

Operation and Administration of the Capacity Trading Platform(s) and Day-Ahead Auction

Consultation Paper

May 2017



Submissions

Stakeholders are encouraged to make submissions in response to this Consultation Paper by **5pm (AEST) Thursday 8 June 2017**.

Electronic submissions are preferred and can be sent via e-mail addressed to the Gas Market Reform Group (GMRG) at enquiries@gmrq.coagenergycouncil.gov.au

Stakeholders who wish to provide hard copies by post may do so by addressing their submissions to:

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The GMRG has a strong preference for public submissions, to generate full and frank debate. All stakeholder submissions will be published on the GMRG's website at <http://gmrq.coagenergycouncil.gov.au/> unless stakeholders have clearly indicated that a submission should remain confidential, either in whole or in part.

Please note that this paper is intended to identify and examine the options associated with the operation and administration of the pipeline and hub service capacity trading platform(s) and day-ahead auction of contracted but un-nominated capacity. It is intended for consultation and does not reflect the final views of the GMRG.

For further information about this Consultation Paper or making a submission, please contact the GMRG via email at enquiries@gmrq.coagenergycouncil.gov.au

The views and opinions expressed in this publication are those of the GMRG.

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Abbreviations

Term	Definition
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APGA	Australian Pipelines and Gas Association
EMMS	Electricity Market Management System
COAG	Council of Australian Governments
Council	COAG Energy Council
East Coast Review	AEMC's <i>Eastern Australian Wholesale Gas Market and Pipelines Framework Review</i> (May 2016)
GMRG	Gas Market Reform Group
GTA	Gas Transportation Agreement
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
SCO	Standing Committee of Officials
SRA	Inter-regional settlements residue auctions
STTM	Short Term Trading Market
Vision	COAG Energy Council's <i>Australian Gas Market Vision</i> (December 2014)



1. Introduction

The Gas Market Reform Group (GMRG) was established by the COAG Energy Council (Council) in the latter half of 2016 to lead the design, development and implementation of a range of reforms set out in the Gas Market Reform Package, including a number of capacity (pipeline and hub service) trading reforms.¹

The capacity trading reforms were recommended by the Australian Energy Market Commission (AEMC) as part of its *Eastern Australian Wholesale Gas Market and Pipelines Framework Review (AEMC East Coast Review)* (see Appendix A for further detail) and were endorsed by the Council at its August 2016 meeting. The reforms include the development of:

- a day-ahead auction of contracted but un-nominated pipeline and hub service capacity, which would be conducted shortly after nomination cut-off and subject to a reserve price of zero (with compressor fuel provided in-kind by shippers);
- a capacity trading platform(s) that shippers can use to trade secondary pipeline and hub service capacity ahead of the nomination cut-off time and provides for exchange based trading of commonly traded products and a listing service for other more bespoke products;
- standards for key contract terms in primary, secondary, operational transfer and trading exchange agreements to make capacity products more fungible and, in so doing, facilitate a greater level of secondary capacity trading; and
- a reporting framework for secondary capacity trades that provides for the publication of the price and other related information on secondary trades.

Together these reforms are expected to foster the development of a more liquid secondary capacity market by:²

- using market based processes to allocate capacity on a non-discriminatory basis to those that value it most;
- reducing the search and transaction costs associated with secondary trades;
- reducing information asymmetries to aid the price discovery process and enable more informed decision making; and
- improving the incentive shippers have to trade capacity.

The AEMC expects that greater liquidity in this market will facilitate more trade in gas and support the development of a more robust reference price for gas, which will, in turn, enable market participants to make more informed decisions about their use of gas and investments in exploration, production, pipelines and storage facilities.³ The reforms are therefore expected to promote the National Gas Objective (NGO) and the Council's Vision for the Australian Gas Market (*Vision*) (see Box 1.1)

¹ COAG Energy Council, Bulletin Two: Gas Market Reform Package, August 2016.

² AEMC, Stage 2 Final Report: Eastern Australian Wholesale Gas Market and Pipelines Framework Review, 23 May 2016, p. 67.

³ *ibid*, p. viii.



Box 1.1: National Gas Objective and Vision for the Australian Gas Market

National Gas Objective

The NGO is set out in section 23 of the NGL and states the following:

The objective of this law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

Council's Vision for the Australian Gas Market

The Council's *Vision* is for.

..the establishment of a liquid wholesale gas market that provides market signals for investment and supply, where responses to those signals are facilitated by a supportive investment and regulatory environment, where trade is focused at a point that best serves the needs of participants, where an efficient reference price is established, and producers, consumers and trading markets are connected to infrastructure that enables participants the opportunity to readily trade between locations and arbitrage trading opportunities.

1.1 Progression of the capacity trading reforms

To progress the capacity trading reforms outlined above, the GMRG has established:

- a number of project teams to carry out the detailed design and development work, with the teams consisting of a mix of members drawn from industry, consumer groups, market bodies and other industries; and
- an Advisory Panel to provide strategic perspective and advice to the GMRG on key issues, which is made up of senior representatives from all segments of the gas supply chain as well as Energy Consumers Australia.

Importantly, neither the project teams nor the Advisory Panel have any decision-making power. Their role is to inform the GMRG's consideration of the design options, which will be consulted upon more broadly with other stakeholders before Dr Vertigan, as Chair of the GMRG, makes his final recommendations to the Standing Committee of Officials (SCO) (senior officials from State, Territory and Commonwealth governments) and Council.

Work on the capacity trading reforms commenced in early 2017 and was initially expected to be completed during 2018, allowing the recommendations to be considered by Council at the end of 2018 and for the reforms to be implemented by 2021. However, in response to a request from the Hon. Josh Frydenberg MP, Minister for the Environment and Energy, the GMRG has examined the opportunities to accelerate this work and at this stage expects to make its recommendations on:

- the organisation(s) designated to operate and administer the capacity trading platform(s) and the day-ahead auction by mid-2017;
- the form that the standardised capacity trading contracts and the capacity trading platform should take by September 2017; and
- the design of the day-ahead auction and the reporting framework for secondary capacity trades by December 2017.

