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# Gas pipeline regulation and capacity trading

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Economic review of the AEMC's discussion paper

A report for APA Group

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# 1. Introduction

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APA Group (APA) has asked me to review and comment on the economic principles disclosed in the 'Pipeline Regulation and Capacity Trading Discussion Paper' (the discussion paper), recently published by the Australian Energy Market Commission (AEMC, or the Commission). The AEMC discussion paper was prepared in the context of its East Coast Wholesale Gas Market and Pipeline Frameworks Review (the review), which is being undertaken at the request of the Council of Australian Governments' Energy Council (the Council).

The essential premise of the discussion paper is that aspects of the existing, contract carriage-based arrangements for the long-term allocation of gas transmission capacity in the east coast may need to be modified in light of doubts about the performance of those arrangements in ensuring the efficient, short term allocation and pricing of transmission capacity.<sup>1</sup>

On this premise, the discussion paper canvasses three broad options, the nature of which ranges from measures designed to reduce transactions costs and so facilitate voluntary trade<sup>2</sup> in pipeline capacity (approach A), through to more onerous arrangements involving, potentially:

- the compulsory reallocation of unused capacity from existing to prospective shippers<sup>3</sup> (approach B); and
- yet further, potential changes to the coverage regime with the objective of the imposing comprehensive regulation on most or all forms of capacity held by pipelines found to be exercising market power<sup>4</sup> (approach C).

In light of the fundamental significance of potential changes canvassed by the AEMC - particularly those in relation to approaches B and C - APA has asked that I review the discussion paper with particular regard to:

- the economic principles disclosed, including the extent to which they are on all fours with those contained within the national gas objective<sup>5</sup> (NGO), and the implications of those principles for the framing of the potential problems identified in the discussion paper;
- the strength of the economic reasoning and/or empirical evidence identified in the discussion paper and so the extent to which it is capable of supporting the hypothesised doubts that it identifies; and
- in light of my findings above, the priority areas for analysis and focus in the next stages of the AEMC review.

I have structured this paper by reference to these three elements of my review.

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<sup>1</sup> AEMC, Pipeline Regulation and Capacity Trading Discussion Paper, 18 September 2015, p ii

<sup>2</sup> AEMC, Pipeline Regulation and Capacity Trading Discussion Paper, 18 September 2015, p iii

<sup>3</sup> AEMC, Pipeline Regulation and Capacity Trading Discussion Paper, 18 September 2015, p iii

<sup>4</sup> AEMC, Pipeline Regulation and Capacity Trading Discussion Paper, 18 September 2015, p iii

<sup>5</sup> National Gas Law, section 23

## 2. Economic principles and main findings

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In this section, I identify the key economic principles disclosed in the discussion paper and their implications for the framing of the problems hypothesised by the AEMC, as well as summarising the ‘potential issues’ canvassed and their identified causes.

### 2.1 Economic objectives and framing

The Commission’s review is being undertaken at the direction of and by reference to the vision statement specified by the Council, which states:

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

The Commission is clear that the approaches canvassed in its discussion paper have been identified with the Council’s vision in mind, and states that these are still to be tested against a wider, assessment framework developed during stage one of its review.<sup>6</sup> That assessment framework has as its overarching objective the NGO, which states that:

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

A striking distinction between the Council’s vision statement and the NGO is the much stronger emphasis of the former on the pursuit of short term, allocative efficiency goals – as distinct from the longer term, dynamic efficiency objective of ensuring appropriate investment in new pipeline capacity.

The NGO refers explicitly to both short term, allocative efficiency (‘use of’ natural gas services) and longer term, dynamic efficiency (‘investment in’ natural gas services). However, when it comes to striking a balance between these two objectives, the NGO’s reference to the long term interests of consumers suggests that investment in pipelines is the relatively more important.

By contrast, the Council’s vision refers to investment in only two, somewhat indirect respects, ie:

- that investment is one objective of the signals that are expected from a liquid wholesale gas market; and
- that responses to those signals should be facilitated by a supportive investment and regulatory environment.

