regime can be implemented without the need for scaling factors related to network conditions. As an example, we will briefly outline an alternative incentive regime.

- Each firm access agreement will include a level of forecast restriction below the agreed firm access level. This would be defined as an annual value to recognise the seasonality of network operation. It might be defined as a quantity of MWh of shortfall (which would be relatively easy for an NSP to estimate) or as a shortfall cost (which would be more difficult for a NSP to estimate but more meaningful for the generator and lead to better incentives in terms of timing of planned outages).
- Once this forecast restriction level has been reached in a year, the NSP would then be obliged to contribute a proportion of the costs of subsequent access shortfalls (the use of a pre-determined proportion is similar to the proposal in the 2nd interim report).
- The risks to NSPs could be mitigated in one or more ways such as–
    - Exclude contributions in relation force majeure events, and/or
    - Exclude contributions in relation to circumstances caused by third parties (e.g. restriction due to gunshot damage to network assets), and/or
    - Capping the total annual contributions. (We note the undesirable consequence of capping in that the incentive regime has no effect once the cap level is reached; this could be managed to some extent by reducing the contribution proportion once a defined value is reached rather than reducing contributions to zero)
- The risks to the generator due to access shortfall would be mitigated by using the NSP contribution to restore some of the financial shortfall

1.3.5 Transition proposals

AGL agrees with proposal to apportion existing firm capability within existing network capability as a tradeable access right.

Further there is no basis to scale back the transitional access levels of tradeable access rights as proposed by the AEMC for the following reasons;

- As has been established in this submission, that once agreed, firm access is enduring noting that all costs implied by the provision of access have been established prior to the network augmentation, (including ongoing network operation and maintenance costs, if any, which can also be reasonably estimated at that time).
- Market reform should not attempt to overturn previous commercial agreements, but should be designed to accommodate these agreements. Existing commercial connection agreements will have different terms and conditions, particularly relevant are the terms relating to access and the term of the contract which must be recognised in the transition process. For example, some contracts already have defined levels of access and are not limited in duration. In any case these contracts sit outside the rules and it is not clear that changes in the rules can effect changes in these contracts.
- The ability to trade access places a value on access which overcomes concerns re hoarding. Hoarding is discussed in the technical paper and is not considered to be an issue in relation to super-firm access. For similar reasons it is not expected to be an issue at generator retirement. When an existing generator reaches the end of its operating life and is considering de-commissioning a tradeable access right will facilitate efficient decentralised generator retirement decisions. If access is valuable at that time in that location it will retire earlier than if access has little value. This is consistent with the principles of the OFA proposal which incentivises efficient decentralised generator investment decisions.
- The proposal to have contracts of limited term does not appear to have any economic justification or efficiency objective.

AGL therefore proposes that the allocation of transitional access levels which is likely to require the opening or renegotiation of contracts to include access provisions or adjust access levels should also allow participants, if necessary, to renegotiate the terms and conditions of their connection agreements to extend their duration, if they wish to do so, which may also require an adjustment in price. This would then be a commercial negotiation between the NSP and the connecting party.

This simplifies implementation of the OFA process considerably as there is no need for regulatory involvement in determining access duration based on the expected life of generation assets which will be controversial and problematic.

1.3.6 Inter-regional proposals

AGL remains concerned, as indicated in our previous submissions, by the risk that interconnector capacity will be further eroded, leading to a de facto fragmentation of the National Electricity Market.

We therefore agree with the intent of the proposal under OFA to allocate firm access to interconnectors in the case where there is remaining network capacity after transitional access has been provided to generators.

However, this allocation to interconnectors may turn out to be zero in most cases, as there are likely to be a number of network constraints where there is insufficient capability to provide transitional access to all relevant generators and to an interconnector as well. The second interim report proposes that in this case the generators would have priority, and we support this proposal. However the result may be interconnectors with no firm access unless a specific provision is made to avoid this outcome.

