



Grid access reform (COGATI) review – technical working group # 7
12 June 2020

The seventh working group meeting was held by Webinar on 12 June 2020.

The working group was formed by the Australian Energy Market Commission (AEMC) to provide advice and input into the progression of the grid access reform (COGATI) review (EPR0073).

All enquiries on this project should be addressed to Russell Pendlebury on (02) 8296 0620 or Tom Walker on 0410 764 175.

The attendees of the meeting are listed below.

Member	Organisation
Andrew Kingsmill	TransGrid
Angus Holcombe	Meridian Energy
Anh Mai	AusNet Services
Arista Kontos	Australian Energy Regulator (AER)
Ben Skinner	Australian Energy Council
Bill Jackson	ElectraNet
Con Van Kemenade	ENEL Green Power
Dan Mascarenhas	AGL
Darryl Biggar	Australian Energy Regulator (AER)
David Havyatt	Energy Consumers Australia (ECA)
David Scott	Australian Energy Market Operator (AEMO)
Dean Gannaway	Aurizon
Gordon Leslie	Monash University
Greg Hesse	Powerlink
Henry Gorniak	CS Energy
Jevon Carding	Lighthouse Infrastructure
Joel Gilmore	Infigen
Jon Sibley	Australian Renewable Energy Agency (ARENA)
Kirsten Hall	Australian Energy Market Operator (AEMO)
Lawrence Irlam	Energy Australia
Lillian Patterson	Clean Energy Council (CEC)
Nabil Chemali	Flow Power
Panos Priftakis	Snowy Hydro
Peter Nesbitt	Hydro Tasmania
Rimu Nelson	CleanCo
Robert Pane	Intergen
Ron Logan	ERM Power
Sam Ingram	Cleanco
Sally McMahon	Spark Infrastructure
Sarah-Jane Derby	Origin Energy
Tennant Reed	AI Group

Tim Astley	TasNetworks
Tom Geiser	Neoen
Verity Watson	Energy Networks Australia (ENA)
Will Taylor	NERA Economic Consulting – Conducting a cost-benefit analysis of reforms for the AEMC
Yolande Pepperall	Clean Energy Finance Corporation

The AEMC's project team attended and is listed below.

Name	Position
Victoria Mollard	Acting Executive General Manager – Security & Reliability
Orrie Johan	Adviser – Transmission and Distribution Networks
Russell Pendlebury	Senior Adviser – Retail and Wholesale Markets
James Tyrrell	Senior Adviser – Transmission and Distribution Networks
Ella Pybus	Consultant – Cambridge Economic Policy Associates
Tom Walker	Senior Economist
Jessica Scranton	Lawyer
Tom Meares	Graduate Advisor
Peter Thomas	Digital Communications Manager

At the start of the meeting, the 'competition health warning' was read out, and copies of the protocol were sent out to each member of the working group in advance of the meeting.

After an introduction and recap to the project, the meeting focussed on four areas:

- 1) Funding to payout to holders of loss FTRs – through congestion and loss rent and how actual losses are dealt with
- 2) Where funds to payout holders of FTRs come from – i.e. using auction revenue to fund a combined loss and congestion FTR
- 3) Purchasing of loss FTRs – determining how many should be sold
- 4) Determining whether there should be separate or combined loss and congestion products or whether loss FTRs should be provided at all.

Introduction

- The AEMC introduced participants, mentioned that materials/minutes have been from last week have been published on the AEMC website.
- It was also requested that participants reach out to the AEMC before nominating additional attendees from their organisation attend the technical working group, in order so that the numbers are limited per each organisation.
- The AEMC outlined the purpose of the day's session being to build on and extend the discussion from last week to considering FTRs that relate to losses. The AEMC noted that it is still an open question as to whether or not loss FTRs will be offered, and if so, whether it would be a separate product or combined with congestion FTRs. We were after stakeholder feedback on this question.

Recap on TWG#6 on the 5 June covering the auction and design of congestion FTRs

- The project team covered some of the key points raised in the TWG held the previous week including that:
 - The quantity of congestion FTRs sold could be set to target the expected congestion rent, with this being the appropriate constraint on how many FTRs can be sold, minimising upside and downside risk to consumers