This accelerated timetable is expected to enable the capacity trading platform(s) and day-ahead auction to become operational prior to the 2018-19 summer, which is when the



Australian Energy Market Operator (AEMO) has projected that declining gas supplies could result in electricity supply shortfalls.⁴

1.2 Operator(s) of the capacity trading platform(s) and day-ahead auction

In keeping with the accelerated timetable, the GMRG intends to advise SCO and Council of its recommendations on the organisation(s) that should operate and administer the capacity trading platform(s) and day-ahead auction by mid-2017:

In the Stage 2 Final Report of the *East Coast Review*, the AEMC identified a number of organisations that could operate and administer the capacity trading platform(s) and day-ahead auction, but did not reach a concluded position on this issue. It instead recommended that the GMRG consider the options in further detail. The options that the AEMC identified were as follows:

- **Capacity trading platform(s) options:**
 - each pipeline operator develops and operates their own trading platform; or
 - a single capacity trading platform is developed and operated by:
 - AEMO;
 - a joint venture between pipelines; or
 - another party with relevant capabilities.
- **Day-ahead auction options:**
 - each pipeline or pipeline operator develops and operates their own auction platform; or
 - a centralised auction platform is developed and operated by:
 - AEMO;
 - a joint venture between pipelines; or
 - another party with relevant capabilities.

These options have been considered in some detail by the GMRG's Capacity Trading and Day-Ahead Auction project teams. In the case of the capacity trading platform(s), there was broad agreement across the project teams that a single capacity trading platform should be developed and operated by AEMO leveraging the existing Gas Supply Hub platform and governance framework.

Project team members were, however, divided on who should operate the day-ahead auction, with some team members believing that each pipeline operator should develop and operate their own auction, while others believed a single auction platform should be developed and operated by AEMO.

⁴ AEMO, Gas Statement of Opportunities, March 2017.



1.3 Public consultation on the options

To help inform its consideration of the options outlined above, the GMRG is interested in hearing from stakeholders on the organisation(s) they think should operate and administer the capacity trading platform(s) and the day-ahead auction. The GMRG is seeking written feedback by **5pm (AEST) Thursday 8 June 2017**.

Once the GMRG has received this feedback it will make its final recommendations to SCO and Council on who should operate and administer the capacity trading platform(s) and day-ahead auction.

1.4 Future consultations

The GMRG intends to consult stakeholders on other aspects of the day-ahead auction, the capacity trading platform(s), standardisation and secondary trading reporting work streams at various points over the next six months. The next consultation is intended to be carried out in July and will focus on the coverage of the auction (i.e. the pipelines and hub service assets that are to be subject to the auction) and the auction product.

1.5 Structure of this paper

The remainder of this consultation paper is structured as follows:

- Chapter 2 describes the assessment framework that the GMRG intends to use when developing its recommendations for SCO and Council;
- Chapter 3 outlines the options for the organisation(s) that could operate and administer the capacity trading platform(s) and sets out a number of questions that the GMRG would like further feedback on; and
- Chapter 4 sets out the options for the organisation(s) that could operate and administer the day-ahead auction and sets out a number of questions that the GMRG would like further feedback on.



2. Assessment Framework

Before making its final recommendation to SCO and Council on the organisation(s) that should operate the capacity trading platform(s) and day-ahead auction, the GMRG intends to evaluate the options using the rule making test that the AEMC is required to consider when exercising its rule making functions.⁵

In keeping with this test, the evaluation will be carried out having regard to the NGO, which is to:⁶

“promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.”

The GMRG will also have regard to the Council's *Vision* is a high-level policy statement on the direction gas market development should take to meet the NGO and is reproduced below:⁷

“The Council’s vision is for the establishment of a liquid wholesale gas market that provides market signals for investment and supply, where responses to those signals are facilitated by a supportive investment and regulatory environment, where trade is focused at a point that best serves the needs of participants, where an efficient reference price is established, and producers, consumers and trading markets are connected to infrastructure that enables participants the opportunity to readily trade between locations and arbitrage trading opportunities.”

The evaluation will also be carried out, having regard to the attributes that the Capacity Trading and Day-Ahead Auction project teams thought the capacity trading platform and auction platform would need to emulate if they were to become the ‘platforms of choice’ for market participants. These criteria are reflected in the table below.

Table 2.1: Platform of Choice evaluation criteria

Evaluation criteria	
Operation of platform:	Operated by independent and experienced operator
	Operated in a predictable and reliable manner
	Operation of platform underpinned by a robust governance framework
	Transparency in costs and operation of platform
Trading Platform /Auction Platform Features:	Provides for low transaction costs and quick and effective execution of trades
	Readily integrated with pipeline operators’ nominations and scheduling processes
Co-ordination benefits:	Shippers can readily co-ordinate trades across pipelines
	Shippers can readily co-ordinate trades through the capacity trading platform and the day-ahead auction
	Shippers can readily co-ordinate trades with other gas services on the Gas Supply Hub
Scale and scope benefits and adaptability:	Capable of capturing scale and scope benefits
	Future proof, scalable and adaptable

⁵ Section 291 of the NGL.

⁶ The NGO is set out in section 23 of the NGL.

⁷ COAG Energy Council, Australian Gas Market Vision, December 2014.



3. Capacity Trading Platform(s)

One of the key recommendations in the AEMC's *East Coast Review* was that a capacity trading platform(s) should be developed to enable shippers to trade secondary pipeline and hub service capacity ahead of nomination cut-off times and should comprise both:⁸

- an anonymous exchange trading mechanism for commonly traded products; and
- a listing service for more bespoke products.

Elaborating further on this recommendation, the AEMC noted the potential for:⁹

- each pipeline operator to develop and operate their own platform; or
- a single capacity trading platform to be developed and operated by:
 - AEMO as part of the Gas Supply Hub exchange; or
 - a joint venture between pipelines or another party with relevant capabilities.

Of the two options, the AEMC noted that a single trading platform that formed part of the Gas Supply Hub was more consistent with its objective of harmonising trading arrangements and would offer a range of benefits over a stand-alone platform, including:¹⁰

- enabling the co-ordination of gas, hub and transportation services via one platform;
- subjecting shippers to one set of prudential arrangements;
- lower implementation costs for the exchange function because the IT, prudential, settlement and billing arrangements have already been established; and
- facilitating more effective competition between shippers that are offering to sell capacity on either the same transportation route or on competing routes.

The AEMC did, however, note that this option may require communication links to be established between the platform and pipeline operators, which could give rise to additional costs. The AEMC therefore stopped short of recommending this option and instead recommended that the GMRG consider the options in further detail.¹¹

In keeping with this recommendation, the GMRG's Capacity Trading Platform and Day-Ahead Auction project teams have jointly considered who should operate and administer the capacity trading platform(s). To help inform their consideration of this issue, AEMO and Australian Pipelines and Gas Association (APGA) were given the opportunity to provide the project teams with an overview of what an AEMO operated platform and a pipeline operated platform(s) would involve. Further detail on the options that were presented by AEMO and APGA and the project teams' assessment of these options is provided below. A list of questions that the GMRG would like to get stakeholders' feedback on is also contained at the end of this chapter.

3.1 AEMO operated capacity trading platform

Consistent with the options presented in the AEMC's *East Coast Review*, AEMO has proposed to develop a single capacity trading platform that would form part of the Gas

⁸ AEMC, Stage 2 Final Report: Eastern Australian Wholesale Gas Market and Pipelines Framework Review, 23 May 2016, p. 95.

