REVIEW

Australian Energy Market Commission

PIPELINE ACCESS DISCUSSION PAPER

East Coast Wholesale Gas Market and Pipelines Frameworks Review

3 March 2016

Submissions due 29 March 2016. Reference: GPR0003
Pipeline Access Discussion Paper

Inquiries

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

E: aemc@aemc.gov.au
T: (02) 8296 7800
F: (02) 8296 7899

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About the AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

Summary

In December 2015[1], the Commission provided the Council of Australian Governments (COAG) Energy Council with a draft package of recommended reforms to improve wholesale gas markets and pipeline frameworks on the east coast of Australia, consistent with the Energy Council's Vision.[2]

A key element of this draft package of recommendations is reform of the contract carriage model for gas transportation which operates in eastern Australia outside of the Victorian Declared Transmission System. Specifically, the Commission recommended:

- The introduction of a day-ahead auction of contracted but un-nominated pipeline capacity, which would be conducted shortly after nomination cut-off and be subject to a reserve price that would be determined through a process overseen by the AER. The proceeds of this auction would be retained by the pipeline operator.
- The mandatory development of a capacity trading platform(s), which would be used to facilitate capacity sales by capacity holders ahead of the auction by enabling shippers to anonymously post buy or sell offers. To further support secondary capacity trades, the Commission recommended:
  - requiring industry, with an appropriate level of regulatory oversight, to develop more standardised primary and secondary capacity products to facilitate more secondary capacity trading; and
  - requiring the publication of key information on secondary capacity trades (ie, shipper to shipper trades), including the price and other terms and conditions that may affect the prices struck in these trades.
- Requiring the publication of key information on primary capacity purchases.

These reforms should facilitate the more dynamic trading of capacity by:

- reducing search and transaction costs involved in trades;
- enabling shippers to obtain competitively priced un-nominated capacity;
- improving the incentives for shippers to trade capacity;
- reducing actual or perceived discriminatory access to capacity; and
- improving the information on which decisions in the sector are made.

1 AEMC, *East Coast Wholesale Gas Market and Pipelines Frameworks Review*, Stage 2 Draft Report, December 2015.

2 COAG Energy Council, *Australian Gas Market Vision*, December 2014.

In turn, more dynamic trading of capacity should reduce the costs associated with trading gas in the wholesale markets, supporting the establishment of a liquid market with an efficient reference price – a key element of the Energy Council's Vision.

This discussion paper has been published to provide stakeholders with an opportunity to contribute to the development of:

- the appropriate means of taking the capacity trading related initiatives forward and the governance and regulatory arrangements that may be required to support their implementation; and
- the next layer of detail on the proposed package of reforms.

Consideration of the governance by which the reforms are implemented is particularly important given some pipeline owners have suggested that it would be appropriate to implement most of the Commission's aforementioned recommendations on an industry-led basis, without (or with very limited) regulatory involvement. The Commission can see benefits and disadvantages in both regulatory and industry-led processes and seeks to recommend a process which balances the two. This is the subject of chapter 2 of this paper.

Chapter 3 discusses the level of standardisation that is likely to be required in primary and secondary capacity contracts to better facilitate capacity trading. Standardisation of capacity will play a pivotal role in the reforms, given that it will facilitate trade through the proposed capacity trading platform, is a key design element of the proposed auction for contracted but un-nominated capacity, and will enable information provision requirements (as the information that needs to be provided will in large part be standardised). The key area of discussion in chapter 3 is the terms and conditions that should be standardised in primary and secondary contracts to facilitate secondary capacity trade.

Chapter 4 discusses the proposed capacity trading platform(s) and the information provision requirements for secondary trades made through the platform or otherwise. With regard to the capacity trading platform, the Commission seeks feedback on the services that could be sold through the capacity trading platform(s), the method for executing the trades, settlement and prudential arrangements for trades, whether single or multiple platforms should be instigated and responsibility for operating the platform(s). With regard to the secondary trade information provision requirements, the Commission explores what information should be reported, and when, noting confidentiality concerns and the cost of information provision.

Chapters 5 and 6 provide an additional layer of detail on the proposed auction for contracted but un-nominated capacity. Chapter 5 provides information on key elements of the auction design given the characteristics of the market for contracted but un-nominated capacity. Chapter 6 then addresses practical implementation issues for the auction including some which are specific to the East Coast market.

Chapter 7 discusses the proposed information provision requirements for primary capacity sales. Despite the rationale for this recommendation being distinct from that for the information provision requirements for secondary capacity trades (discussed in chapter 4), the actual information that should be provided, and when, may in many cases be similar between the two types of trades. The Commission seeks feedback in this regard, and on any concerns about information confidentiality and the cost of its provision.

We are also seeking more feedback on the costs and benefits of the proposed reforms which we are hoping the further detail provided in this report will allow market participants to provide. In the lead up to the Final Report to be provided to the COAG Energy Council in May, the AEMC will be undertaking more work to better understand the costs and benefits associated with different elements of the reform package.

As part of the stakeholder consultation process, the AEMC is also consulting on a number of issues relevant specifically to its proposed reforms to the Victorian Declared Wholesale Market. These matters are considered in a separate discussion paper also published today and available on the AEMC website.

Feedback

Feedback from stakeholders will be used to inform the Commission's final recommendations for the East Coast Wholesale Gas Market and Pipelines Frameworks Review, which will be presented to the COAG Energy Council in mid-2016. We welcome responses on any of the matters outlined in this discussion paper. However, in light of the tight timeframes for consultation, the Commission has set out questions to help focus submissions.

The closing date for submissions is **Tuesday 29 March 2016**.

Contents

1 Introduction

1.1 Context

On 20 February 2015, the Council of Australian Governments (COAG) Energy Council directed the Australian Energy Market Commission (AEMC or Commission) to review the design, function and roles of facilitated gas markets and gas transportation arrangements on the east coast of Australia (“the east coast review”).

The first stage of this review was completed in July 2015 and identified a number of aspects of the transportation arrangements that should be investigated in the second stage of the review, including potential changes to the contract carriage model to improve the efficiency with which pipeline capacity is allocated and used.

The Stage 2 Draft Report was published on 4 December 2015 and outlined the Commission’s proposed roadmap for market development. A key element of this roadmap was the proposed reform of the contract carriage model. The specific initiatives that the Commission recommended in this context were:

1. The introduction of a day-ahead auction of contracted but un-nominated pipeline capacity, which would be conducted shortly after nomination cut-off and be subject to a reserve price that would be determined through a process overseen by the AER. The proceeds of this auction would be retained by the pipeline operator.

2. The mandatory development of a capacity trading platform(s), which would be used to facilitate capacity sales by capacity holders ahead of the auction by enabling shippers to anonymously post buy or sell offers. To further support secondary capacity trades, the Commission recommended:

    - requiring industry, with an appropriate level of regulatory oversight, to develop more standardised primary and secondary capacity products to facilitate more secondary capacity trading; and

    - Requiring the publication of key information on secondary capacity trades (ie, shipper to shipper trades), including the price and other terms and conditions that may affect the prices struck in these trades.

3. Requiring the publication of key information on primary capacity purchases.

As outlined in the Stage 2 Draft Report, the Commission expects these initiatives to foster the development of a more liquid market for secondary capacity by:

- enabling capacity to be allocated on a non-discriminatory basis to those that value it most highly through market based processes and, in so doing, improve the efficiency with which capacity is used on pipelines;

- aiding the price discovery process by reducing informational asymmetries and, in so doing:
  - reduce search and transaction costs;
  - enable more informed decisions to be made; and
  - provide shippers with the confidence that access to primary and secondary capacity is being provided on a non-discriminatory basis; and
- providing primary capacity holders with a greater incentive to trade capacity.

1.2 Purpose of the discussion paper

As the Commission progresses toward its final report to the COAG Energy Council, it is carrying out a more detailed review of the options for implementing the initiatives outlined above and the arrangements that may be required to support their implementation. In doing so, the Commission is considering, amongst other things:

- potential governance arrangements to enable industry to take the lead on this initiative with an appropriate level of input by market and regulatory bodies;
- the terms and conditions in primary and secondary capacity contracts that may need to be standardised to facilitate more capacity trading;
- how the capacity trading platform(s) would operate in practice, the services that could be sold through this platform, the way in which the trade would be given effect and who should be responsible for developing and operating the platform;
- how the auction for contracted but un-nominated capacity would operate in practice, the various auction designs that could be employed and the principles that the reserve price should reflect; and
- the information on primary and secondary capacity trades that would ideally be published to enable more informed and efficient decision making in the market, taking into account the cost of information provision and possible confidentiality concerns.

The Commission is also considering what changes will need to be made to the existing regulatory framework to accommodate these initiatives.

The Commission is interested in hearing stakeholders' views on each of these issues. It has therefore prepared the following discussion paper, which outlines the various options that could be employed and sets out a number of specific questions that the Commission would like feedback on.

We are also seeking more feedback on the costs and benefits of the proposed reforms which we are hoping the further detail provided in this report will allow market participants to provide. In the lead up to the Final Report in May, the AEMC will be undertaking more work to better understand the costs and benefits associated with different elements of the reform package.

As part of the stakeholder consultation process, the AEMC is also consulting on a number of issues relevant specifically to its proposed reforms to the Victorian Declared Wholesale Market. These matters are considered in a separate discussion paper also published today and available on the AEMC website.

1.3 Structure of this paper

The remainder of this paper is structured as follows:

- Chapter 2 outlines the options for taking the capacity trading related initiatives forward and the governance and regulatory arrangements that may be required to support their implementation;
- Chapter 3 considers the level of standardisation that is likely to be required in primary and secondary capacity contracts to facilitate more capacity trade;
- Chapter 4 discusses the design options for the capacity trading platform(s), including the secondary trading information provision requirements;
- Chapter 5 outlines the design options for the day-ahead auction for contracted but un-nominated capacity, given the characteristics of the market for that capacity;
- Chapter 6 considers practical implementation issues related to the day-ahead auction, including some which are specific to the East Coast market; and
- Chapter 7 sets out the various levels of information on primary trades that could be made available to the market and the options for imposing this reporting obligation.

1.4 Responding to this paper

The Commission welcomes submissions on any of the issues raised in this discussion paper. Requests for feedback on specific issues raised in this paper are set out in chapter 2 to 7. In light of tight timeframes for consultation, the Commission has set out questions in those chapters to help focus submissions.

The closing date for submissions is **Tuesday 29 March 2016**.

Submissions should quote project number "GPR0003" and may be lodged:

- online at www.aemc.gov.au
- by mail to: Australian Energy Market Commission, PO Box A2449 , Sydney South, NSW, 1235

2 Implementing the initiatives

In the Stage 2 Draft Report, the Commission highlighted that the governance of the implementation of the package of recommendations was likely to be important.

In particular, with regard to the pipeline access recommendations, the Commission considered that the effectiveness of its recommendation for capacity standardisation would be increased if there were considerable industry involvement in the standardisation process. The Commission highlighted the industry-led approach to capacity standardisation taken in the US, where an industry grouping (initially the Gas Industry Standards Board (GISB), now the North American Energy Standards Board (NAESB)) develops standards and protocols under regulatory oversight.

The Commission had not envisaged that an industry-led approach would be appropriate in the case of some of the other pipeline access recommendations – for example, the auction for contracted but un-nominated capacity. The Commission considers that pipeline owners have limited incentives to release and price as-available capacity in a matter expected in a workably competitive market, and that regulatory intervention is therefore required.

In submissions to the Stage 2 Draft Report, some pipeline owners (APA and Jemena) and their industry association (APGA) have committed to quickly implementing most of the recommendations in the Stage 2 Draft Report with regard to pipeline access on an industry-led basis, without (or with very limited) regulatory involvement.[3]

The Commission can see benefits and disadvantages in both regulatory and industry-led processes, and seeks to recommend a process which balances the two approaches.

The remainder of this chapter discusses:

- advantages and disadvantages of industry and regulatory-led approaches; and
- possible options to balance these two approaches.

Finally, the chapter discusses how the content of the remainder of this report, and the submissions received in response to it, may be taken forward under different implementation models after the AEMC's review concludes in July 2016.

2.1 Industry-led approach compared to regulatory-led approach

APA, Jemena and APGA suggest that an industry-led approach would be preferable for all of the AEMC's pipeline access recommendations which they agree should be implemented. That is, they recommend an industry-led approach for:

3 Some of these pipeline owners, and the APGA, did not commit to implementing the recommendation for the release of pricing information for primary capacity sales.

- the introduction of an auction of contracted but un-nominated capacity;
- further development of capacity trading platforms;
- reporting requirements for secondary capacity trades, including the price at which trades are struck, and terms and conditions which influence the price; and
- an appropriate degree of capacity product standardisation.

While advocating an industry-led approach to implementing these recommendations, the parties do not support each individual element of the recommendations, and their commitment to implementing some of the recommendations is conditional. For example, APA's commitment to introduce an auction for contracted but un-nominated capacity is limited to pipelines which are fully contracted.[4] Jemena has committed to introducing the auction, but did not provide any specific commitment about how the reserve price for the auction would be set.

APA and Jemena do not agree with the recommendation that prices and other terms and conditions which influence prices be reported on primary capacity trades, and therefore have not committed to voluntarily implement it through an industry-led approach. APA's commitment to implement this recommendation voluntarily was conditional on similar reporting requirements being extended to gas supply agreements (GSAs).[5]

APA, Jemena and APGA consider that an industry-led approach with no or minimal regulatory involvement would be preferable to a regulatory-led approach for a number of reasons:

- An industry-led approach is likely to be quicker to implement than a regulatory-led approach. Both approaches would require the development of the specific mechanisms through which the recommendations would be enacted (eg, the capacity trading platform(s)). However, a regulatory-led approach would also require law and rule changes, both of which are time consuming processes which also entail timing uncertainty.[6]
- An industry-led approach is likely to result in lower implementation costs across industry and governments because of the lower consultation and drafting burden if law and rule changes are not required.[7]
- The likely success of an industry-led approach has been demonstrated by the historic build out of gas transmission infrastructure which has occurred in the last decade. Regulatory intrusion may stifle innovation and investment.[8]

4 See cover letter to APA submission on the Stage 2 Draft Report, February 2016, p. 1.

5 See cover letter to APA submission on the Stage 2 Draft Report, February 2016, p. 2.

6 See submissions on the Stage 2 Draft Report, February 2016: APA cover letter, p. 2; Jemena, p. 7.

7 See submissions on the Stage 2 Draft Report, February 2016: Jemena, pp. 6-7; APGA, p. 2, 4.

8 See cover letter to APA submission on the Stage 2 Draft Report, February 2016, p. 2.

- Industry is best placed to appropriately design the specifics of the recommendations. Furthermore, for a number of the recommendations, in particular the auction, it is unlikely that a one-size-fits-all approach will be appropriate. Different pipelines have different characteristics (such as connected supply sources and demand markets, shipper requirements, existing contractual arrangements and physical limitations of the pipeline itself) which will need to be carefully considered in the design. An industry-led approach is best placed to manage these issues.[9]

- A regulatory-led approach to these recommendations may be perceived by some parties, such as financiers and international pipeline investors, to be circumventing or altering the pipeline access regime which was considered detrimental to potential investor interest in funding Australian infrastructure expansions.[10]

To the extent that a regulatory solution is required, APA, Jemena and APGA urge it to be flexible, non-prescriptive and outcomes-focused, so that industry is able to develop the specific details of the recommendations.

The Commission can see benefits in an industry-led approach, for many of the reasons given by the pipeline owners. However, given that there have been few barriers to date to industry-led initiatives in this space, and these have not progressed, the Commission remains concerned that an approach absent sufficient regulatory oversight may not lead to efficient or timely outcomes:

- As noted above, the Commission considers that the pipeline owners may not have a strong (directly financial) incentive to implement the recommendations in such a way that the expected benefits of the recommendations are realised to the greatest extent possible.[11] For example, a pipeline owner may implement an auction for contracted but un-nominated capacity, but choose not to release all of that capacity in the auction, or choose to set a reserve price such that some shippers would not be able to access it despite valuing it greater than the cost of its provision. These would have the effect of limiting access to the pipeline, and so lessen the effectiveness of the auction.

- Industry members may be unable to agree amongst themselves on the appropriate means to implement the recommendations. For example, pipeline owners (collectively) may be unable to agree with shippers (collectively) on appropriate capacity standards. Alternatively, pipeline owners may not be able to agree amongst themselves about how to hold one single auction across all pipelines on the east coast, and so implement individual auctions for each pipeline owner (despite the former potentially being more appropriate).

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9 See submissions on the Stage 2 Draft Report, February 2016: Jemena, p. 6; APGA, p. 3

10 See APGA submission on the Stage 2 Draft Report, February 2016, p. 2.

11 Given commitments made in their submissions, pipeline owners may however have a strong reputational incentive to implement the recommendations in a manner consistent with their original rationale.

- Individual industry participants are unable to compel other participants to comply with the recommendations. For example, capacity standardisation could at most remain voluntary under an industry-led approach even if it was preferable for some aspects of standardisation to be compulsory.
- Preferable elements of a number of the recommendations may be contrary to existing legislation, regulation or contracts. Industry acting alone would be unable to implement these recommendations. At the very least, regulatory involvement will be required to enable these changes. An example of this is for information reporting requirements, which may contradict existing contracts.
- Not all the pipeline owners to-date have made a similar commitment to implement the recommendations through an industry led process, and some pipeline owners that have committed to implementing some recommendations have not committed to implementing others. Regulations may therefore be required to compel any pipeline owners that do not wish to implement the recommendations of their own accord to do so.

The pipeline owners advocating for an industry led approach acknowledge a number of these concerns, and do, in some specific areas, see a role for limited regulatory involvement. For example:

- Both Jemena and APGA consider that the implicit "threat" of regulation should act as a sufficiently strong incentive for industry to implement the recommendations such that the outcomes are consistent with those envisaged by the Commission.[12] Jemena also suggests that a government or regulator specified timeframe for industry implementation might be appropriate, to ensure that the implementation timeframe does not slip.[13]
- Jemena also sees the need for substantial industry-wide engagement (eg, with shippers and other stakeholders) in developing the recommendations, and considers it appropriate to keep the AEMC informed through the development process.[14]
- APGA considers that the issue of standardising nomination times extends to the facilitated markets and GSAs, and so is an ideal candidate for a government process.[15]

2.2 An appropriate balance between industry-led and regulatory-led approaches

It is unlikely that all of the recommendations proposed in the Draft Report would be successfully implemented through a purely regulatory-led approach. It also appears

12 See submissions on the Stage 2 Draft Report, February 2016: APGA, p. 2; Jemena, p. 5

13 See Jemena submission on the Stage 2 Draft Report, February 2016, p. 7.

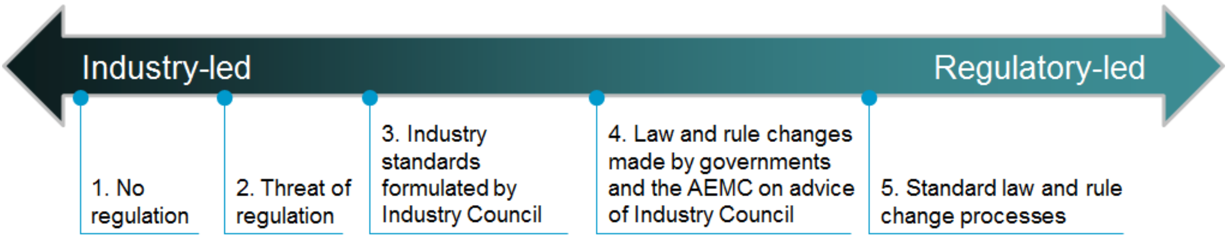
14 See Jemena submission on the Stage 2 Draft Report, February 2016, p. 5.