This contrasts with the extensive and direct focus of the Council’s vision on short term, allocative goals, through its references to:

- ‘trade’ (presumably, in both gas transmission capacity and gas itself) ‘at a point that best serves the needs of participants’;
- an ‘efficient reference price’ at that (or those) points; and
- the where ‘trading markets are connected to infrastructure that enables participants the opportunity to readily trade between locations’; and

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<sup>6</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 2

- ‘arbitrage trading opportunities’.

Consistent with the Council’s vision being the focus of its review, the AEMC’s discussion paper is also focused on addressing short term, allocative challenges, such as those potentially arising from:

- high search and transactions costs in the market for short term trades in transmission capacity;
- lack of incentives for shippers to provide access to that capacity; and
- lack of incentives for pipeline owners to facilitate access.<sup>7</sup>

Notwithstanding that the Commission’s subsequent assessment process is still to be undertaken,<sup>8</sup> in the process of framing the potential problems and options for dealing with them, it would have been helpful for the discussion paper to draw out more explicitly that any institutional framework governing the terms of access to natural monopoly infrastructure – such as, but not only in relation to gas transmission pipelines – must confront the trade-off that exists between:

- the short term objective of ensuring efficiency in the allocation of ‘unutilised’ pipeline capacity; and
- the long term objective of ensuring sufficient investment in new pipeline capacity to meet the needs of a dynamic market environment.

The implications of this trade-off can be observed in very practical terms in the form of widely accepted evaluations of the relative economic performance of the two distinct institutional frameworks that govern investment in and use of gas pipelines in Australia. In particular:

- the Victorian declared wholesale gas market (DWGM) is designed with a principal focus on ensuring the efficient allocation of existing pipeline capacity, but is widely acknowledged<sup>9</sup> to have shortcomings in terms of its ability to deliver new capacity in the right quantity, at the right time and in the right place; and
- by contrast, the contract carriage framework that applies in the rest of the country is generally considered<sup>10</sup> to have been significantly more successful at delivering new investment in pipeline capacity.

The comparative performance of these two frameworks should not be surprising, given the economic trade-offs involved and the relative emphasis to date in terms of their institutional design.

Notwithstanding, in framing its hypothesis of potential allocative inefficiency, it would have been helpful for the discussion paper to have given more emphasis to ‘standing back’ from the contentions that particular (often, interested) parties have made in terms of the short term performance of the east coast pipeline system. In canvassing the merits of fundamental change, it is important to take account of the extent to which this may only be achievable at significant sacrifice for related but different objectives – such as the need to secure long term, dynamic efficiency.

## 2.2 Potential issues identified by the AEMC

The AEMC identifies three main ‘potential impediments’<sup>11</sup> to the efficient allocation of capacity between shippers, with the end result hypothesised as being either:

<sup>7</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 2

<sup>8</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 2

<sup>9</sup> See, for example: Productivity Commission, *Examining Barriers to More Efficient Gas Markets*, March 2015, p 105 and 116; and AEMC, *Review of the Victorian Declared Wholesale Gas Market, Discussion Paper*, 10 September 2015, pp 44-45; and K Lowe Consulting, *Gas Market Scoping Study: A Report for the AEMC*, 2013, p xvi

<sup>10</sup> See, for example: Productivity Commission, *Examining Barriers to More Efficient Gas Markets*, March 2015, p 117; AEMC, *East Coast Wholesale Gas Market and Pipeline Frameworks Review: Stage 1 Final Report*, 23 July 2015, p 49; AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 6; and K Lowe Consulting, *Gas Market Scoping Study: A Report for the AEMC*, 2013, p 92

<sup>11</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 10

- available capacity remaining unused, despite it being of value to one or other shippers; or
- where pipeline capacity is fully used, it not being allocated to those that value it the highest.<sup>12</sup>

The candidate causes of these potential ‘market failures’<sup>13</sup> cited by the AEMC are:

- restrictive provisions in the terms of gas transportation agreements (GTAs), that may impede the ability of shippers to trade unused capacity;<sup>14</sup>
- ‘monopoly prices’ for contracted but unused capacity, so that some shippers valuing that capacity are priced out of the market;<sup>15</sup>
- the ‘hoarding’ of spare capacity by shippers, which may be facilitated by pipeline owners having the ability to price capacity at monopoly prices, and so not compete effectively with the shipper.<sup>16</sup>

These potential market failures provide the impetus for the potential reform options canvassed in section 4 of the discussion paper.

