09 October 2014

Sebastian Henry
Australian Energy Markets Commission
PO Box A2449
Sydney South NSW 1235
Submitted vie AEMC website – ERC0165

Dear Sebastian,

RE: Draft Determination on generator ramp rates and dispatch inflexibility rebidding

Thank you for the opportunity to respond to the draft determination on generator ramp rates and dispatch inflexibility rebidding. While Stanwell did not lodge a submission to the Consultation paper, we continue to support the NGF submission which opposed the Rule change proposal by the AER.

Stanwell broadly supports the findings in the draft report

Stanwell supports the requirement for the provision of minimum ramp rates in order to allow the market operator to maintain system security under a range of market conditions. We consider that the 2009 Rule change process provided this, albeit through a somewhat arbitrary mechanism.

Stanwell does not consider that there has been any evidence that the current Rules have resulted in risks to system security and welcome the Commission's conclusions on this matter. We acknowledge the Commission's view that there may be a difference between ramp rates which are sufficient to ensure system security and those which enable the most economically efficient outcome for the market, however we are concerned by the use of terminology such as "lowest cost" rather than "efficient", given the short run focus of the analysis.

We agree that generator ramp rates contain elements of both technical and commercial consideration, and acknowledge that, like many market design elements, this can result in non-obvious behaviour and/or results in some circumstances. With regard to constraint violation penalties discussed in the original Rule change we defer to AEMO's professional judgement, but consider that under constrained conditions, the risk associated with NEMDE attempting to target a unit to change output faster than an offered ramp rate which is in fact a technical limit is likely to be significantly worse than price volatility[1].

[1] While many units have high registered ramp rates, these may reflect requirements for the units to offer other services such as Trip to House Load SRAS. If NEMDE were to target a Stanwell unit at near it's registered 77MW/min maximum ramp rate, rather than the ≈3MW/min typically offered, there would be a significant risk that the solution would be unachievable, risking system security. If provided, there would be a large cost to Stanwell, which is part of the rationale underpinning the existence of non-market SRAS procurement.

We welcome the Commission's view that regulations must allow market signals to encourage appropriate investment and agree that the originally proposed Rule change would have been detrimental in this regard.

We support the Commission's decision not to progress with the Rule change in its original form. Where the Commission chooses to make a More Preferable Rule Change (MPRC) we support the approach of the Commission to enunciate a clear preference at an early stage to allow for consultation rather than waiting until the final determination to provide detail. While we support the approach, we have found the benefits of the proposed MPRC difficult to analyse, and request that the Commission provide more detailed information.

We support the conclusions in section 3.2.3 which confirm that non-SRMC bidding does not equate to productive efficiency loss, and that the cost of "disorderly bidding" is small relative to the size of the market. However for reasons set out separately in our submission to the Commission's first interim report on OFA design and testing, Stanwell does not consider that OFA is the appropriate "solution" to these purported "problems".

We also support the intention to retain the carve-out mechanism for plant which is not able to meet the default ramp rate criteria.

Questions remain regarding specific implementation

While we acknowledge that the 2009 Rule change had the potential to result in some distortion of investment decisions at the margin, we do not consider that this has proven to be material. Accordingly, the case for change is not necessarily clear, especially as the proposal is to replace one fairly arbitrary formula with an alternative arbitrary formula.

Stanwell supports the principle of having consistent application of Rules across technology type, plant configuration etc, although consider that it is important to maintain pragmatism over theoretical purity in some instances.

We note that table 4.1 in the draft report does not appear consistent with the draft rule and that the MPRC would continue to provide a modest incentive to aggregate units in many cases[2].

While table 4.2 of the draft report indicates that average minimum ramp rates will be maintained[3] or increased for all regions, this appears to be due to the specific calculations conducted and is not reflective of the underlying provision of ramp rates[4]. To Stanwell's understanding, aggregate minimum ramp rates will actually decrease materially in both SA and TAS while increasing in the other states (as shown in table 4 of appendix A). We expect that this outcome would be inconsistent with the intent of the MPRC.

---

[2] We note that aggregating multiple units would have the negative effect of requiring the generator to provide higher minimum ramp rates during period where one or more physical units were offline.

[3] South Australia shows a decrease of less than 0.1 units, which we have considered to be "maintained" for convenience.