15 See APGA submission on the Stage 2 Draft Report, February 2016, p. 1.

unlikely that the package of reforms can be left to industry to implement without support. A balance is therefore likely required between the approaches.

The Commission envisages a spectrum of possible approaches could be adopted. This can be simplistically represented as per the diagram below, which places a number of possible governance approaches on a spectrum from a purely industry-led approach, to a purely regulatory-led approach.

Figure 2.1 A spectrum of governance approaches



On the left of the spectrum is a purely industry-led approach (option 1 on Figure 2.1). For the reasons outlined in section 2.1, no regulation at all is unlikely to be appropriate, and the pipeline owners themselves recognise the need for limited regulatory involvement in some circumstances.

Moving right along the spectrum entails increasing levels of government or regulatory involvement.

As noted by the pipeline owners, the threat of regulation alone (option 2) may be sufficient to provide incentives on pipeline owners to appropriately implement many of the recommendations without specific regulatory or legal changes. This approach is possible because in many cases the proposed reforms are not contrary to existing laws or rules, and can therefore be implemented by industry without the need for law or rule changes. However, this approach risks unsatisfactory outcomes for the reasons given in section 2.1, and were regulatory or legal changes subsequently required, may also result in a delay in appropriate outcomes compared to had such an approach not been taken.

Alternatively, an "Industry Council" might be constituted to implement the reforms. In option 3 of the diagram above, the decisions of the Industry Council would be made into an industry standard, but rules and laws would not be changed (providing such changes were not required to enable the reforms).[16] The AEMC and/or governments might have an observer role on the Industry Council, to ensure that changes being implemented by the Industry Council were consistent with the rationale for the reforms.

16 For the avoidance of doubt, this industry standard might apply to the standardisation of capacity rights and to the other reforms proposed, such as the auction for contracted but un-nominated capacity.

While both options 2 and 3 rely on the threat of regulation to incentivise industry to undertake appropriate reforms, option 3 differs from option 2 through the creation an Industry Council to coordinate reforms across industry and to document decisions.

In option 4, an Industry Council could instead provide advice to governments (in the case of law changes) or the AEMC (in the case of rule changes). For example, the Industry Council might provide rule change requests to the AEMC to consider. In this way, implementation decisions would be made into laws or rules (unlike option 3), although there would be structured industry involvement in the decision making process (unlike option 5, discussed below). Because changes would be made to rules and laws, it might not be appropriate for the AEMC or governments to be members of the Industry Council, even in an observing capacity.

On the right hand side of the spectrum, option 5 is what might be considered a "typical" regulatory reform process:

- In the case of changes to the rules, the AEMC would make rule changes following its rule change consultation process. Rule changes could be proposed by industry, but would more likely be proposed by the COAG Energy Council as a package in response to the AEMC’s Review.
- In the case of laws, changes would be enacted by the South Australian Government, on the recommendation of the COAG Energy Council (typically after receiving advice from market institutions such as the AEMC).

Clearly, alternative governance models exist, and the spectrum is illustrative in nature.

Different approaches may be appropriate for different parts of the reform package, although there may be benefits in unifying the approach to the extent possible.

Consideration would also need to be given as to whether different governance approaches are appropriate for the initial implementation of all reforms compared to subsequent changes. For example:

- Under option 4, consideration would need to be given to whether the Industry Council would be utilised for all elements of the AEMC’s reform program and whether it would be an enduring organisation which continued to provide advice to governments and the AEMC of the need for subsequent reform, or whether it be disbanded once the reforms were fully implemented with any subsequent changes reverting to the "typical" rule and law change processes.
- It may be appropriate for the South Australian Minister for Energy, acting on the recommendations of the COAG Energy Council, to make amendment to the NGR when the reforms are initially implemented, with the AEMC making subsequent rule changes.[17] This may be a more timely option when changes to the NGL would otherwise be required before rule changes could be made by the AEMC.

17 See sections 294A - 294E of the NGL.

2.3 Next steps and feedback

This discussion paper provides the next layer of detail on the Commission's pipeline access recommendations, and invites submissions on these recommendations.

Even if a predominantly industry-led approach is considered appropriate for the recommendations, the Commission considers that there is still value in exploring the recommendations in a greater level of detail, because:

- it provides the Commission, industry participants and governments confidence that the recommendations being proposed are feasible and beneficial;
- it allows the Commission to tailor its recommendations in light of the appropriate governance arrangements; and
- this paper and submissions may inform industry in the development of the recommendations going forwards.

The Commission welcomes feedback on the governance and implementation issues raised in this chapter. In particular, stakeholders are invited to answer the following questions.

Box 2.1 Implementing the initiatives

- Has the Commission accurately and comprehensively outlined the benefits and disadvantages of the regulatory- and industry-led approaches?
- How might the Commission weigh the relative benefits and disadvantages of the two approaches into an appropriately balanced implementation approach?
- Are there any other implementation options which the Commission has not considered which may be appropriate?
- Do you believe an industry-led approach could be effective at delivering this key suite of reforms? If not, what approach should be taken?
- Should the implementation approach differ between the proposed reforms, and why?
- Should any enduring governance arrangements differ from the governance arrangements for the initial implementation of the reforms?

3 Standardisation of capacity products and contract terms

In the Stage 2 Draft Report, the Commission recommended that industry, with an appropriate level of regulatory oversight, develop more standardised primary and secondary capacity products to facilitate more secondary capacity trading. The Commission also noted that standardisation may be aided by providing primary capacity holders greater flexibility to change receipt and delivery points.

These recommendations are discussed in further detail in the remainder of this chapter, which commences with an overview of the rationale for these recommendations and then outlines:

- the types of terms and conditions that could be standardised in primary and secondary capacity contracts to facilitate more capacity trading; and
- how greater receipt and delivery point flexibility could be achieved.

Before moving on, it is worth noting that while the discussion in this chapter primarily focuses on trades of transportation capacity, the Commission is also considering extending this recommendation to hub services and welcomes feedback in this regard.

3.1 Rationale for the recommendations

The contracts underpinning primary and secondary capacity trades on the east coast have historically been quite bespoke, with a range of terms and conditions customised to meet the requirements of the contracting parties. While the Commission understands that there may be value in customising the service related elements of these contracts, it can also see the value in implementing the following measures to facilitate a greater level of secondary capacity trading:

- Make capacity products more fungible by standardising the operational, prudential and other contractual provisions in primary and secondary capacity contracts and, where feasible, standardising these provisions across pipelines.
- Provide primary capacity holders with greater flexibility to change receipt and delivery points under their primary capacity contracts.

Together the Commission expects these two measures to:

- reduce search and transaction costs by making it easier for shippers to value and compare secondary capacity offers and reducing the number of provisions to be negotiated; and
- increase the pool of prospective sellers of secondary capacity by making it easier for primary capacity holders to change their receipt and delivery points.

Having market participants involved in determining the appropriate level of standardisation and receipt and delivery point flexibility will be critical to the success of these measures, because they are the ones that will ultimately have to operate under these terms and conditions. It is for this reason that the Commission recommended in its Stage 2 Draft Report that an industry working group, with an appropriate level of regulatory oversight, be accorded responsibility for taking the lead on this initiative. Further consideration is given in chapter 2 whether this approach remains appropriate in light of submissions to the Stage 2 Draft Report regarding an industry-led approach to reform in general (as opposed to just the standardisation of secondary capacity).

3.2 Primary capacity contracts

3.2.1 Standardisation of primary capacity contracts

A primary capacity holder's right to access capacity on a contract carriage pipeline will usually be defined in its contract with the pipeline operator (the gas transportation agreement (GTA)) by reference to the service related elements, which include:

- the type of service that the capacity is to be used for (eg transportation services (forward haul, backhaul or bi-directional), hub services or storage services);
- the firmness of the pipeline operator's obligation to provide the service and the priority (eg firm, as available or interruptible) accorded to that service in terms of scheduling and curtailment;
- the receipt and delivery points (or zones) that the services are provided between and any technical restrictions at those points (eg operating pressures); and
- the maximum capacity the shipper can nominate to be supplied at receipt and delivery points, which is usually measured on a daily and hourly basis (eg maximum daily quantity (MDQ) and maximum hourly quantity (MHQ)) and any renomination rights that the shipper may have.

Because each shipper's end-use requirements can differ, these service related provisions tend to be quite bespoke.

While the Commission can still see a role for customising these types of provisions, there are a number of other terms and conditions in GTAs that could be standardised to facilitate more secondary capacity trading, including, amongst others:

- operational terms and conditions, such as:

  (i) start of gas day and nomination cut-off times;

  (ii) gas specification, gas quality and metering provisions;

  (iii) definition of what constitutes a firm, as available and interruptible service and the priority accorded to each in the scheduling and curtailment processes;

  (iv) nomination, scheduling, curtailment and allocation procedures;

(v) imbalance, daily variance and overrun tolerance levels;

(vi) imbalance, daily variance and overrun penalty charges;

(vii) process for making changes to receipt and delivery points; and

(viii) provisions relating to transfers, assignments and novations of capacity and any capacity trading requirements;

- prudential requirements; and
- other contractual provisions governing the relationship between the parties and their contractual obligations ('other contract provisions') , such as warranties, representations, possession and responsibility, title, control, liability and indemnities, default, termination, force majeure, notices, confidentiality and dispute resolution provisions.

Standardising these types of terms and conditions across GTAs and, where technically feasible, across pipelines, will make it easier for primary capacity holders to on-sell any spare capacity because it will make the capacity products more fungible and remove any unnecessary impediments to trade across pipelines. Standardisation may also, however, result in a loss of flexibility and some shippers or pipeline owners being worse off relative to their existing GTAs.[18] Careful consideration will need to be given to how the terms and conditions are standardised and how they are implemented.

Standardising prudential requirements may require the creation of a credit support mechanism, to adequately manage the risk to one counter-party of a trade when the other counter-party has low credit worthiness (as this would no longer be able to be managed through bespoke prudential requirements).

Consideration will also need to be given to whether it is possible to develop common standards that can be applied across all pipelines, or if pipeline specific standards are required. At a minimum, the Commission would expect that common standards could be developed for the prudential provisions, other contract provisions, and many of the operational terms listed above (eg items (i)-(iv) and (vi)-(viii)). It may, however, be more difficult to develop common standards for provisions that are more technical in nature, such as imbalance and overrun tolerance levels because they can depend on the physical characteristics of the pipeline. In these cases a pipeline specific standard may be unavoidable.

Some other matters that require consideration include whether:

- standardisation of primary capacity is required (and to what extent) to facilitate increased liquidity in the secondary capacity market;

18 For example, if the standardised penalty charges were to be lower than what was in shipper's contract then the shipper would be better off while the pipeline owner would be worse off.

- a single standard can be developed for each term and condition or if a range of standards may be more appropriate in some circumstances;
- the standardised terms and conditions can be adopted in GTAs that are on foot, noting there may be legal issues arising with forcing changes to existing contracts;
- shippers and pipelines should still be able to negotiate around any of these provisions and the circumstances in which this may be relevant;[19] and
- changes need to be made to the allocation agreements[20] that shippers have entered into at some delivery points to enable capacity to be traded.

The Commission is interested in hearing from stakeholders on these issues and has prepared a number of specific questions that it would like feedback on, which are set out in the box below.

Box 3.1 Standardisation of primary capacity contracts

- Is the list of operational, prudential and other contractual provisions that could be standardised appropriate? Or are there others that could be added, or should some be removed? What may not be suitable for standardisation?
- To what extent will changes need to be made to allocation agreements between shippers at delivery points to facilitate more trade?
- Is there value in also developing standard terms and conditions for hub services at the same time the terms and conditions are developed for transportation services?
- Is it feasible to develop a single standard for each term and condition or is a range of standards more appropriate for some provisions?
- Would it be possible to implement the standardised terms and conditions in GTAs that are already on foot?
- Should shippers and pipelines be able to negotiate alternatives to any of the standardised provisions? If so, in what cases would this be relevant?
- How long is it likely to take to develop standardised provisions?
- What are likely to be the key benefits, risks and costs to your business of implementing and using standardised primary capacity products? Estimates on the magnitude of these benefits and costs are welcomed.

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19 In the US, pipelines are not generally allowed to negotiate the non-price terms and conditions of access, but if a change is negotiated then the GTA must be submitted to FERC for approval. See Order 637 (2000).

20 Allocation agreements may be entered into by shippers using a common receipt point or delivery point and define how the gas delivered on a day is to be allocated between the shippers.

Finally, it is worth noting that the Commission is aware that steps have been taken by some pipeline operators to standardise their terms and conditions in new GTAs. The proposal outlined in this section is intended, however, to go further than these measures by:

- creating standards across pipelines, where it is technically feasible; and
- requiring standardisation (as opposed to voluntary standardisation), to the extent that this is appropriate.

3.2.2 Receipt and delivery point flexibility

Capacity rights on contract carriage pipelines tend to be defined on a point-to-point basis by reference to specific receipt and delivery points that primary capacity holders have firm access rights to. While most GTAs allow primary capacity holders to change their receipt and delivery points, they are usually required to obtain the pipeline operator's consent before doing so. This consent can usually be withheld for commercial or technical reasons.[21] Some GTAs may also limit the number of changes that can be requested in a year, or otherwise limit the changes that can be made.

Non-technical restrictions on changes to receipt and delivery points may be impeding secondary capacity trade because they limit the pool of potential sellers of secondary capacity, although in some cases the rationale provided by the pipeline owner for withholding consent may be technical (despite it actually being commercial). It is for this reason that the Commission recommended in the Stage 2 Draft Report that further consideration be given to whether it would be possible to provide primary capacity holders with greater flexibility to change receipt and delivery points.

The Commission has done some preliminary research on the approaches to capacity standardisation that have been used in the US and New Zealand. An overview of these approaches, which differ in a number of ways, is provided in Box 3.2.

The Commission has not assessed the appropriateness of these two approaches for the east coast and is interested in hearing stakeholders' views on whether there would be value in implementing either of them. The Commission is also interested in hearing whether there are any other approaches that could be used to provide greater flexibility in this area. One other potential option that was identified in submissions to the Commission's Stage 2 Draft Report is for the pipelines to develop zones that cover multiple delivery points and to allow changes in delivery points to occur relatively easily within those zones and to put in place rules that clearly define how changes across zones will be dealt with.[22]

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21 A change may be rejected on technical grounds if there is insufficient capacity at the relevant point or if the change will affect another shipper's firm capacity rights.

22 See APGA submission on the Stage 2 Draft Report, February 2016, p. 11.

Box 3.2 US and New Zealand approaches to delivery and receipt point flexibility

US approach[23]

In the US, the owners of interstate transmission pipelines are required to allow shippers to "segment" the length of their point-to-point capacity into component lengths under certain circumstances. Shippers are then able to sell segments off independently, with the potential to maximise the volume and value of capacity trading. Segmentation is subject to operational constraints.

The US regime also provides for some flexibility in receipt and delivery points. Pipelines are required to permit shippers access to "secondary" receipt and delivery points on a secondary firm basis (ie firmer than interruptible), in addition to a "primary" (firm) receipt point(s). Shippers therefore hold capacity rights for primary and secondary receipt and delivery points and have the flexibility to move between these points if capacity is available at no additional charge to what is set out in their GTAs.

New Zealand approach[24]

On the Vector Transmission Pipeline in New Zealand shippers can transfer all or part of their reserved capacity between receipt and delivery points but before doing so must obtain the pipeline owner's (Vector's), written consent. Under the Vector Transmission Code, which governs the operation of the pipeline, Vector can only reject the transfer on technical grounds.[25] The Code also requires Vector to give its decision as soon as reasonably practicable, but no later than five days after the request. It is also prevented from charging the shipper any fee for this service.

If consent is granted, then the shipper's reserved capacity at the relevant receipt and delivery point will be pro-rated by the price differential between the two locations in accordance with the following formula:

$RC_{NRPDP} = RC_{ORPDP} \times CRF_{ORPDP} \div CRF_{NRPDP}$

Where:

RC_{NRPDP} = the Reserved Capacity transferred to the new receipt point and delivery point;

RC_{ORPDP} = the Reserved Capacity transferred from the originating receipt and

23 FERC Order 637 (2000), section III.B; FERC Order 637-B; Code of Federal Regulations, Title 18, part 284.7d.

24 Vector Transmission Code, Effective 1 October 2015, clauses 4.25-4.30.

25 Changes to the Code are made if 75 per cent of shippers agree to a proposed change. See http://www.gasindustry.co.nz/work-programmes/vtc-change-requests-april-2015/change/

delivery points;

CR_{FORPDP} = the Capacity Reservation Fee at the originating Receipt Point and Delivery Point; and

CR_{FNRPDP} = the Capacity Reservation Fee at the new receipt point and delivery point.

In effect, this pro-rating keeps the pipeline operator whole in revenue terms.

Box 3.3 Receipt and delivery point flexibility

- Would it be feasible to implement the approaches that have been used in either the US or New Zealand, or is there a better alternative?
- If greater receipt and delivery point flexibility can be achieved, will allocation agreements need to change? If so, how significant are these changes likely to be?
- Should a pipeline operator's ability to reject a change be restricted to technical reasons only? If so, how should the criteria for rejection be developed?
- Should pipeline operators be required to respond to requests for receipt or delivery point changes within a specified period? If so, how long should they have?

3.3 Standardisation of secondary capacity contracts

In addition to standardising terms and conditions in primary capacity contracts in order to facilitate secondary trades, some work will need to be carried out to develop a standard set of operational, prudential and other contract terms and conditions for secondary capacity trades themselves. The contracts that will need to be standardised will depend on whether the secondary capacity trades are given effect through a bare transfer or an operational transfer. The differences between these are outlined in Box 3.2.

