



6 December 2013

Mr Marc Tutaan
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235
Ref: EPR0032

Dear Mr Tutaan

The NGF appreciates this opportunity to comment on the *Draft Report: Management of negative interregional settlements residues*¹.

The NGF reiterates its view that negative IRSRs are a minor inefficiency of the NEM design compared to the much larger efficiency gains of facilitating regional trading in derivatives through a single RRP. This view is supported by extensive modelling undertaken by Frontier Economics, Roam Consulting, and IES, that have quantified the economic cost of negative IRSRs to be less than 0.1% per annum of the energy market turnover. We note AFMA's latest derivative survey shows that the derivative turnover to be in excess of three (3) times the physical market turnover. This is a healthy level of turnover which allows the market to efficiently manage risks.

However, the NGF believes there are minor issues in AEMO's existing system of negative residue management which should be addressed.

Has the AEMC adopted the NGF's recommendations?

In response to the consultation paper we recommended four options:

1. Publish the NRM_DI_AMT (NR\$) in dispatch, 5min PD and 30 min PD;
2. Adjust the increments so the NRM² constraints are symmetrical;
3. Apply the increments to targets for the interconnectors and allow the ramping constraints on the interconnectors to control targets and CVP³ factors to apply; and
4. Or explore possibility of treating NRM constraints as an OCD⁴-type rerun where the MW in the equation results in equivalent pricing across both regions.

We summarise the main points from the Draft Report:

- \$100,000 threshold to be retained;
- AEMO should investigate processes to manage the cycling of N-IRSR events, possibly by redefining events;
- AEMO has been asked to communicate why it clamps interconnectors asymmetrically;

¹ From here in this response we shall refer to interregional settlements residue as 'IRSR'

² Negative Residue Management

³ Constraint Violation Penalty Factors

⁴ Over constrained Dispatch

- Where possible AEMO should publish their estimate of the N-IRSRs used to determine when and how to clamp ;
- AEMO is expected to continue to apply clamps to the initial metered interconnector flow rather than the previous target;
- AEMO is not expected to clamp when prices are uniform

We hope the AEMC recommendations satisfy the first option above and possibly the second (but expect sound reasoning from AEMO given asymmetry in constraints appears to cause positive residues after a negative residue event).

We note the Draft Report does not satisfy the third option. We understand the AEMC believes it operationally sensible to use initial metered flow from the previous 5 minute dispatch interval rather than the initial metered flow for the current dispatch interval or alternatively the current dispatch interval target flow, although this ignores the fact that the current system is unpredictable for participants to manage. The NGF questions the logic of continuing to utilise flow data that is not aligned with the RRP outcomes to calculate N-IRSR. In addition, currently AEMO does not transpose actual flow data into the historical dispatch intervals until the end of the trading period, this often results in the imposition of negative residue management for the first dispatch interval of the next trading period when no N-IRSR are occurring.

As a minimum, the NGF recommends that AEMO utilise initial flow data for the current dispatch interval and once dispatch has moved to the next dispatch interval substitute this initial metered flow with the cleared dispatch data to ensure the historical values are aligned with actual outcomes. This will ensure that N-IRSR management more closely matches the actual settlement residue outcomes.

On the fourth point above we had suggested there may be a way whereby the NEMDE could be re-run to calculate the NRM quantity that needs to be dispatched to equalise prices between two regions (no residues at all). We had suggested looking at the objective function in each re-run.

We believed it is possible for the clamping process to work such that there are no residues (negative or positive) across the interconnector, but found out this is difficult given the way NEMDE is designed.

After completing some work with AEMO we confirmed the following:

1. Achieving an optimal NRM constraint is inherently difficult because prices (residues) are an output of NEMDE rather than input
2. Binding constraint serves to increase the objective function (which is the sum of offers x dispatch = cost)
3. Linking the negative settlement residue constraint to the objective function is difficult because the goal is to affect prices (residues) not costs (objective function)
4. If a NRM constraint reduces dispatch of negative offers from constrained generators to an extent (which would not need to be much, just a little bit) where such offers are included in setting the price:
 - a. Positive residues will tend to accrue, rather than negative
 - b. Objective function will increase
5. The point at, or near to, the zero residue occurs is the optimum MW volume for the NRM constraint
6. AEMO considers the difficulty of implementing an iterative dispatch re-run process to establish this optimum is likely to outweigh the benefits (too hard).

The main point is that counter price flows are caused by the combination of the constraint formulation type currently in use in the NEMDE and negatively priced offers from generators with positive co-efficients in the constraint equation. . Therefore if we constrain off the negatively priced offers through a NRM constraint equation, the overall objective function for dispatch will be more expensive.

An alternative methodology would result in The dispatch engine dispatching nearly all the negatively priced offers in exporting region, less a marginal amount, (with the marginal amount of negatively priced offers used to set the price of both regions to be the same). What happens instead is AEMO tends to constrain off incremental blocks of negative priced offers (or none) and the price is lower in the exporting region (or the price remains higher in the exporting region). Sometimes this can result in significant positive residues and volatile and difficult to predict dispatch interval pricing.

We were disappointed the AEMC has not discussed any of this work. This work highlights that we have an automated NRM constraint process that can, sub-optimally, result in positive residues after negative residues, with prices swinging from positive to negative in the exporting region. Instead the AEMC is concentrating on minor changes to AEMO's process. By looking at only minor changes the AEMC is giving it undue credence. The reality is that the current NRM process is flawed because we are seeking an output (price) by adjusting an (input) whilst not knowing what the other inputs are.

Cycling

We understand that the AEMC considers AEMO should investigate processes to manage the cycling of N-IRSR events, possibly by redefining events. Given we believe the clamping process will always be sub-optimal (in that it will prevent efficient, as well as inefficient outcomes) we recommend that the AEMC consider the best option is for AEMO to intervene for as short a period as possible, whilst maintaining negative residues to as low an amount as possible, noting we already have the asymmetry in NRM increments that extends AEMO's intervention into dispatch. If this results in "cycling" as the AEMC has described it and this is intolerable, then there should be another, better, process implemented rather than "fiddling" with the existing process.

5 minute spikes and 30 minute settlement

In addition, Negative IRSRs occur in two instances:

1. After a price spike for 5 mins, generators then rebid to increase dispatch to settle on the half hour price which often changes the magnitude and direction of flow on the interconnector within the half hour. This remains profitable to generators to do so due to the fact that settlement occurs on a ½ hr trading interval as opposed to the 5 minute dispatch interval.
2. Generators with a positive coefficient in a constraint equation rebid to prices below the interconnector, which due to the format of constraint formulation used in the NEMDE is then forced to export, irrespective of whether this is counter price.

May we request the AEMC confirm the intention is that AEMO's NRM processes should cover both instances above?

Yours sincerely



Tim Reardon
Executive Director