

International Power (Hazelwood, Synergen, Pelican Point, Loy Yang B)

Loy Yang Marketing Management Company Pty. Ltd.

InterGen (Australia) Pty. Ltd.

TRUenergy Pty. Ltd.

AGL Hydro Pty. Ltd.

Hydro Tasmania

Flinders Power

23rd November 2006

Dr John Tamblyn
Chairman
Australian Energy Market Commission
Level 16
1 Margaret Street
Sydney NSW 200

Emailed: submissions@aemc.gov.au

Dear Sir,

Congestion Management Review – Barriers to New Generation Entry

Thank you for your response to our letter dated 3rd of November requesting an extension of time for further submissions prior to the release of the Congestion Management Regime draft report. We note your advice that if submissions are late that this may affect the weight they can be given in this stage of the ongoing review.

Attached is a further submission explaining why transmission access certainty for generators is not a barrier to entry and why it will support efficient competition and dynamic efficiency. The issue of access certainty was excluded from the two transmission pricing reviews however, in the view of the signatories to this letter, it is a necessary component in one form or another of either transmission pricing or congestion management regimes. We do not support the introduction of a congestion management regime unless access certainty for generators is established as a core element of the regime.

We are of the view that the issues we are raising are fundamental to addressing congestion management, in both its materiality and impact on efficient market outcomes. If the Commission is unable to give due weight to these issues in this stage of the review then these matters should be considered in the later stage so that they can be given due weight.

We are also undertaking quantification work to assess the dynamic efficiency of transmission access certainty. This will be provided to you in December. At this stage we are not promoting any particular solution. We note however that several different solutions were previously submitted by the various contributors to this submission. The costs of implementation of these solutions can then be weighed up against the quantified benefits.

This work (assessing costs and demonstrating nett market benefits) should also be considered in an appropriate time frame and given due weight in the later stage of this review.

If you have any questions in relation to this request, please call Roger Oakley on (03)9612 2211.

Yours faithfully,

.....
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Barriers to New Generation Entry

Why Transmissions rights are the solution, not the problem

A submission to the AEMC

November 2006

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This submission has been made by the following companies (“the signatories”):

AGL Southern Hydro

Flinders Power

Hydro Tasmania

Intergen

International Power

LYMMCO

Truenergy

Presentation Structure

- Introduction and Background
- What are transmission rights?
- How they lower entry barriers
- Why they don't create entry barriers
- A case study

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This presentation is intended to be made to the AEMC and other interested parties. It is also being formally given to the AEMC as a written submission. To aid interpretation, detailed notes are provided in the notes area of each slide.

Introduction and Background

- we have proposed introducing forms of transmission rights to address issues arising in transmission pricing and congestion management
- we think they are needed to solve existing problems relating to externalities, free riding and regulatory uncertainty
- to date, the AEMC (with some other stakeholders) has resisted these proposals, on the grounds that they create barriers to entry, may undermine open access and common carriage and therefore do not promote the NEM objective
- this presentation is intended to answer and rebut these concerns

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The signatories have previously made individual and/or grouped submissions to the AEMC in relation to the Transmission Pricing Review and the Congestion Management Review. Whilst the positions of these companies have been somewhat diverse, a common theme is that some form of transmission rights are needed in the NEM in order to address and resolve the issues raised in these reviews.

To date, the AEMC – and some other stakeholders – have been resistant to the introduction of such rights. A primary concern that has been expressed is that rights would create barriers to entry, in particular for new generators. If this were true, it could undermine generation competition and dynamic efficiency, and so be inconsistent with the NEM objective.

This submission argues that, on the contrary, transmission rights are essential in removing or lowering existing entry barriers. Whilst the introduction of rights could deter certain generation projects, this would only be where a project was “economically inefficient”: ie bringing private benefit to the investor but net detriment to the market as a whole.

To illustrate our approach and analysis, we have included [some] case studies where either an inefficient project has proceeded or an efficient project has been deterred as a result of the absence of rights in the existing Rules.

This submission focuses on access issues for generation. There are no equivalent issues for the demand side, because transmission reliability standards ensure that demand has a very high standard of “access” to the grid.

Two sides of the argument

We say: transmission rights **lower** entry barriers by:

- preventing a “tragedy of the commons”;
- reducing the uncertainty for a new generator;
- making funded augmentation a practical option; and
- removing regulatory uncertainty

They say: transmission rights **create** entry barriers by:

- undermining open access and common carriage;
- creating “deep connection” charges
- giving incumbents a competitive advantage; and
- creating additional complexity

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This slide summarises the arguments for and against transmission rights. These arguments are discussed in the remainder of this submission.

Our argument is that rights are required to give generators greater certainty of access. Uncertainty is a major deterrent for potential entrants, since without access to the market, their generation capacity is worthless.

The opposing argument, or at least our perception of it, is that transmission rights somehow place a virtual fence around the grid, with the incumbents inside the fence and new entrants at worst being kept out and at best having to pay to get in.

There is some truth to this perception, although it is also true that there is a gate that remains open to any new entrant that is more efficient than existing generators from a total cost perspective. In any case, however *unfair* it may seem that incumbents get the choice spots inside the fence, we must remember that the AEMC should be driven by efficiency, not equity, considerations. As we go on to argue, a “free for all” approach is detrimental to efficiency.

What are “transmission rights”

- by “transmission rights” we mean “non-common, financial rights related to access to and use of the intra-regional shared transmission network”
- the NEM provides many *common* transmission rights to generators:
 - right to connect to the transmission grid on reasonable terms
 - right to be dispatched based solely on generation offer and location in grid
 - right to receive RRP in local region [for output]
- the NEM also provides for some *non-common* rights:
 - right to negotiate a connection charge
 - right not to meet common NEM technical standards (derogations)
 - right to purchase and receive a share of the inter-regional settlement residue

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First, we need to define what we mean by “transmission rights”. They have been called many different things: access rights, property rights, contracts and so on. We use the term “transmission rights” as it simple, neutral and not a term already in use – and meaning something else - in the NEM. We define them to mean: “non-common rights associated with use of the shared, intra-regional transmission network”

The Rules provide generators with many rights – and obligations – relating to transmission. However, these are primarily “common” rights, as they apply equally to all generators. For example, generators have a “right” to be dispatched in accordance with their offer and to be paid at the local regional reference price (RRP) for the amount that they are dispatched. Two generators at the same location with identical offers would get dispatched and paid identical amounts.

There are also rights which are not common - regarding, for example, connection charges and technical derogations – but these do not relate to shared transmission.