In analysing the root cause of these potential market failures, the AEMC focuses its attention on the coverage regime under the National Gas Law, and the fact that only a relatively limited number of transmission pipelines are covered.<sup>17</sup> Further, for those that are covered, the discussion paper notes that the focus of the applicable rules on ‘reference services’ excludes from regulatory attention the pricing of ‘non-firm’ services.<sup>18</sup>

In analysing the coverage criteria applying under national third party access regime, which are essentially replicated in the National Gas Law, the AEMC concludes that the coverage process is:

...a tool targeted at enabling third parties to use existing bottleneck infrastructure in circumstances where the owner of the infrastructure does not wish to make it available, and where such use would promote competition in other markets.<sup>19</sup>

On this basis, the AEMC concludes that:

The third party access regime is not, therefore, a comprehensive regulatory instrument designed to solve a broader range of problems that might affect markets such as the gas market. In particular, it may not be specifically designed to address instances of monopoly power on the part of a pipeline owner in the transmission sector, implying that if such instances existed, either now or in the future, pipelines may not be subject to the appropriate level of regulation.<sup>20</sup>

In light of these preliminary findings, the Commission seeks feedback, with a particular degree of interest<sup>21</sup> on whether it would be appropriate to progress work on the development of a regulatory regime ‘more directly targeted at the potential sources of market failure in the gas transmission sector’.<sup>22</sup>

<sup>12</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 10

<sup>13</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 47

<sup>14</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, pp 10-11

<sup>15</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 13

<sup>16</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, pp 14, 47

<sup>17</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 17

<sup>18</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 47

<sup>19</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p iii

<sup>20</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p iv

<sup>21</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p iv

<sup>22</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p iv

## 3. Review of economic reasoning and evidence

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In this section I review the strength of the economic reasoning and empirical evidence identified in the discussion paper and so the extent to which it can safely be concluded that the inefficiencies hypothesised by the Commission are material.

My review gives rise to three principal observations. These are that the discussion paper:

- gives insufficient recognition to the complexity of pipeline economics, and its implications for the trade-off between short-term, allocative and long term, dynamic efficiency;
- would have been strengthened by drawing out more carefully the implications of the underlying economics for the interpretation of evidence otherwise cited as being consistent with the short term exercise of market power; and
- gives misplaced emphasis in its identification of the national access regime's coverage criteria as being a root cause of the issues raised.

I discuss each of these points in turn, below.

### 3.1 Insufficient recognition of complex pipeline economics

In its discussion of potential impediments to efficient, short term outcomes for the allocation of transmission capacity, the AEMC gives significant prominence<sup>23</sup> to the possibility that prices for the use of capacity that is either contracted but unutilised or simply uncontracted may be too high. Further, the hypothesis that such capacity may be over-priced is fundamental to most of the candidate causes of potential short term inefficiency.

In light of the importance of this potential finding, in my opinion, the discussion paper does not sufficiently describe the complex economic conditions that govern the optimal pricing of transmission capacity. The AEMC does acknowledge that:

Determining what the price of non-firm capacity should be relative to that of firm capacity in a workably competitive market is challenging.<sup>24</sup>

Notwithstanding this observation, the discussion paper gives only modest attention to the relevant considerations, whilst also facilitating the myth that short run marginal cost<sup>25</sup> may be an appropriate point of reference for the pricing of otherwise unused transmission capacity.

The consequence of this myth is an implication carried through much of the discussion paper that the possibility of spare transmission capacity not being made available to whomever wishes to use it at marginal cost, amounts to evidence of the sustained exercise of monopoly power.<sup>26</sup> As a matter of economic analysis, this risks labelling what may be no more than short term market frictions (for which reform options should be tailored accordingly), as a potential source of long term, structural inefficiency, thereby giving credence to reform options that are much more far reaching than warranted.

