



## Coordination of Generation and Transmission Investment (COGATI) 2019 review

### Technical working group meeting 2 14 June 2019

---

The second working group meeting was held in Sydney on 14 June 2019.

The working group was formed by the Australian Energy Market Commission (AEMC) to provide advice and input into the progression of the COGATI 2019 review (EPR0073). All enquiries on this project should be addressed to Jess Boddington on (02) 8296 0626.

The attendees of the meeting are listed below.

Member	Organisation
Jill Cainey	Energy Networks Australia (ENA)
Jevon Carding	Lighthouse Infrastructure Management
Miyuru Ediriweera	Public Interest Advocacy Centre (PIAC)
Kevin Fincham	Australian Energy Regulator (AER)
Marcelle Gannon	Tilt Renewables
Kirsten Hall	Australian Energy Market Operator (AEMO)
David Havyatt	Energy Consumers of Australia (ECA)
Angus Holcombe	Meridian Energy
Jessica Hunt	AEMO
Bill Jackson	ElectraNet
Tim Jordan	Clean Energy Finance Corporation (CEFC)
Andrew Kingsmill	TransGrid
Arista Kontos	AER
Gordon Leslie	Monash University
Ron Logan	ERM Power
Kevin Ly	Snowy Hydro
Dan Mascarenhas	AGL
Peter Nesbitt	Hydro Tasmania
Deirdre Rose	AusNet Services
David Scott	CS Energy
Jon Sibley	Australian Renewable Energy Agency (ARENA)
Ben Skinner	Australian Energy Council (AEC)
Georgina Snelling	EnergyAustralia
Bradley Woods	TasNetworks
Ben Wu	Powerlink

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

Name	Position
Suzanne Falvi	Executive General Manager – Security & Reliability
Victoria Mollard	Director – Security & Reliability

Jess Boddington	Adviser – Transmission and Distribution Networks
Orrie Johan	Graduate Adviser - Transmission and Distribution Networks
Ella Pybus	Consultant – Cambridge Economic Policy Associates
Tom Walker	Senior Economist
Jessica Scranton	Lawyer

At the start of the meeting, the ‘competition health warning’ was read out, and copies of the protocol (attached) were given to each member of the working group.

The meeting focussed on five areas:

- 1) a recap and summary of the first technical working group, including reporting back on how we have incorporated the feedback provided into our work;
- 2) a recap of dynamic regional pricing (DRP);
- 3) two aspects of dynamic regional pricing, which members at the previous meeting prioritised for detailed discussion:
  - a. how to allocate the settlement residues produced under the DRP regime
  - b. who (e.g. storage) should be exposed to the local marginal price, and so who should continue to face the regional reference price
- 4) proposed implementation timing and phasing issues
- 5) principles to facilitate and guide consideration of a transition to new arrangements.

The following points were made at the meeting:

### 1) Recap of the first technical working group

- The COGATI project team provided a recap of discussions during the first technical working group. This covered:
  - A summary of issues that members had raised as emerging since access issues were last considered by the Commission in 2015.
  - We recapped the principles that we had developed to assist in assessing proposed reform, and how we had incorporated suggested changes to the principles. The additions / modifications that we made are highlighted in **bold** below:
    - Promoting price signals **and other types of signals** that encourage efficient investment in and operation of generation **and load** assets
    - Incentivising transmission network service providers (TNSPs) to operate and expand their networks in a timely yet efficient manner
    - Appropriate allocating risks to parties best placed to bear them
    - Enabling technological **and competitive** neutrality
    - Preferring simplicity and transparency
    - Promoting the safe, secure and reliable supply of energy
    - **Conducting effective policy coordination with other major reforms and the political landscape**
    - **Facilitating adaptability to future changes to the market**
- In addition, some technical working group members proposed that risks should be allocated to the parties that can “most effectively manage them”, not the parties that can “most efficiently bear them”, noting that consumers ultimately bear all risks in the market.
- Other group members suggested that the principle of enabling technological neutrality may not be desirable since many of the major changes currently occurring in the national electricity market (NEM) are caused by an explicit desire to shift to lower carbon emitting technologies.
- We recapped the five types of access reform that we discussed at the last meeting: dynamic regional pricing, locational marginal pricing, generator reliability standards, firm access driven by transmission and firm access driven by generation. We noted there were a variety of different views about the effectiveness and attraction of each of the options.