⁹ *ibid.*, p. 101.

¹⁰ *ibid.*, pp. 101-102.

¹¹ *ibid.*, p. 102.



Supply Hub exchange and utilise the trading rules, settlement systems, prudential arrangements and other systems that have been established for the Gas Supply Hub.¹²

The Gas Supply Hub is a centralised trading, settlement and clearing facility that is currently used by participants in the east coast to trade gas and hub services. The Gas Supply Hub is operated using the Trayport exchange trading platform, which provides for both anonymous exchange based trading on a continuous basis and a listing service. AEMO has advised that exchange traded capacity products could be added to Trayport relatively quickly and at a relatively low cost and that additional products could be added over time in response to market needs. AEMO has also advised that participants would be able to pool prudential requirements across all products traded in the Gas Supply Hub.

Further detail on the key features of AEMO’s proposal is provided in Table 3.1.

Table 3.1: Key features of the AEMO single capacity trading platform proposal

Key features	Proposal
Exchange trading and listing service	AEMO proposes to use Trayport for both the exchange trading and listing service elements of the capacity trading platform. AEMO also proposes to utilise the trading, delivery and settlement rules established through the Gas Supply Hub Exchange Agreement.
Settlement, billing and prudential arrangements	<p>AEMO proposes to leverage the existing Gas Supply Hub settlement systems and prudential arrangements, which would involve the following:</p> <ul style="list-style-type: none"> ▪ Settlements and billing: AEMO would calculate settlement amounts on a daily basis and issue statements to participants on a monthly basis (with capacity trades appearing as a line item on the Gas Supply Hub statement). AEMO would also collect funds from buyers and make payments to sellers. ▪ Prudential arrangements: Participants would post collateral to cover their potential settlement exposure, which would be calculated across gas and capacity transactions. AEMO advised that the aggregation of prudential requirements would mean some participants may have sufficient collateral to cover their aggregate exposure, while others may have offsetting exposures that result in a reduction in collateral requirements. AEMO also advised that the prudential assessment would be carried out in real time.
Reports	AEMO proposes to use the existing Gas Supply Hub reporting systems to provide trade confirmations and delivery obligations.
Legal framework, governance arrangements and change process	<p>Section 91BRK of the NGL provides for AEMO to establish, operate and administer gas trading exchanges. The term ‘gas trading exchange’ is defined in the NGL as a facility through which persons may elect to buy and sell natural gas or related goods or services, including pipeline capacity. No changes to the NGL are therefore expected to be required if AEMO takes on the operator role.</p> <p>The rules relating to gas trading exchanges are set out in Part 22 of the NGR and provide for the development of an Exchange Agreement, which sets out the terms and conditions that govern participation in the Gas Supply Hub.</p> <p>AEMO has advised that the inclusion of capacity products on Trayport will require some amendments to be made to the Exchange Agreement, but this is not expected to be a significant issue because the rules allow amendments to be made to the Exchange Agreement over time. Specifically, rule 540 allows any person to propose an amendment to the exchange agreement and states that AEMO can approve the amendment if it is satisfied: (a) the amendment is consistent with the NGL and the NGR; and (b) the amendment is appropriate having regard to the NGO and the compliance costs likely to be incurred by AEMO and participants.</p>

¹² The material in this section is based on information contained in a presentation provided by AEMO to the Day-Ahead Auction and Capacity Trading Platform project teams on 4 April 2017, entitled *Pipeline Capacity Trading Reforms – Scoping Presentation to GMRG Technical Working Group*.



AEMO has estimated that the implementation of this option could take six months after completion of the final design and cost it between \$90,000-\$140,000¹³ depending on the level of integration that is required between its systems and pipeline operators' systems. AEMO has advised that the level of integration between these systems will depend on whether the trades are to be:

- **Partially anonymous:** Under this option the anonymity of the trading parties would be maintained until the trade is executed. Once the trade is executed, AEMO would identify the parties to the trade and it would then be left to the two parties to advise the pipeline operator of the trade and who the counterparty is.
- **Fully anonymous:** Under this option the anonymity of the trading parties would be maintained after the trade is executed AEMO would electronically send the pipeline operator details of the trade and the counterparties. The pipeline operator would then confirm the trade with each counterparty separately, maintaining the anonymity of the trading parties through this process.

In contrast to the partially anonymous option, the fully anonymous option would require some integration between AEMO's and the pipeline operators' systems and is therefore expected to cost AEMO more to implement (i.e. est. \$120,000-\$140,000 vs est. \$90,000-\$110,000). Note that this estimate does not include the costs that pipeline operators would incur.

3.2 Pipeline operated capacity trading platform(s)

During the *East Coast Review* the AEMC identified the following options for a pipeline operated capacity trading platform(s):

- each pipeline operator develops and operates their own capacity trading platform; or
- pipeline operators form a joint venture and operate a single capacity trading platform.

When invited to discuss these two options, APGA advised that in the time available it had focused on issues around the capacity auctions and did not have a proposal on how a pipeline operated capacity trading platform(s) would work in practice.

3.3 Project teams' consideration of the options

While pipeline operators did not put forward a proposal to operate the capacity trading platform(s), the Capacity Trading and Day-Ahead Auction project teams still assessed the relative merits of an AEMO operated platform and a pipeline operated platform(s) using

¹³ AEMO has advised that these estimates are predicated on the following assumptions:

- the capacity products are listed on Trayport under the GSH Exchange Agreement governance framework;
- no law or rule changes are required to implement the platform;
- capacity products developed as part of GMRG process; and
- the trading platform and day ahead auction are implemented concurrently to capture synergies.

AEMO has also advised that the estimate excludes:

- the costs of integration with the STTM and DWGM;
- the cost of training, guide development; and
- the cost of making changes to the Exchange Agreement.



the 'platform of choice' evaluation criteria outlined in Chapter 2. The table below provides a summary of this evaluation.

