

Submission to the Constraints Formulation Guidelines Consultation

Hey AEMO NEM,

In 5.9 of the draft constraint formulations guidelines there is discussion about managing the size of the largest contingency for system security purposes. I think AEMO should also do this for economic benefits, i.e. reducing the size of large contingencies where it results in lower overall dispatch costs.

AEMO thinks this is not worth implementing in NEMDE, stating in 5.9 of the draft constraint formulation guidelines that:

“there is little market benefit in terms of improved optimisation of FCAS dispatch with energy dispatch.”

I’d like to know if there has been any in-depth analysis to back up this statement or any more details as to why there may be very little market benefits.

I haven’t done much analysis myself, partially due to Nemweb being a terrible platform to access data¹, but taking a cursory look at random SCADA files the largest generating unit sometimes seems to be hundreds of megawatts above the next highest unit. That seems like a lot of extra contingency FCAS. I’d also imagine that during high FCAS price scenarios, particularly during islanded events, there are large benefits in managing the largest contingency for economic purposes.

Finally, there’s a groundswell of interest in examining this issue further, so I suspect someone will have to do this analysis soon. For instance:

- “The Panel considers that it could be in the interests of consumers for the Commission to consider implementing an explicit co-optimisation of marginal FCAS costs and increasing contingency sizes, as done in the WEM in Western Australia.” --Reliability Panel Review of the FOS²
- As the above mentions, it’s already done (although I thought maybe it was still being implemented) in the WEM.
- In the inertia rule change the AEC made a statement that their design allows for “Co-optimisation with other spot market services and energy in order for the NEM Dispatch Engine (“NEMDE”) to explore the lowest total dispatch cost”. Many other proponents said yes this is good and it should do that. I pointed out in my submission³ that NEMDE doesn’t even co-optimize for lowest cost currently, which many people may not be aware of, but yes

¹ [More details here](#)

² [Reliability panel review of the FOS, 6 April 2023 pg 39](#)

³ [Grids submission to the inertia rule change](#)

obviously it should co-optimize for lowest cost which would mean managing the size of the largest contingency.

- I've submitted two rule changes recently⁴. One improves contingency FCAS cost allocations, the other proposes putting a requirement on the market operator to manage the size of the largest contingency when there's benefits to doing so. Currently the NER wording suggests the market operator *could* do that, I'd like to change it so it *should* do that. The new cost allocations would likely create a larger benefits case to managing the largest contingency for economic purposes.

In summary, I think this issue deserves a good examination if the analysis hasn't already been done. This will not only help the market operator make good decisions about how it should run an efficient market, but also aid interested stakeholders who are also speaking to this issue in various forums.

Thank you for the opportunity to raise this topic.

Mitchell O'Neill
mitch@grids.dev

⁴ They haven't been put up on the AEMC website yet, I'd expect them up by 14th April. But for now: [more details here](#)