We note that the second interim report has failed to recognise the need, with OFA, to have two parallel planning processes, one to assess customer reliability of supply and the other to assess the adequacy of the network to support the aggregate agreed firm access. When this fact is recognised then it becomes apparent that an interconnector with no firm access would be excluded from the access analysis entirely.

We propose that, to avoid such exclusion, each interconnector, in each price difference direction should be allocated some firm capacity. If no allocation results from the standard transitional process, we propose that a nominal firm access of, say 1 MW, should be applied to an interconnector. This allocation would not reduce transitional firm access to generators appreciably. It would, on the other hand, ensure that the interconnector was included (albeit in a minimal way) in the assessment of the adequacy of the network to support firm access commitments.

We further propose that the Commission should consider a mechanism to ensure that some level of interconnector capacity would be retained in all network planning contexts. We are not seeking here to be definitive about how this should be achieved, but suggest that one mechanism would be to empower the National Transmission Planner to specify a minimum level of interconnector capacity to be retained when any network change is proposed.

We note that such a mechanism could be applied in parallel with the concept of auctioning interconnector firm capacity, and would act as a "backstop" in case the necessary coalition of interests under that mechanism proves difficult to assemble.

1.3.7 Other recommendations

5 min settlement

The AEMC staff paper proposes that the settlement calculations required under the OFA model should be conducted on a Trading Interval (TI) basis. However, all the information that is relevant to this calculation process is defined on a dispatch interval (DI) basis.

The relationships between input and output quantities in the dispatch process is highly non-linear; there is no smooth transition between an unconstrained and a constrained dispatch outcome, and the relationship between inputs such as demand and availability on the one hand and market price outcomes is very strongly non-linear.

It follows that the process of taking averages over the DIs within a TI will unavoidably create errors, distortions and anomalies.

This proposed process is not only a new source of errors, but is unnecessary. The settlement amounts relating to OFA can be simply calculated on a DI basis and these dollar amounts accumulated over the DIs within a TI. This process would avoid the errors inherent in averaging the various input values. This is true regardless of whether the current energy settlement process is retained or modified.

While it is not pertinent to the current consultation, we note in passing that it would be simple to apply DI settlement selectively for energy settlement, and would this overcome some distortions that are apparent under the current arrangements. For example, all scheduled generators and loads could be settled on a DI basis without adverse effects on secondary markets. The information needed to do this is readily available. Settlement on a DI basis could also be made available to any other participant that chooses to provide suitable metering information.

Flowgate support (constrained on gen)

Section 2.3.9 of the Technical Report deals with flowgate support and constrained-on generators, but concludes that a model to take advantage of flowgate support would be complex to design.

However, this conclusion arises because the discussion fails to distinguish between two separate cases which can easily be distinguished in practice. Constrained-on generation is the dispatch of generation above a minimum level where the price of that optional generation exceeds the regional reference price. Minimum generation here refers to either zero or else the level of generation defined by the initial generation level and the offered ramp rate for reductions.

The two cases of constrained-on generation are where a constraint equation:

- cannot be satisfied without the constrained-on generation, and alternatively
- could be satisfied without the constrained-on generation, and hence the additional generation is dispatched because it leads to a more economic dispatch result

In the first case the value ascribed in the dispatch process to the constrained-on generation is based on a "constraint violation penalty", a value which is a significant multiple of the Market Price Cap and is applied to achieve an orderly sequence when constraint violation becomes inevitable. This is an arbitrary value and not a suitable value to be applied in the OFA model.

To this extent we agree with the Technical Report that inclusion would be too complex, but only for this case.

The expected sequence of events in this case is that the generator would recognise that its revenue would not cover its costs, would withdraw its offer, causing AEMO to direct it to generate and hence make it entitled to compensation, enabling it to cover its costs.