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<sup>23</sup> The possibility of the price for use of such capacity being higher than would be expected in a workably competitive market is listed as the second reason for potential inefficiency, behind explicit limitations in GTAs. However, material submitted by APA suggests that the incidence of the first cited form of inefficiency is rare, and arises principally in relation to long-standing, legacy contracts. See: APA Group, *Pipeline regulation and capacity trading*, Submission to the AEMC Discussion Paper, 23 October 2015, pp 8-9

<sup>24</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 12

<sup>25</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 12

<sup>26</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 13



Further, much of the discussion paper portrays the terms on which otherwise unutilised pipeline capacity is made available as being a comparison of 'non-firm' and 'firm' transmission services.<sup>27</sup> In contrast, the more appropriate comparison is generally between capacity that is 'as available' on a daily basis (but, nevertheless, 'firm' on the day of nomination) and that which is contracted all year, on a take or pay basis. This distinction itself gives rise to a significant complication in making any form of price comparison: by definition, 'as available' capacity is only paid for as and when it is utilised, whereas the unit charge for capacity that is taken or paid for on an annual basis must be divided by an annual load factor in order to obtain a like-for-like price comparison.

More generally, the economic properties of transmission pipelines involve several attributes that are of fundamental importance for the basis on which investment and capacity allocation decisions get made. First, transmission pipelines - particularly those running on a point to point basis - are characterised by strong economies of scale. It follows that the cost of transporting gas is significantly less if the entire origin-destination service is provided by one pipeline, rather than two or more. This economic characteristic is uncontroversial, and gives rise to the strong tendency for a single provider to offer any particular point to point pipeline transportation service.

Second, transmission pipelines must usually be designed to serve variable demand, so that a proportion of capacity will remain unutilised for most days of the year, even though - because of scale economies - it is productively efficient for this to be the case. Put another way, the existence of a degree of pipeline capacity that is unused for much of a typical year represents a cheaper way of meeting demand on peak days, as distinct from the potential option of demand curtailment.

Third, because it is often economic for new pipelines to be built with a degree of capacity that will remain unused, at least for all but a few seasonal peak days of the year, and perhaps for several initial years of service (in anticipation of market growth), pipeline investment decisions are prone to the risk of free-riding. Shippers who commit to foundation contracts as well as pipeline owners themselves are vulnerable to the intrinsic risk of users or potential users declining to commit to underwriting capacity on a take or pay basis, but instead seeking to free-ride on the existence of spare capacity, once the pipeline is built.

Contract carriage arrangements represent an efficient framework for addressing these complexities. Their essence is that:

- a pipeline gets built only once there is a sufficient number of foundation customers willing to commit to taking and paying for either the entire pipeline capacity, or a significant enough proportion to cover most of the costs;
- the pipeline owner is able to defray the majority of the market-related risks through those take or pay commitments, and so minimises its cost of capital; and
- the right to use that capacity is controlled by foundation shippers, each of whom has the discretion to make any surplus available to other potential users, once their own needs are met.

In these circumstances, both pipeline owners (who may or may not have developed a pipeline with a proportion of its capacity available on a merchant basis) and shippers must strike a balance between:

- limiting the extent to which spare capacity is made available at its short run operating cost – since, to do so consistently and in any material quantity will potentially:
  - > undermine the competitive position of incumbent shippers in up- and downstream markets, by allowing entrants to compete in those markets without bearing the long run costs associated with the provision of transport infrastructure; and
  - > undermine the prospect of shippers committing to the future take or pay contracts necessary to support investment in any new pipeline; and

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<sup>27</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p.12

- the fact that the existence of multiple parties (whether shippers or pipeline owners) controlling the available unused capacity means there are competitive constraints on the extent to which any one party can profitably withhold short term capacity in the event there is genuine demand for it.

Taken together, these economic characteristics mean that it is important to approach claims that unutilised capacity is being priced too highly with a degree of scepticism. Scepticism is even more appropriate when those same parties have not committed to sufficient long term take or pay obligations to ensure that such capacity is always available.