From a contractual perspective, the differences between a bare and operational transfer can be summarised are as follows:

- Bare Transfer: Under this transfer mechanism all the terms and conditions applying to the trade will be set out in an agreement between the primary capacity holder and the buyer (the Capacity Trade Agreement (CTA)).[26]

26 The Commission is considering whether a prohibition on bare transfers is appropriate, and welcomes feedback in this regard. See section 4.6.1.

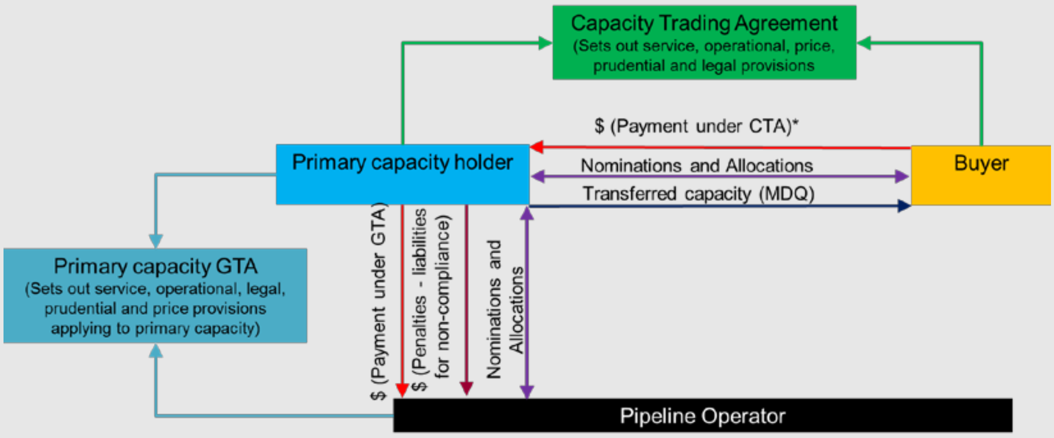
- Operational transfer: Under this transfer mechanism, the service, price and prudential provisions will be set out in the CTA entered into by the primary capacity holder and the buyer. The operational terms and the pipeline related prudential and other contractual provisions, on the other hand, will be set out in an agreement between the buyer and pipeline operator (the Operational GTA).[27]

Table 3.1 provides further detail on these differences.

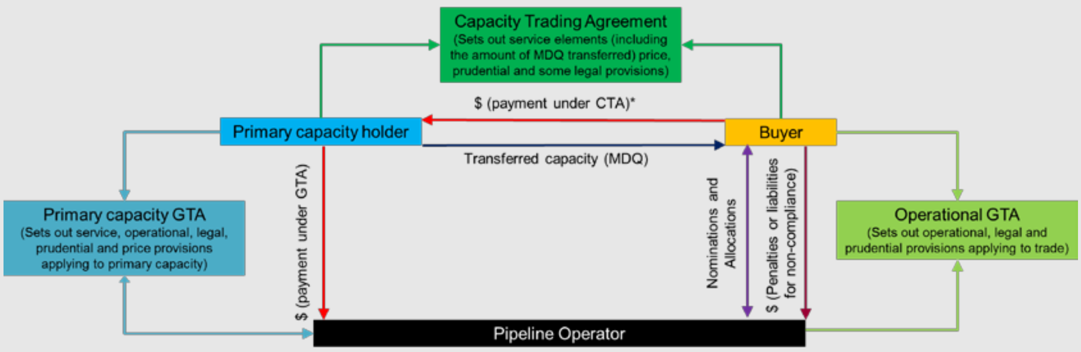
Box 3.4 Bare Transfers vs Operational Transfers

Historically, most of the capacity trades executed in the east coast have been given effect through bare transfers but operational transfers are starting to be used by parties using the APA and Jemena capacity trading portals. The figures below set out how the contractual, financial and operational elements of these two types of transfers work.

Bare Transfer



Operational Transfer



* Note the price paid under the CTA will not necessarily be the same price specified in the primary capacity GTA.

27 APA and Jemena are both using these types of transfers for trades executed through their respective portals. Under the processes APA and Jemena have put in place, buyers that want to purchase capacity can either enter into a new zero MDQ GTA with the pipeline operator if they do not have an existing contract, or have the terms in existing GTAs amended to include the provisions required to give effect to the operational transfer.

As these figures show, under both types of transfers, the primary capacity holder's capacity rights (or part thereof) are temporarily transferred to the buyer and the obligation to pay remains with the primary capacity holder. The key difference between these two forms of transfers is that:

- under the bare transfer, the *primary capacity holder* is responsible for:
  - making nominations on behalf of the buyer of the secondary capacity; and
  - complying with the operational and legal obligations imposed by the pipeline under its GTA, which means it is liable for, amongst other things, any failure by the buyer to comply with gas specification, imbalance or overrun provisions
- under the operational transfer, the *buyer of the secondary capacity* is directly responsible for making nominations and complying with the operational and legal obligations imposed by the pipeline, which are set out in the Operational GTA.

The operational transfer therefore results in lower administrative and monitoring costs for the primary capacity holder and greater anonymity for the buyer. Operational transfers can also impose costs on pipeline operators, which they may try to recoup.

Table 3.1: Contractual Differences - Bare Transfers versus Operational Transfers

<table>
<tr><th colspan="2">Contract provisions</th><th>Bare Transfer</th><th>Operational Transfer</th></tr>
<tr><td rowspan="5">Service and price terms</td><td>Type of service</td><td rowspan="13">Set out in the CTA entered into by the primary capacity holder and the buyer</td><td rowspan="5">Set out in the CTA entered into by the primary capacity holder and the buyer</td></tr>
<tr><td>Firm, as available or interruptible</td></tr>
<tr><td>Receipt and delivery points and technical restrictions at those points</td></tr>
<tr><td>MDQ, MHQ and renomination rights</td></tr>
<tr><td>Price and payment terms</td></tr>
<tr><td rowspan="6">Operational terms and conditions</td><td>Start of gas day and nomination cut-off times</td><td rowspan="6">Set out in an Operational GTA entered into between the pipeline operator and the buyer</td></tr>
<tr><td>Gas specification, gas quality and metering provisions</td></tr>
<tr><td>Service definition and the priority accorded to services</td></tr>
<tr><td>Nomination, scheduling, curtailment and allocation procedures</td></tr>
<tr><td>Imbalance, daily variance and overrun tolerance levels</td></tr>
<tr><td>Imbalance, daily variance and overrun penalty charges</td></tr>
<tr><td colspan="2">Prudential provisions</td><td>Set out in the CTA and the Operational GTA</td></tr>
<tr><td colspan="2">Legal terms and conditions (eg warranties, representations, possession and responsibility, title, control, liability and indemnities and force majeure)</td><td>Most provisions will be in Operational GTA but some will be in the CTA</td></tr>
</table>

The Commission is aware that AEMO has already carried out some work to standardise the CTAs that shippers can use for bare transfers. While this has been a positive development, the take-up of the contract has reportedly been relatively low to date. One potential reason for this is that the provisions in the CTA do not mirror the provisions in primary capacity holders' GTAs, which means that primary capacity holders may be exposed to some risks if using this CTA. This underscores the potential importance of standardising primary capacity contracts and, where relevant, adopting the same provisions in CTAs when trades are executed using a bare transfer.

For trades that are given effect through an operational transfer there may be less of a need to align the primary capacity holder's GTA and the CTA because the Operational GTA will set out the operational and many of the other contractual provisions that apply to the trade (see Table 3.1). That is not to say that some degree of standardisation would not be required in the CTAs and Operational GTAs, in order to facilitate a more liquid secondary capacity trading market. It is just that the terms and conditions in the Operational GTA do not necessarily need to align with the primary capacity holder's GTA.

The Commission is of the view that trades executed through the capacity trading platform and day-ahead auction should be given effect through an operational transfer. The reasons for this are two-fold:

- First, from a buyer's perspective the operational transfer will provide greater anonymity in terms of nominations and its use of the pipeline, which is likely to be of some importance if the buyer has purchased capacity from a competitor.
- Second, from a primary capacity holder's perspective the operational transfer will alleviate it of the costs that it would otherwise incur in administering the trade and monitoring the buyer's compliance with various obligations,[28] which should encourage more primary capacity holders to sell any spare capacity they have.

The Commission is also aware that this is the predominant way in which shorter-term capacity is traded through trading platforms in Europe and the US short-term capacity release program.[29]

The Commission is interested in hearing stakeholders' views on the issues outlined above and their responses to the questions set out in the box below.

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28 As outlined in Box 3.2, the buyer will make nominations directly to the pipeline and compliance with operational and other contractual provision obligations will be a matter for the buyer and pipeline. The administrative and monitoring costs should therefore be much lower for the primary capacity holder under this type of trade (eg because it will not have to make nominations on behalf of the buyer or monitor the buyer's compliance with operational and other contractual provision obligations).

29 Brattle Group, *International Experience in Pipeline Capacity Trading*, 5 August 2013, pp. 10-11.

Box 3.5 Standardisation of secondary capacity contracts

- To what extent should the operational, prudential and other contractual provisions in secondary capacity contracts (ie CTAs and, where relevant, Operational GTAs) mirror the standardised provisions developed for primary capacity trades?
- Are there any provisions in secondary capacity contracts that could not be standardised across pipelines?
- Are operational transfers the most effective way of dealing with trades executed through the capacity trading platform and the day-ahead auction, or are there other limitations with these transfers that the Commission should consider?
- If all capacity trades were to be given effect through an operational transfer, would standardising the operational, prudential and other contractual provisions in Operational GTAs obviate the need to standardise these terms in the primary capacity contracts?
- Is it feasible to develop a single standard for each term and condition or is a range of standards more appropriate for some provisions?
- If a deadline was to be established for an industry led process to deliver standardised provisions, how long should this timeline be?
- Is there value in also developing standard terms and conditions for secondary trades of hub services at the same time the terms and conditions are developed for transportation services?
- What are likely to be the key benefits, risks and costs to your business of implementing and using standardised secondary capacity products? Estimates on the magnitude of these benefits and costs are welcomed.

4 Capacity trading platform(s) and secondary trade information provision requirements

In the Stage 2 Draft Report, the Commission recommended that pipeline operators be required to develop a capacity trading platform (either individually or jointly) that shippers could use to anonymously post buy or sell offers for secondary capacity up to the nomination cut-off time.

The Commission also proposed in the Stage 2 Draft Report that information on the prices struck in secondary trades be published, along with information on the key terms and conditions that may have affected the prices struck in those trades. This requirement would apply to both trades struck through the capacity trading platform, and also any trades struck bilaterally outside of the platform.[30]

These recommendations are discussed in further detail in the remainder of this chapter, which commences with an overview of the Commission's rationale for making the recommendations. The chapter then focuses on how the capacity trading platform(s) and secondary trading information provision requirements could work in practice, with particular emphasis placed on:

- the services that could be sold through the capacity trading platform(s) and who will be capable of selling those services;
- the way in which trades could be executed through the platform(s) and the implications this may have for service standardisation, settlement and prudential arrangements, contractual relationships and other operational aspects of the trade;
- whether a single trading platform or multiple platforms should be developed;
- who should be responsible for developing and operating the platform if a single platform is developed; and
- what secondary capacity trade information should be published and by when.

4.1 Rationale for the recommendations

Although some steps have been taken over the last two years to try to facilitate more capacity trading,[31] there are, as stakeholders have pointed out through this review,

30 It is for this reason that this proposal goes beyond what was provided for in the Enhanced Information for Gas Transmission Pipeline Capacity Trading rule change. It also goes beyond the proposal in Information Provision work stream that pipeline operators be able to publish, on a voluntary basis, their firm and as available tariffs on the Bulletin Board, because it requires information on actual capacity sales to be reported.

31 For example, APA and Jemena have both established capacity trading websites, which enable buyers and sellers of capacity (including the pipelines) to list bids and offers for capacity on their respective pipelines and to execute trades bilaterally using standardised terms and conditions. The

still a number of factors that are limiting the ability of prospective shippers to access competitively priced secondary capacity, including:

- A lack of information on the existence of prospective buyers and sellers of capacity, resulting in high search and transaction costs, particularly for short-term capacity trades. Buyers and sellers are unable to find each other, and so trades that would otherwise occur do not.

- Limited information on the market for both buyers and sellers. This may lead to additional costs as the parties attempt to understand the market value and to ensure that they are being offered capacity on a non-discriminatory basis.

Additionally, GTAs are typically customised, which may be resulting in difficulties in quickly and inexpensively determining the value of the capacity rights being sold in order to make a trade. Customisation also limits the depth of the market as a range of different products splits the market. Addressing this issue through standardisation is discussed in chapter 3.

The capacity trading platform(s) and secondary trading information provision recommendations identified are intended to address the information and transaction cost issues by:

- reducing search and transaction costs for shippers because they could simply and anonymously post or review buy- or sell-offers on the platform(s), reducing costs and speeding the process;

- allowing shippers to quickly assess whether a future trade is consistent with historical transactions, because of the information on trades provided through the platform; and

- providing shippers with confidence that future secondary trading transactions are non-discriminatory. Unlike the current capacity trading facilities operated by the pipeline owners, publishing the price of the trades, plus any information relevant to that price, would give shippers confidence that the access price and conditions were reasonable and being provided on a non-discriminatory basis. Shippers would be less reluctant to enter into a trade, and small shippers may consider their negotiation positions strengthened, reducing barriers to entry and enhancing competition. Anonymity of trades posted through the trading platform might also help in this regard.

The remainder of this chapter focuses on how the capacity trading platform(s) and secondary trade information provision requirements could work in practice.

Gas Supply Hub also includes a capacity listing service, which feeds directly into the Bulletin Board.

4.2 Services that could be sold through the capacity trading platform(s)

In principle, the capacity trading platform(s) could be used by primary capacity holders to sell a range of pipeline related services on a firm, as available or interruptible basis, including:

- transportation services, such as forward haul, backhaul or bi-directional services;
- hub services, such as compression and redirection services; and
- storage services, such as park services or park and loan services.

It could also, in principle, be used by pipeline operators to sell these services on a firm basis using any spare primary capacity they may have.

While the scope of services that could be sold on the trading platform(s) is quite broad, there may be value in trying to avoid any unnecessary complexities, at least in the early stages of the development of the platform(s). This could be done by limiting the services that could be sold through the platform(s) to firm transportation and hub services. As confidence in the trading platform(s) grows, these restrictions could be relaxed and other services added to the platform(s).

The Commission is interested in hearing stakeholders' views on the scope of services that could be sold through the capacity trading platform(s), who can sell the services and any restrictions that may be required in the initial stages. Some specific questions that the Commission is seeking feedback on are set out in the box below.

Box 4.1 Services that could be sold through the capacity trading platform(s)

- Should the capacity trading platform(s) be developed to enable:
  - transportation, hub and pipeline storage services to be sold, or should it only provide for a sub-set of these services?
  - services to be sold on a firm, as available and interruptible basis, or should it only provide for firm services to be sold?
  - primary capacity holders and pipeline operators to sell these services, or should it only provide for primary capacity holders to sell on the platform(s)?
- Is there likely to be any value in limiting:
  - the services that can be sold through the capacity trading platform(s) in the initial stages of its development?
  - who can sell services through the capacity trading platform(s) in the initial stages of its development?
- If so, what limitations should apply and how long should they apply for?

4.3 Method to execute trades and the contractual, financial and operational elements of trades

Trades executed through the capacity trading platform(s) could occur via:

- an electronic exchange, which would allow shippers to anonymously submit buy or sell orders (bids or offers) for capacity and for those orders to be matched by the exchange; and
- for those products offered on a more bespoke basis, a listing service, which would allow shippers to list any capacity they wish to buy or sell and the price at which they are willing to do so, but for any decision to enter into a trade to be determined subsequently through bilateral negotiations. Information on the terms on which these bilateral negotiations were completed would then be required to be posted to the platform on an anonymous basis.

The first of these options is akin to the approach used in the Gas Supply Hub (GSH) for gas trades and the PRISMA capacity trading platform in Europe. The second option, on the other hand, is akin to the approach that APA and Jemena currently use on their respective capacity trading portals and the pipeline capacity listing service that has been built into the GSH.

The Commission favours the use of an electronic exchange for the majority of trades, particularly where the capacity being traded is standardised.

In order to implement an exchange based trading mechanism, consideration will need to be given to the:

- types of standardised services that will be sold through the exchange;
- contractual arrangements that will need to be put in place between the primary capacity holder, the buyer, the exchange and the pipeline operator; and
- settlement and prudential arrangements that will need to be put in place.

To engender more discussion on this option, the Commission has given some preliminary thought to these issues, which are outlined below.

4.3.1 Standardised services

To maximise the potential pool of buyers and sellers of capacity via the exchange, some degree of standardisation will be required across the following service dimensions:

- type and firmness of the service;
- points between which capacity will be provided (contract path);
- capacity to be made available (including any trading rights that may be required for trades involving supply to an STTM); and
- contract length.

Standardising these service dimensions, along with the operational, prudential and other contractual provisions in CTAs and Operational GTAs (see section 3.3) will result in more fungible capacity products that are capable of being traded through an exchange.

In a similar manner to the standardisation recommendation, the Commission is of the view that industry should be involved in determining the appropriate level of service standardisation for exchange traded products. The Commission has nevertheless given some preliminary consideration to how these service dimensions could be standardised to try to maximise the level of trade and align the products with those sold through the GSH. The results of this consideration are summarised in Table 4.1.

Table 4.1 Potential Standardisation of Service Dimensions

Service Dimension	Potential standardisation
Type and firmness of service	The standardised product could (at least in the initial stages) be limited to a firm forward haul and firm bi-directional transportation services.
Contract path	The contract paths that are likely to attract most interest at this stage are: • Wallumbilla to Brisbane • Wallumbilla to Moomba (or Moomba to Wallumbilla) • Moomba to Sydney (or Sydney to Moomba) • Moomba to Adelaide (or Adelaide to Moomba) • Culcairn to Sydney (or Culcairn to Moomba) • Longford to Sydney via the Eastern Gas Pipeline • Port Campbell to Adelaide Over time other contract paths may become more relevant and separate products developed.
Capacity (MDQ)	In a similar manner to the GSH, a minimum MDQ parcel size could be adopted, but some thought would need to be given to the appropriate size. To eliminate unnecessary complexity and make the traded product more fungible the capacity would potentially be provided at a constant hourly rate and with no renomination rights.[32] For any trades involving the supply of gas to an STTM hub, the trading rights associated with the capacity will also need to be transferred to the purchasing party, or AEMO will need to be informed of this transfer.
Contract period	The term of the standardised products would ideally be aligned with the GSH products, which currently include a day-ahead product, a daily, weekly and monthly product. The only product that would not be possible to trade through the platform(s) is a balance-of-day product, because contracted but un-nominated capacity will have already been auctioned.

