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Submitted Electronically: CauserPaysConsultation@aemo.com.au

FCAS Causer Pays Procedure Consultation

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Dear Chris,

Thank you for the opportunity to comment on this very important element of the FCAS Regulation markets.

The current state of the regulation FCAS market presents an unacceptable and unmanageable financial risk on semi-scheduled and non-scheduled generation and new investors of energy infrastructure. The influence of the current causer pays procedure (CPP) in the FCAS regulation cost recovery methodology is significant. Infigen's rationale is described further in this paper and our response has been prepared in consultation with a Wind Coalition of like-minded wind farm owner and operators.

Infigen contends that the 10 areas AEMO sought answered in its original consultation paper should be extended to cover:

1. actual services provisioned by AEMO,
2. quality of the services provided, and
3. the most effective, efficient and appropriate manner for true cost recovery of regulation FCAS services.

Continuation of the status quo in this area of the regulation FCAS market will continue to result in distorted market incentives that simply create an unnecessary wealth transfer between scheduled and non-scheduled generation.

The Wind Coalition commissioned Hard Software and Greenview Strategic Consulting to provide detailed and quantitative analysis that has allowed the Coalition to view the data and methodology applied in the CPF process at a level rarely analysed among participants. Using this new analysis, we have attempted to answer the 10 key questions AEMO sought comment on. Within each of the responses, there are references to the report that can be consulted for further information.

Infigen suggests the issues noted in this paper are a complex mix of technical, mathematical and economic principles that the Coalition contend must be addressed immediately through the following actions:

- The current mathematical overlays to determine causer pays factors, multi-week delays and low market pricing appears to have created a disincentive for adequate frequency control, penalising units for attempting to perform frequency control and hence are all key contributors to frequency performance degradation since 2001;
- The Wind Coalition request an immediate audit of all frequency dead band and frequency influence settings for current FCAS providers as recent power system performance indicates that, although the prices for regulation service are increasing dramatically, the performance of the system appears to be degrading;
- Formation of an urgent technical working group to address a number of concerning observations, from both a power system technical and financial risk management perspective;
- An urgent review on the accuracy of AWEFS forecasts for use in the dispatch timeframe for semi-scheduled windfarms is required immediately, as persistence forecasts have been analysed to show unreliable, expensive and inaccurate performance in forecasting actual dispatch targets of semi-scheduled plant. The Coalition provides a number of alternatives that could be expected to deliver an improvement to expected dispatch targets for semi-scheduled plant that would lead to an immediate reduction in anticipated causer pays factors (CPF) and hence dispatch target adherence;
- The current CPP does not allow a semi-scheduled or non-scheduled participant to adequately manage their underlying financial risk, contrary to AEMO's stated principles;
- A non-controversial rule change will be submitted by the Wind Coalition to address the inability of semi-scheduled plant to manage periods when dispatch levels do not reflect actual outcomes, therefore compounding a participant's CPF;
- Modification to the causer pays procedure to allow for periods when wind farms are metered below 0MW, thereby ensuring 'on-site' consumption is treated as any other 'used in station generation' or auxiliary load within scheduled generating systems.

AEMO High Level Principles

At a high level, Infigen agrees with the general theme of AEMO's principles, but in practice it is felt that a number of the principles are not being reflected in actual outcomes as outlined below:

- Essentially, the current regime is not effectively incentivising the correct management of each units' own risk, therefore is in danger of fundamentally not meeting the intention of Principle 1
- Although 'causer' of the system may be able to be identified, notifying them up to 14 weeks after a measuring period in a completely different settlement week does not constitute suitable incentives for correct dispatch behaviour (Principle 1);
- AEMO had sought to have proposed changes (Principle 6) assessed against system costs and benefits; the same must be applied to changes by AEMO. It could well be argued, for $50m in SA, could alternate arrangements (like

directions) could have been used to manage regulation FCAS following a region-separating critical contingency!

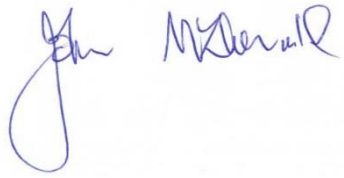
As discussed in Section 5 of the attached report, the degree of deviation that has been allowed in the regulation market such that the performance of the regulation providers has been allowed to reduce to minimal levels allowing the frequency to meander between 49.9 and 50.1, thereby effectively increasing the costs to other participants, must be addressed.

It should be noted some members of the Wind Coalition submitted responses to AEMO's consultation on CPP during Asynchronous operation: this submission does not repeat the content but can be read in conjunction with those submissions.

Although this consultation is not intended to consider the processes used to procure regulation FCAS itself, it raises a number of issues that we consider worthy of deeper understanding by AEMO prior to finalising these CPP's, which by definition will include elements associated with procurement of the services. Similarly, any change to the current CPP should be numerically verified to ensure participants are aware of the financial, technical and operational impact of any change.

Infigen would be pleased to discuss this submission further with you at your earliest convenience.

