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**Testing the bounds of regulation. Submission
in response to the Examination of the current
test for the regulation of gas pipelines.**

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Energy + Water Consumers' Advocacy Program

The Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit law and policy organisation that works for a fair, just and democratic society, empowering citizens, consumers and communities by taking strategic action on public interest issues.

The Energy + Water Consumers' Advocacy Program was established at PIAC in 1998 with NSW Government funding. The aim of the program is to develop policy and advocate in the interests of low-income and other residential consumers in the NSW energy and water markets. PIAC receives policy input to the program from a community-based reference group whose members include:

- Council of Social Service of NSW (NCOSS);
- Combined Pensioners and Superannuants Association of NSW;
- Tenants Union of NSW;
- Ethnic Communities Council of NSW;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW; and
- Good Shepherd Microfinance.
- Affiliated Residential Park Residents Association
- Financial Rights Legal Centre
- The Salvation Army

Introduction

PIAC welcomes the opportunity to respond to Dr Michael Vertigan's (AC) consultation paper, *Examination of the current test for the regulation of gas pipelines*, prepared for the Council of Australian Governments Energy Council (Energy Council).¹ This consultation comes at a critical point for Australia's energy system and has implications beyond gas pipeline regulation.

The recent Australian Competition and Consumer Commission (ACCC) review of the East Coast Gas market recommended that the test to determine coverage of gas pipelines be reviewed to ensure it is fit for purpose in a changing gas market. The Energy Council asked Dr Vertigan to lead the review.

PIAC supports the recommendations put forward by the ACCC and is pleased that the Energy Council is progressing the issue.

Current test

Economic coverage of gas pipelines is assessed by the National Competition Council (NCC) and determined by the relevant Minister in accordance with section 15 of the National Gas Law (NGL).

The section states:

¹ Dr Michael Vertigan (AC) *Examination of the current test for the regulation of gas pipelines* Consultation paper, 4 October 2016.

- (a) that access (or increased access) to pipeline services provided by means of the pipeline would promote a material increase in competition in at least one market (whether or not in Australia), other than the market for the pipeline services provided by means of the pipeline;
- (b) that it would be uneconomic for anyone to develop another pipeline to provide the pipeline services provided by means of the pipeline;
- (c) that access (or increased access) to the pipeline services provided by means of the pipeline can be provided without undue risk to human health or safety; and
- (d) that access (or increased access) to the pipeline services provided by means of the pipeline would not be contrary to the public interest.²

The question at the centre of this review is whether the current test is effective in dealing with the market failure of monopoly pricing. Gas pipelines are natural monopolies, and gas producers and consumers are required to use individual pipelines to transport gas. This provides an opportunity for the pipeline owners to charge monopoly prices for access to capacity regardless of the impact on competition upstream or downstream. The test, particularly subsection (a), does not address this issue as it is only used to determine if access will produce an increase in competition. From a consumer perspective, the key market failure to be addressed is that of excessive market power. PIAC considers that the ACCC assessment is correct and that the test should be amended so that it explicitly addresses the issue of excessive market power.

Consultation

Before addressing the substance of the consultation paper, PIAC would like to comment on the consultation process. PIAC is disappointed with the limited time that has been provided to stakeholders to make submissions. PIAC considers that the tight timeframe makes it difficult for consumer organisations to collect and analyse the information needed to produce an effective submission.

PIAC has previously submitted to the Energy Council on the importance of meaningful consumer consultation.³ Because of the significant resource imbalance between consumer organisations and industry, it is particularly important for governance institutions to provide additional support and information to enable consumer organisations to participate in consultation processes.⁴

In PIAC's view, the National Gas Objective (NGO) and the National Electricity Objective (NEO) and their location within a broader legislative scheme which privileges the interests of consumers, demonstrates the vital role that consumer consultation is intended to play in decision-making in the NEM.

Given the critical role that gas in Australia's energy mix, PIAC believes it is vital that consumers participate and are heard in this consultation.

² National Gas (South Australia) Act 2008—30.1.2015 Schedule—National Gas Law Chapter 1—Preliminary Part 1—Citation and interpretation, 54.

³ PIAC *From complex fragments to competitive consumer-focused markets* Submission in response to Review of Governance Arrangements for Australian Energy Markets: Issues Paper, 7 May 2015.

⁴ *Ibid* 38.