Table 3.2: Evaluation of the capacity trading platform(s) options

Evaluation criteria		AEMO Operated Platform	Pipeline Operated Platform(s)	
			Single Platform	Multiple Platforms
Operation of platform:	Operated by independent and experienced operator	✓	x	Could be independent if a Joint Venture is established
	Operated in a predictable and reliable manner	✓	Untested but expected to be operated in this manner	Untested but expected to be operated in this manner
	Operation of platform underpinned by a robust governance framework	✓ (Already established in NGL, NGR and Exchange Agreement)	Would need to be established	Would need to be established
	Transparency in costs and operation of platform	Could be mandated	Could be mandated	Could be mandated
Trading System Features:	Provides for low transaction costs and quick and effective execution of trades	✓ (while transaction costs were considered relatively low, some concerns were raised about the barrier the annual licence fee may pose to small players)	Untested	Untested
	Integrated with pipeline operators' nominations and scheduling processes	Separate processes required	Separate processes required	Separate processes required
Co-ordination benefits:	Shippers can readily co-ordinate trades across pipelines	✓	✓	x
	Shippers can readily co-ordinate trades with other services on the Gas Supply Hub	✓	x	x
Scale and scope benefits and adaptability:	Capable of capturing scale and scope benefits	✓ (e.g. new capacity and other gas services can be added over time and shippers can aggregate prudential requirements across the GSH)	Potentially but not to the same extent as the AEMO operated platform	Potentially but not to the same extent as the AEMO operated platform
	Future proof, scalable and adaptable	✓	Potentially	Potentially
Implementation Costs:		Est. \$90,000-\$140,000	No estimate provided but expected to be higher than the AEMO option because new exchange trading platform and matching algorithm, settlement, prudential, reporting systems and legal arrangements would need to be put in place	



As this table highlights, the key strengths that the project teams thought that an AEMO operated platform offered over a pipeline operated platform(s) were that:

- **Operation of the platform:** The platform would be operated by an independent and experienced market operator and underpinned by a robust governance framework.
- **Trading system features:** The Trayport system has been demonstrated to be predictable, reliable and transparent system and provides for fast and effective execution of trades with relatively low transaction costs. The other benefit of this option is that market participants would be subject to one set of prudential arrangements in the Gas Supply Hub and would be able to apply collateral posted for gas purchases to capacity trades and vice versa.
- **Co-ordination benefits:** The co-ordination benefits are expected to be greatest under this option, because market participants would be able to co-ordinate their gas, hub services and transportation requirements through one platform and would also be able to co-ordinate secondary capacity trades across pipelines.
- **Scale and scope benefits and adaptability:** The proposed platform is expected to be capable of capturing scale and scope benefits and was also viewed as being more future proof, scalable and adaptable than the other options.
- **Implementation costs:** The implementation costs are expected to be relatively low because existing systems will be utilised.

At the end of the assessment, project team members were asked their view on who should operate and administer the capacity trading platform and the majority of project team members indicated that they thought AEMO should operate and administer the platform.

This position is consistent with the feedback that the majority of stakeholders expressed during the AEMC's *East Coast Review*, which was that a single platform forming part of the Gas Supply Hub was preferable to any of the other options, because it would:¹⁴

- provide shippers with the greatest co-ordination benefits, both in terms of being able to secure:
 - gas and secondary hub service and pipeline capacity through one platform; and
 - secondary pipeline capacity across multiple pipelines through one platform.
- provide for common prudential and settlement arrangements; and
- avoid any conflicts of interest that may otherwise arise between shippers and the pipeline operator selling capacity (i.e. because the pipeline operator and shipper would be competing to sell capacity).

3.4 Questions for stakeholders

As noted in Chapter 1, the GMRG is interested in hearing from stakeholders on who they think should be responsible for operating and administering the capacity trading

¹⁴ See for example, ERM, Submission to AEMC March 2016 Discussion Paper, p. 2, PIAC, Submission to AEMC March 2016 Discussion Paper, p. 5, APLNG, Submission to AEMC March 2016 Discussion Paper, pp. 2-3, EnergyAustralia, Submission to AEMC March 2016 Discussion Paper, pp. 6-7, Stanwell, Submission to AEMC March 2016 Discussion Paper, pp. 4-5 and Origin, Submission to AEMC March 2016 Discussion Paper, p. 3.



platform(s). A list of some of the specific questions that the GMRG would like to get further feedback on is provided below:

1. Do you think:
 - a. a single capacity trading platform should be developed? or
 - b. each pipeline operator should develop its own capacity trading platform?

In answering this question, please explain why you think the option you have selected will promote the NGO and achieve the Council's *Vision*.
2. If you think a single capacity trading platform should be developed, do you think it should be:
 - a. operated by AEMO as part of the Gas Supply Hub? or
 - b. operated on a stand-alone basis by a joint venture of pipeline operators, or another party with relevant experience?

In answering this question, please explain why you believe the relevant party should be selected and what the benefits to the market would be from the selection of this operator.
3. If the capacity trading platform is to be operated as part of the Gas Supply Hub, do you think that once the trade has been executed:
 - a. the anonymity of trading parties should be maintained by AEMO informing the pipeline operator of the trade (i.e. the fully anonymous option)? or
 - b. the identity of the trading parties can be revealed and the communication of the trade to the pipeline operator left to the trading parties (i.e. the partially anonymous option)?

In considering this issue, it is worth noting that pipeline operators have not provided an estimate of how much it would cost to set up the fully anonymous option.
4. Are there any other elements of AEMO's proposal that you would like to comment on?

The GMRG would also welcome any other feedback stakeholders may have on the options presented in this chapter.



4. Auction of Contracted but Un-Nominated Capacity

Another key recommendation in the AEMC's *East Coast Review* was that a day-ahead auction of contracted but un-nominated pipeline and hub service capacity be developed and provide for the auction to be carried out shortly after nomination cut-off time. The objectives of this reform were described by the AEMC as being to “address contractual congestion and to undermine the market power held by pipeline operators in the market for day-ahead capacity”.¹⁵

In a similar manner to the capacity trading platform(s), the AEMC identified a number of organisations that could operate and administer the auction, but did not reach a concluded position on this issue. The options that the AEMC identified included:¹⁶

- each pipeline operator developing and operating their own auction platform; or
- a centralised auction platform being developed and operated by:
 - AEMO; or
 - a joint venture between pipelines, or another party with relevant capabilities.

While the AEMC did not express a final view on any of these options, it did note its preference for a single auction to be conducted across the east coast market and also suggested there may be benefits having the same organisation(s) operate both the capacity trading platform(s) and the auction¹⁷ and recommended the GMRG consider the options in further detail.¹⁸

Consistent with the approach used to assess the capacity trading platform(s) options, the Day-Ahead Auction and Capacity Trading Platform project teams have jointly considered who should operate and administer the day-ahead auction. To help inform their consideration of this issue, AEMO and APGA provided the two project teams with an overview of what an AEMO operated auction and a pipeline operated auction(s) would involve. Further detail on the options that were presented and the project teams' assessment of these options is provided below. A list of questions that the GMRG would like to get stakeholders' feedback on is also contained at the end of this chapter.