It follows that circumstances presenting as a near term loss of efficiency (such as gas appearing not to move to where it is most highly valued in the short term), or as an apparent reduction in downstream market competition, can reasonably also be interpreted as also being consistent with the actions of those seeking to prevent the movement of gas on the basis of transport costs that are unsustainably low.

The phenomena I describe above are all consistent with outcomes in workably competitive markets. There are many examples of goods or services produced in industries that have not dissimilar cost structures to those of gas pipelines, which are widely accepted as being workably competitive, and operate in precisely similar manner. By way of example, the short run marginal cost of making available an existing seat on an airline flight is systematically low (unless or until a plane is full, and prices must act to curtail demand). However, airlines cannot sustainably set ticket prices by reference to such a cost benchmark. Rather, the prices for all tickets must be set so as to contribute to the long run costs of the substantial capital needed to operate an aircraft over the longer term.

Put simply, the underlying economic characteristics of gas pipelines give rise to an intrinsic trade-off between short and long term efficiency, and this must be taken into account in any assessment of the arrangements for the allocation and pricing of pipeline capacity.

In my opinion, appendix A4 of the discussion paper - on the characteristics of a well-functioning gas market - glosses over these issues. Although the discussion paper adequately identifies optimal outcomes consistent with workable competition, it does not identify or discuss:

- the principal challenges in interpreting empirical evidence for assessment against the workable competition benchmark in relation to gas transmission pipelines - being the economies of scale, and the associated risk of free riding in relation to the pricing of 'spare' capacity, so that its making available to others on an unrestricted basis will not be optimal over the longer term; and
- that there is a fundamental design choice between contract-based markets (such as predominates in the east coast of Australia), and administered markets that focus on short term price formation and the allocation of day-to-day capacity (such as exists in the DWGM and, by way of analogous example, the wholesale electricity market).

As a matter of economic principle, each form of market design has its strengths and weaknesses. However, it should be stressed that no market design can be made to work by allowing systematic access to spare capacity at its short run operating cost. Rather, it is crucial for any form of market carriage arrangement:

- to allow for prices to go to extremely high levels where there are shortages (as is well accepted in wholesale electricity markets); and
- to ensure the existence of some form of contractual or regulatory overlay so that parties not committing to finance new capacity are unable to access unused capacity without contributing significantly to the long term cost of making that capacity available.

### 3.2 Potential misinterpretations of evidence

The challenging underlying the economics of transmission pipelines that I describe above, and the intrinsic trade-offs between the management and pricing of short and long term capacity that arise, have implications for the interpretation of much of the evidence cited by the AEMC as being consistent with the short term exercise of market power. By way of example:

- many of the provisions in GTAs to which the discussion paper draws attention as limiting the incentive and/or ability of either capacity holders or pipeline owners to compete for the provision of capacity are explicable by reference to benign or even pro-competitive economic considerations, eg:
  - > the specification of particular receipt and delivery points in GTAs<sup>28</sup> is consistent with the ordinary operating requirements of a point to point transmission service, where changes to receipt and delivery points may affect the capacity to provide other, contracted transmission paths;
  - > most favoured nation provisions<sup>29</sup> - which are most likely to be sought by shippers, rather than pipeline owners - have the function of assuring a shipper that its long term ability to compete in downstream markets will not be compromised by a rival having access to systematically lower transportation charges;
- the apparent 'hoarding' of capacity<sup>30</sup> may, again, amount to benign if not pro-competitive conduct in the form of a shipper seeking to ensure that its ability to compete in downstream markets will not be undermined by others having access to transport capacity at prices below that necessary for their sustainable provision;
- the setting by a pipeline owner of what has been characterised as 'monopoly prices'<sup>31</sup> for spare capacity may well be explicable by the need to prevent free riding by shippers that are unprepared to commit to reserving capacity on a take or pay basis, thereby weakening the economics of investment in future pipeline developments;
- in contrast to the final condition for hoarding listed at page 14 of the discussion paper, the setting of 'monopoly prices' for capacity is more likely to discourage than to incentivise hoarding by shippers, since the higher the price paid for obtaining capacity, the greater will be the economic cost to a shipper of retaining such capacity when it is surplus to requirements; and
- representations by would be shippers (whom, observing the existence of unused pipeline capacity, have a strong incentive to seek access at a price near to its short run marginal cost) as to the excessive price of 'as available' capacity should be interpreted with a degree of scepticism – such representations are precisely consistent with the risk of free riding by those who are unprepared to contribute to the long cost of making pipeline infrastructure available, thereby undermining the economics of transmission investment.