However, the other case is very different. In this case the dispatch process is making a clear choice, recognising that the additional flowgate capacity dependent on the constrained-on generation has an economic benefit that outweighs the cost of the constrained-on generation. In this case there is a clear pricing discipline on the constrained-on generation, as it will not be dispatched unless its offer price is lower than the benefits that it provides.

In this case, simple regional settlement leads to inefficiency. As in the other case, the generator would recognise its insufficient revenue and withdraw its offer. In this case AEMO would have no basis to direct the generator, and hence an opportunity for greater dispatch efficiency would be lost.

This situation can be improved by a simple modification of the OFA model, to allow the constrained-on generator to receive their local price (the efficient price for their generation), leaving those generators sharing access through this flowgate sharing only that part of the flowgate capability that is independent of the constrained-on generation.

Those generators are not worse off due to this change, because the access they share would be the same access that they would share following the withdrawal of availability of the flowgate support generator. Customers would benefit from this change due to the increased market competition that follows the greater access to market by low cost generators that would otherwise be constrained-off.

1.3.8 Implementation

AGL proposes that the optional firm access model should be implemented in stages. Staged implementation will shorten the delivery time for the components of the access model that will provide the largest efficiency gains. This component of the model (ie allocation of access, changes to the settlement system and implementation of an access pricing model) is relatively simple to implement and timely implementation will reduce what could be a period of significant investor uncertainty.

OFA implementation can be carried out in parallel with the proposals to improve the connection framework and implementation of the revised planning arrangementsin Victoria. This may require an interim arrangement for planning in Victoria should the proposed responsibility for planning be delayed or not eventuate.

The proposed implementation stages are:

- Implementation of the OFA model together with a simplified firm access standard based on the requirement for planning the networks to provide firm access confined to a single network condition, and hence not involve usage of a pre-determined set of scaling factors for different operating conditions.
- Implementation of performance standards for TNSP's as described in this submission in section

- Implemenataion of a more encompassing FAS levels. AGL supports the inclusion of a firm access standard as a part of an optional firm access proposal. However, some details of the proposal are of concern. The use of scaling factors based on different operating conditions for the purposes of describing the expected performance of the transmission network for generators and setting performance standards for network service providers may take some time to develop fully. Implementation subject to a comprehensive review of the costs and benefits of these components of the package.

2. Planning proposals

AGL generally supports the transmission planning arrangements outlined by the Commission, noting that if the optional firm access model (modified as proposed in this submission) is implemented, the planners main role would appear to be administration of a new market wide transmission pricing regime for customers and reviewing the TNSP plans to ensure that reliability standards are met through an efficient level of regional and inter-regional transmission investment.

AGL is of the view that the role of the national planner should be limited by having a clearly defined role and objectives. With the implementation of the optional firm access model (modified as proposed in this submission) planning for access will be market led for generators and for customers by reliability standards. It will not be necessary for the national planner to have a role in pricing for generator access, this will be carried out by the jurisdictional TNSPs'.

One of the drivers for AGL promoting the SA model as a working template for a national approach for transmission planning was to avoid the current tripartite connection arrangements in Victoria which in the past have lead to lengthy delays in negotiating a connection. While this may lead to loss some of the desirable features of Vic jurisdictional planning, the separation of asset ownership from planning we believe that this will be compensated for by improved transparency in the connection process which provides connection applicants greater access to competitive or de-facto competitive provision of shared transmission access.

AGL agrees with the Commission that whether or not the optional firm access model is implemented, changes to the RIT/T should not be made to facilitate increases in interconnector capacity. We are of the view that the RIT/T is already biased towards supporting regulated market investment. Any further bias risks further distortion to competitive market outcomes.

3. Improving the Connection Framework

3.1 Definition of terms

This response considers the assets covered by the connection process as comprising the following components. The definitions used in this table are intended to be consistent with the terminology used by the Commission in the Second Interim Report but not necessarily consistent with the rules or the terminology used by participants.