32 It may be appropriate that having no renomination rights for secondary capacity traded through the exchange, because some primary capacity does not have renomination rights. If a primary capacity holder wanted to sell a product with renomination rights it could do so through the listing service, as discussed in more detail in section 4.3.2. Alternatively, it may be appropriate to standardise renomination rights in primary capacity, and then use this standard for secondary capacity.

4.3.2 Contractual arrangements

Before using the exchange, primary capacity holders and prospective buyers will have to agree to be bound by the capacity trading platform's exchange agreement, which will set out the terms that govern, amongst other things, the use of the trading platform, the trading process, settlement and prudential requirements.

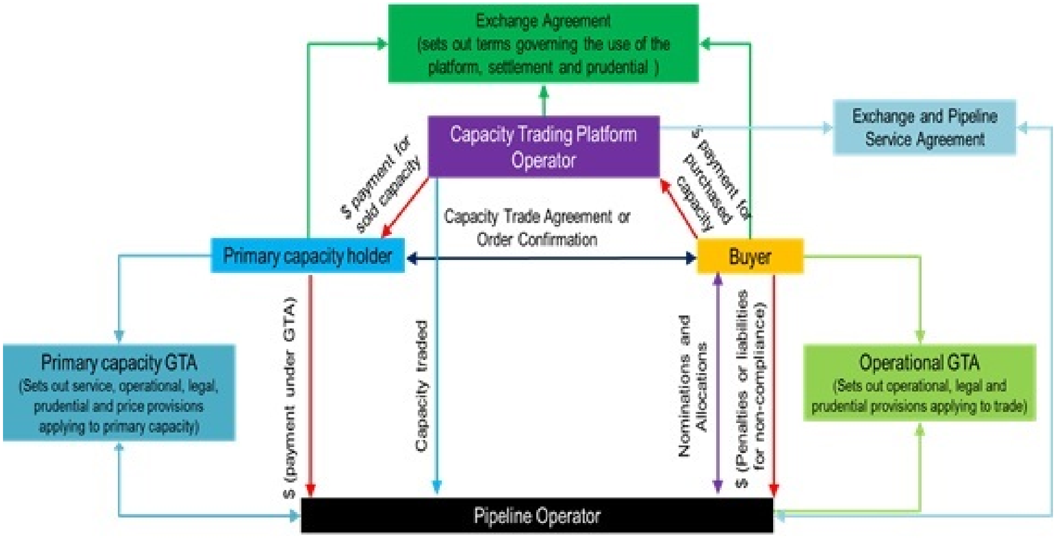
If the trade is to be given effect through an operational transfer, as the Commission proposes (see section 3.3), then a prospective buyer will also need to enter into an Operational GTA with the relevant pipeline operator prior to entering into the trade.[33] This agreement will set out the operational and other contractual provisions that the buyer will have to comply with when using the traded capacity and will also set out any prudential requirements with which the buyer must comply.

If the capacity trading platform is to operate across multiple pipeline operators and/or be operated by someone other than the pipeline operator, then service agreements between the platform operator and the pipeline operators will also need to be entered into. Such agreements will provide for, amongst other things, the platform operator to inform the pipelines of any trades that occur so that the pipeline can make the relevant adjustments to the primary capacity holder's capacity holding and the buyer's capacity holding.

The capacity trade itself could either be given effect through an order confirmation or through a standard CTA.

Further insight into the contractual relationships that are likely to emerge under exchange traded agreements as well as the financial and operational obligations can be found in Figure 4.1.

Figure 4.1 Exchange Trade Contractual, Financial and Operational Relationships



33 Another option may be to have the Operational GTA come into effect at the time the CTA is entered into, but this is something that would have to be considered more closely.

4.3.3 Settlement and prudential arrangements

A critical element of an exchange based trading mechanism is the settlement and prudential arrangements. In a similar manner to the GSH, the Commission would expect:

- all trades that are executed on the exchange to be financially settled by the platform operator, with the buyer to make the relevant payment to the platform operator and the platform operator to then pay the seller;
- the administrative procedures relating to the settlement process to be clearly defined in the relevant exchange agreement; and
- the prudential requirements and credit support to be clearly defined in the relevant exchange agreement.

Quite a lot of work has already been done by AEMO in the context of the GSH to develop standard settlement procedures and prudential requirements, which would ideally and to the extent relevant form the basis for the trading platform.[34]

In relation to any operational related financial obligations associated with the traded capacity (eg imbalance or overrun penalties), the buyer would be expected to pay the pipeline operator in accordance with the terms of the Operational GTA.

4.3.4 Questions

The Commission is interested in hearing stakeholders' views on the use of an exchange traded mechanism in the capacity trading platform(s). It is also interested in hearing whether there value in implementing such a mechanism at this stage, or if a simpler approach should be taken in the early stages of the development of the platform(s), as some submissions to the Stage 2 Draft Report suggested. One such submission noted that rather than implementing an electronic exchange from day one, bids for, or offers of, capacity could be made available to the market in a less costly way through an open season or an auction, with capacity then allocated to the highest bidder(s). This submission also noted that as the level of activity increased over time, there may be more of a justification to invest in an automated exchange system.[35] Another submission noted that complexity could be minimised by removing the requirement for the trading platform(s) to facilitate payments between shippers.[36]

Additional questions that the Commission is interested in getting feedback on are set out in the box below.

34 See AEMO, Gas Supply Hub Agreement, 28 May 2015.

35 See APGA submission on the Stage 2 Draft Report, February 2016, p. 10.

36 See Stanwell submission on the Stage 2 Draft Report, February 2016, p. 2.

Box 4.2 Exchange based trading

- Is there likely to be sufficient demand to introduce exchange based trading from day one, or should a staged approach be implemented as suggested in some submissions? If a staged approach is considered more appropriate, please explain why and outline how the staged approach could work in practice.
- Apart from the factors outlined in Table 4.1 are there any other aspects of the capacity products that would need to be standardised to attract sufficient interest in the products?
  - Are the contract paths identified in Table 4.1 likely to be appropriate in the initial stages of the life of the platform(s), or should it be more limited or expansive?
  - Is there any value in establishing a minimum parcel size for capacity trades?
  - Should the standard product be assumed to have no renomination rights?
- How long is it likely to take to develop standardised services and should industry take the lead on this?
- Are there any other contractual or settlement and prudential issues that the Commission should consider, or any other matters more generally that the Commission should take into account when forming its view on whether to recommend exchange based trading?
- What are likely to be the key benefits, risks and costs to your business of implementing and using an exchange based capacity trading platform? Estimates on the magnitude of these benefits and costs are welcomed.

4.4 Single or multiple platforms

In the Stage 2 Draft Report, the Commission recommended that pipeline operators be accorded responsibility for developing and operating either:

- their own capacity trading platforms, which would result in multiple trading platforms being operated across the east coast; or
- a single capacity trading platform, which would cover all the contract carriage pipelines in the east coast and be jointly operated.

Another option that the Commission has subsequently identified is to expand the scope of the GSH exchange trading system to include a capacity trading platform and accord AEMO responsibility for the operation of this platform. This option would build on AEMO's current proposal to use the GSH exchange to establish a voluntary market for the trade of hub services as part of the Optional Hub Services model.

Setting aside the question of who should be accorded responsibility for operating the platform (which is discussed in section 4.5), a single capacity trading platform that covers all contract carriage pipelines in the east coast would be more consistent with the Commission's objective of, where possible, harmonising the trading arrangements across the east coast. A single capacity trading platform is also likely to:

- cost less to implement and operate over time;
- offer shippers greater co-ordination benefits and visibility over the options available across the market, which will become increasingly important as the Northern and Southern GSHs evolve;[37]
- facilitate more effective competition between shippers that are offering to sell capacity on either the same transportation route or on competing routes;[38] and
- foster greater liquidity in secondary capacity trading.

While there are numerous benefits to having a single trading platform, the Commission is interested in hearing whether stakeholders have an alternative view on the relative merits of the two options, or if there are any other matters it should take into account, such as the potential for multiple platforms to result in greater innovation.

Box 4.3 Single or multiple trading platform

- Is a single trading platform likely to be the most effective and efficient way for shippers to trade capacity, or should further consideration be given to the multiple trading platforms option?
- Are there any other factors that the Commission should consider when deciding between the single and multiple trading platform options that have not been discussed?

37 For example, if a shipper had spare capacity to sell on the SWQP and the MAPS it would only have to list the capacity on one platform if a single capacity trading platform was implemented, while under the multi-platform option it would have to list it on two platforms (ie APA's and Epic's platforms). Prospective users would also benefit from only having to look at a single platform, particularly if they want to transport gas across multiple pipelines and/or are able to use competing routes.

38 For example, a shipper trying to sell capacity between Moomba and Adelaide would compete with other shippers selling capacity on the MAPS and may also compete with shippers selling capacity on the SEAGas Pipeline if the buyer can access gas in either Moomba or Port Campbell.

4.5 Responsibility for operating the platform(s)

If a decision is made to implement a single capacity trading platform, then a decision will also have to be made about whether pipeline operators should be accorded responsibility for operating the platform on a joint basis, or if it should form part of the GSH exchange trading system and be operated by AEMO.

In submissions to the Stage 2 Draft Report, some pipeline operators indicated an interest in taking on this responsibility, while other stakeholders suggested that consideration be given to according this role to AEMO.[39] One stakeholder also noted that if pipeline operators were to develop the platform, then they should be allowed to recover the costs on a cents per GJ basis and that the AER could have a role in approving pipeline costs, in a similar manner to the STTM MOS cost recovery arrangements.[40]

One potential benefit of having the pipeline operators directly involved in running the platform is that they may be more pro-active in facilitating the trades and in standardising arrangements across the pipelines. They might also be best placed to assess whether all trades have been reported, given they have the closest knowledge of the day-to-day operation of the pipelines. They would also, as one stakeholder noted, be able to leverage existing systems.[41] A potential downside to this option, however, is that pipeline operators will have direct visibility over the price that shippers are willing to pay for capacity. This may be of concern to shippers if they later want to negotiate with the pipeline operators to access primary capacity because the pipeline operator will already have an insight into their willingness to pay.

This issue does not arise under the GSH option, which would be independently operated by AEMO. The other benefits that the GSH option is likely to offer relative to the pipeline operator option are that:

- shippers would be able to co-ordinate their gas, hub services and transportation requirements through one platform;
- shippers would be subject to one set of prudential arrangements and any collateral posted for gas purchases could be applied to capacity trading and vice versa; and
- if the trading platform is to include an exchange function, it is likely to cost less to implement because the IT systems, prudential, settlement and billing arrangements required to provide this function have already been established and further work would only be required to add new products.

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39 See for example, APGA, Submission on the Stage 2 Draft Report, February 2016, p. 10, APA, submission on the Stage 2 Draft Report, February 2016, p. 1, Jemena, submission on the Stage 2 Draft Report, February 2016, p. 11, Stanwell, submission on the Stage 2 Draft Report, February 2016, p. 3.

40 See APGA submission on the Stage 2 Draft Report, February 2016, p. 11.

41 See APGA, submission on the Stage 2 Draft Report, February 2016, p. 11.

Although the GSH option offers many benefits, the cost of using this platform are not inconsequential, with users currently required to pay fee of $14,500 per year for a single user trading participant licence. Having said that, the Commission is aware that 22 market participants are already trading participants[42] and that this number is likely to grow when the Moomba GSH commences. As a result, the incremental cost of using the GSH for capacity trading may be relative low for these market participants.

As the preceding discussion highlights, there are costs and benefits associated with both AEMO and pipeline operators running the capacity trading platform(s). The Commission is yet to form a view on which of these two options is preferable and so is interested in hearing stakeholders views on the two and if there are any other costs and benefits that the Commission should take into account when deciding between these two options. Some specific questions that the Commission is interested in getting feedback on are set out in the box below.

Box 4.4 Operational responsibility for trading platform(s)

- If a single trading platform was to be adopted, should the platform form part of the GSH, or should the pipeline operators be required to jointly develop a platform?
- If pipeline operators were to be accorded responsibility for jointly developing a platform:
  - are there likely to be any conflicts of interest with the pipeline operators taking on this role?
  - what costs are likely to be incurred in developing the platform and getting the relevant IT systems and protocols in place to give effect to trades?
  - how would the costs of using the platform be determined?
  - should the AER have a role in approving the fees charged by pipelines to recover the costs of operating the platform, as suggested in one submission?
- If the GSH option was to be adopted:
  - are the participation fees likely to deter shippers from using this service?
  - are there any other costs or factors that would need to be considered under this option (eg additional IT arrangements to communicate with pipelines)?

42 AEMO Website, http://nemweb.com.au/Reports/Current/GSH/GSH_Participants/

4.6 Bilateral trades outside of the platform

The Commission had previously suggested that although pipeline owners would be required to implement the capacity trading platforms, it would not necessarily be the case that shippers would be required to make all capacity trades through the platform.[43] That is, shippers would still be able to make bilateral trades outside of the platform.

Despite wanting to encourage as much trade as possible to occur through the capacity trading platform to enhance liquidity, the Commission recognises that there may still be a role for bilateral trades, and that forcing all trades through the platform may discourage some participants from trading. This could occur for a number of reasons, including:

- the fee to use the capacity trading platform(s) or the operational transfer being viewed by potential trading parties as too high for one-off trades;
- the prospective buyer does not have an Operating GTA in place with the pipeline operator and has insufficient time to enter into such a trade; and
- the capacity being traded being too bespoke (despite the level of capacity standardisation created through the standardisation process) to be effectively traded through an exchange.

Nevertheless, the Commission remains concerned that allowing bilateral trades outside of the platform does not guarantee non-discriminatory access to capacity. Counter-parties would be able to discriminate against one another, by choosing against entering into a bilateral trade, or pricing that trade differently than would otherwise be the case. In this sense, allowing the continued use of bilateral trades may favour incumbents and prevent the entry of smaller participants that these reforms are designed to achieve.

In the US, bilateral trades are allowed, but in most circumstances shippers must post prospective bilateral trades on capacity trading websites, so that other shippers (buyers or sellers) have the opportunity to beat the pre-arranged price.[44] Exemptions to this are when:

- the pre-arranged price has been agreed between the shippers at the maximum regulated rate (which is not currently relevant in the Australian context as there is no regulated price for secondary capacity trades); or
- when capacity releases are for less than one month, which the Commission understands is a materiality threshold.

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43 AEMC, *East Coast Wholesale Gas Market and Pipeline Frameworks Review*, Stage 2 Draft Report, 4 December 2015, p. 63.

44 *Code of Federal Regulations*, Title 18, part 284.8a.

The Commission welcomes feedback on whether such an approach is appropriate in eastern Australia, and under what circumstances.

To be clear, regardless of whether information on prospective trades arranged outside of the capacity trading platform is published (ie, the prospective terms and conditions of the trade), information on trades executed outside of the platform (ie, the actual terms and conditions of the trade) would not be exempt from the information provision requirements discussed in section 4.7.

Box 4.5 Bilateral trades outside of the platform(s)

- Is the issue of discriminatory access to secondary capacity likely to be problematic if bilateral trades continue to occur?
- Should prospective bilateral trades arranged outside of the capacity trading platform be required to publish information on the prospective terms and conditions of that trade, to enable other prospective buyers or sellers to compete for that capacity?

4.6.1 Bare transfers

The Commission has previously raised the possibility of prohibiting bare transfers. The rationale for this includes:

- bare transfers arranged outside of the capacity trading platform may allow shippers to circumnavigate the information provision requirements discussed in section 4.7; and
- bare transfers require the buyer to reveal to the seller operational information (in order that the seller can than nominate capacity on behalf the buyer). This may result in commercially sensitive information being revealed to the seller and may discourage the buyer from entering into the trade (particularly if the counter parties are competitors in a related market). Issues relating to commercially sensitive information that arise from the information reporting requirements discussed in section 4.7 might be addressed through information aggregation or delayed publication. Neither of these two approaches are possible in the case of bare transfers, which inevitably reveal specific information to the seller prior to the nomination cut-off time.

The Commission notes that in regard to the first of these rationales, the concern that information would not be reported could be addressed through making the information provision requirements discussed in section 4.7 apply irrespective of whether the trade is given effect through a bare or operational transfer. Nevertheless, the Commission remains concerned about bare transfers discouraging trade due to the issue of commercially sensitive information.

The Commission received feedback from some stakeholders stating that they highly value bare transfers.[45] As a result, the Commission is keen to understand to extent to which stakeholders consider it an issue that commercially sensitive information may be revealed to counter-parties as a result of bare transfers, and any approaches that stakeholders may have to address this issue. Possible options include:

- prohibiting bare transfers on the grounds that they may discourage otherwise efficient trade because they require the revelation of commercially sensitive information to counter-parties; or
- if bare transfers are offered by counter-parties, requiring them to also offer operational transfers (with equivalent terms and conditions). This would provide shippers the flexibility to use bare transfers if both counter-parties prefer this approach, but give either party the ability to require an operational transfer.

Box 4.6 Bare transfers

- How frequently would counter-parties be discouraged from undertaking a trade because it required that commercially sensitive information to be revealed through a bare transfer?
- How might this issue be addressed?

4.7 Secondary trade information reporting requirements

The proposed reporting obligations would require sellers and/or buyers of secondary capacity to report the prices struck in all secondary capacity trades entered into after the obligation takes effect, irrespective of whether the trade is carried out:

- on a bilateral basis or through the trading platform; and
- as an operational transfer or bare transfer (if such transfers are permitted).

To enable market participants to understand the prices struck in these trades, information on a number of the terms and conditions specified in these trades will also need to be published. While one option may be to require the publication of the underlying contract, a less intrusive approach would involve reporting the terms and conditions that have the greatest bearing on price, which include the following, many of which may have been standardised as discussed in chapter 3:[46]

- the firmness of the pipeline operator's obligation to provide the service and the priority accorded to that service (eg firm, as available or interruptible);

45 See submissions on the Stage 2 Draft Report, February 2016: ERM, p. 6; Stanwell, p. 4; AEMO, p. 2.

46 The Commission is aware that other terms and conditions can also affect the price (for example, penalty charges, credit support and prudential requirements), but they tend to have less of an influence on price than those listed, which is a relevant consideration given that collating and storing this information is not costless.

- the type of service to be provided (eg forward haul, backhaul or bi-directional transportation services);

- the maximum capacity that the shipper can nominate on a daily basis and on an hourly basis;

- the receipt and delivery points (or zones) specified in the contract;

- any additional flexibility that the shipper may have under the contract to manage its use of the pipeline or liabilities,[47] or additional restrictions that the shipper may be subject to relative to the pipeline's standard terms and conditions;

- when the contract was entered into and the duration of the contract;

- the base year used to measure the price and the price escalation mechanism specified in the contract (eg inflation based or some other mechanism); and

- if the contract is related to a capacity expansion.