In my opinion, the theme of wide-ranging potential inefficiencies disclosed by the discussion paper would have attained more balance if the underlying economics of transmission pipelines had been drawn out more carefully, with particular emphasis on the implications for the interpretation of empirical evidence.

### 3.3 Analysis of coverage criteria

The Commission's discussion paper raises the question so to whether or not the coverage criteria that apply under the National Gas Law (NGL) are adequate for determining which transmission pipelines should be covered, and so subject to the comprehensive price regulation framework set out in the National Gas Rules (the rules).

Preliminary analysis of this question in the discussion paper raises the implication that changes should be considered so that the threshold for transmission pipelines falling within the rules - which is based on the criteria established under the national access regime - should be:

...directed towards potentially more relevant problems.<sup>32</sup>

and,

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<sup>28</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 11

<sup>29</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 12

<sup>30</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 14

<sup>31</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 14

<sup>32</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 21

...more directly targeted at the potential sources of market failure in the gas transmission sector.<sup>33</sup>

The Commission's discussion paper presents an analysis of the appropriateness of the coverage criteria that draws in significant part on recent statements made by the National Competition Council (NCC), in the context of its draft recommendation not to declare services provided by facilities at the port of Newcastle. For example, the discussion paper notes the NCC's recent observation that:

3.16. Declaration under the National Access Regime is not a mechanism for imposition of price regulation and was never intended to be such. "Excessive", "monopolistic" or "gouging" pricing per se is not the focus of Part IIIA. Where such pricing in one market merely transfers income or value from one party in a supply chain....<sup>34</sup>

Drawing explicitly on the NCC's observations in relation to the national access regime, the discussion paper observes that:

...the test for regulation provided under the national gas access regime may be directed towards a problem that may be unlikely to exist in the gas transmission sector, and not directed towards potentially more relevant problems.<sup>35</sup>

The AEMC then goes on to state that these 'more relevant problems' are:

The potential for market power in the transmission sector...[so that]... pipeline owners may be able to price capacity at a level higher than... would be expected to prevail in a workably competitive market...[with the consequence that]...there could be a detrimental effect on competition in the wholesale market, through the potential under-utilisation of pipelines.<sup>36</sup>

In my opinion, many of the statements made by the NCC in relation to the national access regime are of little apparent relevance for drawing conclusions in relation to the coverage criteria and its consequences for gas pipelines. A fundamental distinction between the national access regime and the arrangements applying under the NGL is that:

- under the former, the threshold for coverage simply accords the right for an access seeker to have the Australian Competition and Consumer Commission (ACCC) resolve any dispute over access terms and conditions through binding arbitration; and
- by contrast, under the arrangements applying to gas pipelines, the threshold for coverage triggers the application of a comprehensive set of rules for determining reference tariffs, and so on – all of which have been developed by reference to the NGO.

By virtue of this distinction, in my opinion the NCC's observations that:

...the National Access Regime is not a mechanism for imposition of price regulation and was never intended to be such. "Excessive", "monopolistic" or "gouging" pricing per se is not the focus of Part IIIA.<sup>37</sup>

are not applicable for the circumstances applying to gas pipelines.

Rather, the rules that apply under the NGL once a pipeline meets the coverage criteria are unambiguously directed to:

- the 'imposition of price regulation'; and
- addressing practices that involve "Excessive", "monopolistic", or "gouging" pricing.'

