
PANEL SESSION 2

Comments and discussion

Martin Algie (Minter Ellison)

A question for Joshua. One of your assumptions was that the generators have some degree of market power. What would be the effect if you didn't make that assumption, and I say that because I think there are good reasons for not making that assumption, if you assumed that no generator's capacity is necessary to satisfy demand?

Joshua Gans (Melbourne Business School)

In those instances we push the case towards the case in which demand is effectively very high. If demand is relatively low, as Frank talked about yesterday, if demand is low as such that there are many generators which could cover it, you could get more or less competitive outcomes. In that respect, all these strategic implications go away. But you have already got the competitive outcome anyway. Now, you will still see, in reality, contracting in that environment because of uncertainty and simple risk bearing, which is in our model. So we are speaking to the cases in which demand is particularly high and so those are the instances that von der Fehr and Harbord identified as the instances where we will be most concerned about market power issues.

Lasantha Perera (Eastern Energy Ltd)

I think what we heard from the previous speaker, John, when he was talking about what they call a loading and what Joshua is talking about in terms of contracts has very nice implications because previously we had a ...(indistinct)... loading where economics dictated the gross marginal cross units would come on line and if for an instant there was mismatch, that is a non-economic unit on line, it was inefficiency ...(indistinct)... time and you can't recover that. That's always the situation in economic efficiency that you must always have ...(indistinct)... loading to have the best economic outcome. But when you come into the pool situation the loading is not by merit order but by merit order bid price, and if the bid price is not at the marginal price, as we would expect it to be, there will be some uneconomic situations that develop

which can not be rectified in time, because we had a high cost generator running for one hour even when a low cost generator could have run.

So that overall economics comes down because we have now the bid price coming in to set what should be the generator that is loaded. In that context of economic efficiency, in terms of a pool, I think the difference is that you talk about commodities like soy beans, or what ever it is, and it is slightly different because the prices set up in a sense fixed as a market price does not have an implication in terms of what is loaded, because the decision to make farm soy beans is taken very much in advance and it is not influenced by that decision at the price at which it is cleared. So we have a little bit of a mismatch, or a situation where we have a full price which is unknown and keeps going up and down, and of course to contain that uncertainty we have the contract coming in. But if you said what is the market price, is it the contract price or is it the full price? It's going to be a big question, because the item that is published which is available to most people is the full price. They don't know what the contract price is. So in a sense you can say the market is imperfect in-so-far that the market doesn't have full information to decide which is the necessary full price. I would like some comments from both gentlemen to say what do you think should be the outcome.

John Salerian (Industry Commission)

I think in the context that I was presenting, that was the optimum thing to do. If the constraint emerged then what it was saying was that at that point in time the capacity wasn't available. In the long-run it might be a signal that the system has to be changed and there might be some augmentation of transmission occurring somewhere in the system. All the point was of that was that at that point in time it, in fact, was socially optimal — it was the economic equilibrium to actually run the more expensive generator and the only reason for that was because of the externality in the network.

By doing so it enabled the consumer at various nodes to purchase more electricity from that cheap generator. He was unable to deliver the power because of this network externality. By running one of the other more expensive ones they were then able to purchase more of the cheaper power from the cheaper generator. It probably gets caught up in the market mechanism but I think it is a slightly different question to your thing.

Joshua Gans

The question of what is the price of the electricity, you have to ask who is actually trying to determine that. If you are a retailer you know the value of any contracts you have signed and you also know the pool price, so you can work out the average price for every unit of electricity in a particular period that you have had to effectively pay. If you are a potential entrant you have got a harder problem but you can observe pool prices, and the other thing is that a potential entrant will probably have in their mind trying to secure some contracts prior to building the plant.

There is nothing against that, it is just more uncertainty so it might be difficult. So, I think these things are discoverable. We do not know in a lot of economic transactions what prices things were actually exchanging at, so we have to infer. But it should not be necessarily a barrier to price signalling the existence of a contract market.

Lasantha Perera

There is a bigger problem, because I as a retailer who has said to my customer, the price which I fix to the customer is based on my contracts, in a sense, and if the pool price comes down, the customer says "Why are you charging me so much? Look the pool price is so low", because he doesn't get the information about what the contract prices are. That is imperfect knowledge in the market. So the brunt of the whole system's problem is taken up by the retailer, because he has to tell the customer "Hey, buddy, but I bought at a higher price".

Joshua Gans

That's true. If you have bought optimally at that higher price, if you signed the strike price optimally, you should be in no different position from your competitors. So if you have contestable customers the one thing you can say is "Well, go ahead. Go get another price elsewhere if you think it's too high."

Lasantha Perera

The market ...(indistinct)... comes into question in the customer's eyes which is not very good for the market, is it?

Michael Cunningham (Queensland Treasury)

The price paid under uniform tariffs by domestic consumers in remote areas of Queensland is about 40 per cent of the cost of supply. Therefore, it seems to me there would be efficiencies in the overall system if a local supplier could supply the cost less than two and a half times the cost of the present supplier. The Government is not itself going to purchase any new capacity, so are there any incentives for local supply, where it is more efficient than supplying long distance over longer commission lines?

Donald Anderson (Queensland Electricity Reform Unit)

That is an excellent question. One of the things that obviously that inter-relates with is the CSO payments and the sharing of those. One of the issues that is a really down the track issue for us is to work out mechanisms by which the government can start sharing those CSOs back in some way with potential new investors so that can be brought into their thing. We are just working on that now.