What is the problem and why does it need addressing?

Impact of gas pipeline regulation on consumers

The NGO places the consumer at the centre of energy system decision-making. Gas supply is an essential service that is provided by monopoly businesses. There is a strong case that such services should be regulated.

The cost of gas is increasing in Australia for both residential and business consumers. This has led to an increasing number of households with gas debt, which in some states is greater than the number of households with electricity debt.⁵ PIAC understands that gas prices are influenced by a number of factors, including wholesale gas prices and transmission and distribution charges.

Given there is evidence of monopoly pricing and an opaque gas market, PIAC considers that consumers will benefit from the greater transparency and accountability that would come from improvements in regulation and amendments to the test for pipeline coverage. This is particularly important in a context where the coverage of some distribution pipelines has been reviewed and changed to light regulation. A claim made during one review was that the costs saved as a result of pipeline owners no longer needing to comply with full regulation would be passed onto consumers. Once a decision to revoke coverage or change the level of regulation has been made, however, it is difficult for consumers to determine what effect it has on subsequent pipeline pricing. PIAC recommends a review of light coverage decisions in gas pipelines to determine whether they have led to subsequent reductions in pipeline charges for consumers.

Industry claims that gas is a fuel of choice, and therefore subject to competitive pressures from electricity. For many consumers, this is simply not the case. For some consumers, for example, the cost of changing household appliances from gas to electricity may be too high, while for renters it is a decision they cannot make. For households that only use gas for cooking and hot water, the fixed service charge is a greater portion of their bills, and it is estimated that dual fuel customers pay up to \$900 a year in fixed charges, with gas supply charges for some networks approximately 54% of the bill.⁶ These customers, that remain connected to gas because of inability to switch, will be the most affected by the consequences of any changes to the economic coverage of pipelines.

The fourth criterion in the current test under section 15 is a public interest test that is drafted in the negative, i.e. where 'granting access would *not be* in the public interest'. The primary considerations that are taken into account in determining the public interest are those of economic efficiency, regulatory costs and investment effects. PIAC considers that these factors are too narrow, and not in line with the NGO or the Energy Council's preferred risk-based approach, which seeks to identify any matter that could make access (or increased access) contrary to the public interest and then assess whether the likelihood and consequences of the matter lead to a conclusion that access is contrary to the public interest.⁷

⁵ AER, 2015-16 Q3 Residential customers with an energy debt - by jurisdiction, <https://www.aer.gov.au/retail-markets/retail-statistics/2015-16-q3-residential-customers-with-an-energy-debt-by-jurisdiction>

⁶ St Vincent de Paul Society, Queensland Energy Prices July 2016: An update report on the Queensland tariff-tracking project, 2016, 21-23.

⁷ National Competition Council, Gas Guide, A guide to the functions and the powers of the National Competition Council under the National Gas Law, Version 1.0, October 2013, 48.

The level of information provided should be a key factor in determining the public interest, so that shippers are able to negotiate pricing on uncovered pipelines. If there is not sufficient information, then that should be considered as contrary to the public interest.

Additionally, an applicant should have to prove that revoking coverage is in the public interest rather than proving that the revocation is not contrary to the public interest.

Distribution networks

PIAC considers it relevant to consider recent decisions with regard to the regulation of distribution pipelines. These include changes to light regulation for Brisbane gas distribution pipelines and the removal of coverage for the Wagga Wagga pipeline. PIAC is particularly concerned that the Wagga Wagga pipeline no longer has coverage. PIAC does not consider that retail gas competition is sufficient to provide the competitive pressure as is required by Section 15(a). Under a reworked market power test, the decision may have been to keep the pipeline covered.

In regional areas, such as regional NSW, efforts to promote retail competition have not resulted in an increase in retailers or gas offers available.⁸ This, combined with evidence of monopoly pricing in some of the regional pipelines as well as the larger pipelines,⁹ leads to concerns that regional gas customers are being charged more than the efficient cost of providing that service. Even where pipelines are not charging monopoly prices, the evidence suggests that tariffs charged are higher than they would be if those pipelines were covered by regulation.¹⁰

The reason given for changing the coverage of the Brisbane distribution pipeline is the decline in residential gas demand. The Council, therefore, decided that there would be no incentive for the gas pipeline owner to charge excessive prices. The ACCC found, however, that another pipeline owner (not the owner of the Brisbane pipeline) that they assessed with decreasing gas demand did actually increase their prices.¹¹ In light of this finding, PIAC is concerned that a potential 'death spiral' and asset write offs for unregulated pipelines will put customers at risk of higher prices. Consumers are not able to challenge prices due to the burden of providing proof in the arbitrage process left under a light regulation.