- Working group members provided additional reflections on these various models of access reform. Namely:
  - whether and how the load side could be exposed to its local marginal price. It was noted that loads already have locational price signals in their prescribed pricing, although other working group members disputed the degree to which consumers are exposed to these price signals.
  - political considerations mean that loads shouldn't be exposed to the local marginal price. Others argued that this shouldn't be a reason to reject the locational nodal pricing option, especially since loads may be able to hedge against these prices in order to reduce consumers' exposure to volatility.
  - a lack of support for generator reliability standards. The project team noted that such an approach relies on one party setting a "reliability standard" that is fit for purpose for all generators – an approach that gives generators more flexibility over what, and how much, access to purchase would be preferred. In addition, there is a risk that reliability standards could be set too high, leading to inefficient transmission infrastructure being built.
  - the need to integrate AEMO's Integrated System Plan (ISP) into a model where firm transmission access exists. Some stakeholders suggested that a model where generators purchased transmission investment would not work.
- Whether or not the models were options or variants of similar models was discussed. The project team noted that the models can be considered as a range of design options within a model that involves more granular pricing signals and transmission hedges. This will be highlighted in the directions paper.
- Reflecting on the presentation on renewable energy zones (REZs), participants seemed to have mixed views as to whether PIAC's model for REZs (discussed at the last meeting) addresses issues. Some parties noted that it does reduce the need for generators to coordinate with each other to facilitate necessary transmission infrastructure by allowing another party such as a TNSP to build this infrastructure on a speculative basis. Others noted that PIAC's model for REZs may be too complex, and might not adequately address the free rider issue inherent in the current access regime.
- Working group members also suggested that reviewing the current *Scale Efficient Network Extensions (SENE)* framework should be considered in addition to PIAC's model for REZs.
- How the work in COGATI complements the market reform work being considered by the Energy Security Board (ESB) was discussed.

## 2) Recap of dynamic regional pricing (DRP)

- The COGATI project team provided a recap of DRP using an example with dynamic regions and a transmission constraint.
- The project team noted that the maths for dynamic regional pricing works for all system strength (non-thermal) constraint equations, as well as thermal constraints.
- Stakeholder comments included that:
  - Arguably under an availability method, it would be possible for a generator with market power to purposefully set up a bid with the intention of not being dispatched and still obtain settlement residue.
  - Breaking the locational marginal price (LMP) into its constituent parts on an individual constraint provides useful information about storage and constrained-on generators by showing how they affect settlement residues if they receive the LMP rather than the regional reference price (RRP).
  - Under DRP, a generator's ability to dispatch electricity could be affected by actions that occur far away on the transmission network. The COGATI project team agreed, but noted that this is also the case under the present regime, where generators could be constrained-off as a consequence of actions far away on the network.
  - A DRP model changes the risk for generators from a volume risk that is currently manageable under the status quo to a less manageable form of risk that can only be managed by financial transmission rights (FTRs), which are also known as financial transmission hedges. The COGATI project team suggested that the current risks for

generators are not necessarily manageable, although agreed that the situation could remain difficult to manage for generators under DRP without FTRs.

- A large number of nodes would be needed under the DRP model. The COGATI project team and other stakeholders confirmed that this would be the case, with each generator potentially having its own node depending on congestion in the transmission network.
  - Settlement residue would be reduced and would be more difficult to use as a risk management instrument if load would pay the LMP rather than the RRP. The COGATI project team noted that there would still be settlement residue.
  - DRP doesn't appear to be the key reform under discussion – instead it appears to be a step that facilitates financial transmission hedging using FTRs. FTRs are a major feature in two types of access reform: firm access driven by transmission and firm access driven by generation.
  - The purpose of DRP appears to be to provide a stick to disincentivise generators from establishing in not ideal locations and provide them with a carrot of allowing generators to address being in a not ideal location by enabling them to obtain FTRs and therefore fund transmission infrastructure. The COGATI project team agreed that this is a reasonable way to look at the proposed reforms, as generators will need to be able to make a trade-off between the cost of congestion and the cost of hedging against congestion to drive more efficient investment.
- Stakeholders also asked:
    - whether generators would be willing to track four years of price signals (ie. the assumed amount of time required for new transmission infrastructure to be built) before deciding whether to invest
    - whether a model can be used to determine future constraints and their consequences. The COGATI project team noted the challenges of investing in such an uncertain environment and mentioned that the ISP makes forecasts to assist with this process. Stakeholders suggested that the ISP is not always correct in its predictions.
    - whether the costs of transmission would be recouped through the spot market or the contract market. The spot market might not let the generator recover its costs. The COGATI project team stated that it is considering these questions and the impacts of these reforms on the wholesale market as well.