- Like all international markets that have LMPs/ FTRs they are sold through a simultaneous feasibility auction, to determine how many and who holds FTRs
- The specification set out in the March paper, that uses both the congestion rent and auction revenue to back FTRs increases firmness and reduces the chance that payments will be scaled back for participants
- The project team recapped some of the stakeholder comments from the previous week:
 - Stakeholders supported the use of auction revenues to back FTRs. Some stakeholders argued that FTRs should be made fully firm, with consumers contributing the funds in order to achieve this. On the other hand, some were of the view that using auction revenue to back FTRs erodes the benefits to consumers. Many stakeholders noted that there would likely be situations in which auction revenues would not be sufficient to cover FTR payouts.
 - There was discussion on the potential of the simultaneous feasibility test to maximise the number of FTRs available to participants through the auction.
- Stakeholder questions and comments on the recap (and responses from the project team) included:
 - Clarification was sought on whether the auction revenue generated from the sale of FTRs would *collectively* be used to cover payouts for an *individual* FTR to the extent there is a shortfall in congestion rent to back that FTR. The project team stated that this would be the case under the current FTR design proposal, however this design feature was open to change.
 - There was further reiteration of the point that FTR firmness was essential in order for the FTR to be a useful hedging product to generators.
 - Some participants suggested that grandfathered FTRs should not have the same level degree of firmness as non-grandfathered FTRs, given that grandfathered FTRs would be provided for free and so there would not be any auction revenue from their sale to back them.
 - Support for using auction revenue to improve the firmness of FTRs was reiterated. It was noted that this shouldn't be thought of as taking value away from consumers, as the firmer FTRs are, the more valued they are likely to be in the auction and therefore the more revenue from their sale. A comparison was drawn with SRA instruments where these sell below their payouts, because participants that purchase these products are not expected a *firm* product. Firm FTRs, on the other hand in being firm, should be expected to clear above the expected payouts (assuming a risk premium is applied).

Funding for loss FTRs

- The project team outlined a strawman potential design for loss FTRs:
 - Loss FTRs would form part of a combined loss and congestion FTR product, which would be sold through the simultaneous feasibility auction,
 - Combined loss and congestion rent would back the combined FTRs, along with the auction revenue from the sale of FTRs, and
 - Combined loss and congestion FTRs could be implemented through adjusting the quantity sold through the simultaneous feasibility test
- As a starting point for discussion, the project team defined loss FTRs as a product that hedges the difference in LMPs due to marginal losses. This assumes that dynamic

marginal losses have been introduced, as well as a combined product. The impact of changing these assumptions was returned to later in the discussion.

- The project team proposed that the approach of selling loss FTRs where the expected payout is equal to the loss rent (and consistent with the method of selling congestion related FTRs with an expected payout equal to the congestion rent) minimises upside and downside risk for consumers. Doing so has important implications for loss FTR design. This is because a typical simultaneous feasibility auction would not ensure that the combined loss and congestion rent is enough to meet the payout on a combined fixed MW loss FTR product, due to actual losses that arise. This design is not observed elsewhere in the world.
- The project team noted that where FTRs are issued such that their expected payout is equal to the expected loss rent, in aggregate, participants would effectively be able to hedge the difference between *marginal* and *actual* losses. An alternative way to fund actual losses could be found, for example, by using the revenue from the sale of the FTRs in the auction. This may require an auction reserve price to be set, ensuring that there would be sufficient revenue to do so.
- The project team put forward two key questions to participants for this section of the discussion:
 - Do you think loss FTRs should be funded by the combined congestion and loss rent (noting that this would not cover actual losses)?
 - Alternatively, would it be better to find a way to fund the cost of actual losses?
- Stakeholder questions and comments on these areas (and responses from the project team) included:
 - Participants generally agreed that FTRs should not fund actual losses (i.e. consistent with minimising risks to consumers).
 - Some participants suggested that one approach to account for actual losses could be to modify the FTR quantities that were bid into the auction i.e. at the injection / withdrawal points. For example, the FTR quantity could be 100 MW at the injection point, but only 98MW at the withdrawal point, which would reduce the FTR payment to reflect actual losses. The project team noted that this idea has been considered, (known as “unbalanced FTRs”), but was not deemed to be feasible.
 - Participants raised the issue of variability in losses, and asked whether the higher the variability of losses, the lower the number of FTRs that should be available. The project team noted that participants are correct, and that the variability in losses that arises from the physics of the system, makes it harder to hit the target of congestion rent plus losses rent equals FTR payout.
 - A number of participants suggested that loss FTRs may be additional complexity when the reforms were first introduced, and perhaps these could be added in at a later date, once understanding of the congestion products has improved.
 - There was some discussion of markets where loss FTRs are not included. The project team noted that in all the US markets losses are not included in the FTR design, but in New Zealand they are.
 - Participants expressed concern that a combined product could create a mismatch with how many FTRs are required for congestion. The project team noted that the inclusion of losses would lead to a lower number of FTRs being sold than under a congestion only model, but this is something we are looking for feedback on. We are also looking at empirical analysis to estimate how much the quantity of FTRs released in the auction might need to be reduced to account for actual losses.

