snowy hydro Limited

renewable energy

AER's Ramp Rates Rule Change Proposal

May 2014

Ramp rates capability is a pure commercial parameter

- Ramp rate / rate of change (load following and network management) is required by AEMO to fulfil its market and system operator role just as is MW capacity.

- Any generation plant can ramp – the rate is just a question of upfront investment and reinvestment, on-going operational costs, and risk over different timeframes. **This by definition is commercial not "technical".**

- If the broader market needs anything greater than the bare minimum capability for AEMO to meet its system reliability and security obligations then this additional ramping capability needs to be rewarded **not punished**.

  – Additional ramping sourced competitively through a market rather than through regulation!

A requirement to maximise ramping capability would have severe economic dead weight loss

- Some examples:
  - Tumut 3 – near Infinite up / Infinite down - Just a question of cost and risk
    - For “speed no load” spinning reserve, approximately $67 million cost per annum for Tumut 3 and $150 million cost per annum across the whole Snowy Scheme of dead weight loss
  - Manual tripping (all generator types)
  - For thermal generators – ramping a function of fuel costs and plant configuration i.e. number of mills in service, auxiliary firing

The rule change would expropriate ramping capability

- The rule change expropriates ramping capability from the most flexible and peaking generation plant. This would be totally inappropriate:
  - Introduces sovereign risk by penalising the most flexible plant (very poor investment signal)
  - Inequitable as transmission outage risk is put on to generators with the highest inherent ramping ability
  - Miss allocation of risk as these generators are unable to manage the transmission outage risk.
- If implemented there would be perverse incentives to “re-engineer” and de-rate ramping capability or to otherwise manage by availability bidding.

System security is not an issue

- **System security is not an issue. The current ramping requirements provides AEMO with sufficient capability to dispatch the NEM in a secure and reliable manner.**

  "AEMO confirms that the minimum ramp rate 3 MW/min continues to be sufficient to manage the NEM power system under normal circumstances" (AEMO submission).

- There is no such thing as a one sided system security benefit. By definition additional security comes at additional cost – it's a trade off!!

Rule change will be detrimental to the Contract markets

- Flexible, Intermediate and Peaking Generators would be disproportionately backed off (constrained-off) behind binding constraints
- These generators provide load following / flexible contracts and due to this additional risk would be forced to reduce contracting volume
- This loss in volume would not be replaced by remote / inter-regional generators who face additional physical transportation risks.
- SRA units only used at the margin and will not supplement the loss of contract volume
- Contract market is the main market and hence any dis-benefit to the Contract market would outweigh any incremental Spot market benefit

Negative SRA values caused by multiple transmission outages

- The vast majority of the AER's examples showing negative SRA values (counter-price flows) were caused by multiple / non credible transmission outages (17 of 20 market events).

Flow From	Date/Time	Outage
VIC to NSW	9/02/2010 16:30	Out = Dederang to Glenrowan No.1 or No.3 220kV line
VIC to NSW	10/02/2010 14:30	Out = Dederang to Glenrowan No.1 or No.3 220kV line
VIC to NSW	21/04/2010 12:30	Out= Eldon to Mount Beauty No. 1 220 kV line and one Dederang to South Morang 330 kV line
VIC to NSW	22/04/2010 15:00	Out= Dederang H2 330/220 kV txfmr and one Dederang to South Morang 330 kV line
VIC to NSW	21/06/2010 9:00	Outage = Lower Tumut to Wagga 330kV line
VIC to NSW	22/10/2010 11:00	Out = Hazelwood #6 220 kV bus , Murray better coeff than NSW
VIC to NSW	28/11/2010 6:00	Out= Thomastown No. 1 220 kV bus
VIC to NSW	31/01/2011 15:30	Out = Nil. HHE 15:00 flow was very positive (4 periods) then unexpected Darlington constraint caused VOLL price VIC (and flow negative). Price stayed VOLL and flow slightly positive due to low RHS V>>V_NIL_1B constraint (1556).
VIC to NSW	30/05/2011 13:30	Out= one of Dederang-Murray (67 or 68)
VIC to NSW	31/05/2011 8:30	Out= one of Dederang-Murray (67 or 68)
VIC to NSW	2/07/2011 13:00	Out = one 500 kV line between Heywood and Moorabool
VIC to NSW	11/09/2012 9:00	Outage = Lower Tumut to Wagga 330kV line
NSW to VIC	7/12/2009 12:00	Out = Sydney West-Yass (39)
NSW to VIC	22/01/2010 15:00	Out = Nil, but low rated Mt Piper-W'wang (70) line
NSW to VIC	4/02/2010 12:00	Out = Nil, but low rated Mt Piper-W'wang (70) line also Kemps Creek - Syd South out
NSW to VIC	11/02/2010 14:30	Out = Nil, but low rated Mt Piper-W'wang (70) line also Yass-Syd West (39) line out
NSW to VIC	26/03/2010 13:00	Out = Dapto-Marulan (8)
NSW to VIC	13/04/2010 14:00	Out = Dapto-KangarooValley (18)
NSW to VIC	29/06/2010 17:30	Out = Nil, but low rated Mt Piper-W'wang (70) line
NSW to VIC	9/11/2011 15:30	Out = Dapto-Sydney South (11)

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Focus on TNSP's incentives

- Analysis of table 5.2 of the Consultation Paper found multiple and non-credible transmission outages accounted for **over 97%** of counter price flows for the Vic to NSW interconnector and **over 91%** of counter price flows for the NSW to Vic interconnector. Refer to table 1 below.

Interconnector	Period	Negative Settlement Residue ($ millions)	Caused by Multiple Tx Outages ($ millions)	Caused by NIL Outages ($ millions)
Vic - NSW	Since Feb 2010	25.8	**25.1**	0.7
NSW - Vic	Since Dec 2009	8.9	**8.1**	0.8

Table 1: Analysis of the root cause of counter price flows.

- The focus needs to be on ill timed transmission outages which are the root cause of counter price flows.

So – What is the problem?

System Security	• Not an issue • If "enhancement" needed then provide a market
Disorderly bidding	• No material economic loss but proposed rule change would have large economic dead weight loss • Multiple transmission outages is the root cause • Only very small subset 'addressed'
SRA value	• Counter price flows caused by multiple transmission outages • Get transmission incentives right
Ramp rate are commercial parameter	• The ability to ramp underpins willingness to contract • This Rule change will negatively impact Contracting

Conclusion

- Impact of the proposal is to put ill timed transmission outage cost/impacts on to the most flexible/peaking generators.

- The current minimum ramp down requirement is more than sufficient to meet system reliability and security requirements. If more capability is desirable then establish a market / price for service.

- Proposed rule change is trying to fix a symptom of transmission access. If there is a net overall economic benefit to fixing current transmission access arrangements then fix the issue directly (ie. holistically assess all issues through Optional Firm Access project).

Thank-you