Recommendation 1

PIAC recommends that a review of past light coverage decisions be conducted to determine if the decisions have resulted in reduced pipeline charges for end consumers.

Competition between gas and electricity

Most coverage decisions are determined under Section 15(a), on the basis that access will lead to increased competition. This appears to be done on the assumption that competition is the same as efficiency. Monopoly pricing can result in prices being charged that are not based on the efficient costs of business, and improvements in efficiency can be driven by factors other than competition.¹² Even where there are conditions for competition, the ACCC found evidence of monopoly pricing.

⁸ AEMC, Final Report, *2016 Retail competition review*, 30 June 2016, 20.

⁹ ACCC, *Inquiry into the east coast gas market* April 2016, 110-111.

¹⁰ *Ibid* 123-124.

¹¹ *Ibid* 99 & 104.

¹² Castalia Strategic Advisers, *AMEC gas access regime advice*. 10 August 2015, 11.

Denial of access is a separate issue from monopoly pricing. A transmission pipeline owner can allow access at a non-discriminatory price to all shippers/market participants, while still charging all parties a price in excess of the efficient price that would prevail in the absence of a monopoly.

Where the owner of the "essential facility" is not competing in up stream or downstream markets, the owner of the facility will usually have little incentive to deny access, for maximising competition in vertically related markets maximizes its own profits. Like other monopolists, however, the owner of the facility is able to use its monopoly position to charge higher prices and derive monopoly profits at the expense of consumers and economic efficiency. In these circumstances, the question of "access pricing" is substantially similar to the monopoly pricing issues, and maybe subject, where appropriate, to the prices monitoring or surveillance process.¹³

Professor Hilmer made these comments in his early competition reviews and found that where there are vertical interests, there is a need for access regulation. Part IIIA of the *Competition and Consumer Act 2010* (Cth) (CCA) was designed to address this. However, Hilmer also noted that natural monopolies can exist in one section of the value chain within a vertically integrated market and suggested that price regulation should occur in these instances.

The ACCC found that competition from other energy sources does not constrain pipeline prices and the threat of regulation is not sufficient to deter monopoly pricing and use of market power.¹⁴ Gas is not always fungible and to therefore to say that, because electricity exists it necessarily provides a competitive force for gas, is false. The ACCC also found that as a result of recent changes in the east coast gas market, competition between pipelines has decreased to the point that pipeline owners do not see other pipelines as competitors.¹⁵ This is in part due to changes in the direction of flow around the market. Finally, gas pipelines are a bottleneck in the supply chain, and so even if there was effective competition in either the upstream or downstream market, producers and shippers are still required to use a single pipeline to transport gas. Even in a disaggregated market, this bottleneck remains.

As discussed above, gas has become an integral part in the energy supply system providing t gas fired generation including system stabilisation, and restart generation in the event of a black start. The nature of gas supply in the electricity market is intermittent and therefore access to pipeline capacity is infrequent, making gas fired generation more susceptible to monopoly pricing, having a knock on effect in the electricity spot market.

In countries with greater levels of competition between pipelines, such as the United States, the majority of pipelines are regulated; particularly those that cross state boundaries. The United States has a market power test and it is up to the pipeline owner to prove that they do not have excessive market power. PIAC recommends that if a market power test is adopted in Australia, a similar approach to proving that owners do not have excessive market power be adopted.

¹³ Prof Frederick C Hilmer, National competition policy review, 25 August 1993, 241.

¹⁴ ACCC see above no 9, 99-100.

¹⁵ Ibid 98.

Recommendation 2

PIAC recommends that if a market power test is adopted then the onus to prove market power must be with the pipeline owners.

Is the existing regulatory test working?

PIAC relies on the information and analysis provided by the ACCC. The ACCC has had access to confidential information about the nature of pipeline contracts including the prices charged for various transmission services and the costs to a transmission pipeline to provide these different services.