4.1 AEMO operated auction

In a similar manner to its capacity trading platform proposal, AEMO has proposed the development of a centralised auction platform that shippers can use to purchase capacity between key points (or zones) on any pipeline that is subject to the auction.¹⁹

To minimise costs and time associated with implementing the auction platform, AEMO has proposed to leverage a number of its existing systems, including the Electricity Market Management System (EMMS) web portal. This EMMS portal is currently used by market

¹⁵ AEMC, Stage 2 Final Report: Eastern Australian Wholesale Gas Market and Pipelines Framework Review, 23 May 2016, p. 83.

¹⁶ *ibid.*, p. 84.

¹⁷ *ibid.*, p. 16.

¹⁸ *ibid.*, p. 84.

¹⁹ The material in this section is based on information contained in a presentation provided by AEMO to the Day-Ahead Auction and Capacity Trading Platform project teams on 4 April 2017, entitled *Pipeline Capacity Trading Reforms – Scoping Presentation to GMRG Technical Working Group*.



participants to access a number of AEMO operated market systems, including the Gas Supply Hub. AEMO has proposed to expand the scope of the EMMS to include the auction platform, by adding an additional tab to the web portal. AEMO has also proposed to draw on:

- an adapted version of the web-interface and file exchange mechanism that is currently used for the inter-regional settlements residue auctions (SRA);
- the auction algorithm that is currently used in the SRA, which provides for combinatorial (linked) bidding and uses a linear program to establish the bid stack and allocate inter-regional settlements residue;
- the existing EMMS file server and data interchange to provide market participants with auction related information and reports; and
- the Gas Supply Hub settlement, prudential, billing and registration frameworks.

AEMO has indicated that it could take up to 12 months to implement this option once the final design is agreed and has estimated that it would cost AEMO \$350,000-\$450,000.²⁰ It is worth noting in this context that this estimate only relates to the costs AEMO is expected to incur and does not include:

- the cost pipeline operators will incur setting up data exchange systems to enable time critical auction information to be communicated between AEMO and the pipelines;
- the system integration costs that pipeline operators are likely to incur; or
- the cost of setting up reporting systems to enable auction related information to be published on the Bulletin Board.

APGA has indicated that if these costs were included then the implementation cost of the AEMO proposal would be \$3.55-\$3.65 million, of which:²¹

- \$0.35-\$0.45 would be incurred by AEMO setting up the auction platform;
- \$1.5 million would be incurred by pipelines setting up data exchange systems;²²
- \$1.5 million would be incurred by pipeline operators on system integration costs;²³ and
- \$0.2 million would be spent on reporting systems.

The data exchanges required to support the centralised auction are a key point of difference between this option and an option where each pipeline operator conducts their own auction, because under the centralised option:

²⁰ AEMO has advised that these estimates are predicated on the following assumptions:

- a single auction is conducted between key points/zones on the east coast;
- the auction utilises the settlements, invoicing, prudential and registration framework from the Gas Supply Hub;
- the auction interface is adapted from the existing SRA;
- the auction algorithm is based on the existing SRA solver;
- the auction is not integrated with the pipeline operators' nominations systems;
- the trading platform and day ahead auction are implemented concurrently to capture synergies.

AEMO has also advised that the estimate excludes:

- the costs of integration with the STTM and DWGM;
- the cost of carrying out training, developing guidelines; and
- the cost of any changes that may need to be made to the NGL, NGR or Procedures.

²¹ APGA Presentation, Pipeline-run capacity auctions, 2 May 2017.

²² According to APGA this estimate is based on the costs APA, Epic, SEAGas, Jemena, Palisade and AGN would incur.

²³ *ibid.*



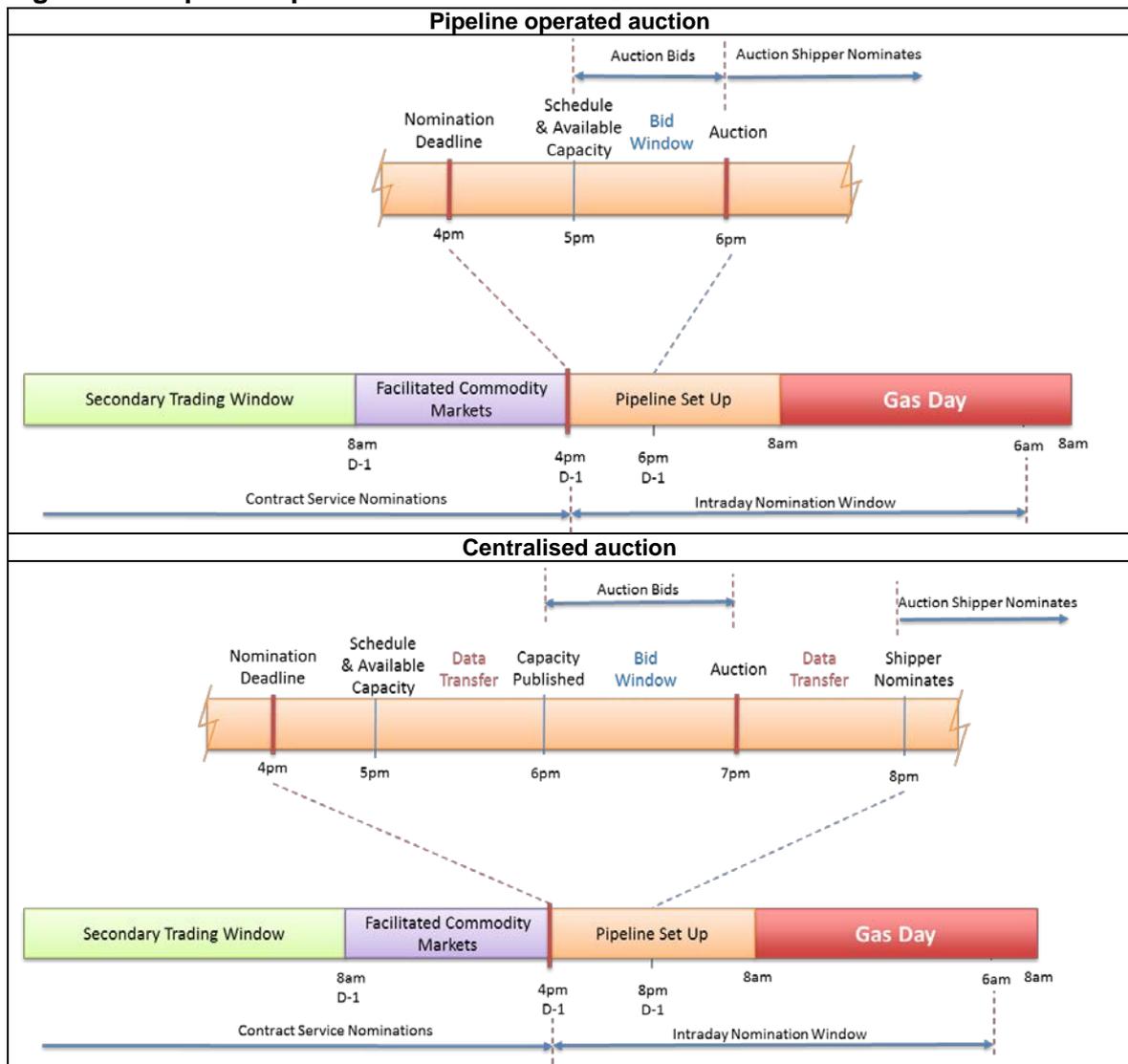
- pipeline operators will need to inform AEMO of the amount of capacity that is available to be auctioned shortly after the initial schedule is conducted; and
- AEMO will need to inform pipeline operators of the auction results once the auction has been completed.