One non-common right on the shared transmission network is the right to receive a portion of the inter-regional settlement residue. These rights can be purchased at a Settlement Residue Auction. They are similar to transmission rights, except they apply inter-regionally rather than intra-regionally. The SRA rights have been very successful and we wouldn’t expect anyone to suggest that they might create a barrier to entry: quite the opposite in fact. The SRA right is purely financial, as are the rights that we are proposing. So, we hope it is seen that transmission rights are not as radical and threatening as they are sometimes painted.

Forms of transmission rights

congestion rights: a financial hedge against intra-regional congestion: similar to the SRA instrument, which is a form of inter-regional congestion right

access rights: a right to enjoy a specified level of access to the local RRN and to be compensated should a TNSP or new generator cause this to be degraded (note: this could be a common or non-common right)

grandfathering rights: allocation of congestion and/or access rights to existing generators to mitigate any adverse commercial impacts caused by Rules changes

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Whilst our definition of transmission rights is broad, they can be placed in three categories.

Congestion rights

The right to receive payments (or, potentially, obligations to make payments) based on the price or cost of transmission congestion. The rights will generally hedge the holder, in that their overall operating profits (including revenue from rights and from NEM settlements) will be less affected by congestion than they would be without rights. However, the rights need not be “firm” in the sense that they provide a *perfect* hedge against congestion. We are not proposing “firm rights” or “firm access”: a degree of exposure is likely to remain. We recognise for instance that transmission outages are a reality.

Access rights

The right to enjoy a specified level of access to the local regional reference node (RRN) or to be compensated if this level of access not provided. The right is financial rather than physical, since physical access is not guaranteed. Again, the access level will generally not be “firm”, in the sense of providing a fixed, specified access level under all conditions.

Grandfathering rights

Rights allocated to generators existing at the time of a change in the Rules, such that the commercial impacts of the change are largely mitigated. These rights only apply in relation to Rule changes that affect the shared intra-regional transmission network: eg the introduction of intra-regional congestion pricing. Grandfathering Rights would need to be designed so that they did not dilute any new incentives regarding operational behaviour that the Rule changes were intended to introduce.

How Transmission Rights lower Entry Barriers

Transmission rights lower entry barriers by:

- preventing a “*tragedy of the commons*” – over-exploitation of a common resource;
- *reducing the uncertainty* a new generator faces in relation to future congestion;
- making *funded augmentation* a practical and efficient route for augmentation;
- *removing regulatory uncertainty* about how congestion issues will be handled in the future

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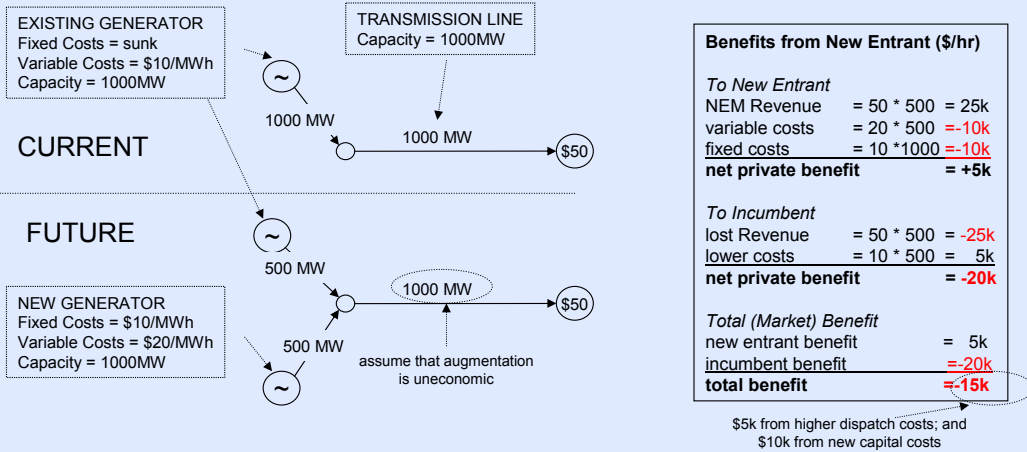
We now come to our four reasons why we believe transmission rights would lower entry barriers rather than raise them. These will be explored in turn in the following slides. All four reasons relate to giving new entrant generators greater certainty about the level of access they can enjoy from the location where they choose to connect. “Access” means their right to be dispatched based on their offer price and the RRP. Fully “firm” access would mean that they are dispatched whenever their offer price is below the RRP and never dispatched when their offer price is above the RRP, after taking account of intra-regional loss factors. In short, they are never “constrained off” or “constrained on”, and are shielded from transmission outage risks.

We are not seeking firm access. Indeed, this is not possible since, in an economically-developed grid, some intra-regional congestion will inevitably occur, so someone must be constrained. However, the objective is that there is some specified “non-firm” level of access which the new entrant can rely on, in order to make an efficient decision on where, when and how to connect to the grid.

Because the rights we are proposing are financial, a physical level of access cannot necessarily be guaranteed. However, the rights framework can ensure that the new entrant is appropriately compensated should his access fall below the agreed level.

A tragedy of the commons: inefficient entrant

The new entrant obtains benefit through a “wealth transfer” from the incumbent...



...to the detriment of the market as a whole

8



The main uncertainty surrounding access under current arrangements arises from a market failure referred to by economists as a “tragedy of the commons”. This occurs where production relies on a *common* resource: ie one which it is not possible to exclude access to, but which is depleted by individual consumption. This leads to a market failure, because new entrant producers may exploit a share of this common resource for their private benefit, even though this may detract from public welfare: or “market benefit” in the NEM terminology.

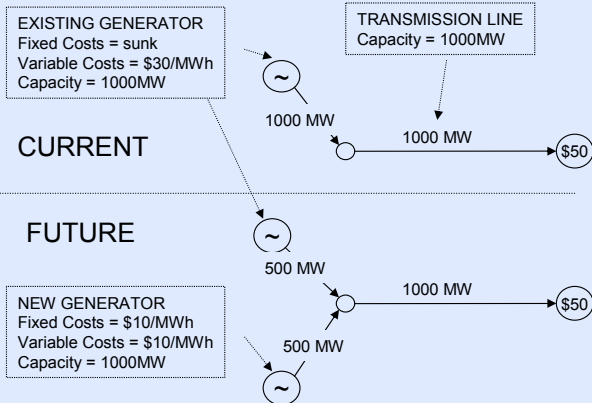
For the NEM, the shared transmission system is the common resource. It is common not because of any intrinsic difficulty in excluding access, but because the current rules do not allow it. The “tragedy” occurs when a new entrant makes a private profit based on “appropriating” some of the access previously enjoyed by the incumbent, rather than by adding to market benefit.

