

CONTRACT MARKET LIQUIDITY

COGATI - TECHNICAL WORKING GROUP #9

09/07/2020

AEMC

Agenda

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1. Welcome and introductions
 2. Contract market liquidity
 3. Liquidity in FTR instruments
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Views expressed in this presentation are staff views only for the purposes of discussion with the technical working group

Welcome and introductions

Recap:

- The technical working group **assists with the detailed design of the model**
- It includes representatives from **networks, generators, consumer bodies and market bodies** – it has also expanded to **include** interested **ESB 2025 working group members**
- The purpose of the technical working group:
 - **Provide advice** and **input** into the progression of the project by attending and participating in working groups
 - **Share expertise** to input into consideration and development of issues
 - Provide **differing view points** to challenge thinking

Workplan

Month	July 20	Aug 20	Sept 20	Oct 20	Nov 20	Dec 20
NERA modelling completed						
Cost modelling – IT, implementation and participant costs						
TWG#9 Contract market liquidity						
TWG#10 Market Power						
TWG #11 Grandfathering & simplification (TBC)						
TWG#12 Reform Model Design						
Public forum – NERA modelling results						
Public forum – Simplified model						
August consultation paper – design of access model						
ESB consultation paper on 2025 work						
Written feedback on consultation paper						
Rule drafting						
Report and draft rules published						
Energy National Cabinet meeting						

- Extensive consultation in TWG, public forums and August paper will run through to the end of September.
- Additional TWG meetings may be scheduled as required.
- Draft rules and accompanying report to be published in November in time for the Energy Ministers Meeting in December. We will welcome feedback on these and report this feedback to the Energy Ministers Meeting.

Purpose of this session

- On the 18 June, we discussed the methodology to be utilised in modelling the impacts of the reforms in the NEM.
- Today, we are discussing **contract market liquidity**, primarily in relation to the impacts of the introduction of LMP/FTRs on the contract market, but also in relation to the liquidity of financial transmission rights (FTRs).
- Our focus today is on understanding what the enduring **impact on contract market liquidity** from implementing grid access reform is likely to be, which design choices for the reform are key in relation to liquidity, and whether any **changes to the proposed design** may further help to ensure contract market liquidity is preserved/enhanced.
- Our focus today is not on the benefits of liquidity. This is well covered in other literature, and feedback from the technical working group has indicated this should not be the focus.
- Our focus is on **enduring** issues relating to liquidity. We are aware of concerns relating to liquidity arising due to the transition to an LMP/FTR regime, but this is not today's focus.



How might grid access reform impact contract market liquidity



What changes could be made to preserve or enhance contract market liquidity?

CONTRACT MARKET LIQUIDITY



The drivers of liquidity

The drivers of liquidity:

Participants willingness and ability to offer contracts

Participants willingness and ability to buy contracts

Market characteristics having an impact on liquidity:

Volatility of the underlying instrument

Structural characteristics: size, interconnection, firming capacity, vertical integration

Cost of the contract market instrument versus alternatives

Current state of liquidity in the contract market:

In most regions, liquidity has been healthy across a range of benchmarks

South Australia historically has had lower levels of liquidity than other regions

Concerns regarding contract market liquidity as a result of COGATI

- A number of stakeholders have raised concerns that the introduction of locational marginal pricing will decrease contract market liquidity.
- We understand this argument to be based on the view that locational marginal pricing introduces a basis risk for generators. That is, for contracts struck at the regional price, the generator has the risk that the locational marginal price that it is settled at is different to the contract strike price.
- In turn, stakeholders have suggested that generators will be less willing to offer contracts struck at the regional price, and/or might prefer to strike contracts at their local price (splitting liquidity in the contract market between locations).

How grid access reform, LMP and FTRs, interact with the contract market

- Our view is that FTRs should help generators to manage the existing risk of congestion, and hence should promote inter- and intra-regional contracting – increasing liquidity.
- Consider the revenue for a market participant under the current arrangements and with LMPs and FTRs, entering into a swap equal to its expected dispatch quantity, assuming there is no congestion.

