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NEOEN RESPONSE

PFR Incentive Arrangements – Draft Rule ERC0263

4 November 2021

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Level 15/60 Castlereagh St,
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Lodged via AEMC portal

Dear Ben,

Neoen welcomes the opportunity to respond to the AEMC's draft determination regarding PFR incentives.

About Neoen

Neoen is the leading French, and one of the world's leading independent producers of renewable energy. Neoen is a responsible company with a long-term vision that translates into a strategy seeking strong, sustainable growth. We have 4.8 GW of projects globally in operation and under construction, including in the NEM: Hornsdale Wind Farm (309 MW in SA); Parkes, Griffith, Dubbo, and Coleambally Solar Farms (combined 255 MW in NSW); Bulgana Green Power Hub (hybrid wind/battery system), Numurkah Solar Farm, and Victorian Big Battery (combined 614 MW in VIC); and the Degussa Hybrid Power System (10.6 MW in WA). Neoen is also the owner of Hornsdale Power Reserve (150 MW battery system) in SA.

Summary

We are far from having a rule proposal that could be sustainably used for the long term; the solution will not be enduring and will have to be changed again later.

1. We have not addressed how to dispatch reserves when aggregate frequency response is poor. Even if this is not deemed to be a pressing issue it is generally agreed to become one in the coming years.
2. Measuring performance and allocating costs fairly and without perverse incentives has many challenges. FCAS recovery already has inequitable outcomes that are not being addressed by the AEMC.
3. Without the possibility for suppliers to recover their costs in providing PFR the service becomes a hindrance to new capacity.

In light of these issues, we suggest that an interim payment scheme is implemented that seeks provide a minimal level of compensation to PFR suppliers soon. Efficiency is less of a goal than expediency.

Neoen is not comfortable having AEMO decide the commercial outcomes of the incentive implementation. It is the AEMC's role to set the principles of fair remuneration of PFR services.

Performance and scaling

Performance is not the basis of payment for FCAS at the moment, but the basis of registration. Regulation & Contingency services are paid for reserves not utilisation.

Scaling payment for PFR based on the utilisation of Regulation creates feedback loops which may lead to perverse incentives. Furthermore, the socialisation of unutilised REG capacity onto the very PFR providers assisting with frequency control is counterproductive and discourages good performance.

The utilisation of REG is subject to decisions AEMO makes about AGC and REG procurement volumes. This should remain a technical decision process and not create angst about potential payments.

REG utilisation is generally low but sometimes high and this range is not possible to know ahead of time. Generators cannot plan to change bids to accommodate these potential changes in opportunity cost.

The utilisation of PFR is already considered to be measured (in the positive factors) so the utilisation of REG is not needed.

Conclusion: we should not scale PFR payments to REG utilisation.

Alternative measures

Below are some potential alternative methods for measuring and remunerating PFR providers. Each has benefits and downsides.

Our preferred interim solution mentioned later is the simplest incremental change to create PFR incentives, but does not necessarily carry more benefits than other methods other than speed of implementation.

Potential reserves

This mechanism reflects the reserve service the other FCAS markets have. From the plant PFR settings, dispatch volumes, and FCAS trapezia we can calculate the potential reserves of each generator.

Payment based upon this metric incentivises more aggressive droop parameters for generators to increase their payment volumes.

It also incentivises generators to operate as to provide headroom for PFR.

The paid volumes will be quite large, on the order of 2 GW, so pricing would need to be controlled as not to be excessive.

Positive contribution share of measured PFR capacity.

This mechanism aims to recreate the reserve basis for payment consistent with the other FCAS markets.

The maximum deviation for PFR could be measured and used to determine the reserve amount in MW. This would reduce the typical volumes of PFR paid, but with occasional spikes much larger than the REG market.

Contribution to either the maximum deviation, or overall positive factor would determine the individual generator share of PFR payments.

Capacity auction

The initial advice to AEMO was that PFR needed to be widely available, not universally available. In the interest of sharing the pain we are needlessly increasing the total economic cost of PFR.

Giving payment to PFR providers allows for “sharing the pain” concerns to be removed.

AEMO could tender for PFR providers from a large base of generators. The cheapest offers would be selected and those for whom the cost of PFR is high would not be forced to be enabled for PFR.

This would help establish the cost of PFR through a competitive mechanism without the need for spot dispatch.

	Operational Impact of PFR	Opportunity Cost
Peaking	Reduced production at max load.	Needs to contract fewer caps.
Intermediate	Wear & tear. Fuel efficiency reduced.	
Wind & Solar	Reduced production.	LGC sales.
Battery	Increased degradation.	Needs to participate less in Energy & REG to maintain warranty.

Price benchmarking

In general, we agree that REG is a good market to benchmark against given that PFR is a complement to REG, and they involve similar work, as such REG better reflects the operational and opportunity costs of PFR.

We note the comments by Delta that PFR is eroding Contingency reserves. In light of this AEMO should not procure additional Contingency reserves in order to improve localised PFR responsiveness if payment for PFR is benchmarked against another service.