[4] For example, simply by aggregating the existing NSW units the resulting "weighted average" ramp rate would increase from 7.3 to 18.5 despite a slight reduction in total ramping (due to rounding) from 180MW/min to 174MW/min.

We would appreciate additional information regarding why 1% of maximum capacity is considered appropriate for the MPRC. This number appears to have been chosen as it provides "a bit more" minimum ramping capability across the NEM than the current rules, in accordance with the Commission's preference. We consider that for many of the larger thermal units in the NEM, 1% of maximum capacity may result in high cost wear and tear if provided consistently. If a significant number of these units were to apply for lower, more economically sustainable ramp rates to be applied it would dilute or remove the proposed benefit of the MPRC and create implicit technology differentials.

If the current Rules are considered inadequate, we would encourage the Commission to investigate alternatives to the proposed 1% of maximum capacity formula which encourages sites which are currently required to offer 2 or 3 MW/minute to continue to do so, while reducing the risk that larger units (thermal units in particular as noted above) are forced to either gain an exemption or provide high cost ramping capabilities at times that it is not valued. One example of such an arrangement is discussed in appendix A for illustrative purposes. Most "simple" solutions appear likely to result in some generators applying for exemption. If required, we consider that exemption applications from small generators are likely to be less contentious than from large generators.

Thank you for your consideration of Stanwell's response to the draft rule change. If you would like to discuss any aspect of this submission, please contact me on 07 3228 4529.

Regards

Luke Van Boeckel
Manager Regulatory Strategy
Energy Trading and Commercial Strategy

Appendix A - Stanwell's alternative ramp rate proposal

Subject to exemption or technical limitation, the current rules require generators to provide a minimum ramp rate of:

Min (max(1MW/min or 3% of capacity rounded down) or
3MW/min)

Subject to the same exemptions, an alternative formula to provide greater total ramping capability with minimal impact could be:

Min (max(1MW/min or 3% of capacity rounded down) or
max(3MW/min or 0.5% of capacity rounded up))[5]

Table 1 below shows the minimum ramp rates for all stations which would have their requirements increased by the MPRC contained in the draft decision. Similarly, Tables 2 and 3 show stations which would have decreased requirements and unchanged requirements respectively under the MPRC. We note that these lists contains some stations multiple times due to units having different capacities, and do not reflect plant which have exemptions under the current rules. Table 4 shows the resulting aggregate ramp rates for each region.

The MPRC increases the requirements on 31 stations, including 16 stations where the minimum requirement will be double or greater than under the current rules. By comparison Stanwell's alternative rule would increase the minimum requirement for only 9 stations. While this appears significantly less beneficial, we believe that the operational impact of the alternative rule would provide the majority of the desired efficiency benefits of the MPRC. This is because increasing ramp rate requirements will have a diminishing return – increasing response from 3MW/min to 6MW/min will have more impact, more often, than increasing from 6MW/min to 9MW/min and possibly 6MW/min to 12MW/min.

The Commission note in their draft rule change that "low" ramp rates may extend price volatility under constrained conditions. The majority of the impact of a constraint occurs in the period immediately after it binds, or immediately after supply/demand changes. The increased minimum ramp rates required by Stanwell's alternative formula will provide significant ramping and mitigation of price volatility in such circumstances.

---

[5] The 3% and 3MW/min figures have been chosen for consistency with the current rules. The 0.5% figure is somewhat arbitrary, being the figure that provides more ramping than is currently required but affecting few units. Rounding conventions are similarly chosen for consistency with existing and proposed rules.

