

More on Congestion Management in the NEM

By Hugh Bannister

My small article on congestion management in the NEM a few issues ago drew an interesting and challenging range of responses. More recently the AEMC has produced a Directions Paper for its Congestion Management Review and that also deserves some comment. So my editor has been on my tail to say a bit more while I have been procrastinating while contemplating the issues. So, if this Insider is a little late, it's because these are *very* difficult issues to write about! As is usual with Insider, the analysis and views expressed here are my own and not necessarily those of IES.

Are firm FTRs a good idea?

There were two responses to my first article that I will talk about a little. The first was from a NEM trader that I have known a long time. The first thing that he said was that the article was a very good read. The next thing he said was that firm Financial Transmission Rights (FTRs) are a *really bad idea in any and every circumstance*. As lauding the power and beauty of firm FTRs was pretty much the central theme of my article, this was a somewhat deflating second comment! And of course he gave his reason and it's a very good reason in the current circumstances of the NEM so I will talk about it.

Outline of the debate

Elements of this debate have been conducted earlier, but it's worth going over them again.

Under the current Inter-regional Settlement Residue (ISR) auction regime, if a generator wants to contract firm in another region it faces the risk of a transmission line outage (there are other risks associated with the NEM regional pricing rules, but more of that later). If it wants to contract firm against line outages, it must contract for backup power near the point of delivery. This is a pain and certainly a discouragement to inter-regional contracting and therefore trade, but it's a fact of life in the NEM.

On the other hand, if you auction firm FTRs and our generator buys whatever FTRs it needs to firm up its contracting, our generator will lose interest in

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arranging backup against line failure. This is hardly disputable. Further, as TNSPs are essentially removed from the market, they will do nothing but meet their regulatory obligations; they certainly have no incentive to arrange backup to firm up the settlement residue. Can't argue with that, either. These blunted incentives inevitably lead to under-investment in backup generation, followed by system unreliability and potential for a blow-out of payouts on the FTRs. Well, I find that argument pretty convincing in the current circumstances of the NEM.

A Closer Look

But let's look at it a bit more closely. To do this, I will examine a very simple and somewhat unrealistic example, but which illustrates the issues.

Consider a base load generator business considering building a new plant, with a prospect of contracting to a large load in a particular region – call it Region A. I could try to draw a picture here but I'm no artist, so a word picture will have to do.

The business has two siting options. One is in Region A close to its prospective load but with expensive fuel. The other is in a neighbouring Region B where there is cheaper fuel while construction and other operating costs are the same. Further, the cost of backup GTs is similar although not necessarily the same in each region. What to do? There are at least three possibilities that a central planner could consider:

- If the interconnector between A and B is highly reliable, the base load generator will be located near the cheapest fuel in region B and the backup for it could be located anywhere convenient, without too much concern about line outage.
- If the line has a medium reliability, it could still be best to locate near the cheap fuel in Region B, but prudent to locate the backup close to the load in Region A, in case of line outage.
- If the line has low reliability the baseload generator and its backup will both be located close to the load in Region A, despite the relatively high cost.

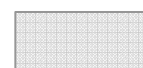
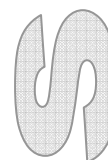
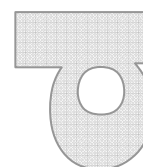
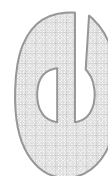
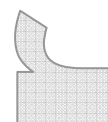
Of course, we do not have a central planner but we do have a market, or at least a partial market. The missing player here is the transmission line owner, the TNSP.

What part do/should TNSPs play?

If we look at the options above, the line reliability delivered by the transmission owner is a key element in the optimal outcome, but he/she is removed from the market as the NEM now defines it. We do not need to argue that transmission is a potentially competitive sector to accept that we might be better off if transmission owners bore more of the risk of line outages.

In the example above, if firm FTRs were to be auctioned it could be in the interests of the transmission owner either to make the line very reliable or to arrange for the necessary backup generation.

It is noteworthy that the AER has recently determined that TNSPs should have up to 5% of their revenues at risk from network non-performance. Currently this is not linked to market outcomes but the AER is looking at ways to make such a link.



They could try looking at the possibility of putting the proceeds from the auction of settlement resides at risk if TNSP line outages cause major market constraints. Auctioning firm FTRs would support such an approach.

Should FTRs be auctioned?

There is another fundamental question to answer. I raised it in my first article and asserted a starting position; that FTRs up to the normal operating levels (allowing for planned outages) be auctioned.

Would I still stick by this in the light of the above analysis? Certainly, if the most economic transmission solution in a particular case is a skinny and unreliable line supporting only opportunity transfers as in the last case above, then we would not auction firm FTRs over such a line.

But what is the situation over most of the NEM? My reading is that there is a widespread belief, starting at the top with the Ministerial Council on Energy (MCE), that there should be a truly national market; that baseload generation *should* generally go to the cheapest location and be able to supply load effectively firm into other regions, albeit with NEMMCO's reliability criteria implying that the backup should be local (i.e. adequate within each region).