### 3) Non-firm access and allocation of settlement residues under DRP with access rights

- Under dynamic regional pricing, the separation between the local marginal price and the regional reference price creates a settlement residue. Due to the maths of settlement, this always, by definition, balances.
- However, if there is more capacity than access rights purchased, then there will be a surplus of residues. If there is a network outage such that the capacity is reduced below the amount of access purchased, then there will be a shortage of residues.
- The technical working group discussed three options for allocating surplus settlement residue:
  - allocating the surplus settlement residue to generators who have not purchased access
  - allocating the surplus settlement residue to offset transmission use of system (TUOS) costs paid by load
  - allocating the surplus settlement residue to a fund, that could be used in the future to reduce the scaling-back of hedge payments for generators when there is a residue shortfall.
- The working group generally agreed that the surplus residue should not go to generators who have not purchased access, but were split in their views about whether it should go to consumers or to a fund. Group members generally noted that firming up the residue would make the access product more attractive. In addition, some parties suggested that the residue should go back to the access product (the FTR) in order to reduce market uncertainty.

- A fourth option was raised that the rights to a share of the residues could be auctioned off similar to how the current settlements residue auction (SRA) operates.
- It was noted that the proposal is that if there is a deficit of residues to a network outage, the TNSP would some of the costs of a residue shortfall – but that this amount would be capped in order to avoid exposing the TNSPs to too much risk. This would create an incentive for TNSPs to have network capability available at times that would be valuable to the market.
- Some technical working group members suggested that:
  - Any market power or manipulation concerns could be dealt with by the AER.
  - For semi-scheduled generation, it would be possible to use the data from ASEFS (the Australian Solar Energy Forecasting System) and AWEFS (the Australian Wind Energy Forecasting System) in order to inform the settlement allocation.

#### **4) Settlement of load and storage under DRP**

- The purpose of this session was to discuss which parties should face the RRP and which parties face the LMP, focussing particularly on:
  - different types of load
  - storage
  - different types of generation (scheduled, semi-scheduled, non-scheduled).
- The COGATI project team suggested that the main factors to consider are:
  - Impacts on the contract market – does settling more parties at their LMP increase the risk of splitting contract market liquidity across multiple nodes?
  - Should parties be able to opt-in or opt-out of facing the LMP?
  - Risk management – can parties make informed decisions about opting into facing the LMP? What are the implications for retailers if some of their customers opt in to facing that price?
  - The impacts on settlement arrangements of non-scheduled load, unscheduled generation or storage facing the LMP or the RRP.
  - Responsiveness – should the LMP apply to market participants who can respond to it?
  - Should parties who don't face locational marginal pricing face the existing regional price or another option such as a volume weighted average of all the local prices in that region?
  - The challenges of determining whether behind the meter resources, storage and virtual power plants (VPPs) should be treated as generation or load.
  - Fairness – would it be fairer for most or all load within a region to face the same price?
- The working group commented on alternative or additional factors that should be considered, including:
  - Raising questions about what a LMP means for load. The COGATI project team suggested that a LMP for load means facing the RRP when there is no congestion and then facing the LMP when congestion separates the nodal price from the RRP. This would mean that load would need to find ways to manage the pricing volatility caused by the LMP.
  - Questioning whether the LMP could be higher than the RRP. The project team suggested that this is an issue under consideration. Market power concerns may be minimised if such a cap is imposed.
  - Noting that loads could enter into arrangements with a party that is exposed to load to respond to the LMP signals or hedge against them.
  - Raising that interactions with unscheduled load need to be considered, even if the load is behind the meter, as load variability can be much greater for these types of loads.
- It was noted that considering whether loads and other storage should be subject to the LMP involves considering whether these parties should be subjected to reliability standards and whether they should pay TUOS or not.
- Additional factors raised by the working group regarding whether various market participants should be settled at the RRP or the LMP included:

- If some load is allowed to choose whether to face the LMP or the RRP, then load in general will become interested in profiting from the gap between the LMP and the RRP if they can.
  - What the impacts would be on the financial transmission hedge?
  - What would be the impacts on contract markets?
  - Could there be contract disruption because current contracts use the RRP rather than the LMP?
  - What would be the impacts be on the Retailer Reliability Obligation?
  - What would the impacts be on interconnectors?
  - The only load that would be interested in switching to the LMP would be load that would face a lower LMP than the RRP.
- The working group also considered whether the parties below should face the RRP or the LMP:
  - Scheduled generation/semi-scheduled generation
  - Non-scheduled generation
  - Load
  - Storage
  - VPPs.
- Group members generally thought there were three ways of dividing this up: 1) all parties should face the LMP; 2) all parties should face the RRP; or 3) generation and storage should face the LMP, but the rest should face the RRP.

## 5) Implementation issues

- The COGATI project team outlined the proposed reform approach in the consultation paper, including:
  - The implementation of DRP in July 2022
  - The provision of improved information based on DRP between July 2022 and July 2023
  - Generators funding transmission infrastructure in July 2023.
- Views in response to the consultation paper were noted:
  - On timing, some respondents said that the proposed timelines were too long. However, the majority of respondents suggested that the AEMC's proposed timelines were very ambitious.
  - On the phasing of the reforms, stakeholder opinions were very diverse, though most respondents did not agree with the proposed phasing of the reforms. Some suggested that improved information phase could occur much earlier and others suggested that dynamic regional pricing and FTRs could be implemented at the same time.
  - There was a general view from the group that the provision of improved information should be the first stage. Information provision could be provided straight away about the costs of congestion through shadow prices produced by the national electricity market dispatch engine (NEMDE). There were questions raised about how useful these figures would be due to disorderly bidding, including for comparisons to dynamic regional prices. This would be followed by the introduction of DRP and FTRs at the same time.
- The project team also noted a number of other projects that are currently being implemented in the market at the moment including 5 minute and global settlement implementation; the ESB's work on actioning the ISP and post-2025 work.
- The project team suggested that the AEMC's current view is that transitional processes are needed to ensure that the introduction of access reform would not create sudden changes in the market, and to facilitate a learning period.
- This would mean there would be some form of grandfathered access provided to incumbent generators, as exposing such generators to significant and unforeseeable regulatory risk would likely deter or increase the costs of future investment.
- However, a key question would be how long the grandfathered rights would be provided for in order to make sure that incumbent generators are not over- or under-compensated, both of which would have adverse impacts on the market.

- To guide any access reform transition, the project team presented the following principles:
  - To mitigate any sudden changes to prices and margins for market participants (generators and retailers) on commencement of the new access reforms to encourage and permit generators – existing and new – to acquire and hold the levels of firm access that they would choose to pay for
  - To give time for generators, TNSPs and other market participants to develop their internal capabilities to develop their internal capabilities to operate new or changed processes under the access reforms without incurring undue operational or financial risks during the learning period
  - To prevent abrupt changes in aggregate levels of agreed access that could create dysfunctional behaviour or outcomes in access procurement or pricing.
- The working group raised other issues to be taken into account when considering implementation timing issues, including:
  - Minimising the need to amend contracts and making sure that COGATI work and timeframes are aligned with the ESB's post-2025 work
  - Changes to debt positions for market participants as a result of market changes
  - The backlog of work after the implementation of 5 minute settlement
  - Adjusting regulatory determinations and regulated rates of return for TNSPs if TNSPs' costs or risks are changed due to access reforms
  - SRAs need a three year lead time
  - The methods used to turn the existing network into transitional rights and provide these rights to the parties that would value them the most
  - How to turn non-existent transmission network into access rights, given lead times?
  - The merits of a full package implementation process compared to staged reform
  - Should grandfathered FTRs be only given to generators in 2023 that already exist at the time of the implementation decision, or should grandfathered FTRs be given to other generators as well, such as generators that have nearly completed their construction by the time of the implementation decision?
  - Making sure that the right options are pursued, rather than right now options
  - Would future FTRs be provided through regulated prices or through auctions?
  - Could a trial process being considered by the AEMC for regulatory sandboxes be used to trial the provision and allocation of FTRs?
  - How long should the transitional FTRs be available for? The Optional Firm Access (OFA) model previously nominated up to decades.
- For additional transitional principles to consider, group members nominated:
  - Preserving the investment pipeline
  - Making sure there is enough information available to the market to make decisions
  - Timing – making sure reform is carried out quickly to reduce uncertainty
  - Reconsidering whether transitional reform should be focussed on protecting margins as well as prices. The COGATI project team indicated that the focus on margins is to avoid the emergence of sovereign risk, but grandfathering is best based on the generator's current risk.