It would also be relevant to publish any variations from the standardised operational, prudential and other contractual provisions. This highlights the importance of the standardisation process outlined in chapter 3, because it will reduce the amount of information to be reported and the information that is to be reported will be relatively standardised.

The list of terms and conditions outlined above is broadly in line with the information that FERC requires to be published for secondary capacity trades (as well as primary capacity trades) (see Box 4.7). One piece of information that FERC requires pipelines to report, which is not in the list above, is the identity of the trading parties. FERC's rationale for requiring this information to be reported is captured in the following statement:[48]

> "The disclosure of the identity of the shipper in each transaction, together with price and capacity path information on each shipper's transaction, is necessary to enable shippers and the Commission [FERC] to effectively monitor for potential undue discrimination or undue preference. The disclosure of all of the transactional information without the shipper's name will be inadequate for other shippers to determine whether they are similarly situated to the transacting shipper for purposes of revealing undue discrimination or preference. For example, the disclosure of the name of the shipper in the transaction may help other shippers to determine whether a transacting shipper may be entitled to a discount because it is fuel-switchable. In addition, the disclosure of the identity of shippers in the transactional reports enables shippers and the Commission to determine how much total firm capacity (both pipeline capacity and

47 For example, imbalance and overrun provisions, renomination rights, imbalance trading rights or options to increase contracted quantities, the directional flow of gas and/or the term of the contract

48 FERC, Order No. 637, 9 February 2000, pp. 184-185.

released capacity) a shipper holds on each individual pipeline, as well as on connecting pipelines. Such information is important for examining market power and whether a shipper has sufficient market presence to unduly discriminate."[49]

Box 4.7 Reporting obligations in the US

In the US, interstate gas transmission pipelines are required by section 284.13 of the Code of Federal Regulations to report the following information for secondary (and primary) capacity trades at the time the contract is executed:

- the identity of the trading parties;
- the prices payable under contract and, if applicable, the maximum rate;
- the duration of the contract;
- the receipt and delivery points and zones or segments covered by the contract;
- the contract quantity;
- special details pertaining to the contract including information on any aspect where the contract deviates from the standard terms and conditions; and
- any affiliate relationship between counter parties.

In Order 637, which gave rise to this regulation, FERC noted that the disclosure of this detailed information was:[50]

> "necessary to provide shippers with the price transparency they need to make informed decisions, and the ability to monitor transactions for undue discrimination and preference."

While the regulatory arrangements in the US differ from those in Australia, it is still relevant to consider whether there would be any value in requiring the identity of shippers to be reported and, if so, the effect it may have on them.

It is also relevant to consider whether the provision of some of the other terms and conditions listed above may reveal who has entered into the trade. For example, if a shipper is the only user of a delivery or receipt point then the publication of this information would, in effect, enable the counter-parties to be identified even if the

49 Undue discrimination was described by FERC in this order as being particularly a problem for "captive customers vulnerable to pipelines' market power". We understand that FERC was also concerned about pipeline operators engaging in undue discrimination to favour their affiliates. See FERC, Order No. 637, 9 February 2000, p. 33.

50 FERC, Order No. 637, 9 February 2000, p. 184.

reporting obligations did not extend this far. The revelation of this information may not be an issue in some cases, but in other cases it may:

- adversely affect the shipper's position in the upstream or downstream market that it competes;[51] and
- weaken the shipper's negotiating position when purchasing or selling gas and other natural gas services (eg storage services).[52]

Any decision to publish the identity of the contracting parties, or any other information that may reveal their identity, must therefore be carefully considered.

The Commission is aware from the submissions received to date that shippers have significant concerns about the identity of trading parties being revealed, because of the commercially sensitive nature of this information.[53] Concerns were also raised about the potential to identify trading parties even if the information was not required to be published, with one stakeholder noting that anonymity will be difficult to maintain in practice.[54] To address this issue, one stakeholder suggested adopting a similar principle to that employed in the EU, which is that information for single final customers and production facilities be published in an aggregate format.[55]

The Commission is interested in hearing more from stakeholders on the issues outlined above. Some other specific questions that the Commission is interested in obtaining stakeholders' views on are set out in the box below.

51 For example, the publication of information on a gas fired generator's purchase pr sale of day-ahead capacity may affect competition in the NEM if it results in more information on the generator's supply plans being available that what is available for other competitors in the NEM.

52 For example, the publication of information on all the capacity a particular shipper has reserved in the east coast would mean gas producers and providers of other natural gas services would be able to readily determine whether any threat to bypass the provider is credible.

53 See for example, Santos, submission on the Stage 2 Draft Report, February 2016, p. 6, Stanwell, submission on the Stage 2 Draft Report, February 2016, pp.4-5 and EnergyAustralia, submission on the Stage 2 Draft Report, February 2016, pp.4- 5.

54 EnergyAustralia, submission on the Stage 2 Draft Report, February 2016, p. 5.

55 Esso, submission on the Stage 2 Draft Report, February 2016, p. 2.

Box 4.8 Type of information to be published

- Should the terms and conditions that have the greatest bearing on price be published alongside the prices specified in the trades, or should the entire contract be published?
- If only those terms that have the greatest bearing on price are to be published, is the list of terms and conditions set out in this section appropriate, or are there others that should be considered?
- From a price discovery process, is there value in having information on more bespoke arrangements or would it be appropriate to limit the reporting requirement, at least for secondary trades, to standardised products?
- Should the reporting obligation extend to the identities of the contracting parties?
  - If so, please explain what value you think this will provide.
  - If not, what level of aggregation would be required to prevent the identities of trading parties being revealed? For example, would it be as simple as reporting the delivery or receipt point at a zonal level, or are there other elements of the reported information that would need to be elevated or aggregated?
- Apart from the identities of the trading parties, are there any other terms and conditions that have been identified that are considered confidential?
- Do the reporting obligations in the NGR need to prescribe the type of information that shippers are required to report, or could this be left to the Bulletin Board Procedures with some guidance provided in the NGR?
- What costs are counter parties to secondary capacity trades likely to incur in reporting this information?
- How might confidential information be protected even if published on an anonymous basis (eg, agglomerated information)?
- What are likely to be the key benefits, risks and costs to your business of providing information on secondary capacity trades? Estimates on the magnitude of these benefits and costs are welcomed.

4.8 When the information should be reported

The proposed reporting obligation for secondary capacity trades will need to state when the information is to be reported by the sellers (or buyers) of secondary capacity. The options in this case include:

(a) reporting the information at the time the transaction is entered into (or shortly thereafter); or

(b) delaying the reporting of information (or a sub-set of the information) for a defined period (eg for one to five days after the transaction is entered into for short term trades, or potentially longer for longer term trades).

From a price discovery perspective, the information would ideally be reported at the time the trade is entered into (or shortly thereafter) so that it can inform the pricing of further trades. Reporting the information this quickly may, however, raise confidentiality concerns, particularly if a decision is made to report the trading parties' identities. There may therefore be case for delaying the release of some of the information for a defined period.

The Commission is interested in hearing stakeholders' views on these two options and their responses to the questions set out in the box below.

Box 4.9 When should the information be reported

- Should the information on secondary capacity trades be reported at the time of the trade, or with a lag? If a lag is to be allowed:
  - Should the lag apply to all the information, or just to those aspects that are considered confidential?
  - How long should the lag be?
  - Should a different lag apply for short term capacity compared to long term capacity trades?
- Are there any other practical considerations or matters that the Commission should take into account when assessing the two options?

4.9 Services that the reporting obligations should apply to

In the Stage 2 Draft Report, it was envisaged that the reporting obligations would only apply to transportation services. The nature of the obligations is such though that they could easily be extended to other services provided by pipeline operators, such as hub services and storage services, if the benefits of reporting this information were expected to outweigh the costs. The Commission is interested in hearing stakeholders' views on this issue.

Box 4.10 Services that the reporting obligations should apply to

- Should the reporting obligations be expanded to include secondary sales of:
  - hub services?
  - storage services?
  - any other services provided by pipelines?
- What terms and conditions would need to be reported alongside the prices of these services?

5 Auction for contracted but un-nominated capacity

In the Stage 2 Draft Report, the Commission recommended that an auction for contracted but un-nominated capacity with a regulated reserve price be introduced. This chapter will discuss how such an auction might be designed, given the characteristics of the market for day-ahead pipeline capacity and the characteristics of the rights that will be traded. The chapter will:

- describe the rationale for an auction for contracted but un-nominated capacity;
- discuss key elements of the auction design; and
- (where this has been determined) explain the Commission's preliminary preference for each design element.

Chapter 6 will discuss issues surrounding the practical implementation of the auction.

5.1 Rationale for the auction

The proposed auction for contracted but un-nominated capacity is part of a package of reforms intended to improve the liquidity of gas trading at hubs, by promoting shorter-term trades in pipeline capacity. Currently, a shipper that has contracted capacity on a pipeline is typically required to nominate their usage for the next day by a defined time on the day before. Typically, after a pre-determined nomination cut-off time, any capacity that the shipper has contracted but not nominated to use is "lost" to the shipper, and the pipeline owner is able to re-sell this capacity to another shipper who might value it.

However, historically fewer trades of contracted but un-nominated capacity have taken place than would be expected in a competitive marketplace. The Commission is concerned that trade is being limited due to a number of factors.

Firstly, as the sole seller of capacity after the nomination cut-off time, the pipeline owner has the ability and incentive to price contracted but un-nominated capacity above levels expected in a workably competitive market. By effectively withholding a portion of capacity from the market, the pipeline owner can drive up the price of that capacity in order to maximise profit even if this means foregoing a number of trades. The auction will address this issue by requiring the pipeline owner to offer capacity to the market, so long as there are buyers who are willing to pay at least the cost of its provision. This will also provide confidence to the market that capacity is being offered on a non-discriminatory basis. Shippers can be confident that capacity is sold at a price determined transparently through the market.

Secondly, there may be substantial transaction costs involved in trading and allocating contracted but un-nominated pipeline capacity. Shippers have limited incentive to sell unwanted capacity prior to the nomination cut-off time, given the potentially high costs of locating buyers and determining an appropriate price, which is not a core business function for many shippers. The auction will address this issue by providing a pricing and allocation mechanism that is less costly for participants.

Thirdly, the market for contracted but un-nominated capacity is complex and involves multiple agents, giving rise to a coordination problem. Multiple buyers need to transact with multiple sellers, preferably simultaneously, in order to reach the welfare-maximising allocation. Currently, they have no means of doing so apart from negotiations between participants which may be lengthy, complex and expensive, or infeasible. The auction will address this issue by providing a platform to simultaneously coordinate trades - allocating capacity in an efficient manner to the combination of shippers that value it highest as indicated through their bids.

5.2 Auction design

This section will:

- define the rights to be auctioned;
- describe the characteristics of the market for day-ahead pipeline capacity;
- list key design elements of the auction and the available options for each design element; and
- (where this has been determined) explain the Commission's preliminary preference for each design element.

5.2.1 Defining the rights to be auctioned

In designing the auction, the Commission must have regard to the characteristics of the rights being offered to the market. The right to use day-ahead pipeline capacity has multiple dimensions, including quantity, time, location and price, all of which must be specified in bids.

It may be helpful to standardise the time element of bids for day-ahead capacity given that the auction will occur on (at least) a daily basis. At the same time, participants could be allowed to specify their own gas volumes, location and willingness to pay. For example, a participant might bid for the right to use 100 TJ of capacity at $40/TJ, specified by injection and withdrawal points, for the following gas day.

Other dimensions may also need to be standardised to an extent to facilitate trading. These include operational, prudential and other contractual provisions. At the same time, there is a trade-off between making capacity products more fungible, and supporting flexibility for shippers to seek products that meet their particular needs. This is discussed in greater detail in Chapter 3.

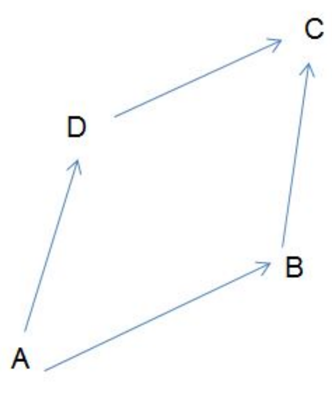
5.2.2 Market characteristics

The Commission must have regard to the characteristics of the market for contracted but un-nominated capacity, which forms the context for the issues which the auction seeks to address. At a high level, the purpose of the auction is to identify (the combination of) transactions among buyers and sellers in a manner that maximises economic surplus, by allocating capacity to those who value it most at the lowest possible cost. The market characteristics will impose some constraints on how this may be achieved.

The market for pipeline capacity appears to be a **multi-item** market, in that there are different pipelines and segments of pipelines. For example, the South West Queensland Pipeline consists of a 755 km segment from Ballera to Wallumbilla and a 180 km segment from Ballera to Moomba. There are also often **complementarities** (Figure 5.1) between items. For instance, a shipper may seek capacity from A to B in order to transport gas from A to C. If the shipper fails to also secure capacity from B to C, then the capacity from A to B lacks value. This means that items either need to be allocated simultaneously, or some other mechanism needs to be used to prevent shippers from becoming stranded with (partial) capacity that cannot be used.

There is also potential for **substitution** between items, as the shippers' needs may be fulfilled using more than one combination of pipeline segments. For example, a shipper seeking to transport gas from A to C can use a route of A to B to C, or A to D to C. Ideally, the auction should allow bidders to express their preferences for multiple combinations of items, some of which may be mutually exclusive. That is, the shipper should be able to place a bid for either of these routes without running the risk of winning both of them.

Figure 5.1 Multi-item market with substitutability between items



It appears to be a double-sided **multi-agent** market, with multiple buyers and multiple sellers. A single buyer may need to obtain items from multiple sellers in order to achieve their preferred aggregation. For example, in some circumstances buyers will wish to buy capacity on pipelines owned by two different parties, or may be indifferent to alternative routes owned by different pipeline owners between the same locations.

Conversely, a seller may own capacity used by multiple buyers competing for their preferred allocation. This is discussed in more detail in section 5.2.5.

In a competitive market, buyers should have no preferences between sellers, and sellers should have no preferences between buyers, apart from price.

It appears to be **multi-unit** market, as more than one unit may be available of each pipeline segment, and these units may be sold to different bidders.

The items sold have largely **private values** on both the buyer and seller sides. For the buyers, each bidder's valuation of a particular segment of pipeline capacity should be largely independent of its competitors' valuations, as it is derived from its individual commercial contracts and arrangements for selling or using gas. For the sellers, valuations should depend on the individual cost structure of the business.

5.2.3 Auction design elements

The following section analyses some key design elements of the auction for day-ahead pipeline capacity:

- whether multiple segments of pipelines should be auctioned;
- whether individual items or a combination of items should be allocated;
- the prices paid by winning bidders;
- how winning bids should be determined;
- the number of rounds in the auction;
- the scale of the auction (i.e. auction by pipeline, pipeline owner or across the entire network);
- the use of auction residue (if any); and
- the institutional setting of the auction.

A number of these design elements are inter-related, in the sense that it would not make sense to select certain combinations of design elements.

These design elements are discussed in sections 5.2.4 to 5.2.11.

5.2.4 Should multiple segments of pipeline be auctioned?

The auction could allocate rights for the full length of each pipeline - for example, from A to C via B in Figure 5.1 above. This would have the advantage of simplicity in pricing and determining the winning bids. Prices for different bids would be easy to compare, since each shipper will bid for identical capacity rights. However, there would be a lack of flexibility in accommodating different preferences from bidders, which could give rise to inefficiencies. For example, a shipper that only wants capacity from A to B will have to bid for A to C - and if it wins, the capacity from B to C may go unused despite other shippers valuing it.

Alternatively, the auction could operate as a multi-item market, allocating separate rights for each segment of capacity - for example, from A to B, and from B to C. Different segments in the auction might include pipeline segments and hub facilities. This would enable shippers to bid for the items which reflect their particular needs, leading to a more efficient allocation of capacity. However, it would also engender additional complexity in determining the winning allocation, as well as the prices paid by the winning bidders.

At this stage, the Commission considers that dividing pipelines into multiple segments is likely to be preferable, but welcomes feedback in this regard.

Box 5.1 Auctioning multiple segments of capacity

- How frequently do shippers require capacity for the entire length of a pipeline?
- How frequently do shippers require capacity for subdivided segments of a pipeline?
- Does this vary between pipelines?

5.2.5 Individual or combinatorial allocation

If multiple items are auctioned (i.e., if pipeline segments are auctioned separately) this raises the question as to whether the auction should allocate the items individually or in combination.

In an auction when individual items are allocated, participants bid for multiple independent 'products' - for example, the right to use a certain quantity of pipeline capacity with a defined entry and exit point ('A to B') over a certain time period. In a combinatorial auction, the allocation mechanism considers multiple products simultaneously, such as capacity on a number of pipeline 'segments' (A to B, and B to C and C to D, and so on). For example, in Figure 5.1, a shipper may wish to transport gas from A to C. This could be achieved via the route from A to B to C, or the route from A to D to C.

Allocating items individually has the advantage of simplicity in design. There is no question of how different combinations should be specified, or how to determine the winning bid when comparing single bids to package bids. However, where there are complementarities between items, a single-item auction may give rise to the 'exposure' problem. Participants may avoid bidding, or refrain from bidding more than their stand-alone value for each individual item, for fear of not obtaining their preferred aggregation. As per the previous example, a bidder may wish to ship gas from A to C, via B. If, through the auction, it only buys capacity from A to B, and fails to buy capacity from B to C, then the capacity it has bought may be worthless to it.

A combinatorial auction avoids the exposure problem, but raises additional conceptual and mathematical difficulties in determining the preferred allocation of rights between bidders.

At this stage, the Commission considers that were the pipeline to be segmented into multiple lengths to be sold separately, the appropriate design for the auction is combinatorial, due to the strong complementarities between capacity rights for different pipeline segments. A combinatorial auction can take into account the substitutability of different packages of items. Participants would be able to place a bid (or set of incremental bids) specifying their preferences over a number of defined dimensions - for example, injection and withdrawal points, and the quantity of capacity required at various prices. The combinatorial algorithm would then translate these preferences into a bid for multiple, mutually exclusive combinations. Using the example in Figure 1.1, the algorithm would allocate capacity from A to B **and** B to C, **or** capacity from A to D **and** D to C. This would obviate the risk of the participant becoming stranded with some portion of their preferred allocation.

While the choice of combinatorial bidding increases the complexity of auction design, these difficulties are unlikely to be insurmountable. Combinatorial auctions have been instituted in a number of settings in Australia and overseas, including the Settlements Residue Auction (SRA) in the NEM[56] and ACMA's digital dividend auctions to allocate radio frequency spectrum.[57] Box 5.2 describes key features of the SRA.