Current arrangements	<p>Revenue from spot market = RRP x dispatch quantity [1] Revenue from swap contract = (Strike price – RRP) x swap quantity [2] Short run cost = Short run marginal cost x dispatch quantity [3]</p> <p>Short run profit = [1] + [2] - [3] = dispatch quantity x (RRP – SRMC) + Swap quantity x (Strike price – RRP)</p>
LMPs and FTRs (differences from the above highlighted in yellow)	<p>Revenue from spot market = LMP x dispatch quantity [1] Revenue from FTR = (RRP – LMP) x FTR quantity [2] Revenue from swap contract = (Strike price – RRP) x swap quantity [3] Short run cost = Short run marginal cost x dispatch quantity [4]</p> <p>Short run profit = [1] + [2] + [3] – [4] = dispatch quantity x (LMP – SRMC) + FTR quantity x (RRP – LMP) + Swap quantity x (Strike price – RRP)</p>

Excludes effects of losses for simplicity of explanation.

How grid access reform, LMP and FTRs, interact with the contract market

	No constraints	Constraint bind, generator's dispatch reduced as a result
Current arrangements	<p>Dispatch quantity = swap quantity</p> <p>Short run profit = Swap quantity x (Strike price – SRMC)</p>	<p>Dispatch quantity < swap quantity</p> <p>Short run profit < Swap quantity x (Strike price – SRMC), potentially negative if RRP is high and/or quantity by which generator is constrained down is large</p>
LMPs and FTRs	<p>RRP = LMP</p> <p>Dispatch quantity = swap quantity</p> <p>Short run profit = Swap quantity x (Strike price – SRMC)</p> <p>Short run profit unchanged</p>	<p>Dispatch quantity = 0 (due to constraint)</p> <p>If FTR quantity = contract quantity, then:</p> <p>Short run profit = Contract quantity x (Strike price – LMP)</p> <p>But we know that $SRMC \geq LMP$ (or else dispatch quantity not zero, had the generator bid at SRMC), so short run profit at least as large as if there were no constraints.</p>

Holding FTRs reduces the downside risk of congestion – giving generators the confidence to offer more capacity into the contract market, promoting liquidity.

Grid access reform design and contract market liquidity (1 of 2)

- A number of stakeholders have suggested that unless the FTRs are **fully firm**, the results on the previous slide do not hold.
- We agree that firmness of the FTRs is an important consideration and have taken steps to improve their firmness significantly (including using the auction revenue to back the FTRs, as discussed with the TWG previously).
- A key reason why FTRs would not payout the full amount is that there would be an outage in the Tx network, meaning that there is insufficient settlement residue to payout to holders of FTRs.
- However, let's compare this to current arrangements – if there is a network outage currently, generators would be constrained off due to the constraint and so their profits would be severely reduced.
- In comparison under the access reforms, the FTRs would (collectively) *at least* payout all available settlement residues, as well as top up payouts from the fund – FTR holders would likely be better off – and at least, not worse off – compared to current arrangements.

Grid access reform design and contract market liquidity (2 of 2)

A number of other key elements of the proposed reform model also help to maintain and preserve liquidity in the contract market:

1. Retention of a regional price for non-scheduled participants

- In the proposed design non-scheduled participants (the majority of load) is settled at a regional price (either the existing regional reference price, or the volume weighted average price), promoting liquidity in the contract market by still having a common reference point price in each region.

2. Transitional allocations of FTRs

- Any allocation of FTRs to existing participants provides for a transitional period which should diminish any transitional disruption to the contract market

3. Implementation timeframes for the reforms

- About 4 years from the time the final rule change is made, beyond typically ASX and OTC traded contract market timeframes

Observations from overseas markets

NERA's report *Costs and Benefits of Access Reform*, March 2020, found that contract market liquidity was not reported to substantially change as a result of the introduction of locational marginal pricing across the range of overseas markets considered.