Causer Pays or Cost Socialisation?

The NER promotes Causer Pays as the preferred cost recovery mechanism, yet this is not actually the case for the existing FCAS markets.

Regulation – those without high speed metering are allocated a pool of recovery based on net consumption or generation. Unutilised REG is still allocated to Causers over and above the magnitude of their deviations.

Contingency – Recovery is smeared across operational MW within each interval. Retailer share of operational demand is estimated where interval meters are not available.

Both Causer Pays and Socialisation paths have merits and downsides.

Causer Pays:

- Those who behave perfectly pay nothing
- Strong incentives for bad performers to improve
- Impossible to measure equally for all participant classifications
- Concentrating costs on fewer participants promotes adverse behaviours and disincentivises scale efficient investment in large generation and heavy industry.
E.g. allocating contingency costs to the single largest unit will simply mean that unit turns down to shift the cost onto the next largest unit.

Socialisation:

- Easier to administer
- Less likely to cause shocks to individuals
- Does not discourage development of scale efficient investments
- Dilutes incentives for good performance
- May remove performance measurement altogether
- Can cause cross subsidisation between groups

Classification	Impact on frequency	Contribution to cost recovery
Residential customers	Least predicable load type, more likely to lead to dispatch error. Distribution outages are unlikely to cause contingencies.	Proportional to imports.
Residential, with solar	As above, but with higher variability. Small solar can fail in a common mode causing a contingency.	Net metering reduces payments despite this customer type causing more frequency problems
Commercial	Usually predictable, but temp sensitive so can diverge from a trend causing dispatch error.	Proportional to imports.
Heavy Industries	Generally stable load and easy to predict, but trips can cause contingencies.	Overpays for Lower Contingency due to net metering.
Networks	Line outages and runback schemes can cause contingencies. The worst contingencies are caused by network outages.	Not liable for FCAS.
4.9 MW solar farms	Higher than average variation.	Proportional to exports. Avoids payment for REG as average per MWh payments are small.
50 MW solar farms	Higher than average variation. Expected to do PFR.	Causer Pays.
500 MW coal plants	Usually follows targets well. Expected to do PFR. Trips cause contingencies.	Costs of Contingency are significantly socialised onto others.
Scheduled Battery	Follows targets precisely. Expected to do PFR.	Not rewarded for excess performance.

It is impractical to completely use Causer Pays methods as the cost of metering and analysis would be enormous.

However, we need a holistic review of FCAS cost recovery. Net metering in particular is unsustainable in cost recovery of FCAS and networks and is creating significant cross subsidies between customer types. This issue is being ignored in the Incentivising Energy Storage rule change.

Without precise measurement across every metering point we will have to create socialisation mechanisms that reflect the differences between the different classifications of consumer and generator.

With respect to the table above it becomes clear that net MWh are not a consistent measure of the contribution to frequency deviations.

Portfolio Disaggregation & Enabled Factors

We agree with the rationale to remove portfolio aggregation as the payment for positive factors should reward good performance **as long as PFR payments are proportional to Regulation recoveries**.

If this is not the case, then participants will prefer to offset negative factors with positive ones and portfolio aggregation should be preserved.

Note that within an interval positive and negative factors cancel out for the individual unit so this cost/payment alignment should be maintained for consistency.

We support using AGC targets as the reference, removing the need for separate classifications of MPF. This can also help to disincentivise poor REG performance.

Preferred interim solution

We present an alternative solution below with the rationale that PFR payment must be equal to the cost of REG charged per negative factor. i.e. PFR can either offset a negative factor within the interval, or receive payment for a positive factor and these amounts will be proportional to the factor.

We anticipate that the positive factors will be smaller than the negative factors due to the activity of REG. Matching the performance payments this way means that if AEMO can improve REG performance PFR payments will reduce.

The cost of PFR and REG are solely allocated to those with negative factors. PFR payment is scaled to the fraction of work not done by REG which attracts a positive factor. If AGC was deactivated this would mean the PFR cost would equal the REG cost and total costs would be doubled.

$$PFR\ Payment = REG_{\$} * REG_{vol} * \left(\frac{Factors_{pos}}{Factors_{neg}} \right)$$
$$Causer\ Cost = REG_{\$} * REG_{vol} * \left(1 + \frac{Factors_{pos}}{Factors_{neg}} \right)$$

We note that this is not a complete solution as it does not allow cost recovery or price discovery for PFR providers. We expect that this option will underpay providers.

However, it is not a large variation from the existing Causer Pays procedure and can be implemented expeditiously. It also aligns PFR payments with REG cost recovery.

Data Issues

AEMO and others in the PFR technical working group noted challenges associated with data quality and alignment of measurement of performance.

We share these concerns and have experienced over-charging in the past due to these kind of data errors.

Neoen is available at your convenience to discuss these topics further.

Yours sincerely,



Tom Geiser,
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Neoen Australia