This slide shows a simple example of this market failure. A new entrant decides to connect next to an existing generator, making use of a transmission line which is already fully utilised and which cannot be economically augmented. The new entrant calculates that, although he will be constrained-off for half of his output, he can nevertheless make a profit at this location.

However, the choice of entry location is inefficient. It simply leads to the new generation displacing existing lower-cost generation, meaning higher dispatch costs and higher generation costs overall and a disincentive to new entry. In short, the existing arrangements are promoting productive and dynamic *inefficiency*, at odds with the NEM objective.

A tragedy of the commons: efficient entrant

Benefits from the new entrant are lost...



Benefits from New Entrant (\$/hr)	
<i>To New Entrant</i>	
NEM revenue	= 50 * 500 = 25k
variable costs	= 10 * 500 = -5k
fixed costs	= 10 * 1000 = -10k
net private benefit	= +10k
<i>To Incumbent</i>	
lost revenue	= 50 * 500 = -25k
lower costs	= 30 * 500 = 15k
net private benefit	= -10k
<i>Total (Market) Benefit</i>	
new entrant benefit	= +10k
incumbent benefit	= -10k
total benefit	= 0k

if the new entrant were fully dispatched, the benefit would be \$10k

...because the incumbent has no reason to give up its "squatter's" access

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The tragedy is not confined to encouraging inefficient investment. It also can deny access to *efficient* investment. In this slide, it is now assumed that the new entrant is low cost and clearly economically efficient, given that its total costs are below the variable costs of the incumbent. In this situation, the best outcome would be for the incumbent to close down to allow the new entrant to be fully dispatched (eg by purchasing the first generator's transmission rights).

But this will not happen, because the incumbent continues to be profitable at her reduced level of access and has no reason or incentive to shutdown. Thus, with the transmission capacity shared, there is no net benefit received from the new investment, although there is significant potential benefit if the new entrant were able to gain full access.

In principle, the two generators could come to a private agreement for the new entrant to pay the incumbent to close down. This may be hard to negotiate in practice – particularly if several generators were involved - and might be in breach of competition laws.

It might be argued that this is a private matter between generators and not an issue relating to the NEM objective as the consumer is unaffected: continuing to pay the same price at the regional reference node in all scenarios. This argument is short-sighted. The extra costs borne by the generation sector will inevitably flow through to the consumer over the longer-term.

How do rights prevent tragedy?

- congestion or access rights are allocated to the incumbent (through grandfathering rights)
- the new entrant would then need to:
 - compensate the incumbent for the extra congestion or loss of access created;
 - purchase the transmission rights off the incumbent;
 - pay for transmission augmentation (ie for the “resource” to be increased); or
 - ensure that it reduced output to relieve any congestion occurring
- in consequence:
 - the potential entrant will only invest if its private benefit exceeds the cost of “compensation”: ie if there is a genuine net market benefit;
 - the incumbent will be protected against uncertain and arbitrary loss of value due to loss of utility from a common resource; and
 - the incumbent will willingly give up its access where it is efficient to do so;

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The fundamental problem in the previous examples is that the new entrant has free access to the common resource of shared transmission capacity. This has two consequences: firstly, the new entrant does not factor the cost imposed on other generators into its entry decision, leading to decisions which are economically inefficient for the market as a whole. Secondly, the incumbent has no certainty on access, since access levels currently enjoyed could be degraded at any time by the impact of a new entrant.

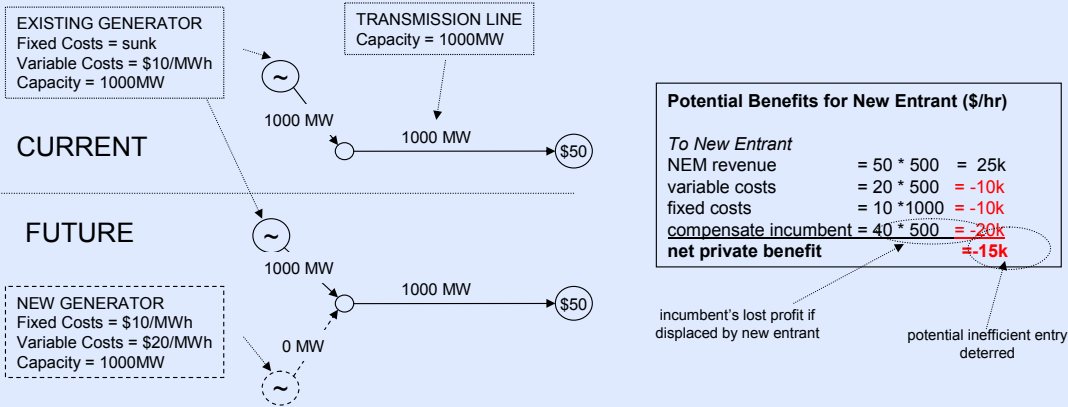
These problems are closely related and are both addressed by introducing transmission rights. Rights allocated to the incumbent would ensure that she is compensated for any reduction in access. Compensation would come from the new entrant who, as a result, would factor this cost into his entry decision.

Note that we are not proposing to physically restrict access, since this would be in fundamental breach of open access principles. We are simply ensuring that the new entrant bears the full economic costs of his entry decision.

If our proposal sounds familiar, this is not surprising. It is similar to the concepts agreed to prior to NEM commencement and encapsulated in clause 5.5 of the Rules. Unfortunately, this clause is poorly drafted and no generator has been able to acquire the rights envisaged.

No more tragedy: inefficient entrant

If an inefficient entrant bears the true cost of using the scarce transmission...