Inter-regional impacts of grid access reform

- **Inter-regional FTRs would be firmer than the existing SRA units** and so improve the ability for market participants to manage basis risk across regions. In turn, this should promote cross-regional trade, and improved liquidity in the existing regional markets.
- **Liquidity is currently split in the NEM across the five regions.** Generators and market customers are likely unwilling to enter into forward energy contracts where each counter-party is exposed to a different regional price – this is unlikely to be permitted in risk policies. This is because of the basis risk that arises for each market participant if transmission constraints bind between regions, resulting in differing regional prices.
- The use of inter-regional settlement residue auctions partially offsets this risk. However, SRAs are currently not firm in nature (due to effects such as counter price flows). Therefore, **SRAs constitute imperfect hedges against basis risk.** We understand they are more typically purchased by speculators, rather than market participants for the purpose of basis risk management. Generators and market customers generally tend to contract with counter parties within their region.
- The introduction of financial transmission rights - that replace SRAs and which are firmer – means that market participants will be able to buy financial transmission rights which hedge:
 - the price difference between an LMP and any regional price, including the regional price in another region, or
 - **the price difference between any two regional prices.**

Grid access reform design and contract market liquidity– Questions

The core design of LMP/FTRs and the impact on the contract market:

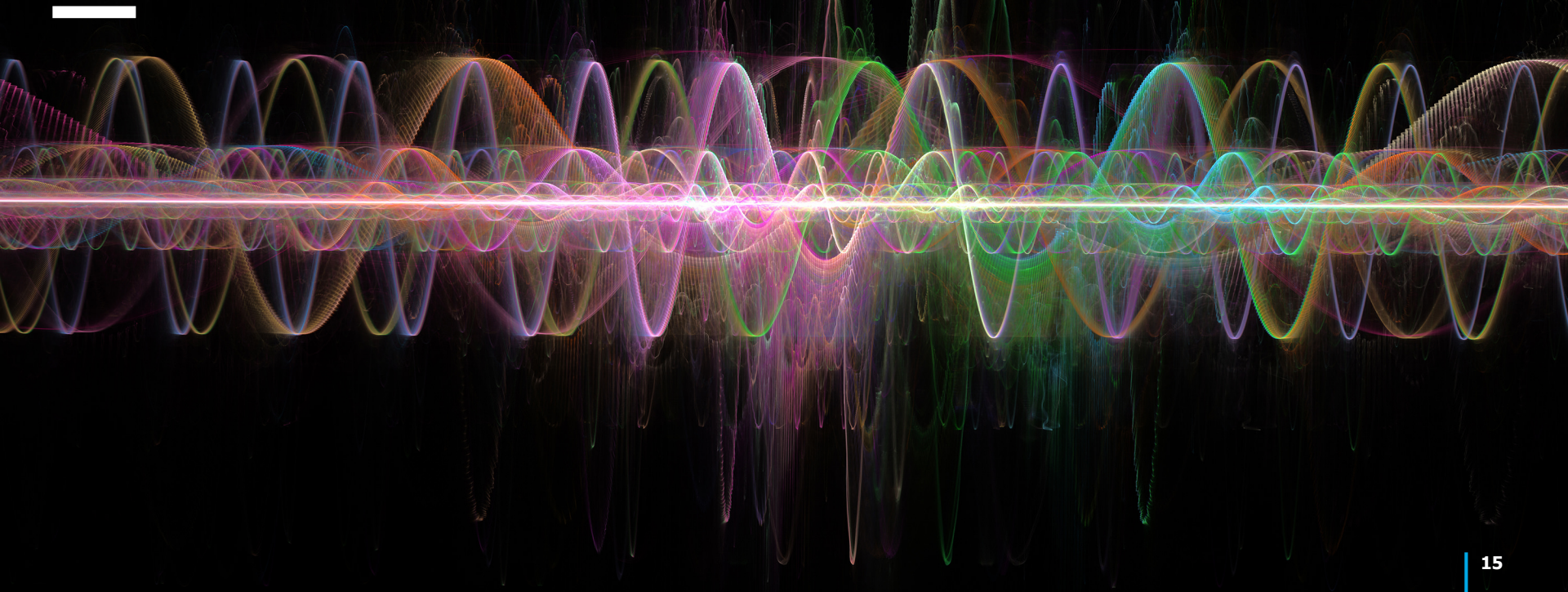
- *How does congestion impact what participants are able to offer in the contract market today?*
- *How does FTR firmness impact participant's willingness to offer vs the status quo arrangements?*
- *How does this impact participant's willingness or ability to offer hedges in the contract market?*
- *The analysis on slides 9-10 focus on swaps. Is liquidity in the PPA market a relevant concern? Are there other types of contracts which we should consider?*