Apart from giving rise to additional implementation costs, the data exchange requirements mean that, relative to an option where each pipeline conducts their own auction:

- the centralised auction cannot be conducted as quickly; and
- the pipeline's schedule for the next gas day cannot be finalised as quickly.

APGA has suggested that the data exchange and validation requirements could give rise to a difference of up to one hour for the auction and two hours for the scheduling process if the same type of standards and regulatory requirements are applied to the data transfers as those that apply in the Short Term Trading Markets (STTM) (see Figure 4.1). This issue was debated by project team members and while there was broad acceptance that there would be some delay in the timing of the auction and scheduling process, a number of team members thought the time frames for data exchange could be reduced.

Figure 4.1: Pipeline operated auction versus Centralised auction



Source: APGA Presentation, Pipeline-run capacity auctions, 2 May 2017.



4.2 Pipeline operated auction(s)

In contrast to the centralised auction platform proposed by AEMO, APGA has proposed that each pipeline operator that is to be subject to the auction develop and operate their own auction platform.²⁴ Under this proposal, pipeline operators would be required to implement their own:

- auction interface to allow shippers to place bids for capacity, which APGA noted would be integrated with the pipeline operators' existing nomination systems;
- auction algorithm (engine) to establish the bid stack and allocate capacity;
- systems to incorporate the auction results into the pipeline scheduling process; and
- reporting system if they don't already have one, to allow information on the capacity available for auction and results of the auction to be published on the Bulletin Board.

To ensure a consistent approach is employed across pipelines, APGA has proposed the development of a common standard for key elements of the auction that pipeline operators would be required to comply with.

APGA has estimated that it would cost \$2.2 million to implement this option across all the pipeline operators that could be captured by the auction,²⁵ of which:

- \$1 million would be spent on installing auction interfaces and algorithms;
- \$1 million would be spent on system integration; and
- \$0.2 million would be spent on reporting.

The implementation cost is estimated to be \$1.35-\$1.45 million lower than the centralised auction, because the data exchange infrastructure that is required to support a centralised auction will not be required under this option.

On the issue of cost recovery, APGA noted that pipeline operators would absorb the implementation costs and any ongoing costs of operating the auction. While this was considered a point of distinction between APGA's proposal and AEMO's proposal, the AEMC has subsequently advised that it had intended the costs of running the auction to be recovered from the auction proceeds with any residual revenue to then be provided to pipeline operators. This intention is reflected in the following statement from the Stage 2 *East Coast Review*:²⁶

"The preferred method of allocating auction revenue is to give it to pipeline owners, after the costs of running the auction have been recovered."

While the proceeds of the auction would be used to recover the costs incurred under AEMO's proposal, some pipeline operators claimed that AEMO would not have the same incentive they have to minimise costs. Some pipeline operators also noted that if the auction proceeds were insufficient to cover the costs, then market participants would bear the additional costs under an AEMO operated auction.

²⁴ The material in this section has been prepared based on the information contained in a presentation made by APGA to the Day-Ahead Auction and Capacity Trading project teams on 2 May 2017 entitled, *Pipeline-run capacity auctions*.

²⁵ According to APGA this estimate is based on the costs APA, Epic, SEAGas, Jemena, Palisade and AGN would incur.

²⁶ AEMC, Stage 2 Final Report: Eastern Australian Wholesale Gas Market and Pipelines Framework Review, 23 May 2016, p. 80.



4.3 Project teams' consideration of the options

Table 4.1 provides a summary of the key features of the proposals that AEMO and APGA presented to the project teams.

Table 4.1: Day-ahead auction: Options considered by the project teams

Key features	AEMO Centralised Auction	Pipeline Operated Auction Platforms
Assumed features of the auction	<ul style="list-style-type: none"> ▪ Single centralised auction operated by AEMO. ▪ Auction conducted on a pipeline by pipeline basis between key points (zones). ▪ Conditional bidding across pipelines will be possible. ▪ A number of data exchanges will be required between the pipeline operators and AEMO, which will have implications for the timing of the auction and scheduling process. 	<ul style="list-style-type: none"> ▪ Each pipeline operator develops and operates its own auction platform ▪ Auction conducted on a pipeline by pipeline basis and can either be carried out between key points (zones) or between specific receipt and delivery points. ▪ Conditional bidding across pipelines will not be possible unless a pipeline operator owns more than one pipeline. ▪ Data exchanges with AEMO will not be required.
Auction interface and algorithm	<ul style="list-style-type: none"> ▪ Auction interface: AEMO proposes to include the auction interface as an additional tab in the EMMS web portal and adapt the interface and file exchange mechanism that is currently used for SRAs ▪ Auction algorithm: AEMO proposes to use the same algorithm that is used for SRAs, which provides for combinatorial bidding. 	<ul style="list-style-type: none"> ▪ Auction interface: Pipeline operators propose to include the auction interface into their respective nominations systems ▪ Auction algorithm: Pipeline operators propose to purchase or develop their own auction algorithm (engine) ▪ Common standard to be developed by APGA to ensure consistent implementation across pipelines.
Settlement, billing and prudential arrangements	AEMO proposes to leverage the existing Gas Supply Hub settlement, prudential and billing frameworks. Auction participants will also need to have a standing contract in place with the pipeline operator that outlines the terms for utilising auction capacity, which may also include the pipelines prudential requirements.	Pipeline operators propose to use their existing billing and prudential arrangements and to develop a common standard for settlements.
Reports and information	AEMO proposes to use the EMMS file service and data interchange.	Pipeline operators propose to publish information on the Bulletin Board and use their existing systems to transfer information to auction participants.
Legal framework	Amendments expected to be required to the NGL and NGR to provide for the day-ahead auction	
Governance arrangements	<p>If AEMO operates the auction, it is likely to be required to develop Procedures. The process AEMO is to follow when making or changing Procedures is set out in Part 15B of the NGR. In short, AEMO can only make Procedures if it is satisfied they are:</p> <ul style="list-style-type: none"> ▪ consistent with the NGL and NGR; and ▪ are appropriate having regard to the NGO, any compliance costs likely to be incurred by AEMO and participants and any principles in the NGR. 	This detail was not covered in APGA's proposal.
Implementation Costs	Estimated: \$3.55-\$3.65 million (\$0.35-\$0.45 million to be incurred by AEMO).	Estimated: \$2.2 million.