	Shared Network	**Connection Assets**	**Extensions (connecting line)**
Description	Augmentations and extensions of the shared network	The shared network and the terminal or substation assets up to the substation fence or the terminal point [5]	The assets between the substation fence or the terminal point and the generator facility[6]
Regulation	Negotiated services	Negotiated services	Competitive provision With the option of provision as Negotiated services

3.2 Improving the Efficiency of the Connection Process

3.2.1 Strengthening the negotiating framework for shared network and connection assets

The Commission has outlined a proposal to improve the efficiency in the provision of negotiated services by including measures to increase transparency, and provide an enhanced role for participants. AGL is of the view that all the following proposals will considerably strengthen the negotiating framework that applies to negotiated transmission services.and are therefore supported by AGL.

Enhanced transparency

- Publishing standard contracts.

  The proposal to have standard connection contracts published is supported. We are of the view that each NSP should publish their pro forma contract. In our view it is not necessary to apply standard connection agreements or standard clauses across the NEM as generally connection agreements are tailored for each connection to meet the connection applicants' requirements or risk profile. The act of publishing may in itself mean the standardised contract form is achieved.

- Publishing high level design standards and a philosophy or protocol for connection assets.

[5] The terminal point defines where the work which is the responsibility of the NSP finishes and where the work carried out for the extensions commences. This is usually arranged to be practical location which minimises potential interference during construction and supports isolation for future maintenance

[6] This is the definition used in the AEMC second interim report.

Publication of this information is essential to allow connection applicants to assess connection offers including assessment of the cost information.

- Providision of a cost breakdown of connection costs

  The cost breakdown should include as a minimum a breakdown of the total costs by major component or plant type (such as transformers, circuit breakers isolators transmission and communications equipment) with further categorisation of the costs into the following components; supply, construction, operation and maintenance.

Enhanced role for participants

The proposal to allow connection applicants to have a greater role in the TNSP tender process for connection assets through increased transparency and input; by providing connection applicants with all responses, a detailed business case for the decision and to demonstrate consideration of the connection applicant's preferences in choosing the contractor is also supported.
It is noted however that if all tenders are conforming to the technical specification for the work (rules & TNSP standards) and will meet the security and reliability requirements, there appears to be no reason why the connection applicant (CA) should not select the contractor as proposed by Deloittes7 in their report to the AEMC.

3.2.2 Competition in the provision of shared network and connection assets

Delays in establishing connection agreements may arise from resource constraints or from cultural issues in the NSP. The best approach to address the lack of incentive for timely completion is to make the provision of all the elements in the negotiated services subject to competition. AGL stongly supports competitive provision of shared network and connection assets however it is recognised that NSP's are monopolies as true competition would require the duplication of a network within a region which would clearly be inefficient.

Further due to economies of scale and to ensure that a network is secure and reliable it is practical to have one body responsible for network planning and expansion to meet customer reliability standards and generator access in the case of the implementation of the OFA, as well as network maintenance and operation to maintain access in an operational time frame. Currently in the NEM this responsibility is divided on a geographic basis.

For the reasons described above direct competition is not possible however de facto competition can be introduced through the Commissions proposals.

The elements in the provision of shared network and connection assets are the same as those shown in the table in section 3.3.2. These elements can be grouped into the following two major phases;

- the design and costing phase, and
- the project management and construction phase,

which are critical for establishing a design, cost and program for timely construction.

[7] Deloitte - Feasibility of implementing contestability within the transmission connection arrangements final report 9 July 2012

AGL is of the view that the Commission's proposal to enhance transparency supports de-facto or indirect competitive provision of connection services. Provision of design standards and philosophies for connection assets at a high level will allow a connection applicant to develop, in parallel with a NSP, its own cost estimate and a project schedule. This information can then be used in a number of ways to facilitate timely provision of shared network and connection assets such as;

- use as a benchmark for comparison with a NSP's offer (and cost breakdown) in negotiating the connection agreement,
- use by the NSP as a basis for developing an offer to expedite the connection process.

