



26 September 2014

Mr John Pierce  
Chairman  
Australian Energy Market Commission  
PO Box A2449  
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

### **Generator ramp rates and dispatch inflexibility in bidding**

Alinta Energy welcomes the opportunity to make a submission in response to the draft determination on the proposed *National Electricity Amendment (Generator ramp rates and dispatch inflexibility in bidding) Rule 2015* (the proposed rule or the proposal).

Alinta Energy is an active investor in the energy retail, wholesale and generation markets across Australia. Alinta Energy has around 2500 megawatts of generation capacity in Australia (and New Zealand) and a growing retail customer base of over 750,000.

#### *Discussion*

The impact of ramp rates on dispatch in the National Electricity Market (NEM) is a matter that is due for detailed consideration. The Australian Energy Regulator's (AER) proposed rule delivered this opportunity and this was welcomed by Alinta Energy.

Unfortunately the submission provided by Alinta Energy did not appear to assist the AEMC's thinking and the AEMC has elected to move away from 'line in the sand' threshold for determining minimum acceptable ramp rates to another one-size-fits-all threshold of 1 per cent of maximum generator capacity.

It should quickly become apparent that such an approach will not result in an equality of outcomes between all generators even where generator units are the same size in aggregate. Not that equality of outcomes should be a driver of the AEMC's thinking.

As a principle, generator bids should reflect actual unit capability and conversely what generators can't do should be based on those same characteristics. The proposed rule met that standard and as such was supported, in-principle, by Alinta Energy with suggested modifications to manage implementation.

Unfortunately, the discussion has been led astray with a mistaken interpretation of technology neutrality, a slippery and increasingly misused concept in NEM discussions. The oft cited 3.1.4(3) refers to special treatment. This should be interpreted to mean that there be no favourable or unfavourable treatment based solely on technology used by a market participant. Special treatment means a rule made specifically for the purpose of penalising or advantaging a form of technology only as a consequence of that technology being that technology. This is not how the AEMC has chosen to apply the concept in this instance.

The AEMC has chosen to interpret the clause as one whereby equality of outcomes is required to ensure technology neutrality is not offended. If this thinking is followed through to its conclusion it undermines multiple aspects of the NEM.

Suggesting that defining ramping capability based on technical characteristics offends the principle of technology neutrality is not correct. In fact, it is no more valid than suggesting: different plant types shouldn't bid based on their unique short run marginal costs; that loss factors for remote coal plant should be different to gas fired plant located close to load; or that wind farms can't compete for ancillary services. It is the nature of the NEM that different technology types exhibit different characteristics and interact with the market uniquely.

What the technology neutrality principle is seeking to achieve (or should be) is a level playing field whereby a technology is not arbitrarily punished or rewarded based on its technological capability alone. This differs markedly from ignoring technology differences. Thereby a rule that required generators to commit to ramp rates that reflected the baseline ramping achievable under all conditions would not offend the technology neutrality principle. The rules need to account for those differences but that should not create differences based on technology alone.

This is what the Alinta Energy submission proposed as outlined in Attachment A. It is difficult to determine whether these issues were appropriately considered by the AEMC.

Further, a baseline ramp rate approach for each unit meets the criteria outlined by the AEMC in the draft determination (see page 23).

- Treats all units consistently regardless of technology but like all NEM outcomes accounts for the fact different technologies interact with the market uniquely.
- Distributes ramp rate requirements proportionately in that the minimum requirement reflects the least cost option for each unit regardless of technology type – this differs from the AEMC proposal that does not account for the cost of the 1 per cent threshold and how it may differ by technology.
- Can be easily determined, is unambiguous once nominated, and is not subject to any more uncertainty or change than would be required to seek a derogation away from either the existing 3MW rule or the proposed 1 per cent threshold. Both are best guesses and both will require exceptions to the rule.
- Will easily be applied in practice and ensures no uncertainty for AER and AEMO once set, a desirable benefit for generators when bidding and re-bidding.