Inter-regional impacts:

- *In so far as FTRs are firmer than SRAs, is this likely to improve liquidity in lower liquidity regions of the NEM?*

What changes to the design would preserve or enhance contract market liquidity?

LIQUIDITY IN FTRS



Grid access reform design and FTR liquidity (1 of 2)

Grid access reform will introduce a new market to the NEM, for FTRs, both in the primary auction of FTRs and in the secondary market that will likely emerge between auction participants and other parties.

There are specific design decisions for the **primary market** for FTRs (the auction), which may promote liquidity in the secondary market. These are listed below:

- **Participation.** The March blueprint designed proposed that only physical participants would be able to purchase FTRs intra-regionally; but that all participants (including non physical participants) could purchase inter-regional FTRs. In addition, there would be no explicit restrictions on secondary trading.
 - Restricting participation in the FTR auction to physical participants may result in concerns about liquidity and/or hoarding. If auctions are opened to non physical participants this may enhance liquidity and so increase revenue derived in the auction. Additional revenue, given the design decision to use auction revenue to back FTRs, supports firmness, which further supports the value of FTRs in the auction, and so on. However, many market participants have indicated that they see value in restricting access to FTRs to physical players, at least initially, to ensure limited disruption to existing contracting arrangements. Allowing non-physical participants to buy hedges through the auction risks reducing the number available to physical participants, reducing their ability to manage risk.
- **Term of FTRs.** The length of FTRs available, either in the auction or grandfathered rights has a bearing on liquidity. Our current design has FTRs up to 10 years being available.
- **Grandfathering** or transitional arrangements. Extent and term of grandfathering, and the tradeability of grandfathered rights also has an impact.
- **Continuous** (rights that cover all times of day and night) and **time-of-day FTR rights** would both be available under the current design. Continuous rights support a liquid FTR market, as rights are more fungible. Time of use rights better allow generators to purchase a quantity of FTRs consistent with their physical output, allowing them to better manage basis risk.

Grid access reform design and FTR liquidity (2 of 2)

Additional considerations to promote liquidity in the secondary market for FTRs include:

- There are **no restrictions on secondary trading of FTRs** under the proposed design. Even if non physical participants were restricted from the auction, to the extent that physical participants were willing to trade, non physical participants will also be able to trade.
 - **Multiple avenues by which FTRs can be acquired** (eg, primary and secondary markets), would promote liquidity of these products making sure that they are available to those parties who most value them.
- Secondary trade of FTRs also allows for **continuous trade and pricing of FTRs** beyond the timing and terms with which auctioned rights are made available.

Potential impacts of COGATI on contract market liquidity – Questions

Participation

- *Should non-physical players be permitted to take part in the primary auction of FTRs?*
- *If so, what restrictions should be put on them, if any?*