Station Name	Technology Type	Unit Max Capacity (MW)	Ramp rates (MW/min) current	MPRC	Alternative
Tumut 3 Power Station	Hydro - Gravity	1800	3	18	9
Murray 1 Power Station	Hydro - Gravity	1575	3	16	8
Kogan Creek Power Station	Thermal	781	3	8	4
Eraring Power Station	Thermal	750	3	8	4
Bayswater Power Station	Thermal	700	3	7	4
Mt Piper Power Station	Thermal	700	3	7	4
Vales Point "B" Power Station	Thermal	680	3	7	4
Tumut 1 Power Station	Hydro - Gravity	665	3	7	4
Darling Downs Power Station	CCGT	663	3	7	4
Loy Yang B Power Station	Thermal	600	3	6	3
Basslink HVDC Link	Network	594	3	6	3
Loy Yang A Power Station	Thermal	590	3	6	3
Liddell Power Station	Thermal	550	3	6	3
Loy Yang A Power Station	Thermal	535	3	6	3
Pelican Point Power Station	CCGT	510	3	6	3
Newport Power Station	Thermal	510	3	6	3
Wallerawang "C" Power Station	Thermal	500	3	5	3
Callide Power Plant	Thermal	500	3	5	3
Tarong North Power Station	Thermal	480	3	5	3
Basslink HVDC Link	Network	478	3	5	3
Tallawarra Power Station	CCGT	460	3	5	3
Millmerran Power Plant	Thermal	450	3	5	3
Gordon Power Station	Hydro - Gravity	450	3	5	3
Macarthur Wind Farm	Wind - Onshore	420	3	5	3
Yallourn W Power Station	Thermal	405	3	5	3
Yallourn W Power Station	Thermal	395	3	4	3
Valley Power Peaking Facility	OCGT	390	3	4	3
Callide B Power Station	Thermal	385	3	4	3
Stanwell Power Station	Thermal	385	3	4	3
Swanbank E Gas Turbine	CCGT	385	3	4	3
Tarong Power Station	Thermal	385	3	4	3
Yallourn W Power Station	Thermal	380	3	4	3
Laverton North Power Station	OCGT	346	3	4	3
Wivenhoe Power Station	Hydro - pump storage	312	3	4	3

Table 1. Stations/Units which would have increased minimum requirements under the proposed MPRC and increased or identical requirements under the Stanwell alternative formula.

Station Name	Technology Type	Unit Max Capacity	Ramp rates (MW/min) current	MPRC	Alternative
Bogong / Mckay Power Station	Hydro - Gravity	300	3	3	3
Gladstone Power Station	Thermal	285	3	3	3
Mortlake Power Station Units	OCGT	281	3	3	3
Northern Power Station	Thermal	273	3	3	3
Playford B Power Station	Thermal	252	3	3	3
Poatina Power Station	Hydro - Gravity	248	3	3	3
Bendeela / Kangaroo Valley Power Station	Hydro - Gravity	240	3	3	3
Hallett Power Station	CCGT	220	3	3	3
Hazelwood Power Station	Thermal	220	3	3	3
Torrens Island Power Station "B"	Thermal	210	3	3	3
Tamar Valley Combined Cycle Power Station	OCGT	208	3	3	3
Osborne Power Station	CCGT	204	3	3	3
Devils Gate Power Station	Hydro - Gravity	65	1	1	1
Jeeralang "A" Power Station	OCGT	65	1	1	1
Oaklands Hill Wind Farm	Wind - Onshore	63	1	1	1
Boco Rock Wind Farm	Wind - Onshore	61	1	1	1
Eildon Power Station	Hydro - Gravity	60	1	1	1
Tamar Valley Peaking Power Station	OCGT	58	1	1	1
Dry Creek Gas Turbine Station	OCGT	57	1	1	1
Clements Gap Wind Farm	Wind - Onshore	57	1	1	1
Port Lincoln Gas Turbine	OCGT	55	1	1	1
The Bluff Wind Farm	Wind - Onshore	52.5	1	1	1
Boco Rock Wind Farm	Wind - Onshore	52	1	1	1
Hunter Valley Gas Turbine	OCGT	50	1	1	1
Ladbroke Grove Power Station	OCGT	50	1	1	1
Bell Bay Three Power Station	OCGT	49	1	1	1
Woodlawn Wind Farm	Wind - Onshore	48	1	1	1
Gunning Wind Farm	Wind - Onshore	47	1	1	1
Baimsdale Power Station	OCGT	47	1	1	1
Fisher Power Station	Hydro - Gravity	46	1	1	1
Roma Gas Turbine Station	OCGT	42	1	1	1
Meadowbank Power Station	Hydro - Gravity	42	1	1	1
Lake Bonney Stage 3 Wind Farm	Wind - Onshore	39	1	1	1
Barcaldine Power Station	CCGT	37	1	1	1
Mackay Gas Turbine	OCGT	34	1	1	1
Lake Echo Power Station	Hydro - Gravity	34	1	1	1
Barron Gorge Power Station	Run of River	33	1	1	1
West Kiewa Power Station	Hydro - Gravity	31	1	1	1
Energy Brix Complex Power Station	Thermal	30	1	1	1
Quarantine Power Station	OCGT	25	1	1	1
Port Lincoln Gas Turbine	OCGT	23	1	1	1
Kareeya Power Station	Hydro - Run of River	22	1	1	1

Table 2. Stations/Units which would have decreased minimum requirements under the MPRC but which would be unaffected by Stanwell's alternative formula.

