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Australian Energy Market Operator

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Consultation on Automation of Negative Residue Management for the implementation of transmission loops

AGL Energy (AGL) welcomes the opportunity to respond to the Australian Energy Market Operator (AEMO) Consultation on Automation of Negative Residue Management for the implementation of transmission loops.

About AGL

At AGL, we believe energy makes life better and are passionate about powering the way Australians live, move, and work. Proudly Australian for more than 185 years, AGL supplies around 4.5[1] million energy, telecommunications, and Netflix customer services. AGL is committed to providing our customers simple, fair, and accessible essential services as they decarbonise and electrify the way they live, work, and move.

AGL operates Australia's largest private electricity generation portfolio within the National Electricity Market (NEM), comprising coal and gas-fired generation, renewable energy sources such as wind, hydro and solar, batteries and other firming technology, and storage assets. We are building on our history as one of Australia's leading private investors in renewable energy to now lead the business of transition to a lower emission, affordable and smart energy future in line with the goals of our Climate Transition Action Plan. We'll continue to innovate in energy and other essential services to enhance the way Australians live, and to help preserve the world around us for future generations.

Consultation questions

AGL understands that the scope of this review is confined to the questions below, but we do think some of the issues raised are more relevant to be discussed in a wider review of negative residue management in general, including the principles involved in clamping and the relevant threshold. There is also a broader question as to whether negative residue management is still fit for purpose in balancing the risks associated with negative residues and dispatch efficiency.

Please find our responses to the consultation questions below:

Number	Question	AGL response
1	When considering AEMO's proposed approach to the inclusion of transmission loops within the automated NRM process, what do stakeholders consider are the main challenges? Why?	The main challenge is ensuring that any clamping is applied in a consistent and predictable way in all circumstances including in transmission loops. The difficulties in forecasting intermittent generation and the precise implementation of the constraint equations in relation to PEC may present unforeseen challenges in this respect. The NRM process for loops should be carefully implemented such that there is a balance between utilising interconnection and managing negative IRSR. It is not clear that applying the current methodology to individual directional

[1] Services to customers number is as at 31 December 2024.

Number	Question	AGL response
		interconnectors when the loop is in aggregate negative IRSR is a suitable approach – is this optimal for the market? For example, clamping of one leg could introduce counter price flow on another leg. These factors should be considered; however, we recognise there may be limited time to review before PEC changes are implemented.
2	Do stakeholders agree that AEMO's proposed NRM process updates have been appropriately specified?	Generally, yes. However, we do believe AEMO should make the NRM logic and calculation/algorithm transparent moving forward with further documentation. It should be possible for participants to reconcile the automated NRM outcomes moving forward. As stated in response to Question 1, it is not clear what the optimal process is for clamping in general, and further, what the optimal clamping process is when a loop has an aggregate negative IRSR. It is not obvious that applying clamping to each of the negative IRSR legs in the loop is an optimal outcome that promotes dispatch efficiency. Could clamping the negative legs within a loop have a negative impact on the market or have unintended impacts on adjacent regions?
3	Do stakeholders consider the proposed measurement periods for loop-aggregate residues prior to commencement of, and exit from, a NRM management period are appropriate? Why?	Yes, in the first instance consistency with the current process is desirable. It is likely some aspects of this will need to be revised once there is some operational experience with PEC.
4	Do stakeholders consider that the proposed NRM constraint equation step sizes for PEC are appropriate in the current market?	Yes, this is a reasonable starting point. Within a broader review of NRM and clamping, the logic behind step sizes should be justified and/or the motivation for respective step sizes should be discussed.
5	Has AEMO correctly identified the causes of cycling observed under the existing NRM process?	Yes, however we would note it is not immediately obvious that this is a problem. As described elsewhere in the consultation a broader review of the basis of clamping is required to understand whether this needs to be solved (i.e. are multiple periods of NRM that exceed the threshold a problem).
6	Is AEMO's proposed modification to minimum flow limits for NRM constraints an appropriate solution	The proposed modification to the minimum flow would be a good starting point if, after further

Number	Question	AGL response
	to reduce cycling? Are there any unintended consequences?	evaluation, it is determined that this issue needs to be addressed.
7	Is the proposed minimum flow limit of 20MW an appropriate value? AEMO has implemented this release in AEMO's pre-production environment and is seeking feedback on whether there are any unintentional consequences arising from such changes.	It is difficult to answer this without extensive modelling; however, it should provide a reasonable starting point.
8	Describe whether AEMO should or should not also pursue the addition of a graduated release stage to NRM management periods to reduce the possibility of loop-level cycling?	We agree that ultimately this might be a more effective way to manage cycling, particularly with the loop. As discussed, a more extensive review of clamping and negative residue management should be undertaken before this is pursued further. The effect on loops and PEC should be explicitly considered in this assessment.
9	Are the process criteria and parameters outlined in Appendix C appropriate for a graduated release stage being added to the NRM process?	No comment.
10	Do stakeholders consider it appropriate to use 5MS calculations in the NRM process?	Yes, this should use 5MS for consistency purposes.
11	Should the use of Pre-dispatch estimates of future IRSR be removed from the NRM process, wholly or selectively (for example, only for entry to/exit from a NRM management period)?	Based on our experience and on the arguments presented in the consultation paper we consider that the removal of Pre-dispatch estimates of IRSR wholly is preferred.
12	Are there any pre-conditions for, or possible unintended consequences of this change?	No comment.
13	Do stakeholders consider this to be sufficiently material for AEMO to consider in the future? If yes, please provide justification.	We do not believe these changes should occur without a wider review of clamping and negative residue management, particularly the purpose of the management itself and thresholds. The NRM itself is already causing non-optimal dispatch and this needs to be balanced against the need for it to exist in the first place and the other undesirable outcomes. We would also caution in using historical outcomes to draw conclusions in this manner – it may be the dispatch outcome would have been different in the first place had these changes been in existence.

Number	Question	AGL response
14	Are there alternative approaches to dealing with the issues described?	Please see question 13.
15	Do stakeholders agree with the priorities assigned to these items?	No. Further investigation is required to ascertain the necessity of adjusting the process for cycling – see comments above. Reviewing the use of pre-dispatch estimates should be of higher priority especially considering the cases where clamping is activated exclusively due to the pre-dispatch estimate.

If you have queries about this submission, please contact Alifur Rahman at ARahman3@agl.com.au.

Yours sincerely,

Liz Gharghori

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AGL Energy