...it will be deterred from entry

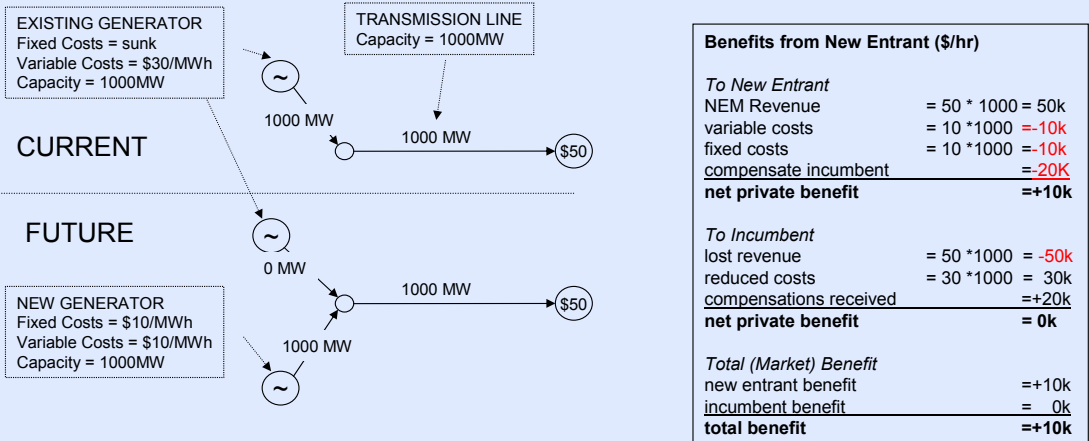
11



This slide shows how the introduction of rights would affect the scenario of an inefficient entrant. Once the cost of compensation is taken into account, the new entrant realises that the project is unprofitable and decides not to proceed with it. This is an entry “screen” rather than a barrier. It deters inefficient entrants, but efficient entrants – those who contribute positive net benefit to the market – should not be deterred. Indeed, they will be encouraged by the opportunity to obtain certainty of access should they require it.

No more tragedy: efficient entrant

The incumbent is fully compensated for releasing its “squatter’s” capacity...



...allowing the full benefits from the new entrant to be realised

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Introducing rights also addresses the market failure in the efficient entrant scenario. Because the incumbent is compensated for loss of access, she no longer needs to bid at below cost in order to preserve her “squatters rights” to access. She is, in effect, compensated for closing down, making the full transmission capacity available to the efficient entrant.

Thus, introducing rights encourages both new entrants and incumbents to make decisions in relation to use of shared transmission which are to the benefit of the market as a whole.

Rights reduce uncertainty for new entrants

- today's generation entrant is tomorrow's incumbent;
- an informed potential investor will anticipate the “commons” risk and invest accordingly:
 - where a higher rate of return compensates for the risk; or
 - at a location close to the RRN, where future congestion is less likely to occur or more likely to be built out
- if the investor has a chance to purchase rights, this uncertainty can be removed;
- the cost of the rights will be factored into the location decision;
 - where there is spare capacity – or a low cost augmentation option – rights will be relatively cheap

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The previous examples demonstrate how the introduction of rights gives greater certainty to incumbents on their levels of access. It might be argued that – from an efficiency perspective – it does not particularly matter how incumbents are treated since, with their capital costs “sunk”, they will make do with whatever access they can get. They may whinge, but they are hardly likely to exit the market simply because of some access uncertainty.

But today's new entrant is tomorrow's incumbent. As they consider their entry decisions, potential entrants will think: “Once I have entered the market, as an ‘incumbent’, what certainty of access do I have? What is to stop another new entrant coming after me and impacting my access?”. In this respect, current uncertainty on access levels will act as a significant deterrent to entry.

The AEMC has argued that such uncertainty may be appropriate, as it will encourage generators to locate close to the RRN, where there ample transmission capacity or where it can be augmented cheaply and economically: ie it provides an effective locational signal.

But is risk and uncertainty a good signalling mechanism? A manufacturer may be deterred from developing export markets due to the risk of exchange rate fluctuations. But isn't it better to make a foreign exchange hedge available and for the manufacturer to factor the cost of this hedge into its export decisions. Unmanageable risk – particularly one that fundamentally depends upon the possible future actions of third parties – is corrosive to efficiency and not an efficient or economic “signalling” mechanism which should be supported.

Funded Augmentation needs rights

- as currently envisaged, the funded augmentation option allows an investor to buy access but *not* access *rights*;
- the investor still faces the “commons” risks; but now it is *his* asset which is the common resource;
- without rights, a funded augmentation makes sense only where:
 - there is a quick payoff for the investor – but in this case the augmentation is probably economic anyway; or
 - the risk of a follow-up “free riding” new entrant is low – but most entry will be in a location where future entry is attractive (eg a coalfield)
- transmission rights solve the problem by allowing the funder to acquire access *rights*, not just access.

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The AEMC has promoted the “funded augmentation” mechanism as a way in which generators can obtain the level of access that they are prepared to pay for. However, without transmission rights, any funded augmentation in the shared network simply becomes another common resource which may have to be shared with future entrants. As a result, funded augmentation is a rare example of a service which a user is expected voluntarily to pay for but is given no rights to use and which may have to be shared with future “free riders”. Would you pay for such a service?

For this reason, the funded augmentation mechanism is unlikely to be efficient or effective. It may be used in special circumstances (see the Victorian Case Study) but will not in general provide an opportunity for generators to obtain the access levels and, in particular, the access *certainty*, which they require.

Grandfathering Rights reduce Regulatory Risk

- grandfathering rights in relation to *current* Rule changes protect incumbents against regulatory risk (that's why we like them!)
- grandfathering rights in relation to possible *future* Rule changes also protects future entrants against regulatory risk, thus lowering a significant entry barrier (that's why we are proposing them!)
- tomorrow's new entrant is the following day's incumbent

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Transmission rights – in particular, grandfathering rights – allow regulatory risk to be substantially reduced. They can be used to substantially mitigate the impact on incumbents of Rule changes or other changes in regulation affecting the shared transmission network, without diluting the intended effect of these changes on the behaviour of incumbents or new entrants.

Again, regulatory certainty may be considered a luxury for incumbents but it is vital for new entrants – tomorrow's incumbents. Regulatory risk is probably *the* major barrier entry to a highly regulated market such as the NEM.

Of course, it is not possible to define *now* the grandfathering rights that are needed to insulate *future* Rule changes as the nature of these changes cannot be known. However a general regulatory policy – whether explicit or implicit – of grandfathering can be established, and the first opportunity to apply this policy may be in relation to any significant Rule changes coming out of the transmission pricing or congestion management reviews.

To summarise how rights lower entry barriers...

- transmission rights can prevent a “tragedy of the commons”: where economically **inefficient** investment – which relies on appropriating a scarce resource from incumbents – can lead to net public detriment;
- transmission rights protect future entrants – as well as incumbents – from this commons risk;
- without rights, funded augmentation can only buy access, not access rights, meaning it’s usually not worth doing; and
- grandfathering rights are about protecting tomorrow’s incumbents as well as today’s

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To summarise, potential entrants currently face considerable uncertainty about levels of access to the RRN over the life of their project. Without transmission rights, they have few mechanisms for managing or mitigating this uncertainty. Transmission rights can help to improve certainty, and at the same time ensure that new entrants face the full cost of their entry decisions, so that what is profitable for them will be of benefit to the market as a whole: ie technically and dynamically efficient

Rights do not create entry barriers

- they **are** consistent with open access and common carriage principles
- the cost of acquiring rights (“deep connection charges”) is not a barrier to efficient new entrants
- any competitive advantage that grandfathering presents to incumbents does not distort competition
- rights can create some additional regulatory complexity, but this is more than offset by the extra commercial certainty that they provide

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We recognise that there is significant resistance to introducing transmission rights, from the AEMC and from other NEM stakeholders. Indeed, a major concern is that rights will create new entry barriers rather than lower existing ones. In the following slides we aim to address the four main areas of concern – as listed in this slide – and demonstrate that the concerns are unnecessary or misconceived.

