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Mr Neville Henderson
Chairman
Reliability Panel

Submitted via www.aemc.gov.au

16 January 2014

Dear Mr Henderson,

Submission on ROAM Consulting's draft report on reliability settings (REL0051)

EnerNOC is grateful for the opportunity to comment on this modelling work.

EnerNOC is an energy management company, currently managing over 24 GW of load sourced from over 14,000 commercial and industrial sites across markets in North America, the UK, Australia, New Zealand, and Japan. We offer much of this load into energy, capacity, and ancillary services markets of varied designs.

1 The level of verisimilitude is problematic

The "extreme peaker" is an abstract, theoretical approach, which ignores the practicalities of the market. On the face of it, this seems like a bad thing, which is presumably why an alternative approach is being explored. A completely realistic model would seem the ultimate goal.

The "cap defender" is an attempt to model some features of the market more realistically. However, to make it tractable, it's not a truly realistic model. In developing the model, it has been necessary to make many arbitrary decisions about what features of the market to model, what sensitivities to explore, and what features or sensitivities to ignore.

It is generally a bad idea to have a model with many arbitrarily-chosen inputs: unless a rigorous approach is taken to sensitivity testing, the result may depend far more on these arbitrary choices than on the underlying reality.

In our opinion, the "extreme peaker" model, since it is fairly objective, provides more useful input into the Reliability Panel's considerations than the highly subjective "cap defender" model.

2 Specific issues with the "cap defender" modelling

The modelling in the draft report:

1. Models the effect of the exercise of market power by generators, but only for one pattern of ownership. It does not test the sensitivity to different ownership patterns. It seems likely that different ownership patterns – e.g. less concentrated ownership – would produce very different outcomes.

2. Assumes that the marginal peaking plant is dispatched perfectly – i.e. such that it runs for the full duration of every trading interval for which the price exceeds $300/MWh, and at no other times. AEMO will not dispatch a plant this well, as they take no account of the time required for a plant to start and to ramp up to full output. They also dispatch on the basis of 5-minute prices, even though settlement occurs only on the basis of 30-minute trading prices. Scheduled participants attempt to work around this by rebidding, but, just as for unscheduled participants, their ability to do so is limited by the price uncertainty they face about future trading intervals and about the current trading interval.[1]

3. Ignores the effect of the marginal peaking plant being partially dispatched, and hence earning spot price revenue for only a fraction of its capacity.

These issues could be addressed, for example:

1. By considering many different possible ownership patterns,

2. By modelling dispatches at a 5-minute resolution, or, more simply, by calibrating the model based on the dispatch patterns of real peaking resources. These will sometimes not be dispatched (and hence earn no revenue, and yet have to pay out on hedges) when prices are high, and sometimes be dispatched (and hence incur costs) when prices turn out low.

3. By modelling a peaking plant of realistic size – e.g. a 160 MW open cycle gas turbine, as assumed in the equivalent process for the Western Australian Wholesale Electricity Market.

However, we do not believe that this is a useful approach. These improvements would make the model slightly more realistic, but many arbitrary modelling decisions would remain: a truly realistic model is unachievable. As discussed above, we believe the "extreme peaker" model, although more abstract, is more informative.

[1] NEM pricing is effectively *ex post* because the price at which the market will be settled is not known until the 26th minute of the 30-minute interval to which the price applies. The NEM is very unusual – possibly unique – amongst electricity markets in that it allows rebidding within the trading interval to which the bid applies, even when the rebid is purely for commercial reasons. This means that the pricing uncertainty experienced by participants can be extreme, as it is caused not only by physical changes of supply and demand, but also by the rebidding actions of other participants.

3 Is it appropriate to endorse the exercise of market power?

If the market were to become more competitive – either due to new entrants or changes in ownership of existing facilities – it would become harder for particpants to exercise market power to force prices above $300/MWh. Regulatory action to hamper the exercise of market power could have a similar effect. In either case, the "cap defender" would become more like the "extreme peaker". This increased competitiveness would benefit customers by lowering average prices; it should be encouraged.

However, if an assumption of a low level of competitiveness is baked into the reliability settings, there is a danger that these settings could form a barrier to increased competition. This could happen in two ways:

1. Participants could argue that they need to exercise market power to remain profitable, and, indeed, that it is expected of them. This could stymie regulatory efforts to reduce the exercise of market power and increase competition.

2. Potential new entrants would be deterred, because they would see that by competing with the incumbents, such that they reduce their ability to exercise market power, they would cause prices to fall such that the new entrant would be unable to operate profitably.

Reliability settings based on the "extreme peaker" model would avoid these effects.

4 Treatment of demand-side participation

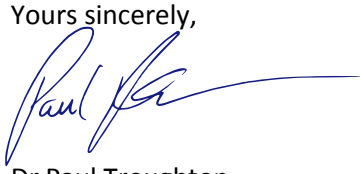
It is good that the beneficial impact of demand-side participation is being considered. However, we see two issues with the way it has been modelled:

1. It is wrong to assume that it will be perfectly dispatched. Demand-side resources face the same problems with price uncertainty as generators, as discussed above, but the effects are more serious due to higher short-run marginal costs and (in some cases) longer start-up times.

2. The Demand Response Mechanism recommended by the Australian Energy Market Commission in its Power of Choice review should lead to significantly increased volumes of demand-side participation. It would be useful to test the sensitivity of the results to such increased volumes.

I would be happy to provide further detail on these comments, if that would be helpful.

Yours sincerely,



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