

Jemena Gas Networks (NSW) Ltd - Initial Response to the draft decision

Appendix 9.1

**Farrier Swier Consulting: JGN Access
Arrangements 2010 - Approach to
opex forecasts – Expert opinion, Geoff
Swier**

19 March 2010



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JGN Gas Networks (JGN) Access Arrangements 2010: Approach to Opex Forecasts

**Expert Opinion, Geoff Swier
March 2010**

1 Introduction

1.1 Background

1. Jemena Gas Networks (JGN) submitted an access arrangement proposal (AA proposal) to the Australian Energy Regulator (AER) in August 2009 as a revision to the access arrangement approved by the Independent Pricing and Regulatory Tribunal (IPART) in 2005. On 10 February 2010 the AER published its draft decision on JGN's AA revision proposal. This will be the first decision under the National Gas Law (NGL) and National Gas Rules (NGR) to be made by the AER.
2. Under the NGR, total revenue for a relevant service provider is determined for each regulatory year of the access arrangement using a building blocks forecasting approach. The building blocks include, amongst others, a forecast of operating expenditure (opex) for each year of the AA period.
3. JGN has asked me to provide an expert opinion on what approaches to forecasting operating expenditure (opex) would result in a forecast of operating expenditure:
 - (a) such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services;
 - (b) that will or is likely to contribute to the achievement of the national gas objective;
 - (c) that will or is likely to give effect to the revenue and pricing principles; and
 - (d) that is arrived at on a reasonable basis and represents the best forecast or estimate possible in the circumstances.

JGN has also asked me to identify the strengths and weaknesses of these forecasting approaches against (a) to (d) above.
4. I was asked to review:
 - revealed efficient cost approach
 - a bottom up approach or approaches
 - a forecasting approach as adopted by the AER for the JGN AA draft determination, and
 - any other methods or methodologies I considered relevant.
5. The Terms of Reference are attached as Annex 2.
6. I was asked an additional question which is set out in Annex 3 and is answered in section 4.

1.2 Experience

7. I graduated with a Masters in Commerce (Econ) from the University of Auckland in 1981. I began my career in energy sector policy and planning in 1982. Between 1994 and 1999, I assisted the Victorian Department of Treasury as deputy project leader for the reform and privatisation of the Victorian gas and electricity industries. Since that time, I have been closely involved in the establishment and operation of utility regulation in Australia. I was a founding director of Farrier Swier Consulting formed in 1999. I was a member of the Australian Energy Regulator between 2005 and 2008. I have advised regulatory bodies and regulated companies on economic regulation extensively in Australia and New Zealand. I have provided expert witness evidence and been a member of dispute resolution panels. Currently I am a director Trustpower NZ Ltd. My curriculum vitae is attached as Annex 4.

1.3 Limitations

8. This report has been prepared based on my experience as an economist practicing in economic regulation. It is not a legal interpretation of the law and rules.

1.4 Disclosure

9. I am a director of a company, Farrier Swier Consulting Pty Ltd, which advises JGN and related companies.

2 Opinion

10. I evaluated three approaches for arriving at opex forecasts:

- a revealed efficient cost approach
- a bottom up method, that I define as an Independently Derived Bottom Up Review of Base Year Costs
- a Forecasting Approach, as adopted by the AER for the JGN AA draft determination.

11. My assessment of the strengths and weaknesses of these approaches against the law and rules that govern the AER's decision on the opex forecasts is as follows.

2.1 Revealed efficient cost approach

12. The revealed efficient cost¹ approach for forecasting opex involves two components. A base year roll forward approach is applied to the majority of recurrent opex over the next AA period; and specific year-by-year forecasts are adopted where base year costs are not representative of the future. The key feature is that base year costs are based on verified actual costs which are inferred to be efficient as a result of the incentive regime operating in the previous regulatory period. Base year costs are adjusted by step changes (permanent

¹ This approach was called the "base year roll forward approach" in the JGN AA proposal. There are several methods which involve rolling forward base year costs. The term "revealed efficient cost" more clearly describes the essential characteristic of the approach JGN adopted, and this term is used in the remainder of this report.

step changes in expenditure that are not reflected in current cost and that are forecast to continue in the future) and these costs are then “rolled forward” using escalation factors to reflect assumed rates of change in growth / volumes, material costs and labour costs.