Rights are consistent with open access

What they said...

“...transmission property rights are not consistent with the principles of an open access transmission regime”

*Macquarie Generation submission to AEMC
Transmission Pricing Review*

“[Access rights are] contrary to the regulatory transmission framework which is based on the principle of common carriage.”

*AEMC draft rule determination,
Stanwell rule change*

And we respond...

- what about gas? Rights there are intrinsic to open access
- even with “common carriage” access rights are OK if:
 - they are financial, not physical;
 - they can be acquired by new entrants on reasonable terms; and
 - TNSPs retain their obligations to economically expand the network to accommodate growth
- rights were envisaged in the original NEM design and remain in the Rules (see clause 5.5)
 - we just want to redesign them so they actually work!

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The first area of concern is that introducing transmission rights is somehow inconsistent with open access and/or with common carriage. The argument about “open access” – assuming that this refers to the effectiveness of an access regime under part IIIA of the Trade Practices Act – is straightforward to rebut. After all contract carriage – for example as used for gas transmission access – is regarded as effective and yet is entirely predicated on transmission rights and would be impossible without them.

The common carriage concern is less straightforward to address, since it is not entirely clear what “common carriage” actually entails. Our view is that common carriage entails two basic principles: firstly that TNSPs are obliged to develop the grid economically to accommodate load growth; secondly, that all generators have the right to connect to the grid at any practical location and to then be dispatched in accordance with their offer prices. Our concept of transmission rights is consistent with such common carriage, so long as, firstly, the transmission rights are financial and, secondly, they can be obtained by new entrants on reasonable terms. Indeed, as previously noted, a similar concept has existed in the Rules since NEM commencement.

If other stakeholders have a different view on common carriage principles, it would be helpful for these to be articulated and to demonstrate how transmission rights are in conflict with them.

The cost of acquiring rights is not a barrier

What they said...

“A deep connection policy ...would act as a significant barrier to entry for new generators”

Energy Australia submission

“The Commission agrees with the view that...deep connection charges may...deter new generation investment”

AEMC draft determination on transmission pricing review

And we respond...

- cost of rights will only deter economically inefficient generation
- investment will still take place where efficient: eg anticipated profitability is high or cost of rights is low
- deep connection charge is only a barrier where rights **not** provided;
- the AEMC says congestion risks already provide locational signals, but:
 - rights remove these risks;
 - locational signal arises from the cost of buying the rights
 - you can't signal using risks; you need prices

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If rights were introduced, a new entrant would have the choice of four options: purchasing rights from an existing holder, obtaining rights through an augmentation, voluntarily reducing output at times of congestion so as not to affect the access of incumbents, or compensating the incumbent(s) for their additional congestion costs. Each option implies potential a cost to the new entrant over and above that which he must pay at present.

These additional costs will inevitably deter some potential entrants: indeed they are designed to deter those entrants which are technically and dynamically inefficient. However, because new entrants now have a choice in the level of access they require and are prepared to pay for, rights should promote rather than deter the entry of “efficient” entrants.

Our approach differs from a simple “deep connection” policy, as payment of deep connection charges – of whatever nature – would entitle the entrant to some rights. We would agree that, without rights, deep connection charges *would* deter entry. Indeed, a new entrant remote from the regional reference node would suffer the double deterrence of deep connection charges and uncertainty of future access levels.

Grandfathering creates competitive advantage

What they said...

“To the extent that incumbent generators have not had to pay deep connection costs, imposing such charges on new entrants provides an inadvertent competitive advantage to the former”

Origin, P5 of submission

And we respond...

- yes, grandfathering rights are an advantage for incumbents; but does this create inefficiency? Does it either:
 - deter new entry; or
 - distort competition between new entrant and incumbent?
- OK, suppose incumbents had to purchase rights instead. This would:
 - put a dent in the incumbent's balance sheet;
 - but leave their operations and behaviour otherwise largely unchanged;
- a dent in the balance sheet does not prevent an incumbent from competing so effectively?
 - if it did, they would just be taken over by a company with a stronger balance sheet;
 - if denting balance sheets really did promote competition, why not just have an incumbency tax?

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We have proposed that incumbents receive grandfathering rights in relation to new Rules or regulations but subsequent entrants do not and would have to pay to obtain similar rights. It has been argued that this provides a competitive advantage to the incumbent. In a sense this is correct; other things being equal, the incumbent will as a result be more profitable than the new entrant. However, the critical issue is whether this will distort competition and so undermine economic efficiency, in conflict with the NEM objective.

This question is perhaps more meaningful and easier to answer if placed in the converse: if incumbents had *not* received grandfathering rights and so had to pay for equivalent rights, would this *promote* competition and the NEM objective? If, say, an incumbent had to pay \$50m to acquire this right, would this fact by itself better promote dynamic or static efficiency? It is difficult to see how or why this might be the case. Once the \$50m is paid, the cost becomes sunk, just like the other (much larger) historical costs associated with entering the market in the first place. The extra cost might, if it significantly damaged the incumbent's balance sheet, limit that company's tactical and strategic opportunities to deter new entrants. But, if this were commercially significant, the damaged incumbent would simply be taken over by a company with a stronger balance sheet.

Indeed, if a regulator believed that putting dents in incumbents' balance sheets was a good way to promote economic efficiency, it might decide to do this as a matter of course: eg by instituting an incumbents tax. This sounds ridiculous (we hope) but is simply the argument against grandfathering taken to its logical conclusion.

There are also parallels with the grandfathering of technical standards. In the same way it makes no economic sense to require a generator to retrofit to achieve a level of technical performance it was never designed to achieve, it makes no economic sense to impose a locational price signal on a sunk investment.

Do rights create complexity and regulatory risk?

What they said...

“Origin does not consider that a workable regime of property rights is feasible because of the essential difficulty in allocating to individual parties the costs and benefits of augmenting the shared network”

Origin submission P5

“the Commission agrees with the view that...deep connection charges may create additional regulatory complexity”

AEMC rule proposal P 41

And we respond...

