



15/10/2020

Ms Merryn York  
Australian Energy Market Commission  
PO Box A2449  
Sydney South, NSW 1235

Dear Ms York and the AEMC team

**Integrating energy storage systems (ESS) into the NEM submission**

Apologies, I should have filled out the template and be more prepared, but in light of that I thought I'd jot down a few high-level thoughts around the submission and my experiences in the NEM.

Thank you for reading my letter.

Yours sincerely,

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I like the submission; it highlights a lot of problems we face by still calling things “generators” and “loads”. In the past those classifications were approximately correct. Things came out of generators and went into loads and the few exceptions where that wasn’t the case, we could mostly ignore. Overall it really didn’t matter too much if the pumps came on at a generator or some enterprising hobbyist in the 90’s had a solar PV system up and running at their house.

Unfortunately, the NEM has changed and now we have bi-directional flows at millions of connection points. There are common cases in the NEM today where loads can export far more than they import, and a less common but possible cases where generators can import far more than they export.

Here are some Market Participants who can register connection points with significant bi-directional Flows:

- Market Customer
- Market Generator
- Market Ancillary Service Provider
- Small Generator Aggregator
- Demand Response Service Provider

And perhaps soon a:

Scheduled Bi-directional Resource Provider

This creates a lot of confusion. Did you know that some Participants aren’t aware that Small Generator Aggregators can have bi-directional flows? I often try to correct this misconception but sometimes people don’t believe me, which is fair enough, it does have *Generator* right there in the name.

Further, I was part of a group that registered an Aggregated Ancillary Service Load last year and was initially told they’re not allowed to export to deliver FCAS. Once again, I can see how having *Load* in the name is not very helpful and this misunderstanding is totally understandable. This was resolved in an “Interim Agreement”<sup>1</sup>, an increasingly common tool needed to clarify how we’re going to interpret bi-directional flows in an NER that barely considers them.

As AEMO points out in their submission, things flowing out of loads or into generators often have bad interactions in our dispatch and settlement systems. To give an example: as Market Customers pay for Contingency FCAS Lower Costs, sites with a Market Customer that are exporting (e.g. loads with behind the meter solar) currently reduce the Contingency FCAS costs of the Market Customer, and therefore

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<sup>1</sup>[https://www.aemo.com.au/-/media/files/electricity/nem/participant\\_information/new-participants/interim-arrangements-for-fcas-from-der.pdf](https://www.aemo.com.au/-/media/files/electricity/nem/participant_information/new-participants/interim-arrangements-for-fcas-from-der.pdf)

re-allocates those costs other Market Customers. I believe this is not an interaction that the designers of our FCAS Cost Allocation Methods considered when putting in clause 3.15.6A(g)(i) of the NER.

The NER and procedures aren't fit for purpose for bi-directional flows and at some stage we should fix it up. This rule change seems to me like a quick and perhaps pragmatic interim arrangement to address some of the problems, but this change may lead to further confusion and the potential for misinterpretations. One example: this suggested rule change could be applied inconsistently to different technology types. I'm not sure how 'bi-directional' your flows need to get before your Facility becomes a Hybrid Facility.

Perhaps this is all ok. If it aids AEMO transitioning through this tough time I think we should give it all the help we reasonably can, as it's one of the main Participants burdened by bi-directional flows not being properly considered in the NER.

I do hope that we can properly address these bi-directional issues holistically at some stage, and the Commission considers the costs of deferring that by instead putting in these temporary measures, as well as opportunities to efficiently correct other inconsistencies in bi-directional flows during this process.