Kind regards,



John McDonald
General Manager Energy Markets Operations

Niva Lima
OCC Manager

Attachments

- Infigen response to AEMO's 10 Questions
- Report: NEM FCAS causer pays procedure

Infigen response to AEMO's 10 Questions

1. Calculation of causer pays factors when regulation FCAS requirements apply within a local region.

- The group is unable to recommend option 1 or option 2 due to the lack of clarity around what is actually occurring at the physical power system level.
- Rather than answer this question in isolation, the group would like a review to investigate further what happens at the power system level when a local constraint is applied to a synchronised region, then determine the most efficient cost allocation method.
- There are members of our group that doubt the technical veracity of the 35MW local constraint to manage the power system as intended following a separation event, and see it is as nothing more than an extremely expensive time-correction cost.
- When all regions are connected and synchronised, all regions are supporting each other through regulation management sharing as demonstrated in Figure 7 of the report, which shows high NSW import on Fri 10th February, yet there were no local raise service providers during critical high demand periods (i.e. all regulation service was coming from the interconnectors) where the power system was equally at risk as some of the conditions that have resulted in local FCAS requirements being applied in SA in recent times.
- When asynchronous regions exist, the Wind Coalition agree with the current AEMO methodology that recoups the costs from only region-specific generation.

2. Ability for positive and negative performance to balance within a portfolio.

- Suggest staying with Option 1: status quo, but allow for participants to allocate/understand portfolio breakdown/aggregation levels so as to avoid confusion around it.
- The current methodology for portfolio allocation has created perverse outcomes:
    - We are aware of numerous events in SA have been translated through to wind farms in up to two regions away and allocated to the wind farm simply because they have used that portfolio group for their contract and settlement services.
    - The Wind Coalition do not believe it would have been the original designers view for this method to effectively force costs onto other entities through the Recipient Created Tax Invoice Process.

3. Ability for positive and negative performance to balance across the sample period.

- Stay with Option 1 (Status Quo), especially if the sample period is reduced to settlement weeks. Risk, behaviour and financial penalties will all start to be more aligned.
- Continue to support positive RNEF/LNEF factors carrying through each 5 minute and for aggregation at the settlement interval by Unit/Station and portfolio (by consent)
- Agree for the aggregated RNEF and LNEF to form the factor with the zeroing to be applied at the aggregated (not LNEF/RNEF) level

4. The most appropriate sample period, notice period, and application period.
    - Suggest 7-day sample period (Option 3 aligned to settlement weeks) as an interim stage with a view to constructing near-real time performance assessment (with an option to shut-down if economic signals persist). This should be possible given data is already available within 28hrs after the end of a trading day
    - If performance was bad, incentives to improve are immediate instead of up to 14 weeks after the event (bad event at start of the sample period, 4 weeks later the sample period ends, 3 weeks later it applies, 4 weeks of application, 3 weeks until regulation costs are first seen)

5. The treatment of non-scheduled generation.
    - Agree with AEMO

6. Resolving cases where all factors are positive.
    - Agree with AEMO

7. Treatment of facilities with changing registration status during the sample period.
    - Agree with AEMO

8. Producing factors when significant periods of input data are deemed unreliable or inapplicable.
    - No clear position on this at the macro level where major data errors occur (i.e. SA Blackout in September/October 2016)

9. The appropriate form and granularity of published causer pays datasets.
    - Agree with AEMO's intention, but insist participants must continue to have access to 4 second data
    - The group request all the available factors, normalisation items and assumptions (including portfolio breakdowns) be published

- The Coalition agrees that the existing 4-second data format is difficult to use, both because all participant data is jumbled together and stored in zipped files by trading interval. Some possible improvements from most desirable to better-than-nothing include;

    1) Putting causer pays data on MMS for SQL querying.

    2) A web portal for manually downloading the desired data selected by element id, variable id and time period.

    3) Rather than upload CSV files by dispatch interval to www.nemweb.com.au, upload CSV files by element id for the entire sample period to date. These would be small enough to easily download, filter manually and work with.

    4) All data per sample period could be feasibly available in one (very large) csv file or a few files divided sensibly (eg element id 1-50 etc). Total data size for a sample period is approximately 604,800 timestamp rows by 1084 element id-variable id columns. Such a file will open (eventually) in spreadsheet applications (Excel, Calc) and can be manually filtered by market participants relatively easily.

10. Consolidation and clean-up of causer pays documentation.
    - Agree there is a need to implement further information as significant parts of the CPF calculation methodology are missing from the document, and without AEMO assistance, participants would currently be unable to replicate the CPP processes
    - Section 4 (Calculation Methodology) highlights some of the details that were missing or inadequate

Non-Controversial Rule Change Proposal: Enable the use of Availability Bids by Semi Scheduled Generators

Background

At present, Semi-Scheduled generators are able to submit bids that are complete with available capacity changes, however they are not under any circumstance made effective in NEMDE (by design) due to AEMO's interpretation of NER clause 3.7B a) and 3.8.1 (b) (2) (ii).

Statement of Issues

The failure to consider an available capacity bid that is lower than the UIGF forecast can result in significantly distorted dispatch outcomes that do not represent actual power system conditions; hence place power system security at risk. At the same time, it is recognised inaccurate bidding can lead to excessive causer pays factors.

Description of the proposed Rule

Modification of 3.8.1 (b) (2) (ii) to include the words (noted in **bold**):

> (ii) in the case of semi-scheduling generating units, **the minimum of availability and** identified by the unconstrained intermittent generation forecast;

The proposed Rule contributes to the National Electricity Objective

Given there are no competition issues and this change continues to improve power system reliability, this rule change request should be considered non-controversial and aligning semi-scheduled bidding capability with scheduled generation.

Expected benefits and costs of the proposed rule

This change is expected to be a change to the NEMDE case-loader, rather than the solver itself, hence the expected implementation costs for AEMO and the market are minor. The benefits for semi-scheduled generators could be over a million dollars annually across the entire NEM, due to improved causer pays factors through more accurate dispatch targets.