The Commission's recognition that parallel processing is a method the connection applicant may wish to use speed up the connection process is acknowledged. In general ensuring that a flexible and innovative approach to establishing connections is not discouraged is also a factor that will assist in timely connection.

3.2.3 Dispute resolution

The proposal to maintain the dispute resolution process and to continue to treat connections as negotiated services and improve the negotiating framework is supported. AGL agrees that there appears to be little value in enhancing the dispute resolution process.

3.3 The provision of extensions

3.3.1 Competitive provision of extensions

AGL understands that the Commission proposes to amend/clarify the rules to confirm that provision of extensions is through the competitive market for these services so that a connecting party can either;

- tender for the provision of extensions (connecting lines), or
- at the request of the connecting party oblige the TNSP to provide the extension as a negotiated service.

Both these objectives are supported.

In practice extensions (connecting lines) are currently provided by connection applicants generally through a competitive tendering process, they are not covered by the rules as they are not part of the transmission system, in most states they are covered by the generator's licence. This is consistent with grid Australia's conclusion[8] that extensions (connecting lines), sit outside the rules and are generally covered by state legislation and regulations. It is therefore not clear that any changes to the rules are required to achieve the first objective.

Extensions are often classified as being "contestable" but in our view this is not on the basis of definition of contestability in the rules.[9]

[8] AEMC TFR Second Interim Report page 93

[9] The rules provisions identified by the AEMC, in Box 6.2 "Current contestability arrangements". Page 88, relating to contestability are not intended to be relevant to the provision of extensions (connecting lines). The term *contestable* is used in the rules for the particular case of Victoria where the transmission planner was separated from asset ownership and an obligation placed on the transmission planner to call for competitive tenders for *augmentation* when it exceeds $10M. The TNSP's incorrectly apply the term contestable to the extensions (connecting lines).

AGL does not agree with the conclusion or interpretation that is sometimes reached by NSP's that extensions (connecting lines), sit outside the rules and the incumbent NSP is the only party that can construct them.

3.3.2 Workable competition in the delivery of extensions (connecting lines)

We are of the view that the market for the provision of extensions is workably competitive.

This is shown in the following table "Provision of the elements of an extension" which has been based on table 5 in the Deloitte[10] report to the AEMC and is provided as an alternative to figure 6.1 in the Second Interim Report.

Transmission construction capability resides in the contractors that provide construction services for TNSP's, or provide power station construction services which are available to connecting parties through the competitive market.

All the elements comprising the establishment of an extension can be undertaken either by a generator connection applicant together with a contractor, with responsibility of the elements of the process allocated as shown in columns 2 and 3, alternatively these services i.e. ownership operation and maintenance of an extension could be provided by a TNSP to contracted through a competitive tender. In this case the NSP could provide the complete service.

As the Commission notes in most jurisdictions a third party may be able to gain a transmission licence and provide these services. It is understood that recently AECOM-Powercore has established a joint venture of this nature.

The incumbent TNSP may have advantages by benefiting from economies of scale, scope, experience and capability; this does not necessarily mean that they have a competitive advantage or market power in the provision of extensions.

[10] Deloitte - Feasibility of implementing contestability within the transmission connection arrangements final report 9 July 2012

Provision of the elements of an extension

Extensions "connecting line" These assets are not covered by the Rules			
Element	**TNSP/DNSP** [Note 1]	**Contractor**	**Connecting party**
Detailed Design Establish scope of work technical performance technical standards for plant quality and reliability	Yes	Yes - by contract to connecting party.	The Connecting party as the owner and operator of the connection service must be involved in this phase of the project
Establish cost	Yes		By competitive tender
Obtaining Planning Permissions / Environmental Approvals	Yes		Yes
Obtaining easements	Yes		Yes
Project management e.g. management of site works, organising outage planning with TNSP	Yes	Yes	Yes
Procurement of materials / resources	Yes	Yes	
Construction	Yes	Yes	
Testing Commissioning	Yes	Yes	
Operating egg ensuring the asset is operated in accordance with jurisdictional requirements, insurance	Yes	Yes	The operation and maintenance of these assets is generally covered by generator licenses, except in NSW.
Maintenance i.e. routine servicing of the plant or equipment ensuring it is kept in accordance with a set of specified standards	Yes	Yes	As above
Ownership	Yes		Yes
Third party access	In accordance with the rules		In accordance with the generator license.