It would be possible to do studies to determine whether the network truly is strong enough to support economic firm contracting across regions but it should be designed so, except perhaps for some peripheral lines.

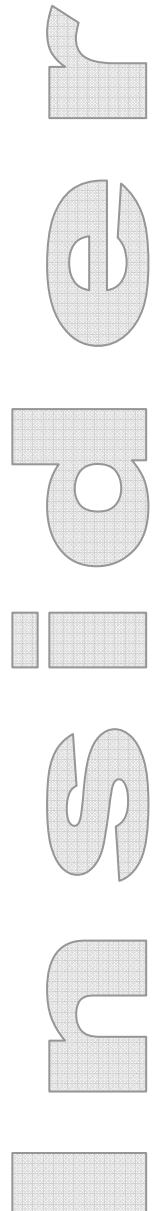
Where does non-firmness come from?

This brings me to the next interesting response, which came from Dr Darryl Biggar who advises the AEMC and AER. A paper from Dr Biggar that covers this ground has been published as part of the AEMC's congestion management review.

Dr Biggar sees non-firmness in the ISR auction revenue stream as arising from the anomalies introduced by regional pricing and the way that flows through into the ISR streams. While of course aware of the distortions introduced by the NEM regional pricing rule, for me Dr Biggar's argument puts the issue in a new and enlightening perspective.

However, I do have an issue not with Dr Biggar's technical analysis but with the implied conclusion that pricing distortion *is* the non-firmness problem. Additional risks posed by line outages, while recognised, appear to be considered second order.

So Dr Biggar's constraint-based residue (CBR) auction proposal addresses only the pricing distortion and therefore only part of the firmness issue. But how big a part? That's not at all clear and perhaps the AEMC's ongoing work on the materiality of congestion in the NEM will clear that up.



IES analysis

However, IES analysis reported elsewhere indicates that network constraints are generally not static and persistent over long periods. Some (such as in the Snowy region that has received a lot of attention) may persist for a time but can change and move as the network, generation and load patterns evolve. Most others are entirely ephemeral in nature, being driven by network outages.

The AEMC's Discussion Paper

So what does the AEMC's Directions Paper make of all of this?

I hunted through the document looking for a serious discussion on the FTR option, only to find that it was ruled out by the MCE's Terms of Reference for the review! Or that's the way the AEMC interprets it. The Terms of Reference from the MCE do imply that regions are here to stay and that the AEMC's job was to find ways of dealing effectively with *material* congestion until such time as investment or boundary change (and the drafter surely knows that this is never likely to happen) fixes the problem.

The AEMC acknowledges that it is still not clear about what and where the material congestion is in the NEM, but it argues it is certainly not *all* congestion and a solution involving full nodal pricing for generators, for example (which the AEMC acknowledges could fall within the terms of reference) is ruled out simply because it would indeed address all congestion.

This is a remarkable leap of logic. It implies that dealing with only part of the problem of the non-firm of contracting over the network (the pricing distortion part) on a selected, few constraints (to keep it manageable) is necessarily more efficient and robust, simpler and cheaper to implement than a solution that addresses the whole problem. If constraints are more ephemeral than fixed as we argue, one cannot reasonably reach such a conclusion.

The LATIN Group's proposal

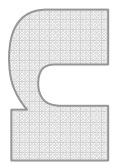
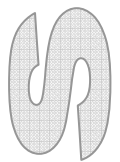
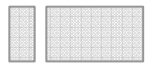
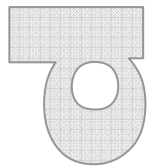
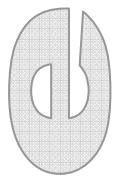
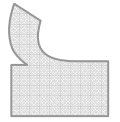
A proposal by the LATIN group of companies (and IES is not on their payroll) to go for nodal pricing for generators, an FTR regime and vesting FTRs for existing generators was dismissed in a few lines in the Directions Paper. This was a serious proposal and deserves fuller treatment; perhaps it will get fuller consideration in the draft report.

Is it true that new generators would be unfairly disadvantaged against existing generators if existing generators are vested? I would have thought that new generators are really competing against each other to meet demand growth.

Which Regime?

The real question is – does a suitably designed firm FTR regime (with TNSPs facing network performance risk) offer good incentives for efficient investment?

Would it be more or less efficient and practical to implement than the various partial regimes that are currently dominating the AEMC's thinking? Do we want



to deal with the issue fully at this juncture (and some including the LATIN group have surely hoped that this Review would do that), or do we just adjust a few things at the margin and live with the remaining network congestion problems bubbling along indefinitely? Do we risk being mired in an ongoing regulatory headache, arguing about which constraints are in and which constraints are out of whatever partial regime that wins the day? Or, with a comprehensive congestion management regime off the table, will it all look like too much effort for too little return?

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