In a similar manner to the capacity trading platform, the Day-Ahead Auction and Capacity Trading project teams considered the relative merits of these two options using the ‘platform of choice’ evaluation criteria outlined in Chapter 2. The table below provides a summary of this evaluation.

Table 4.2: Evaluation of the options

Evaluation criteria		AEMO Centralised Auction	Pipeline Operated Auction Platforms
Operation of platform:	Operated by independent and experienced operator	✓	✗
	Operated in a predictable and reliable manner	Requires a common auction standard to be developed	Requires common auction standards to be developed and implemented by all pipelines
	Operation of platform underpinned by a robust governance framework	✓	A new governance framework would need to be established
	Transparency in costs and operation of platform	Could be mandated	Could be mandated
Platform System Features:	Provides for: <ul style="list-style-type: none"> ▪ low transaction costs ▪ quick and effective execution of the auction 	<ul style="list-style-type: none"> ▪ The use of existing systems is expected to result in low transaction costs, although the implementation costs are estimated to be higher. ▪ The use of the SRA algorithm is also expected to result in the effective execution of the auction. ▪ Data exchange requirements are, however, expected to result in the auction be conducted later than a pipeline operated auction. ▪ Some project team members noted that AEMO would not have the same incentives to minimise costs as a pipeline operator. 	<ul style="list-style-type: none"> ▪ Pipeline operators have proposed to absorb transaction costs. ▪ Because data exchanges are not required under this option, the auction is expected to be executed relatively quickly.
	Integrated with pipeline operators' nominations and scheduling processes	Separate processes required	Separate processes required
Co-ordination benefits:	Shippers can co-ordinate trades across pipelines	Possible across all pipelines that are subject to the auction, regardless of ownership	Co-ordination of auction products only possible when pipelines are operated by the same pipeline operator Shippers can, however, co-ordinate with primary products.
	Shippers can co-ordinate trades between the capacity trading platform and the day-ahead auction	✓	✗
	Shippers can readily co-ordinate trades with other services on Gas Supply Hub	✓ (The GSH and auction would be housed on the same web portal, EMMS)	✗



Evaluation criteria		AEMO Centralised Auction	Pipeline Operated Auction Platforms
Scale and scope benefits and adaptability:	Capable of capturing scale and scope benefits	✓	✓ (in so far as it relates to other services offered by the pipeline operator)
	Future proof, scalable and adaptable	This option is expected to be future proof and scalable, but questions were raised about the incentives for innovation and its ability to adapt to change over time unless driven by industry.	Depending on the governance arrangements that are put in place, this option may be future proof. It is also possible that competition between pipeline operators could drive innovation. The option is not, however, scalable.
Implementation Costs		Estimated: \$3.55-\$3.65 million (\$0.35-\$0.45 million to be incurred by AEMO).	Estimated: \$2.2 million.

When evaluating the two options, the issue of who should operate and administer the auction was widely debated by the project teams and a range of views were expressed. Those project team members that favoured AEMO developing and operating the auction platform, noted that it complied with the AEMC’s preference for a single auction platform and pointed to the following benefits of this option:

- **Operation of the platform:** The auction platform would be operated by an independent and experienced market operator that has a track record of conducting auctions and operating in a transparent manner. The auction platform would also be underpinned by a robust and well understood governance framework.
- **Platform features:** Market participants would only need to utilise one auction platform, which a number of project team members claimed would reduce the risks faced by traders. Some project team members acknowledged that the data exchanges required to support the centralised auction could give rise to additional risks, but they noted that these risks could be managed by AEMO and pipeline operators.
- **Co-ordination benefits:** The co-ordination benefits are expected to be highest under this option because:
 - market participants would be able to bid for capacity across multiple pipelines through one auction platform and would also be able to make conditional bids across pipelines; and
 - the auction platform would be on the same web portal as the Gas Supply Hub, so market participants would be in a better position to co-ordinate their transportation, gas and hub service requirements.

Some project team members noted that these features of the auction mean that it is more likely to support the development of a liquid wholesale gas market and promote energy security and reliability.

- **Scale and scope benefits and adaptability:** The centralised platform is expected to capture greater scale and scope benefits and to be more scalable than the alternative. Some concerns were, however, raised about innovation, with some project team members noting that industry would need to use AEMO’s consultative processes to drive innovation in the future.



- **Implementation costs:** While the implementation costs are estimated to be \$1.35-\$1.45 million higher under this option, a number of project team members noted that they did not think the cost differential was significant, or that it would be sufficient to outweigh the other benefits offered by the centralised auction. A number of project team members also noted that the cost estimates had been developed at such a high level that it was possible the \$1.35-\$1.45 million difference could fall within the margin of error.

Those team members that favoured the APGA proposal, on the other hand, noted that pipeline operators are in a better position to manage the operational complexities presented by the auction and focused on the following benefits of this option: ²⁷

- **Auction features:** The auction can be conducted between specific receipt and delivery points, rather than being limited to key points (or zones), which will enable the utilisation of the pipeline to be maximised during peak periods. It is worth noting in this context that an AEMO operated auction could also be conducted on this basis, but the cost of doing so is likely to be higher because it would be a more complex auction system and is likely to require more data transfers and validation between AEMO and pipeline operators.
- **Platform features:** Under the proposal some level of data exchange will be required between pipeline operators and the Bulletin Board (i.e. to publish available capacity), but fewer data exchanges will be required than under the centralised option, which means that:
 - the auction and scheduling process can be completed earlier;
 - there will be fewer potential points of failure between the pipeline operator and AEMO reducing these operational risks; and
 - it will cost less to implement and there are greater incentives for pipeline operators to minimise costs.

The platform would also be integrated into the pipeline operator's nominations system, which means shippers would only have to use one system to enter their auction bids and pipeline nominations. Shippers seeking access to capacity across multiple pipelines would, however, need to access each pipeline operator's system individually, which some project team members noted could expose shippers to greater risk of error and cost if they are trying to bid for capacity from different pipeline operators.

The contractual, prudential and billing arrangements are also expected to be simpler under this option (i.e. because shippers will only have to enter into a contract with the pipeline operator and the prudential and billing arrangements will be set out in the gas transportation agreement).

- **Adaptability:** Competition between pipeline operators for the provision of auction services is expected to drive more innovation (the two examples APGA cited in this context include the intra-day auctions and pipelines releasing uncontracted capacity through the auction). Some project team members also noted that external operation of the auction may limit the potential growth and development of this market mechanism.