- Participants noted that a loss FTR may not be necessary, and may introduce unnecessary complexity, particularly if the static MLF arrangements under the status quo remain. However, if we were to change to dynamic marginal losses, then hedging would be useful. The project team has had similar thoughts and noted that there is a close relationship between the movement to dynamic marginal losses, the increased volatility that would result and the need to hedge against this.
- Participants noted that scaling back the quantity of FTRs to account for losses and the implications of this required further thought.
- Stakeholders noted that under the current framework there is no hedging product for changes in marginal loss factors. Stakeholders suggested that one difficulty relates to determining who the natural counterparty to losses is, which is easier in the case of congestion.

The use of auction revenues to firm combined loss and congestion FTRs

- The project team noted that in the March technical specification paper, the auction revenue is used to help payout holders of FTRs if the congestion rent was not enough. The project team proposed that the same approach could be taken for a combined loss and congestion FTR product. The project team noted that the intent of using the auction revenue was to improve the firmness of FTRs, but not change the volume of FTRs issued, consistent with stakeholder feedback on this point.
- The project team put forward a question on this section of the discussion:
 - Is it appropriate to use the auction revenue from the sale of FTRs to payout of holders of combined loss and congestion FTRs, but not increase the overall volume of FTRs being sold?
- Stakeholder questions and comments on these areas (and responses from the project team) included:
 - Some participants were concerned that loss residues are currently allocated to consumers, and the proposed changes seem to be re-allocating these residues away from consumers to generators.
 - Participants queried whether the congestion and loss rent, and auction revenue (for the combined FTR product), would collectively be used to back the combined FTRs, or whether the fund would somehow be separated out into loss and congestion components. The project team stated that it makes sense that if the FTRs were combined into a single loss-congestion product, then the fund used to back them would also be combined.
 - Participants noted that it is possible for the marginal loss to change during the period over which an FTR has been sold, and questioned who would bear this risk given the FTR still need to pay out.
 - Participants observed that the proposed fixed volume FTR design hedges the market participant at a marginal loss factor of 1, where it is likely to be lower than 1 at places across the grid, therefore providing a windfall gain for generators. The project team responded that by allowing a competitive auction, the value of the FTR will be reflected in the price paid, and windfall gains will be eliminated.

Concerns were raised in regard to competition for FTRs and that a participant might be able to purchase FTRs cheaply (and experience a windfall gain in relation to their current MLF). Participants also queried how loss FTRs would be treated in grandfathering arrangements. The

project team noted the importance of the grandfathering point, and that this was being considered. The project team noted that the impact of competition on auction revenues was also a good point, and is related to the question of who should be able to participate in the auction for FTRs: physical participants only, or non-physical participants as well. Some participants noted that participation of non-physical participants would enhance competition for FTRs. The project team also noted that this was something we would look to explore in future TWG sessions on market power and contract market liquidity.

Procurement of loss FTRs, determining the quantity to sell consistent with funding

- The project team explained that to sell loss FTRs consistent with the available funds available to payout to FTR loss holders, there would need to be an adjustment made to the FTR design. For the avoidance of doubt, this section only applies to consideration of loss FTRs, not congestion FTRs. Some of the potential options available include:
 - Option 1: An adjustment to the *quantity* of FTRs sold, by decreasing the available network capacity that is used as an input assumption to the FTR auction, with this reflecting actual losses. The benefits of this approach are that it is relatively simple, FTRs still follow the standard design, and the availability of FTR auction revenue to back payouts partly addresses concerns regarding the accuracy of the adjustment. Disadvantages are that it may be difficult to make the exact adjustment required which could result in inaccuracies and so increased risks for consumers. , We are continuing to look into how the adjustment factor could be set, and the level of accuracy that is likely to be achieved.
 - Option 2: Altering the FTR design so that the payout to a loss FTR holder exactly matches the available loss rent in each dispatch interval. There are concerns that this approach creates a link between an FTR payout and generator output decisions, which would impact the accuracy of marginal price signals. The project team also noted that it is unclear how this approach would fit with a combined FTR product that also covered congestion.
 - Option 3: The final option put forward was introducing ‘unbalanced FTRs’. This approach would set different injection and withdrawal quantities for the FTRs, such that the payouts to holders of FTRs reflects the impact of actual losses. There would be different options for determining the difference between injection and withdrawal quantities. In principal, this method directly accounts for the actual losses through the FTR auction, however it is untested in international jurisdictions. The concept has the potential to create additional complexity in the use of the product.
- The project team put forward several questions for this section of the discussion:
 - Do you agree with our initial analysis of the options for determining what quantity of loss FTRs could be issued?
 - Are there other options that we should explore?
 - What empirical analysis could we consider in relation to the Option 1 (adjusting the FTR quantity)?
- Stakeholder questions and comments on these areas (and responses from the project team) included:
 - Some participants questioned how the project team is accounting for future uncertainties such as unknown outages, and the unknown impact of losses. The project team noted that the point on outages relates to congestion-only FTRs as well, and that in other jurisdictions adjustments are made to the simultaneous feasibility auction to account to this. The project team also noted that accurately

estimating the impact of actual losses is a key issue for the loss FTR design. However, given the current specification uses the auction revenue to firm payouts to holders to FTRs, our primary concern relates to minimise risks to consumers.