- complexity depends upon the form of rights and how they are implemented
- regulatory risk depends upon degree of regulatory discretion and the extent to which the new regulations were sustainable
- yes, any new complexity must be justified, but this is no reason to disregard rights ex ante.
- the AEMC has simply not investigated how complex an implementation would be. This is prejudice, not analysis

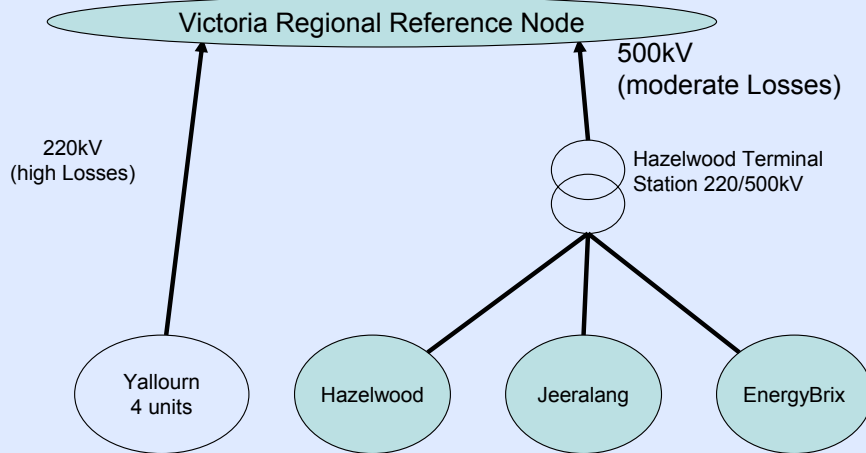
21



Finally, it is argued that a regime of transmission rights would be extremely complex, adding to the regulatory complexity and risk of operating in the NEM and so deterring future entry. We do not deny that a system of rights applying on the shared transmission network would be complex, but then so are many other aspects of the NEM. The issue of complexity is relative rather than absolute. The AEMC cannot reject rule proposals simply because they are complex, but only where the cost of the additional complexity outweighs the benefits of the new mechanism.

We have articulated a number of generic benefits of transmission rights in reducing entry barriers. The level of complexity will depend upon the actual implementation of these rights, which is far from decided upon, even amongst the signatories to this submission. Therefore, we would argue that, rather than reject the concept of transmission rights out of hand as “too complex”, the AEMC should examine how to make the implementation of rights as simple as possible.

Case Study: Victoria



Latrobe to Melbourne Transmission: 1978-2000

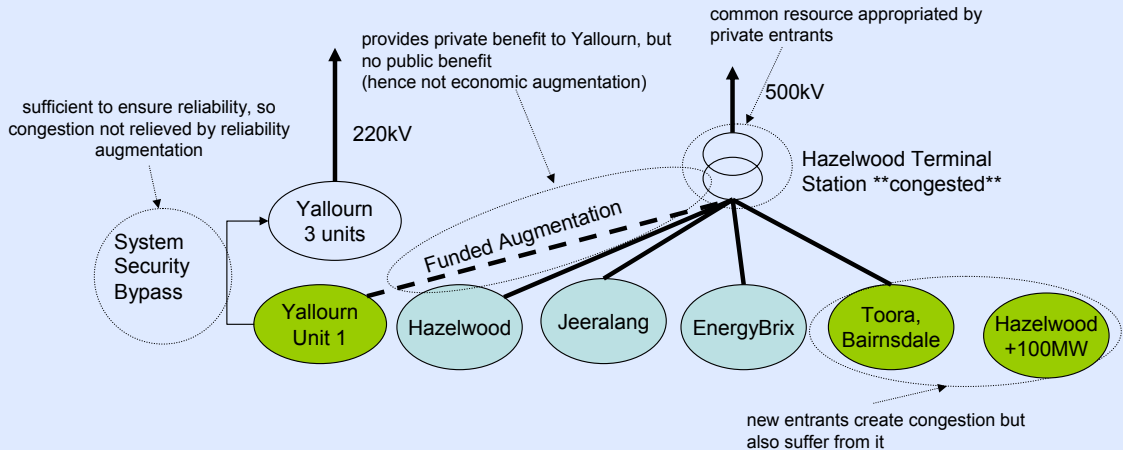
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The Victorian case study considers the Latrobe Valley to Melbourne transmission path. Historically, three power stations (Hazelwood, Jeeralang and Energy Brix) have used a 500kV line via a 200/500kV transformer at Hazelwood terminal station (HTS). Yallourn Power station, however, used a 220kV line and, as a result, suffered higher losses: ie a worse intra-regional loss factor to the Victoria RRN. The Loy Yang power stations use separate transmission lines and are not relevant to this case study.

Since the transmission assets have been designed to accommodate this generation capacity, there is no congestion when all transmission assets are in service (“system normal”).