Note 1- A TNSP or a third party with a transmission licence could provide these extension services through a competitive process established by the connecting party or in the future as a negotiated service.

3.3.3 When workable competition is not feasible

In the event that workable competition is not feasible the proposal by the Commission that, at the request of the connecting party, the TNSP is obliged to provide the extension as a negotiated service, provides a fallback option.

3.4 Summary of the Commission's proposals for improving the efficiency of the connection process

The following table is a summary of AGL's understanding of the Commissions approach to supporting competitive provision of extensions.

	Connections **Negotiated Services**	**Extensions** **Competitive provision**	**Extensions** **Negotiated Services**
Transparency Measures	• TNSP must publish: — standard contract terms, — design standards and philosophies for equivalent prescribed assets;	The scope of work and technical standards would be specified in the tender documents	• TNSP must publish: — standard contract terms, — design standards and philosophies for equivalent prescribed assets;
	• TNSP must provide to connection applicants:		• TNSP must provide to connection applicants:
	— Detailed cost, assumption and calculation information, including supporting evidence;	The information to be provided would be specified in the tender documents	— Detailed cost, assumption and calculation information, including supporting evidence;
	• A power for AER to develop (and enforce) guidelines on specific information TNSPs should provide to connection applicants.	In the event that the connection applicant considered that there was not a workably competitive market they can elect to have the extension developed by the NSP as a negotiated service	• A power for AER to develop (and enforce) guidelines on specific information TNSPs should provide to connection applicants.
Enhanced Role in Connection Process	TNSPs must:		
	• provide to connection applicants all responses from contractors to the TNSP's tender for construction of connection assets,		
	• provide to connection applicants detailed business cases for its decisions on choice of contractors, and		
	• take account of the applicant's preferences in its choice of contractor		

3.5 Access to extensions

3.5.1 Ownership by a NSP

If the extension is owned by a TNSP, and a third party connects then we agree that the rules must be clarified to specify that the line must be upgraded (if required) in order to ensure that it can be operated to an unconstrained level. Further the rules must clarify that the upgrade should be paid for by the third party. Upgrading the extension to be unconstrained ensures that the existing generator or customer is not disadvantaged by the TNSP providing access to the third party and is consistent with the principles of the OFA model as applied in the shared network.

3.5.2 Ownership and third party access

If the extension is owned by a licensed network service Provider or another party granted an exemption by the AER or not, the rules or the conditions in the exemptions relating to third party access, in addition to those proposed by the Commission, should be clear that if a third party connects, the line is upgraded (if required) in order to ensure that it can be operated to an unconstrained level. Further the rules or conditions in the exemptions must clarify that the upgrade should be paid for by the third party.

3.5.3 Transfer of extension (connecting line) assets to negotiated or prescribed services

The two triggers identified for the extension (or part of it) being reclassified as part of the shared network are considered to be appropriate, i.e.

- where a DNSP wishes to connect to the extension; or
- where a TNSP is augmenting the existing shared network to facilitate additional capacity, and the most efficient option would be to utilise the extension.

Under these circumstance we agree that the appropriate options for the non network owner would be to;

- operate the assets as prescribed transmission services as a registered NSP, or
- sell off the assets to the incumbent TNSP[11].

As the Commission notes this mechanism allows third party owned extension assets to become part of the shared network which may result in increased diversity in third parties owning elements of the shared network, which could include generators.