Term of FTRs

- *How does the length of FTR available impact FTR liquidity?*

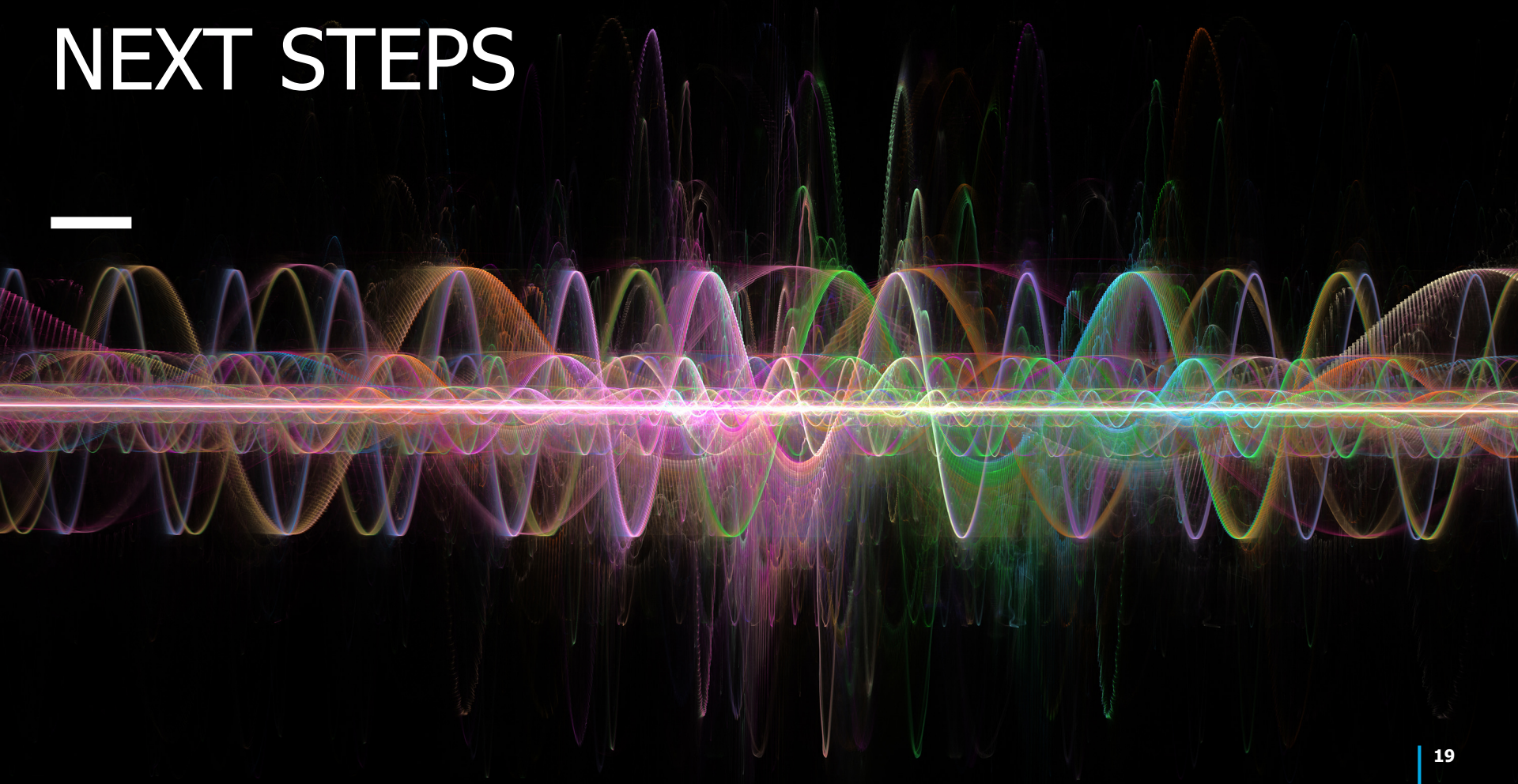
Grandfathering

- *Should grandfathered rights be tradeable?*

Are there any other aspects of the design or changes that would preserve or enhance FTR liquidity?

NEXT STEPS

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Upcoming consultation

Technical working group meetings

- Further working groups planned for later in July and August, notification to be sent out shortly

Public forums

- Quantitative modelling results – August
- Simplified model of reforms in action –August

Written consultation

- ESB post-2025 market design consultation paper – featuring COGATI – August
- COGATI specific technical specification document consultation report – August
- Please reach out to Russell (Russell.Pendlebury@aemc.gov.au) or Tom (tom.walker@aemc.gov.au) for a further discussion.