- Some participants expressed concern with the requirement to estimate the impact of actual losses under Option 1. The project team acknowledged that Option 1 involves some judgement about the adjustments that are to be made. However the alternative of doing nothing implicitly makes a judgement that says we are not going to aim to minimise risks to consumers. Some participants expressed concern with AEMO taking on the role of determining the adjustment factor, noting that this could require a substantial increase in complexity compared to the modelling they currently undertake to calculate static MLFs.
- Participants expressed concern that fixed volume FTRs would not allow them to manage variable dispatch (flow-based payouts). Another participant noted that fixed volume FTRs are also complicated by the fact that losses are not linear, with the incremental payout increasing with line loading. It was also noted that fixed volume FTRs are problematic for losses, as the available loss rent would not match the FTR payout in each dispatch interval, creating a need to manage overs and unders.
- The project team noted the importance of the points raised by participants and that an option is to leave the arrangements for losses as they are. However, we are looking for options that would be an improvement over the status quo.

Determining whether there should be separate or combined FTR products

- The project team noted that a combined congestion and loss FTR product avoids having to split out the loss and congestion components of LMPs (with dynamic marginal losses, the effect of marginal losses will be automatically included in LMPs). Furthermore, if congestion and loss rents are pooled, the available funding for a combined product would be larger, potentially reducing the risk of a shortfall in either. Finally, the project team noted that there is some experience of selling combined products through a simultaneous feasibility auction format.
- The project team also noted that participants may however prefer to manage congestion and loss related risk in different ways, a point which was raised by participants earlier in the meeting.
- The project team put forward questions for this section of the discussion:
 - Do participants have an initial view on whether combined products, separate products – or alternatively no loss FTR products – would be preferable?
 - Are there other factors we should take into account when considering this?
- Stakeholder questions and comments on these areas (and responses from the project team) included:
 - Participants noted that fixed volume FTRs may make sense for congestion, but not with loss FTRs.
 - One participant queried the impact of loss FTRs on bidding incentives. The project team indicated that it thought this was not the case for fixed volume FTRs, but further investigation is needed.
 - The question was raised of whether we could set up FTRs so that losses could be added later, if there is a need for this.
 - Participants suggested that loss FTRs become more problematic at longer lead times / tenures (for example, for lead times of 10 years, rather than 2-3 years). The

project team noted that the March technical specification paper set out that FTRs would be available for up to 10 years. The project team also raised the question that if long FTRs are desired and loss FTRs make longer FTRs infeasible, then perhaps loss FTRs should not be included in the design.

How are marginal losses treated?

- The project team noted that the project team is undertaking analysis on whether to introduce dynamic marginal losses or retain the current static MLF framework and that in principle, it would still be possible to introduce loss FTRs with static MLFs.
- Stakeholder questions and comments on these areas (and responses from the project team) included:
 - Participants again mentioned that loss FTRs may not be immediately necessary if the static MLF framework is maintained, and that the best course of action might be to see if they are desired by the market before making a decision to implement them.
 - Participants also noted that the introduction of dynamic losses might be superior to the current static MLF framework, even without hedges, as generators would be able to minimise fuel costs and maximise profits through dynamic losses.
 - Some participants questioned whether only dispatch efficiency was considered. The project team noted that its assessment of the costs and benefits of the proposed access reforms is broader than dispatch efficiency in isolation.
 - Participants noted that while congestion-only FTRs might still provide the right locational signals, meaning that in future, the exposure of incumbent generators to losses arising from new entrant generators locating nearby might be less of a problem.
 - It was noted that competition in the FTR auction is a critical issue, and therefore who can participate is important. The project team noted that there will be an upcoming TWG on market power and that it is understood that competition for FTRs is an important consideration for the design. It also noted that the March technical specification paper did not reach a landing on whether non physical participants can participate in the FTR auctions. Non physical participants have expressed an interest in purchasing FTRs; we have not heard a perspective on this point from generators themselves.
 - It was noted that the efficiencies from dynamic losses may increase over time, with increasing development of coincident renewable generation. It is therefore important to take a long term view. The project team agreed with this.

Next steps

- The AEMC noted the upcoming technical working group meetings coming up in June and July.