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56 See AEMO, *Guide to the Settlements Residue Auction*, July 2014.

57 See http://www.acma.gov.au/Industry/Spectrum/Digital-Dividend-700MHz-and-25Gz-Auction/Reallocation/combinatorial-clock-auctions-reallocation-acma

Box 5.2 Settlements Residue Auction

The Settlements Residue Auction (SRA) is an example of a combinatorial auction that exists in the NEM. Inter-regional settlements residue (IRSR) arises in the spot market because there is generally a difference between the amount paid by customers to AEMO for electricity, and the amount paid by AEMO to generators. The difference arises because of power flows between regions where there are different prices – for example between Queensland and New South Wales, or New South Wales and Victoria.

Each quarter, an auction is held to allocate IRSR for all regions and quarters over the next three years. Participants can bid for a portion of IRSR associated with the flow of electricity in a particular direction between two regions. Each bid has four dimensions:

- unit category – the regions and direction of flow the units of IRSR are associated with (for example, New South Wales to Victoria);
- units – the amount the participant is bidding for, expressed as a proportion of accumulated IRSR for the unit category;
- time – the quarter for which the IRSR will be calculated; and
- price – a single price for the bid.

Auction participants can also place 'linked' bids for any combination of unit categories and quarters. A linked category bid will specify demand for units in more than one unit category, while a linked quarter bid will specify demand for units in more than one quarter. By making linked bids, participants can avoid the exposure problem associated with winning some, but not all, of the desired IRSR.

Box 5.3 Individual or combinatorial allocation

- How strong are the complementarities between different segments of pipeline? How often do they arise?
- How strong are the complementarities between different pipelines? How often do they arise?
- How important do stakeholders think the 'exposure' problem is?

5.2.6 Prices paid by winning bidders

Broadly, there are two options for the prices paid by winning bidders: a first price rule, and a second price rule.

Under a first price rule, bidders pay the value of their winning bid. This has the advantage of simplicity. However, bidders may be concerned about paying more than they need to in order to obtain the capacity. This may give rise to a strategy of bid-shading, where shippers seek to 'game' the auction by submitting bids which are lower than their willingness to pay in an attempt to get capacity for the lowest possible price. Transaction cost will increase, as bidders need to actively manage their bidding strategies. This in turn may affect the ability of the auction to determine the efficient allocation, since true information about shippers' preferences is not available.

The principle behind a second price rule is that the winning bidder should pay the minimum amount they would have needed to bid in order to win the auction. Participants then have an incentive to bid their true values, since they do not run the risk of paying too much if they have over-estimated other participants' bidding prices. If the auction for contracted but un-nominated capacity is run as a single-item allocation, second prices will be relatively straightforward to calculate. Per-unit pricing will be used to determine a ranking of bids on each individual length of pipeline. The winning bidder will then simply pay the value of the second highest bid.

If the auction is run using a combinatorial allocation, determining the 'second price' may be unfeasible or mathematically complicated. There is no obvious way of ranking bids, since they are not directly comparable, as different shippers will bid for different 'packages' of pipeline products. For example, if there is a bid for capacity from A to B **and** B to C, it is not obvious how to compare this to a bid for A to B **and** B to E, or to a bid for A to B only.

There is therefore a trade-off between the preferred combinatorial nature of the auction, which addresses the 'coordination failure' rationale for the auction, and the preferred second price rule, which will encourage shippers to submit their real willingness to pay in their bids.

At this point, the Commission considers a first price rule may be appropriate for the following reasons:

- The potential for 'gaming' of the auction through bid-shading is limited considering that the auction will be conducted on (at least) a daily basis. Participants will be able observe auction outcomes and incorporate this information into their bidding strategies, making it less likely that any individual shipper will accidentally 'miss out' on highly valued capacity by bidding beneath their true willingness to pay. (A caveat to this argument is that the auction may still reach an inefficient allocation in the event of unexpected fluctuations in the price of capacity, which participants will not be able to incorporate into their strategies).

- The combinatorial aspect of the auction is likely to be important given the interactions between different pipeline capacity products. The efficiency gains from allocating capacity through a combinatorial process may the greater than the potential efficiency losses from bid-shading.

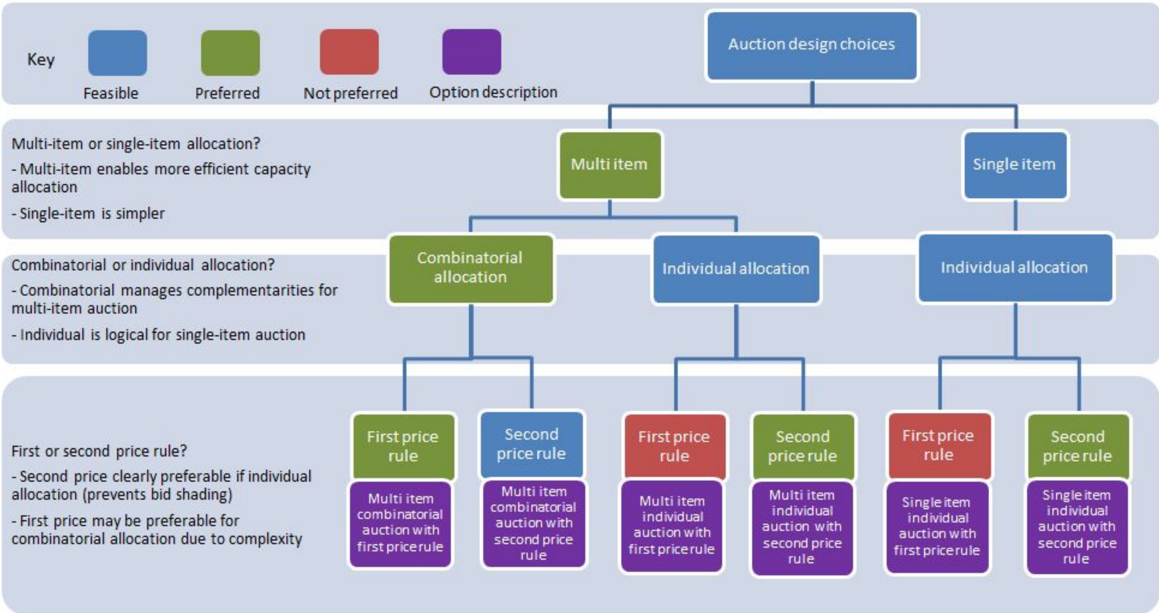
Box 5.4 What is the appropriate pricing rule for the day-ahead capacity auction?

- Is there a real risk of bidders underbidding or otherwise failing to submit their true values in a first-price auction?
- How often are significant and unexpected fluctuations in demand for capacity likely to occur?
- Will there be efficiency gains from a second price rule? If so, how significant are these gains likely to be?
- Are there feasible methods of incorporating a second price rule into a combinatorial auction?
- If there needs to be a choice between a combinatorial auction and a second price rule, which of these aspects is more important for allocative efficiency?

The following flow diagram summarises the three inter-related issues discussed above of subdividing pipelines into sections, individual or combinatorial capacity allocation, and the prices paid by winning bidders.

The characteristics of the market seem to suggest that a multi-item, combinatorial auction is required, and that pricing at first price may result in only limited issues. However, other combinations of these design characteristics are possible and the Commission welcomes stakeholders' views on the matter.

Figure 5.2 Flow chart



5.2.7 Determining the winning combination of bids

If a combinatorial auction format is chosen, this raises the question of how the winning combination of bids should be determined.[58] An optimisation algorithm can be used to maximise one of the following dimensions:

- revenue;
- capacity; or
- profit.

At times these dimensions may be correlated with each other, as higher capacity utilisation implies more products sold, and hence higher revenue, which should generally lead to higher profit.

For efficiency purposes, the optimal allocation should maximise economic surplus. This can be calculated as the difference between the value consumers attach to the services (implied through their bids) and the cost of providing them. This implies that the appropriate dimension to maximise is profit. The auction will likely use an optimisation algorithm which selects the combination of bids which maximises the sum of revenue received from bidders, minus the reserve price[59] for each product sold.

It should be noted that the allocations reached through profit maximisation under the combinatorial auction would be different from those reached through the pipeline owners' existing incentive to maximise profit. This is because the auction would make it compulsory to offer contracted but un-nominated capacity to the market, at or above the regulated reserve price. That is, profit would be maximised under the condition that capacity cannot be deliberately held back from the market above the cost of providing that capacity. Pipeline owners would no longer have the ability to effectively refuse efficiency-enhancing trades, by pricing capacity above shippers' willingness to pay.

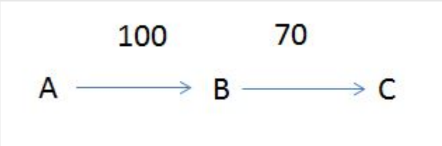
58 As discussed above, determining the winning bids is far clearer when items are sold individually. For example, all shippers whose bids were above the highest losing bid would win.

59 The reserve price is likely to be set at short-run marginal cost (SRMC). See section 6.2.

Box 5.5 Determining the winning combination of bids

The following is a simplified worked example of how the combinatorial algorithm might work.

Assume there is a pipeline from A to B to C. There are 100 TJ of capacity available on the A to B segment, and 70 TJ on the B to C segment.



Three shippers, Azealia, Kendrick and Nicki, submit bids for capacity. Each bid has three dimensions:

- **location**, specified in terms of injection and withdrawal points (i.e. bid for capacity from A to B means an injection point of A and a withdrawal point of B);
- **quantity**, or the number of GJ required; and
- **willingness to pay**, specified as the dollar value the shipper is willing to pay for the total capacity.

Bids are not divisible. That is, if a shipper bids for X units of capacity, either it will be allocated the entire quantity of her bid, or none of it. Each shipper is allowed to submit multiple bids, which they may specify as mutually exclusive (or not). If bids are mutually exclusive, then only one can be part of the winning allocation. Otherwise, the auction will consider allocations which include both (or all) bids submitted by the shipper.

Azealia's, Kendrick's and Nicki's bids are expressed in the table below. Kendrick's bids are mutually exclusive, that is, he wishes to obtain 55 GJ (at a price of $1200) or 30 GJ (at a price of $600) of capacity from A to B, but not both.

Shippers' bids for capacity

Shipper	Location	Quantity demanded (GJ)	Willingness to pay ($)
Azealia	B to C	30	1000
Nicki	A to C	60	2000
Kendrick's first bid	A to B	55	1200
Kendrick's second bid	A to B	30	600

The combinatorial algorithm seeks to maximise profit (revenue minus costs) given constraints. Assuming for simplicity a short-run marginal cost of zero, the profit maximising allocation will be equal to the revenue maximising allocation. Constraints arise because the capacity sold on each segment must be less than or equal to the capacity available. In this example:

- allocations from A to B must be less than or equal to 100;
- allocations from B to C must be less than or equal to 70;
- allocations from A to C must be less than or equal to 70;
- the sum of allocations from A to B and A to C must be less than or equal to 100; and
- the sum of allocations from B to C and A to C must be less than or equal to 70.

Feasible combinations of bids

Shipper(s)	Profit ($)
Azealia only	1000
Nicki only	2000
Kendrick's first bid only	1200
Kendrick's second bid only	600
Azealia and Kendrick's first bid	2200
Azealia and Kendrick's second bid	1600
Nicki and Kendrick's second bid	2600

As it turns out, the best combination is to accommodate Nicki's bid and Kendrick's second bid. Kendrick's demand for 30 GJ of capacity from A to B for $600 can be satisfied at the same time as Nicki's demand for 60 GJ of capacity from A to C for $2000, leading to a total profit of $2600.

Some combinations (for example, either of Kendrick's bids and Azealia's bid) are feasible, but do not maximise profit. Other combinations (for example, Kendrick's first bid and Nicki's bid) are not feasible.

While in this example, the winning combination also maximises the throughput of the pipeline, this is not directly relevant to the outcome of the auction: profit maximisation, not volume maximisation, is the objective.

5.2.8 Number of rounds in the auction

The auction may consist of a single round during which participants submit bids and the winning allocation is chosen. Alternately, there may be multiple rounds - for instance, an initial round during which participants submit initial bids for price discovery purposes, followed by a final round where participants make their best and final offer for each item. To ensure that bids in the initial round reflect participants' real willingness to pay, there may be a requirement that bids submitted in the final round do not contradict the valuations expressed in the initial round (for instance, it may be permissible to revise bids upwards, but not downwards).

The key benefit of the single round approach is its simplicity. A multi-round auction may be extremely difficult to implement in an already complex setting with multiple buyers placing bids for multiple items in various quantities, all having to be done quickly. A single round auction also minimises opportunities for anti-competitive behaviour including collusion between participants.

The key benefit of the multi-round approach is that in each successive round, information is revealed to assist participants in the price discovery process. In the initial round, participants gain information about their competitors' valuation of a product. However, given the short timeframe in which the auction for day-ahead capacity must be completed, the Commission considers that holding more than one round may overcomplicate the process, increasing administrative costs and bidders' costs of participation. In any case, as the auction will occur daily, a single round will provide potentially ample opportunity for price discovery.

Box 5.6 Number of rounds

- Is a single round appropriate for the auction of contracted but un-nominated capacity?

5.2.9 Scope of the auction

The allocation of pipeline resources may be conducted as a single auction allocating capacity across the entire East Coast pipeline network. Alternatively, the auction may be conducted separately for each individual pipeline, or for each pipeline owner.

From an efficiency perspective, without counting implementation costs and auction complexity, a single auction covering the whole network would optimise allocation across as many products as possible. This is particularly the case given there are strong complementarities between different units of pipeline capacity. A 'larger' auction will require greater computational power to run the optimisation algorithm. This is not expected to be prohibitive given the computational resources available.

Conducting the auction on a per pipeline basis has the advantage of simplicity, as there are likely to be fewer issues with the harmonisation of rights between different pipelines and contracts. However, a single pipeline auction raises the problem of sub-optimal allocation where the usefulness of a particular product depends on whether the bidder can also access other products (for example, two or more connecting segments of pipeline). Participants may be reluctant to bid their full value for a product due to the exposure problem described in section 5.2.5. Conducting the auction on an ownership basis raises similar problems, albeit less severely due to the larger system of pipelines being simultaneously optimised.

The Commission welcomes stakeholders' views on the appropriate scope of the auction.

Box 5.7 The appropriate scope of the auction

- If the auction is conducted on a per pipeline basis, how can complementarities between different pipelines and hub services be managed?
- If the auction is conducted on a network basis, how can the harmonisation of rights between different pipelines be achieved?
- How frequently do shippers require capacity on multiple pipelines?
- How frequently do shippers require capacity owned by multiple owners?

5.2.10 Institutional setting

Implementing the auction will require a 'market operator', or an institution to conduct the auction. The market operator might also be tasked with informing participants and potential participants about the rules of the auction. This might be AEMO, individual pipeline owners (in the case of separate auctions conducted on each pipeline) or an association of pipeline owners acting collectively.

The market operator must have the technical capacity to run a combinatorial auction, if such an approach is adopted. It will need to act impartially, favouring neither buyers nor sellers, and avoiding discrimination or the appearance of discrimination against individual buyers or sellers. Ideally, the market operator will not otherwise be a participant in the market. This will give participants confidence that auction outcomes are genuinely fair and competitive.

AEMO appears to be the natural choice, as it has experience running auctions in the NEM, STTM and DWGM, and does not directly participate in the buying or selling of gas or gas pipeline capacity. However, there may be synergies with the auction being run by the same party or parties as those administering the proposed capacity trading platform(s), meaning that were the pipeline owners to be accorded this responsibility, it may also be appropriate for them to also run the auction (subject to confidentiality concerns).

Box 5.8 Institutional setting for the auction

- What is the appropriate body to operate the auction?
- Are there any inter-linkages in with the institutional settings for the auction and the other recommendations?

5.2.11 Allocation of auction residue

Some portion of the auction revenue will need to be allocated to cover the costs of running the auction, as well as any costs of providing pipeline capacity services (ie, the short run marginal cost of shipping the gas). Additional revenue above these costs is defined as the residue from the auction and may be allocated to the pipeline owners, the market operator (to cover the costs of running the auction), or otherwise. The Commission considers that residue should go to the pipeline owner and not be allocated to the incumbent shipper, in order to maintain the incentive for shippers to sell capacity prior to the auction.

In a combinatorial auction, if the auction residue is allocated to pipeline owners, this raises the question how to distribute the residue between multiple pipeline owners given interlinkages between different pieces of capacity. One option is to simply divide the residue on a pro-rata basis, given the length of the various pipeline segments. Another is to use a Shapley value allocation, in which the marginal contribution of each piece of capacity is determined by calculating the total value of trades in the absence of that capacity, then subtracting this from the optimised value.[60] A third option is to allocate residue based on pipeline costs according to a methodology approved by the AER, which might draw on the methodology used to calculate reserve prices.

The Commission welcomes stakeholders' views on the appropriate allocation of auction residue.

Box 5.9 How should auction residue be allocated?

- How should residue be allocated?
- Are there any allocations that have the potential to distort efficiency?

60 Lloyd S. Shapley. "A Value for n-person Games". In *Contributions to the Theory of Games*, volume II, by H.W. Kuhn and A.W. Tucker, editors. Annals of Mathematical Studies v. 28, pp. 307–317. Princeton University Press, 1953.

5.2.12 Summary

The table below summarises the design elements for the day-ahead capacity auction.

Table 5.1 Auction design elements

Design element	Available options	AEMC's preliminary preference
Should multiple segments of pipeline be auctioned?	Divide into segments or whole pipeline	Divide into segments
Individual or combinatorial auction	Individual or combinatorial	Combinatorial
Prices paid by winning bidders	First price or second price	First price
Determining the winning combination of bids	Maximise profit, revenue or utilisation	Maximise profit
Number of rounds in the auction	Single or multiple rounds	Single round
Scope of the auction	By pipeline, pipeline owner or whole network	To be determined
Institutional setting	AEMO, individual pipeline owners, or pipeline owners acting collectively	To be determined
Allocation of auction residue	Pipeline owners, market operator or investment fund	To be determined

The Commission is interested in hearing further from stakeholders on all the elements of auction design, including those for which the Commission has a preliminary preference.

6 Implementing the auction

Chapter 5 described how an auction for contracted but un-nominated pipeline capacity with a regulated reserve price might be designed at a high level. The day-ahead capacity auction will raise practical implementation issues, including some which are specific to the East Coast market. This chapter sets out the key issues, which are:

- **participation** - which pipelines should participate or be exempt from participating in the auction, including:
  - whether pipelines that are not fully contracted should participate;
  - whether pipelines that serve a single facility should participate; and
  - whether the auction should apply to hub services as well as pipeline transportation capacity;
- **determining auction parameters** - how various parameters for the auction should be set, including:
  - how the reserve price should be set; and
  - setting the quantity of capacity to be auctioned;
- **interaction with shippers; rights with regard to other matters**, including:
  - shippers' existing rights with regard to nomination and renomination;
  - shippers' existing rights with regard to curtailment order;
  - shippers' existing rights with regard to as available capacity;
  - nomination times for the STTM; and
  - the existing regulatory coverage regime; and
- whether the auction addresses issues of **limited competition in the retail market**, particularly on lateral pipelines.