<sup>33</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p iv

<sup>34</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 20

<sup>35</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 21

<sup>36</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, pp 21, 22

<sup>37</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 20

In my opinion, these statements highlight the internal contradiction in the reasoning set out in the discussion paper.

More generally, in its analysis of the coverage criteria, the Commission appears to have misinterpreted its role in relation to gas pipelines, and the scope of the consequential access price regulation framework that applies. On one hand, the discussion paper states that coverage criterion (a) is not designed to address the problem of monopoly pricing, but rather to address concerns about the effectiveness of competition in up- or downstream markets.<sup>38</sup>

On the other hand, the AEMC states clearly that the basis for concern in relation to potential monopoly pricing by gas transmission service providers is the potential for:

....a detrimental effect on competition in the wholesale market, through the potential for the inefficient under-utilisation of pipelines.<sup>39</sup>

The degree of alignment between this form of problem statement, and the role of the criteria for declaration as recently described by the NCC is striking. By way of comparison, the NCC recently stated:

The regime provides a means of promoting competition in markets where the ability to compete effectively is dependent on being able to use *on reasonable terms and conditions* an infrastructure service provided by a facility that is uneconomical to duplicate.<sup>40</sup> [emphasis added]

These statements indicate that the Commission is still to establish the essential rationale for its suggestion that the coverage criteria for gas pipelines are somehow inappropriate for addressing the question of whether or not the terms and conditions of access to a particular pipeline should be subject to the regulatory regime applying under the rules.

Although the AEMC expresses its concern in terms of the effect of potential monopoly pricing by pipelines on the effectiveness of competition in up- or downstream gas markets,<sup>41</sup> it also appears to believe criterion (a) represents is too high a hurdle for determining which pipelines should or should not be subject to the NGL's regime of access price regulation. However, any amendment to criterion (a) of the gas pipeline coverage regime risks the imposition of regulation that does not deliver net economic benefits. Both the national competition policy framework and the NGO are firmly anchored by reference to economic efficiency. Any move to depart from that principle would put the economic integrity of these regimes at risk.

In my opinion, the analysis and reasoning put forward in the discussion paper does not establish a case for reviewing the coverage criteria for gas pipelines. Criterion (a) has economic efficiency as its essential foundation, through its focus on the application of regulation in circumstances where there are tangible consequences for competition and so efficiency in upstream or downstream markets.

This objective is on all fours with the NGO, and those elements of the Commission's discussion paper that emphasise the need to address circumstances where the exercise of market power (by pipeline owners, or incumbent shippers, where this may be a consequence of contractual terms set by pipeline owners) causes detriment to the ability of gas markets to respond to an increasingly dynamic environment. Against that background, there is no apparent rationale for the potential conclusion that the existing coverage criteria are inadequate for addressing 'the most relevant market failures in the gas transmission sector'.<sup>42</sup>

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<sup>38</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 21

<sup>39</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 22

<sup>40</sup> NCC, *Declaration of the shipping channel service at the Port of Newcastle*, Draft recommendation, 30 July 2015, para 3.2

<sup>41</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 22

<sup>42</sup> AEMC, *Pipeline Regulation and Capacity Trading Discussion Paper*, 18 September 2015, p 23

## 4. Priorities for next stages of review

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In this section I summarise of my findings as to the strength of the economic reasoning and empirical evidence identified in the discussion paper, and so the extent to which it is capable of supporting the hypothesised inefficiencies that it canvasses. In light of those findings, I make some observations as to priorities for analysis and focus in the next stages of the AEMC's review.

### 4.1 Reconciliation of Council's vision with NGO

The priorities embedded in the Council's vision are not on all fours with the objectives disclosed by the NGO. These distinct reference points for the AEMC's review of pipeline regulation and capacity trading strike different balances of emphasis as between short and long term economic efficiency. Of critical importance, the framing of both potential inefficiencies and many of the options for responding to them is fundamentally affected by an intrinsic trade-off between these two objectives.

Notwithstanding, the discussion paper makes few explicit references to the NGO, other than noting it will sit over a subsequent assessment process. In my opinion, it would be helpful for the AEMC to bring forward in its review process a more explicit consideration of the long term objectives that would need to be sacrificed in pursuing at least some of the potential reforms it has flagged.