Setting ramp rates with reference to the lowest cost under all circumstances for each unit is the only method of ensuring lowest cost in aggregate. The suggestion that picking a number, which leaves spare minimum cost ramping for some units on the table, but is set too high for others and will require derogations, will be most efficient is difficult to support.

#### *Why the AEMC preferred rule change is not desirable*

In the NEM, price and quantity bids are the determinants of dispatch outcomes. In that context, ramp rates can have the effect of changing dispatch outcomes by preventing changes between dispatch intervals that would otherwise have occurred if all plants could be ramped up or down without limitation.

The purpose of ramp rates are, or should be, to take account of the fact that all plant cannot be turned up or down without physical limitations. Physical limitations are an inherent feature of the electrical system and ancillary and network support services have been developed for the purpose of managing and overcoming these physical limitations.

Nevertheless, physical limitations should not interfere with competition based on price and quantity where they can be readily overcome. In Alinta Energy's view, in some instances ramp rates are having this effect. This is because dispatch outcomes in one dispatch interval flow into subsequent intervals where generators artificially limit their ability to be ramped down. This is likely to be inefficient.

Therefore, the impacts of ramping should be minimised based on the baseline capability of the existing generation fleet whereby generators need to take into account the need to ramp up or down as they are dispatched based on their price and quantity bids.

For this reason, Alinta Energy is concerned that the 1 per cent threshold will be no more effective, with the exception of better capturing aggregated units, than the current rules. In such an environment the incentives to distort price and quantity bids through minimising ramp rates below baseline technology capabilities will remain.

In this regard, having a clearly agreed and understood baseline capability would assist the AER, AEMO and provide the market with greater certainty.

#### *Dispatch inflexibility*

Alinta Energy suggests the issue of inflexibility profiles has not been given the attention required and that the case for ensuring minimum load and 'T-times' entered into the bidding system reflect technical characteristics is clear cut. If an inflexibility profile can be changed at will it seems, prima facie, to defy the very purpose of its existence.

#### **Conclusion**

Alinta Energy has concerns with the proposed approach and urges further consideration of this issue by the AEMC especially in light of the AEMC interpretation of the technology neutrality principle. Alinta Energy contends that baselines set with reference to actual technical capability will provide the most efficient outcome in the long term interests of customers.

Should you have any queries in relation to this submission please do not hesitate to contact me on, telephone, 02 9372 2633.