Box 6.1 Costs and benefits of the proposed auction

- Recognising that the detailed design of the auction is still to be determined, what are likely to be the key benefits, risks and costs to your business of its implementation? Estimates on the magnitude of these benefits and costs are welcomed.

6.1 Pipeline and service participation in auction

In the Stage 2 Draft Report, the Commission noted a number of possible circumstances under which pipelines might be exempt from the requirement to participate in an auction for day-ahead capacity. These were:

- pipelines that were less than fully contracted; and
- pipelines servicing a single facility.

Furthermore, in its Stage 2 Draft Report the Commission also questioned whether it was appropriate for the auction to apply to hub services as well as pipeline transportation capacity. This is discussed in section 6.1.3.

6.1.1 Low contracted capacity

In order to consider whether it is appropriate to exempt pipelines that are not fully contracted, it is instructive to consider the intent of the auction, which is two-fold:

- to address contractual congestion; and
- to undermine the market power held by pipeline owners in the market for day-ahead capacity.

Neither of these rationales appear to apply in the case of pipelines which are less than fully contracted. Contractual congestion occurs where physical pipeline capacity is available, but cannot be utilised by shippers that value it because it is contractually held by another party. By definition, pipelines that have a low proportion of capacity contracted are not contractually congested.

Similarly, the incentive and ability to exercise market power is weaker in cases where significant pipeline capacity is not contracted. Market power in this instance refers to the ability of pipeline owners to price day-ahead un-nominated capacity above what would be expected in a workably competitive market, thus rationing demand. Pipeline owners will be less inclined to pursue this strategy where there is already low demand for pipeline capacity, due to the threat of asset under-utilisation and asset stranding.

In principle, it therefore seems appropriate that pipelines that are not fully contracted should be exempted from the auction. However, a blanket exemption for partially contracted pipelines may provide perverse incentives to deliberately only partially contract capacity (say, to 99 per cent). As a result, the Commission considers that pipelines that are not fully contracted should be exempted on a case-by-case basis. It may be appropriate for the AER to determine whether a pipeline's uncontracted capacity is being actively marketed by the pipeline owner (and so is demonstrably not being deliberately withheld to avoid the auction). If so, an exemption would be granted.

6.1.2 Pipelines servicing a single facility

In the Stage 2 report, the Commission noted that some pipelines serve only a single facility and consequently may only be used by a single shipper – either the facility itself, or the facilities' retailer. In such circumstances, an auction for un-nominated capacity may achieve little as there would be no prospect of un-nominated capacity being resold to another shipper. It may be appropriate for the auction to not be required in such circumstances. Stakeholder submissions were broadly in agreement with this perspective.[61]

6.1.3 Hub services

The Commission considers that the same set of issues that are present in the pipeline capacity market (limited incentives for shippers that hold capacity to sell it prior to the nomination cut-off time, and a lack of competition for pipeline capacity sold after the nomination cut-off time) are applicable to hub services such as compression and redirection services at the Wallumbilla Gas Supply Hub (GSH) and, when implemented, the Moomba GSH. In principle, the Commission sees no reason not to require the auction be applied to hub services.

The Commission is interested in understanding whether there are any practical difficulties or differences in applying the auction to hub services as opposed to pipeline capacity.

Box 6.2 Service and pipeline participation in the auction

- Is the auction necessary on a pipeline when capacity has not been fully contracted?
- If not, what criteria should determine exemption if a pipeline is not fully contracted? What is the appropriate governance of this decision?
- Are there any other circumstances where pipeline owners should be exempt from undertaking the auction?
- Are there any practical difficulties or differences in applying the auction for contracted but un-nominated capacity to hub services? For example:
  - Is determining the quantity of hub services to be auctioned (ie, the amount of contracted but un-nominated hub services) different (see section 6.2.2)?
  - Would setting the reserve price be different (see section 6.2.1)?
  - How should existing (re)nomination rights for hub services be accommodated in the auction design (see section 6.3)?

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61 However, APA suggested an the exemption for pipelines serving a single facility should not apply for pipelines serving LNG facilities, stating that while the principal pipelines in question may service single facilities, these pipelines are interconnected and connect into Wallumbilla. See APA submission on the Stage 2 Draft Report, February 2016, p. 15.

6.2 Determining auction parameters

Currently, the pipeline owner has the ability to set the price of contracted but un-nominated capacity above what would be expected in a workably competitive market, which limits access to capacity.

The proposed auction seeks to address this issue by defining the quantity of capacity that must be offered to the market at or above a regulated reserve price. The auction is intended to provide non-discriminatory access to contracted but un-nominated capacity *at a price consistent with that expected in a workably competitive market*. Defining the quantity of capacity to be auctioned, and setting the reserve price, are therefore two crucial features of the auction.

Section 6.2.1 will discuss the calculation of the reserve price, including:

- whether the reserve price should be set at SRMC (short-run marginal cost) - and if so, the appropriate methodology for doing so; and
- whether the reserve price should incorporate the costs of running the auction.

Section 6.2.2 will discuss the quantity of capacity auctioned.

6.2.1 Setting the reserve price at SRMC

In the Stage 2 Draft Report, the Commission suggested that setting the reserve price at short run marginal cost (SRMC) may be appropriate.

SRMC describes the incremental cost incurred by pipeline operators to supply additional pipeline capacity without incurring any additional infrastructure investment costs.

The Commission engaged NERA Economic Consulting (NERA) to consider the methodology for setting the reserve price at SRMC, whether the SRMC is an appropriate reserve price for the auction, and alternatives to SRMC.[62]

In keeping with the Commission's findings in the Stage 2 Draft Report, NERA considered that setting the reserve price at SRMC is appropriate as raising the auction reserve price above SRMC would affect allocative efficiency. It would mean that a potential shipper willing to pay more than SRMC but less than the alternative auction reserve price would be priced out of the pipeline. In other words a potential shipper that would be willing to pay more than society’s incremental costs for providing the service would not get it - an economically inefficient result.

62 See NERA Economic Consulting, *Determining a reserve price for a short term gas transmission auction*, February 2016.

Methodology for determining the SRMC

NERA noted that when un-nominated capacity is available for sale on the Commission's proposed auction, the SRMC of gas transmission equals the cost of incremental gas used to run compressors. That is, no other components materially contribute to the SRMC.

Given that the SRMC is equal to the cost of incremental gas used to run compressors, it can be expressed in two ways:

- on a dollar per unit of gas basis; or
- as a percentage of total gas throughput, in which case the reserve price would be set at $0, but shippers would be required to provide the incremental compressor fuel gas in-kind to the pipeline owner.

There is a clear advantage of expressing the SRMC as a percentage of total gas throughput, as the price of gas is not required to determine the SRMC, and might otherwise be difficult to calculate (indeed, the opaque nature of gas prices on any given day on in the east coast of Australia is one of the wider prompts of reform).

Furthermore, we understand it common practice for shippers to cover the cost of compressor fuel by providing it in-kind in existing long-term GTAs.

NERA's regression analysis of a dataset of US pipelines demonstrated that there is a strong correlation between pipeline length and the proportion of gas used to run compressors compared to the total throughput. NERA noted that there is an empirically observed logarithmic relationship between pipeline length and the proportion of compressor fuel needed, with typical fuel consumption rates of between little over zero to 1.5 per cent of the total gas throughput (with longer pipelines typically requiring a larger proportion of compressor fuel). Pipeline age and pipeline diameter were shown to be weakly correlated with the proportion of gas used to run compressors compared to the total throughput, and NERA advised against these variables being used to determine the SRMC.

A similar regression approach could be applied to Australian gas pipelines, to determine the relationship between length between injection and withdrawal points and proportion of gas throughput used as compressor fuel. Alternatively, the compressor fuel usage for each individual combination of injection and withdrawal points could be individually assessed by engineers. While this would not be a straightforward exercise, it would only need to be undertaken once (or very infrequently), as compressor fuel usage does not appear to be correlated to factors which are not fixed over time.

Given that compressor fuel usage does not vary on a particular pipeline route over time, shippers would have knowledge of the amount of gas in-kind that they would be required to provide were they to buy capacity in the auction prior to the auction taking place. They can therefore factor this into their bids.

Costs of running the auction

In submissions to the Stage 2 Draft Report, a number of stakeholders suggested that the cost of running the auction should be recovered from participants of the auction. The Commission agrees that the cost of running the auction (including fixed system costs) should be recovered from shippers which participate in the auction.

How this is achieved is impacted by:

- who runs the auction (discussed in section 5.2.10; and
- where the residue for running the auction goes (discussed in section 5.2.11).

If a party other than the pipeline owner (for example, AEMO) were to run the auction, then a proportion of the residue could be allocated to that party, with the remainder of the residue going elsewhere (as discussed in section 5.2.11).

Were the residue insufficient to cover the costs over time, the reserve price could be raised or a fixed participation fee levied.

The Commission welcomes feedback on possible approaches to determining the auction reserve price and cost recovery. Box 6.3 discusses a number of specific questions in this regard.

Box 6.3 Determining the reserve price

- Are there any other constituents of SRMC other than compressor fuel?
- Is it sensible for compressor fuel to be paid in kind by the shipper, with a reserve price for the auction of zero?
- How might compressor fuel usage be calculated in the Australian context?
- How should the cost of running the auction be recovered?

6.2.2 Setting the quantity of capacity to be auctioned

As noted in the Stage 2 Draft Report, were the pipeline owner able to determine the amount of un-nominated capacity to be auctioned, it may have an incentive to withhold some capacity in order that the auction clearing price is increased (with the overall effect of higher profits).

We therefore suggested that it may be appropriate for the quantity of capacity to be auctioned to be set through a regulated process (either directly, or through a process approved by the AER).

Upon further investigation, the Commission understands that determining the amount of un-nominated capacity to be auctioned is relatively straightforward, and can readily be calculated on a daily basis. This is because the total amount of contracted capacity of a pipeline is readily known, as is the total capacity nominated.[63]

In most cases, the total contracted capacity is less than or equal to the total physical capacity of the pipeline (so that the pipeline can physically meet the demand of all firm contracted shippers). As a result, releasing contracted but un-nominated capacity to the market should be within the physical capability of the pipeline.

Where this is not the case (eg, planned maintenance or low linepack), determining the physical capability of the pipeline is a relatively simple engineering question which we understand pipeline owners undertake already on an ongoing basis for operational reasons. The amount of capacity released through the auction would then be adjusted so that the amount of capacity nominated prior to the auction, plus the capacity released in the auction, was equal to or less than the physical capacity of the pipeline.

The Commission considers that the process through which the amount of capacity to be released through the auction is determined should be created by the pipeline owners themselves (given that they understand best the physical capability of their pipelines). However, the Commission considers that the process should be approved by the AER, to ensure that all contracted but un-nominated capacity is released through the auction providing the pipeline is physically capable. The AER might also audit the process from time-to-time to ensure that it is being applied appropriately.

Questions relating to how to determine the amount of capacity to be auctioned are provided in Box 6.4.

Box 6.4 Determining the amount of capacity to be auctioned

- Is the Commission correct in suggesting that determining the amount of contracted but un-nominated capacity is relatively straightforward?
- Do you agree with the proposed approach to determining the amount of capacity to be auctioned?
- How should this process be governed?

6.3 Interaction with existing nomination and re-nomination rights

The Stage 2 Draft Report noted that under typical GTAs, shippers lose their firm capacity rights at the nomination cut-off time. This nomination cut-off time typically occurs in the afternoon of the day before the day the gas is to be shipped.

Some shippers value the ability to renominate because their actual gas transportation requirements vary compared to their forecast requirements made at the nomination cut-off time. However, currently under typical GTAs, shippers have no firm right to

63 This is not to say that determining the amount of capacity to be released through the auction is straightforward if some capacity is withheld to provide firm renomination rights to incumbent shippers. This is discussed in section 6.3.1.

(re)nominate beyond the cut-off time, and would not be accommodated if the pipeline owner were to subsequently sell the capacity on a firm basis to another shipper such that the capacity of the pipeline was unable to accommodate the (re)nomination.

While this theoretical problem exists currently, the Commission understands that shippers' renominations have nearly always been accommodated in practice, despite them not being contractually firm.

The proposed auction may increase the probability of this problem eventuating in practice. By increasing the ability of other shippers to access contracted but un-nominated capacity on a firm basis, the ability of the pipeline owner to accommodate non-firm renominations by the original shipper may be reduced. The auction may therefore diminish the valued ability of these shippers to renominate that they have enjoyed in practice (but not contractually) to-date.

This potential problem appears to be particularly material for gas fired generators in the National Electricity Market, whose gas consumption responds to five minute changes in the spot market price for electricity, which can be very volatile. In effect, day-ahead use-it-or-lose-it is restrictive on some shippers.

Furthermore, some shippers and pipelines have responded to the challenge of forecasting accurately in advance by contracting firm rights to nominate capacity more immediately prior to the gas flowing than the previous afternoon. In some cases, the nomination cut-off time is far closer to the time the gas is to be shipped – for example, an hour ahead. In other cases, renomination rights are firm. Were firm capacity to be released through the auction the afternoon before such that subsequent firm rights could not be accommodated, this would take-away the existing contractual rights of shippers.

The issue of (re)nomination rights is discussed in sections 6.3.1 to 6.3.2. A number of other issues also arise with regard to existing rights and nomination and re-nomination times, and are discussed in sections 6.3.3 to 6.3.5:

- the place in the curtailment order for auctioned capacity;
- contracted as-available capacity rights; and
- STTM and production nomination times.

6.3.1 Options to address auction interaction with existing rights

The Commission has considered five approaches to addressing the issue of how existing (re)nomination rights might be accommodated in the proposed auction. These are outlined below.

Withhold some capacity in a firm day-ahead auction

As discussed in section 6.2.2, a regulatory-approved process would determine the amount of capacity to be released through the auction.

To reduce the risk of incumbent shippers not being able to re-nominate, some of the capacity that might otherwise be made available in the auction could be withheld.

Clearly, the risk of (re)nominations not being accommodated cannot be reduced to zero without withholding all the firm capacity not nominated prior to the auction. That is, the risk cannot be reduced to zero unless the auction is not held at all. But it may be reasonable to assume it is unlikely that all un-nominated capacity would be (re)nominated on any given day.

The main disadvantage of this approach is that it reduces the effectiveness of the auction in meeting its aim of releasing contracted but un-nominated capacity. Some shippers may still not be able to access capacity that they value and that ultimately goes un-used. Other shippers may pay more in the auction than they otherwise would to access scarcer capacity.

It also adds complexity in determining the appropriate level of capacity to be released in the auction. No longer is it merely a function of the physical capacity of the pipeline, but also of the probability and impact of (re)nominations. A relatively simple example of how renomination rights could be determined (and hence how much capacity can be released through the auction) is provided in Box 6.5, drawing upon the methodology adopted by the German system operator.

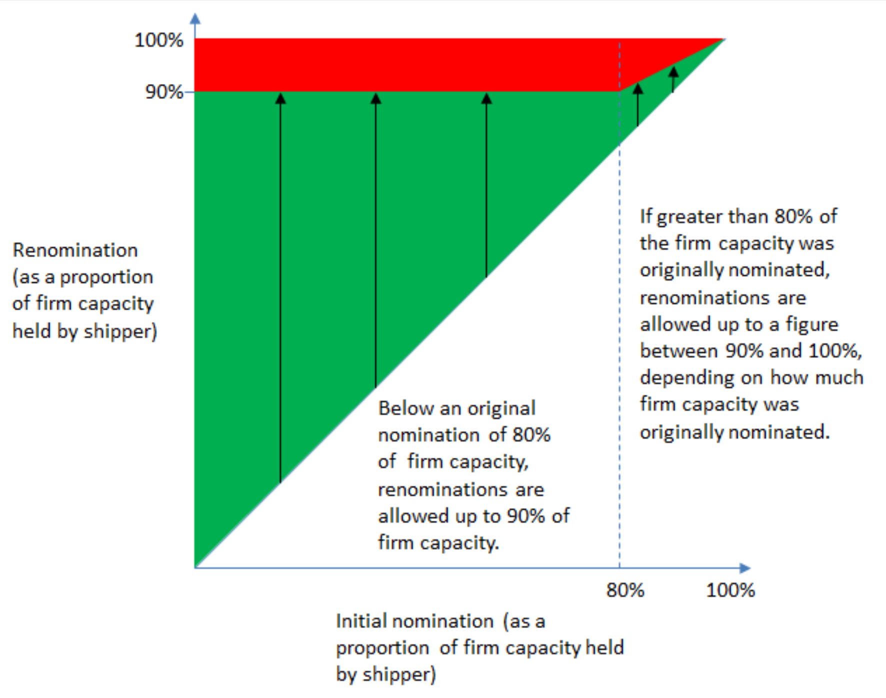
Box 6.5 How much capacity to withhold from the auction

In Germany, firm renominations upwards are allowed with a lead-time of two hours, but with the following profile:

- renominations are only allowed up to 90 per cent of original firm capacity providing less than 80 per cent of firm capacity was originally nominated; and
- if greater than 80 per cent of the firm capacity was originally nominated, renominations are allowed up to a figure between 90 per cent and 100 per cent, depending on how much firm capacity was originally nominated.

This is represented diagrammatically below.

Figure 6.1 Renomination rights under the German day ahead use-it-or-lose-it mechanism



Under the German approach, only the proportion of capacity in the red area of the diagram above is released as firm capacity to other prospective shippers, with the capacity in the green area being reserve for potential renomination by the incumbent shipper.

Day-ahead auction with interruptible capacity

The auction could be held on a day-ahead basis, but with any capacity released on an interruptible basis. Any (re)nomination (including those that are not contractually firm) would be accommodated by interrupting the capacity released in the auction.

For those shippers which have contractual firm rights to (re)nominate capacity after the auction, this would leave their rights unaffected. For those shippers that do not have contractual firm rights but have an implicit ability to renominate, this ability would be formalised and therefore strengthened.

Shippers would know that the capacity they were bidding for in the auction was interruptible, and factor this into their valuation of the product, and hence their bids. A very simple compensation mechanism might be implemented, whereby shippers received back the amount they spent on the capacity.

The advantage of auctioning interruptible capacity is that it does not negatively impact the contractual or implicit ability of incumbent shippers to (re)nominate their capacity close to the time the capacity is required. The disadvantages are that the quality of the product sold in the auction is reduced, which may impact trading liquidity.