²⁷ APGA also claimed that curtailments of auctioned capacity could be managed more effectively under this option because the pipeline operator would have access to the bid stack, although it noted in its presentation that if AEMO provided this information to the pipeline operators the same outcome could be achieved under the centralised option.



- **Implementation costs:** The implementation costs are expected to be \$1.35-\$1.45 million lower under this option.

As this summary reveals, there are strengths and weaknesses associated with both options. It is not surprising therefore that project team members were unable to reach consensus on this issue.

Finally, it is worth noting that the diversity of views expressed on this issue is consistent with what occurred in the AEMC's *East Coast Review*, with the majority of shippers that participated in this process recommending the auction be operated by AEMO,^{28,29} while pipeline operators noted they had better operational knowledge to conduct the auction.³⁰

4.4 Questions for stakeholders

Given the diversity of views expressed by project team members on who should operate the auction, the GMRG is interested in hearing from other stakeholders on who they think should be responsible for operating and administering the capacity trading platform(s). A list of some of the specific questions that the GMRG would like to get further feedback on is provided below:

1. Do you think:

- a. a single auction platform should be developed? or
- b. each pipeline operator that is to be subject to the auction should develop its own auction platform?

In answering this question, please explain why you think the option you have selected will promote the NGO and achieve the Council's *Vision*.

2. If you think a single auction platform should be developed, do you think it should be:

- a. operated by AEMO? or
- b. operated on a stand-alone basis by a joint venture of pipeline operators, or another party with relevant experience?

In answering this question, please explain why you believe the relevant party should be selected and what the benefits to the market would be from the selection of this operator.

3. Are there any other elements of:

- a. AEMO's proposal that you would like to comment on?
- b. APGA's proposal that you would like to comment on?

The GMRG would also welcome any other feedback stakeholders may have on the options presented in this chapter.

²⁸ See for example, AGL, Submission to AEMC March 2016 Discussion Paper, p. 2, APLNG, Submission to AEMC March 2016 Discussion Paper, p. 4, QGC, Submission to AEMC March 2016 Discussion Paper, p. 7, APLNG, Submission to AEMC March 2016 Discussion Paper, p. 6, EnergyAustralia, Submission to AEMC March 2016 Discussion Paper, p. 6.

²⁹ PIAC also supported the proposal that AEMO run the auction. See PIAC, Submission to AEMC March 2016 Discussion Paper, p. 5.

³⁰ See for example, APA, Submission to AEMC March 2016 Discussion Paper, p. 14 and APGA, Submission to AEMC March 2016 Discussion Paper, p. 19.



Appendix A Summary of AEMC Recommendations

The table below contains a summary of the recommendations contained in the AEMC's Stage 2 Final Report which have been categorised by the AEMC as follows:

- **required outcomes** – these recommendations were described by the AEMC as outcomes that must be progressed by the GMRG and are necessary to the implementation of the reforms;
- **preferred outcomes** – these recommendations were described by the AEMC as outcomes that should be pursued by the GMRG unless it is clear there are greater benefits in alternative approaches; and
- **suggested outcomes** – these recommendations were described by the AEMC as outcomes that have in-principle benefits but need to be considered further by the GMRG.

AEMC Recommendations

Recommendation	Required outcomes	Preferred outcomes	Suggested outcomes
Standardisation of key primary and secondary capacity contractual terms	<ul style="list-style-type: none"> ▪ Standardisation of key primary and secondary capacity contractual terms for pipeline and for hub services. ▪ Where possible and appropriate apply across the eastern Australian gas market. ▪ Standards to be developed are for key operational, prudential and other contractual provisions in GTAs, CTAs and Operational GTAs, and provisions in contracts used for exchange based trading on the capacity trading platform. ▪ Counterparties to existing contracts should not be materially disadvantaged through the standardisation process 	<ul style="list-style-type: none"> ▪ Shippers provided greater flexibility to change their receipt and delivery points 	n.a.



Recommendation	Required outcomes	Preferred outcomes	Suggested outcomes
Auction for contracted but un-nominated capacity	<ul style="list-style-type: none"> ▪ A daily, day-ahead capacity auction for contracted but un-nominated pipeline capacity and hub services. ▪ Auction happens shortly after nomination cut-off time. ▪ Reserve price of zero dollars, with compressor fuel provided by shippers in-kind. ▪ At least all contracted but un-nominated capacity placed for sale through auction. ▪ Accommodate nominations or renominations by incumbent shippers after the auction is conducted. 	<ul style="list-style-type: none"> ▪ Combinatorial auction where multiple buyers and sellers can simultaneously coordinate trades, managing the complementarities between different pipeline segments. ▪ Single round auction to reduce complexity and opportunities for anti-competitive behaviour between participants. ▪ Bidders pay the value of their winning bids ("first-price" rule) to reduce complexity. ▪ Algorithm determines the winning combination of bids by maximising profit (constrained by requirement that at least all contracted but un-nominated capacity is put on sale in auction). ▪ Capacity purchased in the auction curtailed before (ie, earlier than) firm capacity. ▪ Single auction across the east coast market, in order to optimise allocation across as many products as possible. ▪ Exemption from the auction for pipelines serving a single user. 	<ul style="list-style-type: none"> ▪ As available rights in current GTAs to be phased out to avoid them competing with rights allocated in the auction. ▪ Exempting on a case-by-case basis pipelines that are not fully contracted from needing to conduct the auction. ▪ The auction to be run by the same institution(s) which run the capacity trading platform.
Capacity trading platform(s)	<ul style="list-style-type: none"> ▪ Creation of capacity trading platform(s) which include electronic anonymous exchange based trading for commonly traded products in addition to a capacity listing service typical on current capacity trading platforms. ▪ Trades carried out through trading platform to be given effect through an operational transfer. ▪ Bare transfers will be allowed but the seller will be required to offer the buyer the option to use an operational transfer. 	<ul style="list-style-type: none"> ▪ Single capacity trading platform operating across the east coast. ▪ As many services as possible capable of being traded on the platform (eg, transportation services, hub services and pipeline storage services), recognising the need to avoid unnecessary complexities. ▪ Trades conducted outside the capacity trading platform to be advertised ahead of time on the capacity trading platform listing service. 	<p>n.a.</p>
Publication of information on secondary capacity trades	<ul style="list-style-type: none"> ▪ Publication of information on all secondary trades of pipeline capacity and hub services. ▪ The information to be published is the price of the trade and any other information that might reasonably influence that price, taking into account measures to protect anonymity. ▪ Publication should occur at or shortly after the time the transaction is entered into 	<p>n.a.</p>	<p>n.a.</p>