3.5.4 Generation and transmission cross ownership

The Commission however proposes that a single party should be prohibited from having controlling ownership of both a registered generator and a registered NSP due to the "significant" competition concerns that a generator will operate its shared transmission network for its benefit and to the detriment of other competing generators.

This severely restricts the first option of encouraging an alternative supplier to the NSP, which could lead to more competitive outcomes in providing transmission services, because generators are most likely to be owners of extensions.

[11] Under the optional firm access model the sale of the extension assets would require revision of the connection agreement as the generators connection point to the shared network would change as would the point at which NSP's obligations, if any, to provide access, are measured.

As the Commission notes the issue of joint ownership of both generation and shared assets was recently considered by the Department of Resources, Energy and Tourism through a regulatory impact statement which concluded that cross ownership is not currently a problem in the NEM.

We do not believe that there are "significant" competition concerns that a generator will operate its shared transmission network to the detriment of others. An entity with cross ownership has a direct interest in maximising the capability, availability and reliability of the transmission assets it owns (originally as extensions) as they are the means of providing their access to the market. As a transmission asset owner it is likely that a generator will have a stronger incentive to maximise the capacity and availability of the network than a NSP that is not directly impacted by poor transmission performance. As a shared network element it is unlikely that it could be operated to the benefit of one and the detriment of another user.

Cross ownership between generators and transmission, like vertical integration between generation and retail allows participants to directly manage the significant market risks associated with transmission failure. Vertically integrated business including transmission, will be more stable businesses, have a higher credit rating and more able to support efficient investment in combined generation and transmission assets. The vertically integrated model including transmission is therefore in the long term interest of consumers.

Further in the case of the application of the OFA model, access standards and performance measures will be implemented to measure a NSP performance. These measures will provide an incentive to third party transmission operators to maintain network performance and measure and make obvious non performance.

The prohibition of ownership of both generation and transmission is not supported as it is a disproportionate to the problem of potential discrimination in access provision and is likely to discourage competition in the provision of and the operation and maintenance of transmission services.

3.6 Clarifying the rules

The Commission has identified the following principles for clarifying the rules;

- identify what each transmission service required to connect to the national grid involves, including the boundaries of the current categories,
- establish how each such service is regulated under the Rules,
- identify what NSPs' obligations are in relation to connections and the provision of each of these services,

and in addition we propose,

- identify what transmission services are provided outside the rules and the third party obligations in providing these services,

However clarification of the rules cannot proceed in the absence of the development of a high level policy describing the objectives of the transmission framework and the objective of the connection process on which changes can be based.

In addition to the factors identified by GA as causing confusion, the fact that the connection provisions form the interface between the competitive and regulated

components of the market, and in the absence of any policy document which provides guidance at a high level as to the intention of the rules and the allocation of risk between these sectors, has led to participants interpreting the rules based on the black letter provisions of the rules. The rules are tested under the connection application process and in this circumstance the monopoly service providers' interpretation has prevailed. This is naturally based on an interpretation which exposes them to the least risk and which is not in the interests of connection applicants or in the interests of consumers.

3.7 Further analysis of connections

In this section the Commission has raised some issues in relation to boundary issues, service descriptions and the basis for charges for connecting generators, DNSP's and large loads and it is suggested that these issues can be resolved by using as a starting point the "Alternative access pricing proposal" outlined in section 1.3.3 of this submission.

This section establishes pricing principles for charging generators for access which by default defines which charges would be borne by consumers. The proposal also addresses the allocation of the costs associated with lumpiness and scale which are inherent in transmission investment, and which is not addressed in the Commissions current proposal for access charging.

Based on this proposal it would be unlikely that distinctions between various assets in the transmission system could be made on the basis of who is charged for them or who is provided a service from them and the proposals for the definition of boundary issues and service descriptions proposed by the Commission may need to be reconsidered.