The ACCC found substantial returns on equity for a number of pipeline owners, including owners of critical interstate transmission pipelines, above those that would be allowed under a regulated access agreement. Since the release of the ACCC's report, the Australian Pipeline Authority (APA) stated that the ACCC only included rate of return data for pipeline expansions or alterations to provide bi-directional flows and that by only analysing this data the rates of return had been inflated.¹⁶

PIAC is concerned that even if the APA's contention is correct, consumers may still be paying higher than efficient pricing due to the nature of the NGL, which only applies coverage to a reference service, which may only be one service, provided by the pipeline. Given the growing complexity and interregional links in the east coast pipeline network, there are an increasing range of important services provided by pipelines including back-haul, park and loan, and interruptible, and as available capacity, they remain unregulated and may be subject to monopoly pricing.

Impact of monopoly pricing

The ACCC clearly outlines the impact of monopoly pricing. Its analysis, however, does not consider the second-order impacts on the energy market. Access to the additional services listed above is critical for variable gas fired power generation, particularly for generators that provide stand-by power, and any monopoly pricing here will have an impact on electricity prices.

Demand management services reduce costs in the energy system. The efficiency of demand management will be reduced if monopoly pricing occurs, as it will impact the efficient costs of market players who provide back-up cogeneration facilities. Additionally, larger shippers and retailers are able to spread extra costs from the presence of monopoly pricing across their portfolio. Monopoly pricing of transmission services, even if not overtly discriminatory, compounds the risks facing new entrants in both upstream and downstream markets. This is particularly concerning for regional retail gas consumers where competition has not significantly improved despite the removal of price regulation.

Victorian Declared Wholesale Gas Market reforms

The proposed reforms for the Victorian Declared Wholesale Gas Market (VWGM) include moving to an entry-exit system. Under the current regulatory arrangements the AER approves the

¹⁶ APA Group Media Statement, Gas pipelines investing and innovation for gas markets, response to the ACCC east coast gas inquiry report. 20 May 2016, 2.

pipeline owner and system operator (AEMO) charges. It is unclear if under the proposed changes the declared transmission system (DTS) would remain covered. Under the current test any application to remove coverage would likely succeed as there are other transmission pipelines supplying gas to and from Victoria. It would also be difficult to mount an access discrimination case, that the removal of coverage would reduce competition in either the upstream or downstream markets, given the current interpretation of the NGL and previous decisions. A market power test, however, may be more likely to see coverage remain on the DTS. The Victorian gas market serves as an important market in not just Victoria but the east coast.

Revoking and recovering pipelines

The removal of coverage from a pipeline requires the satisfaction of only one of the four criteria, and most decisions have been determined by the satisfaction of the first. Often the burden of proof lies with those opposing the removal of coverage. This is extremely difficult, given the nature of the confidential information involved, and the difficulty of proving an impact on upstream or downstream competition, as the market is no longer vertically integrated.

There have been few attempts to have a pipeline recovered by regulation and those attempts have failed. This is in part because an application to recover a pipeline must satisfy all four criteria. While it is technically possible for anyone to lodge an application, the financial and legal resources required make it practically impossible for consumers to lodge an application.

This was evident when Kimberley Clarke sought to have coverage reapplied to the South East Pipeline System (SEPS). Initially SEPS pipeline was covered when the NGL was introduced. Coverage was removed in 2000 after the owner applied to have it removed based on the costs of regulation and because capacity was under contracted. It was argued that the owner did not have any incentive to charge high prices. Once the long-term contract underpinning the pipeline expired in 2010, the owner increased the charges to access the pipeline. In order to apply to recover the pipeline, the applicant had to prove not only that the pipeline was a monopoly, the reason it was originally covered, but had to also satisfy all four criteria. Ultimately the decision was made that the applicant was not able to prove that coverage would improve competition. The main users of the pipeline are price takers in their markets and could not prove there would be sufficient increase in upstream gas production.¹⁷ If residential consumers wanted to seek to have the Wagga Wagga pipe recovered it would be nearly impossible for them to participate and to prove the criteria was satisfied.

Decisions by the NCC and relevant Minister are complex and legalistic. Regardless of whether the test is changed, it should be a requirement that the NCC publish summaries of its decisions in a clear, simple and accessible manner that consumers are able to understand. Ensuring the decisions are accessible is the first step in ensuring consumers can participate in reviewing decisions.