A more complicated compensation mechanism for interrupted capacity, known as oversell and buyback, is implemented in some European markets and was discussed in the Commission's September 2015 Discussion Paper.[64] This mechanism is briefly explained in Box 6.6. The Commission's current view is that the complications of such approach may mean it is not warranted.

Box 6.6 Oversell and buyback

In the situation where a (re)nomination cannot physically be accommodate without interrupting capacity purchased through the auction, the pipeline owner might be required to buy back capacity from shippers, in a mechanism known as oversell and buyback.

The buy-back procedure put in place would be market-based, where shippers (either all shippers that have been scheduled, or just shippers which purchased capacity in the auction) would have the opportunity to participate and indicate at what price they would be willing to waive their capacity rights. That is, a market mechanism (such as another auction) would determine who is interrupted, and for what amount of compensation.

Over time, the revenue to the pipeline owner from the original daily auctions (the "oversell" component) would have to exceed the cost (to the pipeline owner) of any "buybacks" that the pipeline owner was required to make to ensure that the pipeline owner does not make an overall loss from the auction. This might be managed by capping individual buyback payments.

Release some capacity on a firm basis and some on an interruptible basis

Combining the two approaches above, the total amount of un-nominated capacity could be released partially as firm capacity and partially as interruptible capacity.

64 AEMC, *Pipeline Regulation and Capacity Trades*, Discussion Paper, 18 September 2015, p. 40.

The advantage of this approach is that it reduces the risk of (re)nominations from incumbent shippers not being accommodated, while:

- increases the quantity of capacity released on the auction (compared to simply withholding capacity); or, put another way
- increases the quality of capacity released in the auction (compared to releasing all the capacity on an interruptible basis).

A process would be required to determine the proportion of the total capacity that is released on a firm or interruptible basis. Again, this would require consideration of the probability and impact of not being able to accommodate incumbent shippers' (re)nomination requests – potentially a complex and controversial process.

More frequent auctions of firm capacity

If an auction was held more regularly than day-ahead, this would reduce the potential for differences between capacity nominated immediately prior to each auction and the actual capacity requirements of shippers, and so reduce the possibility (and size) of (re)nominations. There are a number of ways this could be achieved:

- the auction could be held more frequently (for example hourly or twice daily); or
- daily auctions could be held (as per the original recommendation) but additional ad hoc intra-day "buyback" auctions of the type described in box Box 6.6 could be held whenever (re)nominations occur such that they cannot physically be accommodated by the pipeline. These intra-day auctions would in effect determine which shippers valued the capacity they hold least highly, and interrupt them for a level of compensation determined through the auction.

Were the first of these two approaches adopted, the duration of the product released in the auction would need consideration. Take, for example, a twice daily auction, held at 13 hours and 1 hour prior to the start of the gas day. The first auction could sell capacity for the first half of the gas day, while the second auction could sell capacity for the second half of the gas day. Alternatively, the first auction could sell some of the capacity for the full day gas, with some of the capacity held in reserve for (re)nominations from incumbent shippers, which could then be sold in the second auction if not re-nominated. Clearly there are many more sophisticated combinations.

The main downside of holding more frequent auctions is the complexity involved, including:

- determining the appropriate frequency of the auction;
- determining the appropriate tranches of capacity released in each; and
- costs to run and participate in the auction on a more frequent basis.

The auction would have to designed to be capable of running frequently – for example, determining the amount of un-nominated capacity available would have to be done quickly enough to input into the auction.

Day-ahead auction for firm capacity

Finally, the auction could be designed as described in the Stage 2 Draft Report. That is, an auction held on a day-ahead basis for firm capacity.

As discussed above, this would curtail existing contractual nomination rights beyond the time of the auction (unless capacity relating to those rights was specifically excluded from the auction), and would not accommodate the implicit ability of other shippers who do not hold firm renomination rights.

However, the advantages of this approach are that it maximises the amount of capacity released, the quality of the capacity released is high (ie, it is not interruptible), and the auction would be relatively simple.

Summary of options

A summary of the options presented, and their pros and cons, is tabulated below.

	Consistent with existing firm and implicit (re)nomination rights	Quantity of product released	Quality of product released	Complexity
1. Withhold capacity	✓	x	✓✓	xx
2. Interruptible capacity	✓✓✓	✓	xx	x
3. Combination of the above	✓✓	✓	x	xx
4. More frequent auction	✓✓	✓	✓✓	xxx
5. Firm day ahead auction (as envisaged in Stage 2 Draft Report)	xxx	✓	✓✓	✓

6.3.2 Commission's initial analysis

The analysis above indicates that there is no option that is clearly preferable, and that trade-offs will be required.

One of the intents of the auction is to address contractual congestion – where physical pipeline capacity is available but is unable to be utilised by shippers that value it because it is contractually (or implicitly) held by another party.

Instances of interruption are the result of physical congestion – where shippers wish to transport more gas than is physically able to be accommodated by the pipeline system.

Given the intent of the auction, it seems appropriate that capacity purchased through the auction provides access at times of contractual congestion, and not at times of physical congestion. It is also preferable that some of capacity released through the auction is firm. For these reasons, approach 3 appears to be an appropriately balanced method.

In the first instance, there could be no compensation or the compensation mechanisms could be simple, with interrupted shippers being compensated the price paid in the auction. Over time, a more sophisticated compensation mechanism could be introduced, if deemed necessary.

6.3.3 Curtailment order

The discussion in section 6.3.2 relates to scheduling. That is, whether (re)nominations made by incumbent shippers will be schedule for dispatch when the total of the capacity that shippers want to be scheduled exceeds the physical capacity of the pipeline.

A separate issue is that of where in the curtailment order should the capacity released in the auction be placed.

Curtailment happens to scheduled capacity, and arises because the physical capacity of the pipeline unexpectedly declines compared to that forecast at the time of scheduling (for example, in the event of equipment outage).

The Commission's understanding is that most pipelines have a curtailment order.[65] Firm capacity is typically last to be curtailed, and is only curtailed (on a pro rata basis) once all other categories of capacity have been curtailed.

Placing the capacity released through the auction low in the curtailment order (ie, late to be curtailed) increases the value of that product, but implicitly reduces the value of all products at or above it in the curtailment order. This is the key trade-off in determining the curtailment order.

Curtailment arises due to physical congestion – more capacity has been scheduled than can be physically shipped by the pipeline system. As discussed above, part of the rationale for the auction is to address contractual and not physical congestion. It therefore seems appropriate that the capacity released in the auction is curtailed ahead of firm capacity. Its exact place in the curtailment order on each pipeline would need to be determined.

65 For example, overruns ahead of interruptible capacity ahead of firm capacity. Other categories of capacity also exist.

6.3.4 As-available rights

Some shippers hold contracted rights to nominate capacity on an as-available basis. In effect, they have first right of refusal if contracted firm capacity is not nominated.

These contracts seem to be inconsistent with the proposed auction for as-available capacity. Those holding the as-available rights might get priority to as-available capacity by virtue of holding a contract for the as-available capacity with the pipeline owner as opposed to because they are willing to pay more for the capacity through the auction, in competition with other shippers.

Existing contracted as-available rights might be grandfathered, with those holding such rights getting first right of refusal to contracted but un-nominated capacity before the auction is run, and any capacity bought through this approach not then being made available through the auction. Over time, contracted as-available rights could then be phased out, so that all shippers are able to compete for contracted but un-nominated capacity through the auction.

6.3.5 STTM nomination times

In order to know how much contracted capacity has not been nominated, the auction might be held daily on the afternoon prior to the gas day, after which nominations have typically been made (notwithstanding the discussion above about holding auctions more immediately prior to the time that gas is shipped). This means that the auction will be held after the time at which bids and offers for gas into the STTM hubs must occur by.[66]

In order to place a valid bid or offer for gas onto the STTM, a shipper must hold sufficient firm capacity on pipelines into or out of the hub, to ensure that sufficient capacity is available to fulfil the bid or offer. This means that a shipper will be unable to place a valid bid or offer into the STTM using capacity bought in the auction.

However, a shipper is currently able to submit a market schedule variations (MSV) instructing AEMO to modify its shipper schedule if the shipper changes the quantities it is delivering or using. MSVs are a mechanism for trading participants in the STTM to administer differences between scheduled and delivered quantities of gas on a particular gas day. Providing the net impact on the hub is zero, there will be no deviation payment for the shipper or shippers involved.

MSVs may be submitted until seven days after the gas day to which they relate. Because they may be submitted after the event, they do not required firm capacity – the gas has already been delivered, so the question of whether the capacity will be available to delivery the gas is irrelevant. MSVs may therefore be an appropriate mechanism through which a shipper can schedule gas onto the STTM using capacity bought in the auction, as illustrated in the example in Box 6.7.

66 Noon the day before the gas day on the Adelaide and Sydney STTMs, and 1.30pm the day before in Brisbane.

Box 6.7 Market schedule variations

A shipper has firm pipeline capacity for 100GJ of gas into the Adelaide STTM, but wishes to ship 110GJ. The shipper has been unable to secure additional firm capacity through the secondary capacity market.

At noon the day before the gas day, it places an offer for 100GJ of gas into the STTM and a bid for 100GJ of gas from the STTM, and, through the STTM scheduling process, is scheduled to buy and sell 100GJ of gas. Its bid quantity was capped at 100GJ, as this is the total firm capacity it has at the time of the nomination, despite its preference to ship 110GJ.

In the contracted but un-nominated capacity auction (held, for example, at 6pm the day before the gas day), the shipper secures another 10GJ of capacity. It then submits an MSV to AEMO, informing AEMO that it will over-supply the market (as scheduled) by 10GJ and over-consume by 10GJ. The shipper then ships 110GJ of gas.

One potential drawback of this mechanism is that shippers incur a variation fee if the MSV results in a net increase in flows into and out of the STTM. This fee is between zero to three per cent of the ex-ante price of gas on the STTM, depending on the quantity of additional gas shipped. Shippers using the MSV to ship gas using capacity acquired in the auction would be subject to this variation fee.

The Commission acknowledges that there may be other difficulties in using MSVs to remedy the potential issue arising as a result of differences between the STTM nomination timetable and the proposed auction timing, and welcomes feedback in this regard.

Questions on how the auction might interact with existing rights and nominations processes are provided in Box 6.8.

Box 6.8 Interaction between the auction and existing rights

- How material is the issue of re-nomination rights, and has the Commission accurately characterised the issue?
- Has the Commission identified all possible solutions to this issue?
- What is your preferred solution to this issue, and why?
- How complex and costly would holding more frequent auctions be?
- Where should capacity bought in the auction be placed in the curtailment order?
- Should contracted as-available rights be permitted in light of the introduction of the auction? If not, how should existing as-available rights be phased out?
- Are the MSVs appropriate mechanisms through which shippers should renominate additional gas into the STTM in light of additional capacity secured through the auction? What possible advantages and disadvantages might this approach have?

6.4 Auction with price cap on reference services

There is a conceivable but unlikely set of circumstances where the proposed auction may conflict with existing pipeline regulations. This section discusses how this situation might be resolved, were the situation to arise in practice.

In the situation that a pipeline is covered[67] *and* full regulation is applied[68] *and* the AER deems the service provided by the auction as a reference service[69], then the AER will set a reference tariff for the service, which effectively acts as a price cap. This would be in conflict with the proposed auction, which has an uncapped clearing price, and could therefore clear above the price cap set by the AER.

This situation may be particularly unlikely given that the AER is required to consider the revenue and pricing principles in determining whether a service should be a reference service. Consideration of these principles may dissuade the AER from making the service provided for in the auction a reference service, given that the auction is already providing a mechanism through which the capacity is priced.

The Commission's preferred method of harmonising the auction with the existing regulatory regime in the unlikely circumstances where the service sold through the auction is a reference service, is that the auction clearing price should be capped at the reference tariff.

In the event of multiple bids at the cap, a tie-breaking mechanism would be required to determine the capacity allocation. Options include allocating the capacity on a pro-rata basis in proportion to the size of the bids, on a first-come-first-serve basis, or randomly. At this stage, a pro-rata approach appears appropriate.

6.5 Lateral pipelines where consumers have limited supply options

One issue not specifically raised in the Stage 2 Draft Report is that of gas consumers being served by a single pipeline attempting to negotiate a delivered gas price where the rights to capacity on that pipeline are owned exclusively (or nearly exclusively) by a single shipper acting as retailer. In this circumstance, the retailer has considerable market power over the consumers on the pipeline. This situation appears more likely to occur on lateral pipelines, where shippers may be able to secure all (or nearly all) of the capacity.

The situation may arise because a Gas Supply Agreement between a consumer and shipper expires before the Gas Transportation Agreement between the shipper and pipeline owner expires. In this instance, the retailer may be able to negotiate the (new) Gas Supply Agreement with the consumer at a price above that which would be expected in a workably competitive market, because no other retailer is able to access the pipeline to ship gas to the consumer.

67 See s.15 of the NGL.

68 See s.122 of the NGL

The auction may be able to provide some relief to the consumer in this circumstance, as it may be able to secure capacity on a day-ahead basis. The consumer might choose not to agree a GSA with the retailer. The retailer would therefore not be nominating capacity to the pipeline owner, meaning that the capacity would be available in the auction.

If the consumer was confident that the un-nominated capacity was less than the total demand for capacity (because, for instance, it was the only consumer on the pipeline[70]) then it would be confident that the auction would clear at the reserve price. It could then secure its own gas and ship the gas itself (or contract with another retailer to do so), at a low price.

However, if demand for the capacity released in the auction exceeded supply (perhaps because of other gas consumers on the pipeline) then the consumer or alternative retailer would be at risk of not being able to buy capacity in the auction (or doing so at a very high price). The Commission is therefore not convinced that the proposed auction is a sufficient solution to this issue.

Having said this, the Commission has not received any direct evidence to it that this is an issue in practice, and wishes to understand the materiality of the issue before exploring alternative options.

Note this is different to the situation to where a single consumer directly owns all the capacity on a pipeline, or it has already struck a deal with a retailer which owns all the capacity (as discussed in section 6.1.2). In this instance, the auction may be unnecessary, as any capacity not nominated for that consumer's use cannot be allocated through the auction to an alternative consumer.

Box 6.9 Retail competition on lateral pipelines

- Is the issue of insufficient retailer competition on pipelines a significant problem? Please provide specific evidence in this regard.
- Is the auction likely to provide a sufficient remedy to the issue?
- How might this issue otherwise be addressed?

69 See s.101 of the NGR

70 Note that there being only one consumer on a pipeline does not mean that there would necessarily be only one shipper on the pipeline, such that the auction might not need to be held, as discussed in section 6.1.2. They may be two or more shippers (retailers) competing to sell gas to the one consumer, or the consumer could act as a shipper itself, competing with the incumbent retailer for capacity on the pipeline.

7 Information on primary capacity purchases

The Commission recommended in the Stage 2 Draft Report that information on the prices struck for all primary trades be published, along with information on the key terms and conditions that may have affected the prices struck in those trades. The Commission proposes that this obligation applies to contracts that are entered into on or after the date the reporting obligation takes effect.[71]

As with the obligation to publish information on secondary capacity trades (discussed in sections 4.7 to 4.9), consideration will need to be given to:

- the information to be reported and the costs and confidentiality issues that may be associated with reporting this information;
- when the information would be reported; and
- whether the reporting obligations should be limited to transportation services or extend to hub services and any other services provided by pipelines.

These issues are discussed in further detail in the remainder of this chapter, which commences with an overview of the rationale for making this recommendation.

7.1 Rationale for the recommendation

The Commission considers that there is an issue regarding actual or perceived non-discriminatory access to primary capacity. The price and other terms of primary capacity transactions are currently confidential, meaning that other shippers have no way to assess whether their own capacity purchases are non-discriminatory.

This may particularly deter new entry by shippers with smaller gas portfolios, who, unlike a large shipper, may consider that they do not have the market power to negotiate a good deal with the pipeline owner. Importantly, the perception of non-discriminatory access is as important as the practice of non-discriminatory access.

Even if, in practice, shippers are being charged the same tariff for the same service, if they perceive that they are not receiving competitively neutral treatment relative to incumbents then this may be sufficient to deter new entry.

To the extent that pipeline owners are currently price discriminating, transparent historical prices, terms and conditions should place a discipline on pipeline owners not to undertake this practice. Even if price discrimination is not occurring in practice, transparency should give shippers confidence that this is indeed the case, and improve their negotiating power with the pipeline owners.

71 Other contracts that are on foot at the time the reporting obligation takes effect would therefore be likely to be exempt from the obligation.

A number of stakeholders opposed primary capacity trades being published. They noted that discrimination in the provision of access is not a significant problem in Australia and that careful consideration would need to be given to the effect that the release of this information would have in downstream markets.[72]

The Commission is keen to understand further whether actual or perceived discriminatory access is a problem in sale of primary capacity.

Nevertheless, greater transparency in information in the primary capacity market may result in more informed and potentially improved decisions by shippers and other participants. Such decisions not only include capacity procurement decisions, but also for consumption, production, investment and pipeline operations. More information would also enable regulators (such as the ACCC) to assess the prevalence of monopoly power in the primary capacity market.

7.2 Design considerations

The Commission considers that much of the information reporting requirements for primary capacity trades is likely to be the same as for secondary capacity trades. Sections 4.7 to 4.9 discuss, in the case of secondary capacity trades:

- what information should be reported;
- the timing of when information should be reported; and
- whether the reporting obligations should be limited to transportation services or extend to hub services and any other services provided by pipelines.

The Commission is interested in understanding whether there should be any differences in the case of primary capacity trades for any of these matters, and invites answers to the following questions.

72 See submissions on the Stage 2 Draft Report, February 2016: APGA, p. 13 and EnergyAustralia, pp. 4- 5.

Box 7.1 Information provision for primary capacity trades

- Should the reporting requirements apply equally to all primary capacity trades?
- Are the terms and conditions that should be reported the same for primary capacity trades and secondary capacity trades? If not, which should differ and why?
- How might bespoke arrangements in primary capacity trades be accommodated in the reporting requirements?
- How might the protection on anonymity be achieved for primary capacity trades, to the extent this differs compared to secondary capacity trades? For example, can aggregation be used to protect anonymity in the case of primary capacity trades, and how?
- What are the likely cost of primary capacity information provision?
- Should the timing of primary capacity information publication differ compared to secondary capacity trades? How might a lag apply to primary capacity trades given that capacity traded is typically long-term (unlike secondary capacity which can typically be short- or long-term)?
- Should the reporting obligations for primary trades of hub services, storage services and any other services provided by pipelines differ compared to the obligations for secondary trades?
- What are likely to be the key benefits, risks and costs to your business of the proposed primary capacity transaction information provision requirements? Estimates on the magnitude of these benefits and costs are welcomed.