

July 24, 2011

Attn: Richard Owens, Director  
Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

**Re: Review of NERA Report dated 22<sup>nd</sup> June 2011 (Final Report).**

Dear Mr Owens:

This letter contains our review of the (Final) Report by NERA Economic Consulting entitled “Potential Generator Market Power in the NEM.”

**Background**

Our understanding is that the context for the NERA report is the requested rule change put forward by Major Energy Users Inc (MEU) to constrain the exercise of market power by generators in the National Electricity Market (NEM). The MEU have argued that when there is high demand for electricity, some generators are not constrained by competitive forces and have the ability and incentive to use resulting market power to increase the wholesale electricity spot price. The MEU have proposed that the Australian Energy Regulator (AER) should provide an assessment of which generators have market power and when and declare them ‘dominant generators.’ If it is assessed that at a certain period of time that one or more generators are dominant, then those generators would have a separate cap on their bids at \$300/MWh (and a requirement to offer all “available capacity”) while other generators could offer bids as per usual up to \$12,500/MWh. AEMC are required to assess the proposed rule on the basis of economic efficiency including allocative, productive and dynamic efficiency that covers the impact of the rule on investments.

AEMC have outlined a procedure for evaluating the proposed rule. The first task is to “clarify the meanings of market power, exercise of market power and the impact of market power on efficiency.” It is in the context of this task that the NERA report has been drafted.

We have had the benefit of providing comments on a draft version of the NERA Report. We briefly summarize our previous comments below and note whether, in our opinion, they have been addressed in the final NERA report. We also comment on the expanded discussion of the functional definition of the market that is included in the NERA report. Overall, **we find that NERA have appropriately described the state of the economics and law literature on market power as it pertains to wholesale electricity generation.**

As noted above, this is the ‘first task’ in the AEMC’s evaluation proposed rule. We

limit our comments to this first stage of the process.

### **Summary of comments on draft report**

We summarize our comments on the draft report as follows:

1. Further consideration of the issues of dynamic efficiency relating to the timing and nature of generator investment, should be included in NERA's approach;
2. The LRMC approach used by NERA should be clarified to recognise that LRMC differs from generator to generator;
3. The distinction between substantial and temporary market power could be further elaborated and relevant alternative indicators of market power could be discussed;
4. The relevance of strategic barriers to entry should be noted; and
5. The relationship between the forward and spot markets could be more fully explored

### **NERA's final report**

With regards to the first and second comments above, in its final report, NERA has appropriately responded through its approach to LRMC as a measure of market power. NERA explicitly notes that the relationship between LRMC and optimal investment and that the LRMC they are referring to in their discussion is the LRMC of the 'market'. See for example, the discussion on page iii and footnotes 1, 6, 19, and 49 of the NERA report.

This clarification of NERA's approach feeds into the definition of substantial market power. Thus, "a firm has substantial market power when it has the ability to sustain prices that *should* attract additional investment ... but that do not, because such investment is prevented or delayed by various factors (ie. Barriers to entry)."<sup>1</sup> This alternative (but equivalent) characterisation of market power in the NERA report clarifies their approach.

With regards to the third comment, in the final report, NERA notes that "[t]here are also a number of other indicators of substantial market power that are not discussed in this initial report."<sup>2</sup> While recognising the bounds of the current NERA report, in our opinion, a focus on these alternative indicators will be an important part of the further AEMC analysis. The relationship between transitory and substantial market power is more subtle in electricity markets than in many other markets, and is reflected in both the sometimes volatile nature of electricity spot prices and the fact that in some periods many generators may have temporary market power even though they clearly lack sustained, substantial market power. Alternative measures, such as the Residual Supply Index, are (imperfect) ways to try and capture this relationship.

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<sup>1</sup> See footnotes 4 and 37 in the NERA report. Emphasis in the original.

<sup>2</sup> See footnote 10. See also the discussion at the bottom of p.1 and footnote 58.

With regards to the fourth comment, the NERA report clearly notes the importance of strategic entry barriers. For example, see footnote 15. We agree with NERA that a detailed consideration of entry barriers is beyond the scope of their initial report.

Finally, with regards to the fifth comment, in our opinion, the relationship between forward and spot markets and the implications for market power, need to be considered in significantly greater detail by the AEMC as it moves forward in its consideration of the proposed rule change.

NERA briefly discusses this relationship in section 4.4.2 of their report. NERA states that “hedge contracts do not *create or extend* substantial market power, and they do not enable counterparty customers to *avoid the consequences* of substantial market power”.<sup>3</sup> While this is correct, it does not bring out the key relationship between a generator’s hedge cover and its incentive to use any market power in the spot market. Put simply, forward markets do not alter the existence of market power, but the interplay between forward contracts and the spot market can alter the incentives to abuse market power.

For example, suppose that there is a simple market with a base-load generator with capacity of 1000MW and a SRMC of \$40 per MWh. There is a single ‘peaking’ plant with capacity of 200 MW and a SRMC of \$100 per MWh. Further, suppose that in a certain period it is known that demand for electricity will be 1100 MW.