## **Next steps**

- The project team thanked participants for their time and noted that the group will be convened again in August.
- A directions paper will be published on the 27<sup>th</sup> of June focussed on access reform.
- A public forum will be held in July to discuss and consult on the issues raised in the directions paper.

# Australian Energy Market Commission

## Working group protocol

### Context and purpose

The AEMC has convened this working group with energy industry members to discuss proposed access reforms being considered by the Commission in its COGATI review.

The Working Group is committed to complying with all applicable laws, including the *Competition and Consumer Act 2010 (CCA)*, during these discussions. Breach of the CCA can lead to serious penalties for members and for individuals involved in any breach (including large financial penalties and potentially also imprisonment for key individuals involved).

**This Protocol governs the way in which Working Group discussions will proceed, and the Working Group agrees to adhere to this protocol in order to ensure compliance with the CCA.**

### Key principles

The purpose of this Working Group is solely to discuss the proposed reforms being considered by the review and for stakeholders to raise potential issues for the Commission's further consideration.

Each member **must make an independent and unilateral decision** about their commercial positions and approach in relation to the matters under discussion in the Working Group.

This Working Group **must not discuss, or reach or give effect to any agreement or understanding\*** which relates to:

- **pricing** for the products and/or services that any member supplies or will supply, or the terms on which those products and/or services will be supplied (including discounts, rebates, price methodologies etc).
- **targeting (or not targeting) customers** of a particular kind, or in particular areas.
- **tender processes** and whether (or how) they will participate
- any decision by members:
  - about the purchase or supply of any products or services that other members also buy or sell
  - to not engage with persons or the terms upon which they will engage with such persons (i.e. boycotting); or
  - to deny any persons access to any products, services or inputs they require.
- **sharing competitively sensitive information** such as non-publicly available pricing or strategic information including details of customers, suppliers (or the terms on which they do business), volumes, future capacity etc
- **breaching confidentiality obligations** that each member owes to third parties.

\* An "understanding" does not have to be formal; a "nod and a wink" is enough if one party commits to act in a particular way.

### Communication & meeting guidelines

Members must ensure that **all communications** (including emails and verbal discussions) adhere to the Key Principles. All meeting between Working Group members should be conducted in accordance with the following rules:

- Agree and circulate an agenda in advance of each meeting. The content of each agenda should not include anything that could contravene the Key Principles set out in this Protocol, and try to avoid "any other business" agenda items.
- Ensure all members understand ahead of the meeting that any competitively sensitive matters must be subject to legal review before any commitment/agreement can be given.
- The below 'competition health warning' is read and minuted at any meetings or conference calls:
  - Attendees at this meeting must not enter into any discussion, activity or conduct that may infringe, on their part or on the part of other members, any applicable competition laws. For example, members must not discuss, communicate or exchange any commercially sensitive information, including information relating to prices, marketing and advertising strategy, costs and revenues, terms and conditions with third parties, terms of supply or access.*
  - For any new attendees – please note that participating in these discussions is subject to you having read and understood the Protocol including the Key Principles. If you have not yet done so, please do so now.*
- Accurate minutes are kept of all meetings, including details of attendees.
- If something comes up during a meeting that could risk contravening any Competition Laws, attendees should:
  - Object immediately, and ask for the discussion to be stopped.
  - Ensure the minutes record that the discussion was objected to and stopped.
  - Raise concerns about anything that occurred in the meeting with their respective legal counsel immediately afterwards.
- Any decision about whether, and on what terms, to engage with customers and suppliers is an independent and unilateral decision of each member.