Common Resources becomes over-used



Latrobe to Melbourne Transmission: 2006

23

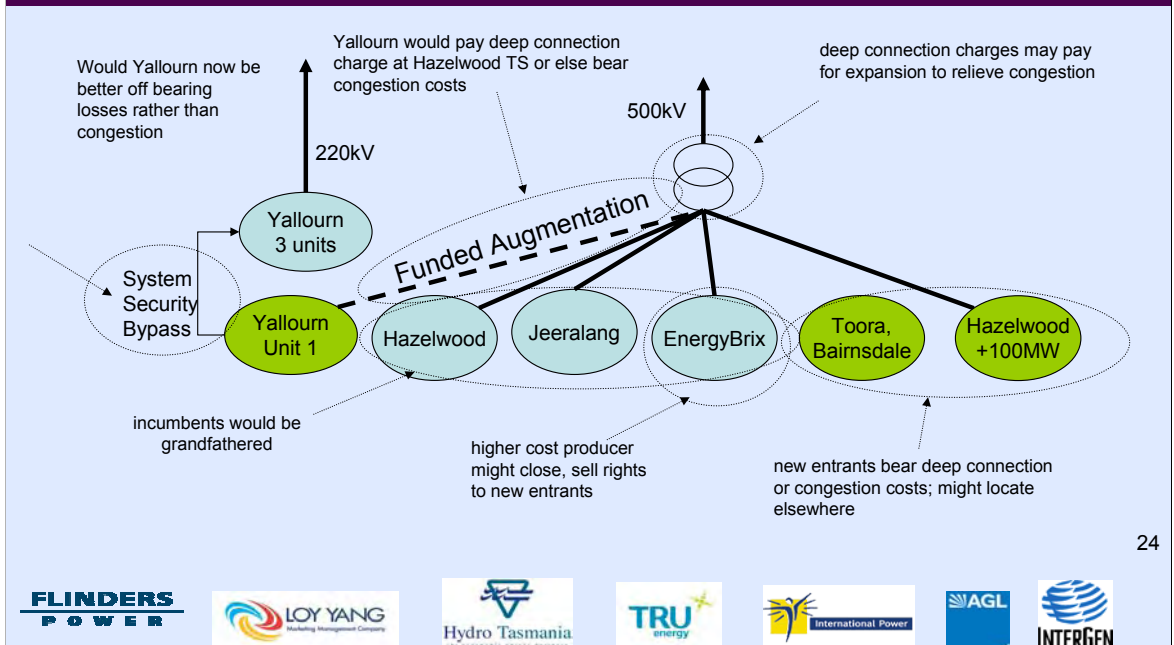


Since 2000, additional generation capacity has been developed which accesses the main grid through the HTS: new power stations at Bairnsdale and Toora and additional generation capacity at Hazelwood Power Station. In addition, Yallourn has funded an augmentation which connects one of its units to the HTS, since the benefit from the improved loss factor exceeds the cost of the augmentation. As a result, the HTS is now congested when all of the connected generation capacity seeks to operate at full output.

Since Victoria suffers chronic shortfalls of generation capacity at peak demand, one might expect the HTS congestion to be relieved for reliability reasons through some augmentation. However, a "system security bypass" allows the Yallourn unit to be reconnected to the 200kV line when necessary (eg through NEMMCO direction), so the full generation capacity can be accessed if needed for reliability reasons. Therefore, there is currently no case – reliability or economic – for augmenting the HTS.

This is a classic "tragedy of the commons" situation, with an additional twist that part of the problem has been caused by a funded augmentation: a mechanism that the AEMC has pointed towards as a potential *solution* to access concerns. Note that the nature of the funded augmentation in this case makes it unlikely that a new entrant could free ride on it, so Yallourn could confidently fund it without obtaining any rights to use it.

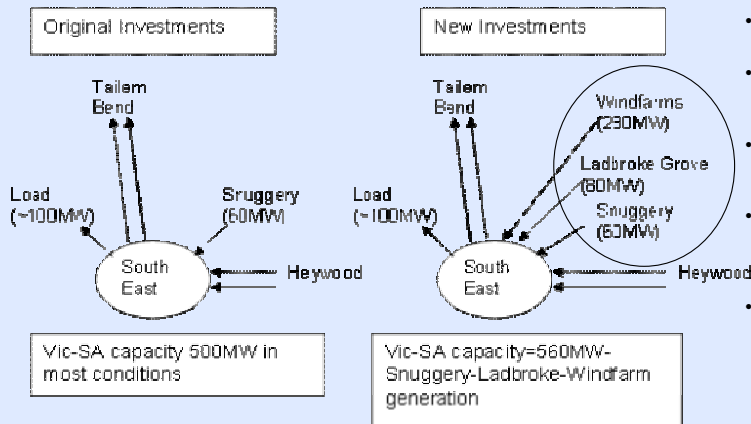
What if there had been Transmission Rights?



Consider the situation if a regime of transmission rights had applied, with grandfathering occurring in 2000, say. The then incumbents (shown shaded blue in the slide above), would have received grandfathering rights of access to HTS and the 500kV line beyond. New entrants could have acquired rights, but only up to the capacity of HTS. The first entrant to cause this capacity to be exceeded [assume this was Yallourn. Is this right?], would not have received rights. It would have then had the four options discussed previously: ensure that its output does not create congestion; compensate rights holders for any congestion that it causes; buy rights from one of the existing holders; or fund an augmentation to HTS and receive the corresponding rights. If none of these options allowed the entrant to be profitable, it would simply have decided against entering the market at this location.

With Yallourn we can speculate that the preferred option might have been to ensure that it did not create congestion, since all of the connected capacity is rarely at full output concurrently and at such times Yallourn Unit 1 could reconnect to the 200kV via the system security bypass [feasible?]. Despite the higher losses, this would be a more efficient outcome than being constrained-off. Alternatively, Yallourn may have decided not to fund the augmentation or may have sought to buy rights of an inefficient incumbent.

Case Study: South Australia



- New investments create congestion costs but do bear them.
- A more efficient decision may have been for Ladbroke Grove (gas) to locate closer to load (Adelaide).
- Windfarms receive priority dispatch over scheduled generation and reduce SA imports.
- Adelaide consumers received no added security or enhanced competition benefits from the new investment.
- Had investors been exposed to the cost of the additional congestion created, they may have located elsewhere in the SA network and provided added benefits to Adelaide consumers.

When the new investments operate they act to constrain the VIC – SA interconnector (VIC & NSW Gens)

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Ladbroke Grove power station is located close to the gas field that fuels it, on the SA-Vic interconnector in the south east of South Australia. This would have been optimal for the investor, as it minimises the cost of gas transmission and also enables LGPS to receive the SA price, which would generally be higher than the Victorian price.

As a result of its location, there is now congestion between the South East and Adelaide. A feature of regional pricing is that local generation has precedence over the interconnector flow, i.e. Victorian generation. When these generators operate they act to constrain the Vic-SA interconnector and therefore constrain off Victorian or NSW generation. Thus, it creates additional congestion costs but does not bear these.

It may be the case that an efficient decision would have been to locate closer to Adelaide and build a gas pipeline. Typically, gas transportation is cheaper than electricity transportation and central planners usually locate gas-fired power stations at load centres.

Consider the Ladbroke Grove investment from the perspective of the long-term interest of Adelaide consumers: they have received no benefit of this power station – from either added security or enhanced competition - as its generation has simply displaced other generation that the consumer previously had access to. Furthermore, Ladbroke Grove's ability to displace other generation does not imply that it is more efficient, as the regional model does not permit fair competition between them.

A number of windfarms are also being developed in this area, including three staged projects near Lake Bonney totalling up to 280MW. As with Ladbroke Grove, this generation further impacts Victorian imports, although the windfarms will not bear the cost of this and will receive the SA price. As non-scheduled generation, the output of these units also receives priority over all scheduled generation output at present, worsening the congestion impact.