Yours sincerely

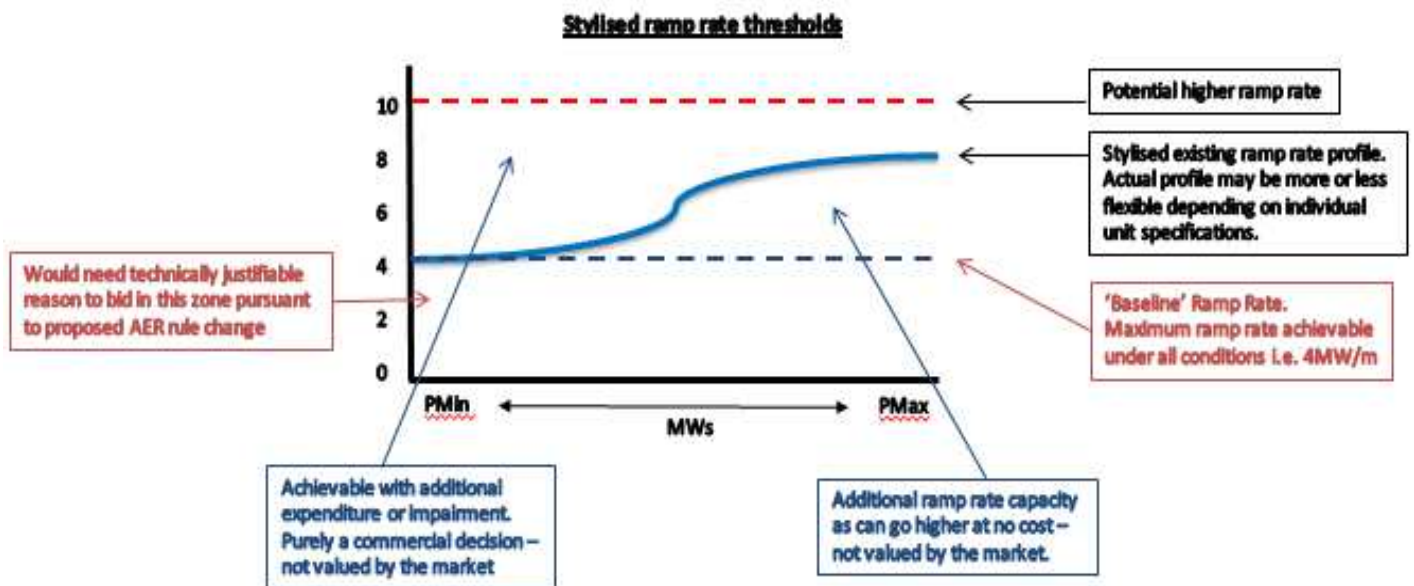


**Jamie Lowe**  
Manager, Market Regulation

Approach to implementing AER proposal

The stylised diagram below illustrates how Alinta Energy considers the rule proposed by the AER would be expected to operate and where issues arise that have not been contemplated in the consultation paper.

The diagram provides a stylised (and thus simplified) ramp rate profile for a generator whose maximum existing ramping capacity ranges from 4 megawatts per minute (MW/m) at minimum generation to 8MW/m near maximum generation. Under this example this generation unit has the possibility to ramp up to 10MW/m if further investment were to be undertaken.



The two mauve coloured boxes with text highlight the issues contemplated explicitly by the rule change. Namely, the establishment through guidelines of what will be from herein called the ‘baseline’ ramp rate which is 4MW/m in this instance. This is the ramp rate at which a generator would, as a minimum bid up and down under all circumstances. Where a lower ramp rate accompanied bids or rebids this should require a technically justifiable reason. Conversely, where a ramp rate above this was provided for commercial reasons this would not require justification in bidding reasons.

The two blue coloured boxes with text denote matters not dealt with by the rule change. Notably, ramp rate capability, above the baseline, that is not valued by the market. As it is not valued by the market there is no incentive to provide services that the market may value but the individual generator may not. This additional capability may or may not come at an additional cost to the generator depending on the ramp rate profile of the unit under consideration.

Each unit and technology type will have both a different baseline ramp rate and a different potentially higher ramp rate they can utilise when commercial conditions warrant.

The AER proposes that ramp rates reflect the true capability of the plant. While generators would generally be able to operate at their baseline ramp rates, any new rule would need to take risk, reliability, controllability and sustainability into account. This is interpreted as the ramp rate provided to AEMO would be the baseline the generator can safely attain with reference to technical specification that is auditable. In this context, it is important to clarify the conditions under which baseline ramp rates would be determined.

- The baseline ramp rate is one that can be used under all normal operating circumstances between maximum unit output and minimum generation. This rate is not the actual maximum that could be achieved in all circumstances at no or additional cost but what can be achieved under most or all normal operating conditions.
- Baseline ramp rates should not increase the risk of failure either in the long term or short term and will not result in a reduced life expectancy beyond that which would be expected due to normal operations.
- Baseline ramp rates should be set at a level that can maintain output as per dispatch instructions and can reliably move in either direction in subsequent intervals i.e. X up, X down or a up/down combination equating to X.
- Setting a baseline ramp rate does not prohibit revisions based on permanent changes to plant, including upgrades that increase ramp rates, or decreased ramp rates for the purpose of minimising wear and tear where those changes are broadly symmetrical or at least technologically justifiable.
- Baseline ramp rates should be set on a unit not generation facility basis. Other things being equal ramp rates should be set on a per unit basis and not aggregated across facilities.

If a generator submits a ramp rate lower than the baseline that a unit is technically capable of achieving then it would be required to accompany the bid with a brief, verifiable, and specific reason relating to the relevant technical limitation on their generating plant. Deviations below the baseline ramp rates may be encountered from time to time but should not be expected to only occur at times of constraints and if they reflect permanent changes should not be asymmetrical for most technologies.