Recommendation 3

PIAC recommends that coverage decisions should be published in accessible, plain English to assist consumers to understand and participate in reviews.

¹⁷ Major Energy Users, *A Review of Gas Pipeline Competition, Issues where there is a lack of open access and Limited or no competition*, 2015, 7-8.

How could the regulatory test be improved?

There are two options for reforming the current test; the first is to accept the recent competition review recommendations to amend the CCA and subsequently the NGL; and the second is to move to a market power test as proposed by the ACCC.

Current reform agenda

The Harper review recommended changes to section 46 of the CCA which address misuse of market power and include changes to the declaration criteria (the general access test that the NGL access test is mirrored on). Some stakeholders have proposed that these changes alone will be enough to address concerns about the provisions of the NGL not being fit for purpose.

The role of section 46 is to distinguish competitive activity that is desirable from economically inefficient and monopolistic practices that may exclude rivals and harm competition. There are three criteria used to determine this:

- corporations that have a substantial degree of power in a market;
- from taking advantage of that power;
- for the purpose of eliminating or substantially damaging a competitor, preventing the entry of a person into a market, or deterring or preventing a person from engaging in competitive conduct.¹⁸

Harper proposed:

- to maintain the substantial market power threshold test
- remove the 'take advantage' test
- introduce an effects test
- move from "damage to a competitor" to "substantially lessening competition"; and
- introduce mandatory non-exhaustive factors that the courts must consider when making decisions.¹⁹

The most controversial of the recommendations is the introduction of an effects test, which would examine the effect of a firm's behaviour rather than the purpose of the activity, as the effect is what causes harm to consumers. Proving the (subjective) purpose of commercial conduct is difficult, while proving (objective) effect is less so. The proposed changes are intended to improve the clarity and force, and provide clarity for courts who are reviewing decisions.

The recommendations would result in a reframing that allows the provision to be simplified and would allow the repeal of amendments introduced since 2007, which would become unnecessary. These include 'specific provisions prohibiting predatory pricing, and amendments clarifying the meaning of 'take advantage' and how the causal link between the substantial degree of market power and anti-competitive purpose may be determined'.²⁰ The Federal government has accepted all of the Harper review recommendations in its Exposure Draft Bill.²¹

¹⁸ Australian Government, 'Options to strengthen the misuse of market power law', (2005), 3.

¹⁹ Professor Ian Harper, *Final Report National competition review*, March 2016, 61 and 335-340.

²⁰ *Ibid* 348.

²¹ Exposure Draft of the *Competition and Consumer Amendment (Competition Policy Review) Bill 2016*

Finally, the Harper Review examined the National Access Regime and made the following recommendations:

- Criterion (a) should focus on the specific effect of declaration, rather than access, on promoting competition in dependant markets.
- Criterion (a) currently sets a low threshold for regulation (“material increase”), which should be raised (“substantial increase”).
- Criterion (b) currently asks whether the facility is a bottleneck in the sense that it is commercially infeasible to bypass the facility. The recommendation retains focus, however but revises the provision to exclude the service provider from the assessment of feasible duplication by anyone.
- Criterion (f) works to strengthen the public interest test, replacing the requirement that access be “not contrary” to public interest, to a requirement that access “promote” instead it.²²

The Government has agreed to adopt criterion (a) and (b) as recommended by the 2013 Productivity Commission Review²³, and not those suggested by the Harper Review.

Therefore:

- Criterion (a) retains the “material increase” test; and
- Criterion (b) will be satisfied where total foreseeable market demand for the infrastructure service over the declaration period could be met at least cost by the facility. This effectively replaces the current “private profitability” test, with a “natural monopoly” test.

The Government has agreed to adopt criterion (f) as recommended by the Harper Review.

PIAC is disappointed that the government has not adopted the proposed changes from the Harper Review with regard to criteria (a) and (b). PIAC supports the proposed changes to the public interest test (criterion (f) of the access regime and criterion (d) of the NGL).

ACCC recommendations

The ACCC recommended that the current test in the NGL be replaced with a new test that will assess the market power of a pipeline, determine if the pipeline will continue to have substantial market power, and if coverage will or is likely to contribute to the realisation of the NGO.²⁴ The ACCC has not provided more detail on the design of a market test, preferring to leave that to either the Australian Energy Market Commission or COAG. The Energy Council has agreed to establish a gas market reform committee, and it is appropriate for this group to be involved, as long as there is sufficient representation of consumers or their advocates.