In the absence of a forward contract market, an equilibrium spot market outcome would be that the base-load generator bids in (just under) 900MW and the peak generator bids in 200 MW, sending the price to the market cap of \$12,500 per MWh.<sup>4</sup>

Suppose now that a forward contract (ie. hedge) market is introduced and retailers (naively) purchase forward contracts at a price of \$12,500 per MWh (ie. the forward contract price equals what would be the expected spot price in the absence of the forward market transactions). The base-load generator would like to sell its entire 1000 MW capacity in this forward market. Note that if it were successful in doing this then three things would happen:

1. The base-load generator would make more profit than in the absence of the forward market. It would sell 1000 MW at a price of \$12,500 per MWh in the forward market rather than only 900 MW at that same price in the spot market;
2. The base-load generator would alter its bidding behaviour in the spot market. In particular, it will bid its entire capacity into the spot market at a price of no more than \$100 per MWh, the SRMC of the peak generator. Indeed, the base-load generator would find it optimal to bid in its entire capacity at SRMC in the spot market; and
3. The peak generator’s behaviour will depend on its forward contract cover. If it has sold 100 MW in the forward market then it will also find it profitable to bid in to the spot market at SRMC. In this case the spot price will equal \$100 per MWh, not \$12,500 per MWh. If the peak generator has not sold 100 MW

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<sup>3</sup> Page 30, emphasis in original.

<sup>4</sup> For completeness, note that this is not the unique market equilibrium. Indeed, any dispatch levels that in total just send the price to the cap will be a pure strategy equilibrium in this simple example.

in the forward market then it will have an incentive to ‘spike’ the spot price to \$12,500 per MWh by withholding capacity.

In summary, the interaction between the forward market and the spot market alters the incentives for market participants to manipulate any (temporary or substantial) market power that they might possess. While the forward market price will (approximately) equal the expected spot market price, the quantities of forward transactions will matter for the incentive of a generator to exercise any substantial market power that it might have.

This relationship is most obvious where long-term contracts are in place. These might be ‘vesting contracts’ associated with the initial market design, or long-term supply arrangements that underpin the initial generator investment (e.g. a long term supply contract with an aluminium smelter). In such a situation, a generator that otherwise has a substantial degree of market power may have a significantly muted incentive to exercise that market power due to the long-term forward contract being in place. When bidding into the spot market, the generator needs to consider the possibility that it will not be dispatched and, as a result, will be forced to effectively buy electricity itself in the spot market to cover its contractual obligations. As a result, the generator faces increased risk and reduced rewards when exercising market power and is less likely to exercise this power.

In our opinion, the relationship between spot market behaviour, forward contracts and the incentives to exercise market power will need to be further investigated by the AEMC as it continues the process of considering the proposed rule change.

### **The functional dimension of the market.**

On page 42-43 of their final report, NERA considers the functional dimension of market definition. The approach used by NERA is standard in the Australian legal literature. An early, expanded discussion of this approach is found in the National Competition Council’s 1996 declaration decision re: Carpentaria transport.<sup>5</sup>

We agree with this standard approach and agree with the NERA’s conclusion that there is clearly a separate generation market. However, two caveats need to be noted:

1. The existence of a separate generation market does not mean that the issues of generator market power can be analysed in isolation of the retail market

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<sup>5</sup> See National Competition Council, Decision number D0007, Applicant: Carpentaria transport, December 1996, p.15:

“Carpentaria seek to establish their case by applying the Ergas tests to establish whether the functional layers constitute separate markets. These tests are:

*...whether the layers at issue are in fact separable from an economic point of view. The crucial question here is whether the transactions costs involved in the separate provision of the good or service at the two layers would not be so great to prevent such separate provision from being feasible...*

*While separability,...., is a necessary condition for distinct functional layers to form distinct markets, it is not sufficient. Rather it must also be the case that serving each of these distinct layers requires assets specialised to that layer, so that supply-side substitution (in this instance in the form of movement from one layer to another) is not so immediate as to effectively unify the field of rivalry within which services at the two layers are provided. The specialised assets at issue may be physical assets (that is, distinct capital equipment), human capital, organisational skills and/or contractual assets more generally (that is, the explicit or implicit contracts required for service to be provided)” (italics in original).*

structure. For example, if a generator is vertically integrated into retailing then its incentives to exercise market power might change. This is because it effectively has a ‘forward contract’ with itself. To see this, consider the trivial example where the sole generator in a market is also the sole retailer who faces a regulated retail price when selling power to end-users. In this situation the spot electricity market is effectively irrelevant and any ‘market power’ of the monopoly generator is moot.

2. The NERA approach, while consistent with existing Australian case law, is not the only approach. It is our understanding that an alternative approach to functional market definition based on the ‘hypothetical monopolist test’ was presented to the Federal Court in the recent case involving Metcash and the Australian Competition and Consumer Commission. As we write this review, the final decision in this case is yet to be released. When it is released it may be usefully reviewed by the AEMC to see if the approach noted by NERA is challenged by that decision.

## **Conclusion**

In conclusion, the NERA report reviews the standard approach to assessing market power in wholesale electricity markets. However, we note that analyses of market power should be purposive – that is, reflect the nature of the competition question being addressed. We note here that this may necessitate an approach that takes explicit account of what the MEU’s proposed rule is aimed at achieving and whether that rule’s use of market power or “dominance” is consistent with objectives both of competition policy and of economic efficiency.

Please do not hesitate to contact us if you have any further questions.

Sincerely,

Professors Joshua Gans  
and Stephen King