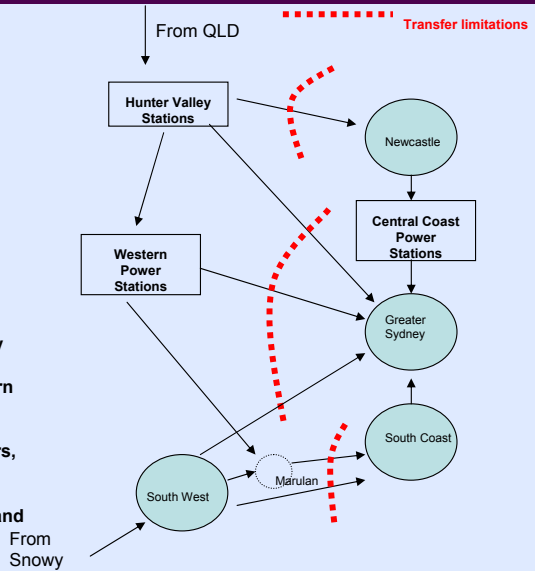
Windfarms need to locate where it is windy. However, if the windfarm investors had borne the full cost of the additional congestion that they create, they may well have decided to locate their windfarms elsewhere on the SA network: there are numerous alternative windy - but also uncongested - network locations.

The SA TNSP is now conducting regulatory tests on upgrading the South-East to Taillem Bend capacity. As the generation investments will be committed (i.e. sunk) during the test, it is very likely that such an upgrade will appear as an efficient investment. However had an assessment been taken prior to commitment, the costs of a gas pipeline and windfarm relocation would likely have been lower than the cost of a new line.

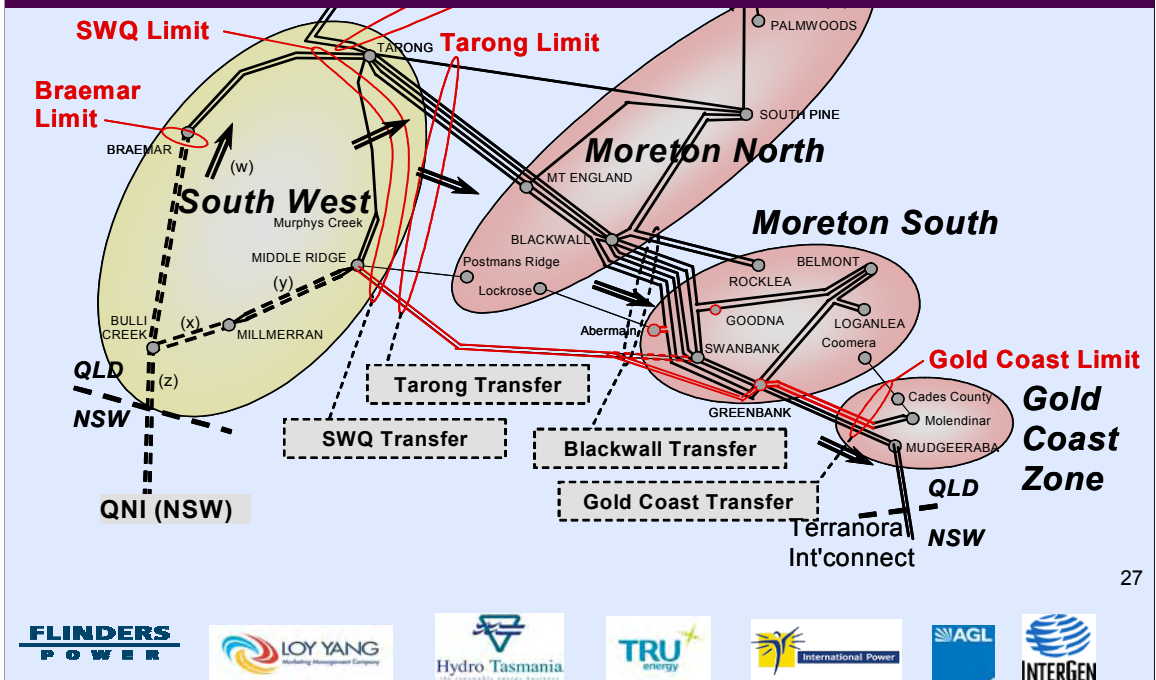
Case Study: Providing Access for New Generators in NSW

Transfer Limitations to Major NSW Load Centers	
Issue 1	Congestion between Liddell and Newcastle
Issue 2	Voltage control limitation in supplying Sydney
Issue 3	Congestion between Southern NSW (Marulan) and Sydney

- 500kV reliability upgrade from Hunter Valley to Western to Marulan is planned for 2010.
- Works will address existing limitations and improve supply reliability to customers
- Announced new generation at Marulan/South West, Western or Hunter Valley areas will increase congestion at the locations shown
- Network planners can only respond after congestion occurs, and if supply reliability is threatened.
- Therefore no certainty of access in the longer term for new and existing generation outside of the major load centres and no signals to locate efficiently



Case Study: Queensland



InterGen built a shallow connection line from Millmerran Power Station to Bulli Ck on the Queensland-New South Wales Interconnector (in the South West region) to connect the plant to the grid. This line therefore forms part of the connection assets for the Millmerran Power Station.

Subsequently, this connection became operationally part of the shared network when Powerlink constructed the line from Millmerran to Middleridge. InterGen continues to pay the costs of the line from the Millmerran Power Station to Bulli Creek.

Load is growing in SE Qld but new generation is being built in SW Qld as depicted on the map above (extracted from Powerlink's 2006 Annual Planning Report). New entrant generators in SW Qld will create congestion and consequently appropriate benefits associated with InterGen's transmission and generation investment. InterGen will not be compensated for the loss of those benefits.

Conclusions

- transmission rights were part of the original NEM design; the challenge is to get them to work, not to get rid of them;
- the debate has been centred on entrants vs incumbents and on instinctive equity concerns rather than rational efficiency considerations;
- it should be about new entrants vs the next entrants; who wants to build a generator where there is no certainty of future access?
- you can't expect a generator to fund augmentation (whether "funded" or "deep connection") without attendant access rights. Who would spend money on a common good?

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Transmission rights are not radical or complex and are not a departure from open access or common carriage. They exist in the current Rules, just not in a way which is workable. Without rights – as the original NEM designers foresaw – intra-regional congestion creates uncertainty over access levels and dynamic inefficiency. Far from creating barriers to entry, transmission rights are important in lowering them.

We think that concerns about rights centre on instinctive equity rather than rational efficiency concerns. It may seem right to give new entrants a “fair go” on the grid, but where the grid is congested this simply causes a (potentially lower cost) incumbent to be pushed out. This is neither fair nor efficient.

One can argue that mistreating incumbents does not matter because their costs are sunk anyway and so they have no choice but to remain in the market. But any informed potential entrant knows that they become an “incumbent” once they sunk their capital. They will be loathe to enter a market with high commercial and regulatory risks on transmission access, unless they expect to earn a higher return on capital to compensate for it.

Inefficient investment and higher returns on capital, in the long run, mean higher prices for consumers, contrary to the NEM objective.