Since the Government has rejected the Harper Review’s recommendation to change criteria (a) and (b), PIAC considers that the ACCC’s proposed new test better represents the current market conditions and would deal better with the impact of no coverage on the consumer. This market test would be more in line with the United States, which has greater regulation and competition

²² Professor Ian Harper see above no 19, 437.

²³ Productivity Commission Inquiry Report, National Access Regime, No. 66, 25 October 2013.

²⁴ ACCC see above no 9, 138.

between pipelines and where pipelines are assumed to have market power from the beginning, and it is up to a pipeline owner to demonstrate they do not have an excess amount.

Requiring pipeline owners to prove they do not have market power will address the current issues the Minster and NCC have in accessing information to make an effective decision.²⁵ Two previous reviews of the gas access regime also recommended that the coverage test be changed.²⁶ In light of the ACCC recommendation²⁷ and previous reviews, PIAC recommends that the test for coverage be reformed to better reflect current market conditions.

The ACCC has recommended retaining the 15-year no determination provision for new pipelines to encourage investment in new pipelines.²⁷ PIAC does not know that is appropriate and would welcome additional information to understand if it provides incentives for pipeline owners to invest and build new projects and to determine if this is in the public interest. PIAC also acknowledges that many of the current uncovered pipelines will likely remain uncovered with a new test, due to the existence of long-term contracts.²⁸ This is another protection in place for pipeline owners, as there is no risk that coverage will immediately change upon the drafting of a new test.

Recommendation 4

PIAC recommends that the review accept the ACCC's recommendation to change the coverage test.

Limited Merits Review review

PIAC has provided input into the current review of the limited merits review (LMR). In our submission we argue for targeted changes to the LMR framework to protect consumer interests.²⁹ PIAC has the unique perspective of being one of the few consumer organisations to have participated in a LMR. Generally, PIAC is of the view that if changes to the LMR framework result in access for consumers to LMR processes, this will provide consumers greater opportunity to appeal coverage decisions. PIAC's preferred way of dealing with the issues presented in coverage review is to change the coverage test to enable better decisions to be made, rather than relying on changes to the appeal aspect of the process.

Conclusion

PIAC appreciates that compliance with economic regulation has a cost for businesses, and has the potential to pose risks to investment. PIAC considers that the risks and costs are not as extreme as claimed by the pipeline owners, and that there are sufficient protections, including 15-years of no coverage for the construction of a pipeline, to ensure that risks are manageable.

²⁵ Ibid 139.

²⁶ Incenta, Assessment of the coverage criteria for the gas pipeline access regime for the Australian Energy Market Commission, September 2015. And Castalia see above no [12](#).

²⁷ Ibid 137.

²⁸ Ibid 139.

²⁹ PIAC, Paved with good intentions: an assessment of practical outcome against policy intent Submission in response to the COAG Energy Council Review of the Limited Merits Review Regime Consultation Paper, 7 October 2016.

Generally, economic regulation provides certainty for business and investment decision-making and provides transparency and certainty for shippers and consumers.

Industry contends that coverage issues should be left to the power of the market³⁰. As energy is an essential service that is necessary to live a dignified life, the risks of market failure in these circumstances are arguably too high:

The most serious mistake we can make is pretending that markets do things that they do not do," said Kellan Fluckiger, executive director of the electricity division at the Alberta Department of Energy. "Markets allocate risk, they allocate capital, they provide price signals. Markets do not have a conscience, they do not provide social policy, and they do not do things they are not paid to do."³¹

PIAC supports the conclusions of the ACCC in the recent review of the east coast gas market. Recent changes in the market, in particular the reduction in vertical integration accompanied by an increase in horizontal integration, mean the current test is no longer fit for purpose. PIAC recommends that the test for determining if a pipeline should be covered by economic regulation be changed in line with the ACCC's recommendation.

³⁰ APA Group, Media Statement: Gas pipelines investing and innovation for gas markets Response to ACC east coast gas inquiry report 4 august 2016, 4.

³¹ Matthew L Wald, Experts Assess Deregulation as Factor in '03 Blackout 16 September 2005, <http://www.nytimes.com/2005/09/16/politics/experts-assess-deregulation-as-factor-in-03-blackout.html>