Station Name	Technology	Unit Max Capacity	Ramp rates (MW/min) current	MPRC	Alternative
Dartmouth Power Station	Hydro - Gravity	185	3	2	3
Catagunya / Liapootah / Wayatinah Power Station	Hydro - Gravity	183	3	2	3
Colongra Power Station	OCGT	181	3	2	3
Smithfield Energy Facility	CCGT	175	3	2	3
Townsville Gas Turbine	OCGT	174	3	2	3
Braemar Power Station	OCGT	173	3	2	3
Braemar 2 Power Station	OCGT	173	3	2	3
Gullen Range Wind Farm	Wind - Onshore	172	3	2	3
Oakey Power Station	OCGT	171	3	2	3
Somerton Power Station	OCGT	170	3	2	3
Musselroe Wind Farm	Wind - Onshore	168	3	2	3
Uranquinty Power Station	OCGT	166	3	2	3
Anglesea Power Station	Thermal	165	3	2	3
Lake Bonney Stage 2 Windfarm	Wind - Onshore	159	3	2	3
Mt Stuart Power Station	OCGT	152	3	2	3
Redbank Power Station	Thermal	151	3	2	3
Condamine Power Station A	CCGT	144	3	2	3
Snowtown Wind Farm Stage 2 North	Wind - Onshore	144	3	2	3
John Butters Power Station	Hydro - Gravity	144	3	2	3
Mt Stuart Power Station	OCGT	139	3	2	3
North Brown Hill Wind Farm	Wind - Onshore	132	3	2	3
Tungatinah Power Station	Hydro - Gravity	131	3	2	3
Mt Mercer Windf Farm	Wind - Onshore	131	3	2	3
Quarantine Power Station	OCGT	128	3	2	3
Snowtown South Wind Farm	Wind - Onshore	126	3	2	3
Poatina Power Station	Hydro - Gravity	124	3	2	3
Torrens Island Power Station "A"	Thermal	120	3	2	3
Reece Power Station	Hydro - Gravity	119	3	2	3
Waterloo Wind Farm	Wind - Onshore	111	3	2	3
Mintaro Gas Turbine Station	OCGT	105	3	2	3
Trevallyn Power Station	Hydro - Gravity	103	3	2	3
Cethana Power Station	Hydro - Gravity	100	3	1	3
Jeeralang "B" Power Station	OCGT	100	3	1	3
Snowtown Wind Farm Units 1 And 47	Wind - Onshore	99	2	1	2
Hallett 1 Wind Farm	Wind - Onshore	95	2	1	2
Tarraleah Power Station	Hydro - Gravity	94	2	1	2
Tribute Power Station	Hydro - Gravity	92	2	1	2
Energy Brix Complex Power Station	Thermal	90	2	1	2
Mackintosh Power Station	Hydro - Gravity	89	2	1	2
Bastyan Power Station	Hydro - Gravity	88	2	1	2
Lemonthyme / Wilmot Power Station	Hydro - Gravity	86	2	1	2
Townsville Gas Turbine	OCGT	84	2	1	2
Blowering Power Station	Hydro - Gravity	80	2	1	2
Guthega Power Station	Hydro - Gravity	80	2	1	2
Energy Brix Complex Power Station	Thermal	75	2	1	2
Hallett 2 Wind Farm	Wind - Onshore	71	2	1	2
Hume Power Station	Hydro - Gravity	70	2	1	2
Snuggery Power Station	OCGT	69	2	1	2

Table 3. Stations/Units which would be unaffected under either proposal.

Region	Aggregate ramp rates (MW/min) current	MPRC	alternative	Weighted ramp rates current	MPRC	alternative
NSW1	107	180	126	3.0	7.3	4.1
QLD1	129	147	131	2.9	4.0	3.1
SA1	85	73	85	2.7	2.6	2.7
TAS1	57	46	57	2.6	2.7	2.6
VIC1	120	154	125	2.9	5.6	3.5
NEM	498	600	524	14.1	22.3	16.0

Table 4. Summary of aggregate and weighted ramp rates