Henry Ergas (University of Auckland)

A question for John, which relates to your overhead where you have the equilibrium prices which emerged under each of the demand scenarios. I don't know a great deal about electricity but intuitively you would think that the difference between the equilibrium prices at the nodes should on average be equal to the long-run marginal cost of transmission, of the transmission link between the nodes, taking account of extra analysis. That is, that because the cost of transmission from point A to point B will be reflected in the price difference between point A to point B, I should build capacity up to the point where long-run marginal cost of adding to that capacity is equal to the equilibrium price difference. But looking at your numbers there seem to be virtually no average price difference between the nodes and I wondered what that meant in terms of how you had modelled the supply side of the transmission network.

My question for Joshua is if entering into contracts reduces the ability to exploit market power by the generator, then if there were a reasonably small number of generators wouldn't you expect them over a time to broadly refuse to enter into contract?

John Salerian

The way this model was set up is that it's in a sense got long-run generation but it doesn't have long-run transmission. We didn't put in there the opportunity to invest in extra transmission capacity. If we had done that then this model would have made the trade-off between the congestion costs and transmission losses. It would be a fairly complex optimisation because it has got to look at the flows over each of the blocks, as in this case it's an annual model. It has got to build a capacity. It is going to be sitting there for the whole of the period but the losses are going to be going up and down, depending upon load flows over that link in each of those time periods. So, yes, it would do that, if we had done that; we have not.

That was one extension that we actually mentioned ...(indistinct)... you can make was to start to see how that then starts to interact with generation. What you are doing with the transmission system is quite important to the long-run efficiency of the whole system, otherwise you would get a constrained optimisation. You will get generation optimising itself around a given or a regulated transmission system. What you do with the transmission system is important in optimising the whole.

That was really where we were trying to go in the long-term, and then the other issue that we wanted to look at was the revenues created by that because the only revenues you get in the long-run are the differences between the marginal energy losses, because the marginal losses are higher than average losses. So you get this trade-off between, do I invest in the capacity and get the losses down or do I restrict capacity and get the losses up? But we were also thinking, in the long term, of the Eastlink and the Westlink and the Basslink and how they matter because it will in part determine how the incentives for potential generation to come into the system.

Joshua Gans

The answer to your question is, in the context of our model, absolutely you would expect that. But there are a lot of wrinkles. First of all, you are talking about tacit collusion, so what is critically going to hinge is the ability of generators to observe each other's contractual arrangements. The advantage of having a pool as we do is you have to bid all of your amount into the pool. You can not observe which amount of that was contracted necessarily, unless you had detailed access to each other's bid information that would be a problem, but that will always be a problem.

Moreover, because of the uncertainty and because you always have risk bearing reasons to sign contracts and retailers will demand that, it is going to be hard to

distinguish between the strategic element of contracting and other elements as well. That adds to the uncertainty and would add to the difficulties of generators to tacitly collude on that dimension. There might be other reasons to be concerned about that but I would say they are probably lower on the list.

Stephen Wallace (Snowy Hydro Trading)

Have you actually had a look at this relationship of contracting over multiple periods? Because my suspicion is that if you depress spot prices based on your generation in one period the future contract prices will actually go down and then you put yourself in a situation where those prices are lower than if you continue to depress prices. My suspicion is that a profit maximum strategy over multiple periods is actually to ignore contracts and bid in the spot market as if you hadn't any, and the only purpose of contracts is just to smooth the cash flows out. Would you like to comment?

Joshua Gans

There are a number of issues bound up in what you say. The ability of you to use your market power in the pool to manipulate prices you might sign for contracts is critically dependent on the sophistication of the purchase of contracts and how they read that. So you have to make assumptions about that. But I wouldn't presume to do in this setting.

In terms of the whole thoughts about the inter-temporal aspects of contracting can be particularly relevant if you are concerned about being despatched in adjacent time periods. Those are complicated financial arrangements and I believe that there are researchers of the University of Queensland, Steven Gray is one of them, who are actually to solve that complicated financial problem. There is no answer yet on how to do that but there are probably advantages to so doing. I think that we will still see contracting. I don't think ignoring it will be the strategy for generators.

Stephen Wallace

I wasn't advocating ignoring it, I was advocating the trading of the generator in the spot market ignores the contracted position in the long-term.

Joshua Gans

No, can not do that. You wouldn't do that for simply the reason — this is why it is a domino strategy — I told you before. If you ignore your contracted

amounts you could end up producing into the pool when you would be better off having purchasing from the pool and vice versa.

Stephen Wallace

That s a short-run optimisation. The long-run is once you affect the future contract prices you will realise it is not optimal to take a short-run optimisation.

Joshua Gans

And then we get into a discussion of the sophistication of retailers which is a thing I can not comment on.

Paul Hyslop (Edison Mission Energy)

We have actually seen contract prices fall in the Victorian electricity market from around \$40 two years ago to under \$20 now because they followed the pool price down because generators have, in fact, followed the strategy that you prescribed and if in fact they had ignored their contract positions and bid into the pool on the basis of optimising their position, they would have held contract prices up and made a lot more money in the process.

You're saying the dominant strategy is to bid in marginal costs of your contract position and I also disagree with that. I don't think that is the dominant strategy for generators.

Joshua Gans

We can argue about that later probably.