In plain terms, any reform that means it would be less attractive for shippers to hold contracts for firm, take or pay capacity (say, because more onerous, regulatory obligations become attached to that contractual right) risks compromising investment in new pipelines. If the Commission was to devote more of its analysis and emphasis to this trade-off, a number of the potential reform options raised in the discussion paper may be able to be set aside without significant further analysis or consultation.

### 4.2 Trade-offs arising from complex pipeline economics

In assessing the trade-off between short and long term efficiency objectives, it would be helpful for the Commission to give more emphasis to explaining and drawing out the implications of the complex issues that underpin pipeline economics. I explained that in section 3.1:

- strong economies of scale in the development of new pipeline capacity mean it is generally cheaper for a single pipeline to serve any particular origin-destination pair, and for that pipeline to be designed so that some capacity will be unused for much of a typical year; and
- the very existence of such unused capacity gives rise to the risk of users seeking to free-ride on those shippers (and pipeline owners) that have committed to underwriting new pipeline investments by seeking access on terms approximating short run marginal cost, once a pipeline is built.

Under a contract carriage framework, pipeline owners and shippers must therefore strike a balance between:

- limiting the extent to which pipeline capacity is made available at prices below those necessary to support the long term provision of capacity, thereby undermining the prospects for investment in new capacity; and
- that the existence of multiple parties controlling that unused capacity placing constraints on the ability of any individual shipper (or pipeline owner) withholding capacity when there is genuine demand for it.

In my opinion, more comprehensive recognition and analysis of these challenges would enable the AEMC's review to take more carefully into account the fundamental trade-offs that must be struck in its process of testing the extent of any hypothesised inefficiencies, and identifying and evaluating options for addressing them.

### 4.3 Testing of evidence against economic framework

It would be helpful for the Commission to devote more effort to teasing out the consequences of the economic complexities I have identified for its analysis and interpretation of circumstances put forward as 'evidence' of short term allocative inefficiency. By contrast to the implications drawn in the discussion paper, many of the observations cited by the AEMC (or by stakeholders engaging in the review process) can equally be explained by reference to longer term, workably competitive market outcomes. Further, by facilitating the myth that short run marginal cost may be an appropriate reference point for the pricing of otherwise unused capacity, the discussion paper risks labelling short term frictions as symptomatic of a long term structural problem.

The principal challenges in interpreting empirical evidence for assessment against the workable competition benchmark for gas transmission pipelines are to take into account the implications of economies of scale for investment decision-making, and the associated risk of free riding in relation to the pricing of 'spare' capacity. Looking forward, it would be helpful for the AEMC to recognise that the making available of any significant quantities of spare capacity at short run marginal cost would compromise long term efficiency.

### 4.4 Coverage criteria are fundamentally sound

In my opinion, the AEMC has misidentified the pipeline coverage criteria as a potential shortcoming of the existing institutional and regulatory framework.

Although the coverage criteria are essentially the same, the Part IIIA declaration process and the pipeline coverage regime applying under the NGL have fundamentally different roles. The former establishes the right to invoke a binding dispute resolution process overseen by the ACCC, undertaken by reference to a broad set of pricing principles. By contrast, the pipeline coverage arrangements invoke a comprehensive, established regulatory regime. Given this distinction, certain observations in relation to the Part IIIA regime recently made by the NCC are of little relevance for gas pipelines.

Further, the coverage criteria under both regimes are directed to economic efficiency and - particularly through the focus of criterion (a) - on the role of access 'on reasonable terms' for efficiency in downstream markets. These objectives are not different from those encapsulated by the NGO, or from many of the explicit references made by the Commission as to its focus in the reform options it canvasses.

In my opinion, no case has been made that there is any intrinsic shortcoming in relation to the coverage criteria as a threshold for decision-making as to when it is appropriate to invoke the comprehensive framework for the regulation of price and non-price terms of access to pipeline capacity, as currently available under the rules.



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