13. I consider forecasts developed using this approach are efficient, prudent and consistent with the “lowest sustainable cost” where the relevant decision maker:
 - decides under Rule 71 (1) to rely on an incentive mechanism as the approach for inferring that the opex is efficient and other criteria have been met
 - having considered whether the incentive mechanism has been operating effectively, concludes it will continue (perhaps with amendment) to operate effectively in the future to encourage the service provider to reveal efficient operating cost over time
 - can verify that the actual cost information appropriately establishes the base year costs and are reasonable in the circumstances.
14. Forecasts based on this approach would not necessarily be efficient, prudent and consistent with the “lowest sustainable cost” where the relevant decision maker:
 - under rule 71 (1) decides to use an approach *other than* reliance on incentive mechanisms for determining compliance, or
 - sees merit in using an incentive mechanism for determining compliance under Rule 71 (1), but is unable to verify material aspects in applying the forecasting approach to determine base year costs so that, on balance, another forecasting approach is preferred.
15. This forecasting approach potentially supports verification of the actual costs to establish base year costs. I note AER’s concerns with verification of base year costs in JGN’s AA proposal are:
 - a perceived lack of a verified account of actual 2008-09 base year costs, given that JGN’s proposal was based in part on estimates for that year
 - a desire to see further ‘bottom-up’ detail of the activities and drivers for operating and maintenance (O&M) expenditure and an associated belief that the AER could not rely on benchmarking analysis submitted by JGN absent such ‘bottom-up’ information, and
 - a view that JGN had not adequately demonstrated that the commercial margin it will pay JAM for O&M ‘is efficient or consistent with lowest sustainable cost’.
16. I believe that there are many varied facts, materials or evidence that would enable the regulator to infer that forecast opex expenditure is efficient.
17. The way that those facts, materials or evidence are considered by the AER affects its approach to interpreting Rule 71 (1).
18. I consider the revealed efficient cost approach enables forecasts to be prepared on a reasonable basis. The costs of preparing and reviewing the forecasts are a factor in interpreting “reasonable”. Compared to the alternatives, this is a relatively low cost approach.

19. The forecasting approach has positive features in dealing with the problem of information asymmetry. It relies on the operation of a broadly based financial incentive to infer efficiency. To the extent a relevant decision maker considers there is an information asymmetry problem, then compared to other forecasting approaches, this approach is likely to reduce the risk of regulatory error resulting in a service provider being unable to recover at least its efficient costs.
20. Benefits of this forecasting approach identified by the AER are that it: provides a recent and reliable estimate of costs, in other words is a verifiable estimate of costs; and (implicitly) assists in dealing with the information asymmetry problem, and therefore supports the Rule 91 requirements. As noted above, I consider the other benefits are:
 - It is a relatively low cost way of undertaking opex forecasting which I consider contributes to the “reasonable basis requirements” of Rule 74.
 - To the extent there is an information asymmetry problem, this forecasting approach reduces the risk of regulatory error which I consider relevant to Section 24 (2) of the NGL.
 - The approach is expressly recognised in the Assessment of Compliance Rule 71 (1) – although I note the AER can infer that opex is efficient and complies with other criteria on any approach it considers appropriate.

2.2 Independently Derived Bottom Up Review of Base Year Costs

21. I consider the use of the term “bottom up review” is unclear. I therefore distinguish between a “bottom up review” and an “Independently Derived Bottom Up Review.”
22. One way to undertake an Independently Derived Bottom Up Review would be for the AER to develop its own forecast of base year opex and then roll this forward. I call this an “Independently Derived Bottom Up Review of Base Year Costs”.
23. I consider the opex forecasts developed through an Independently Derived Bottom Up Review would be efficient and prudent, produce “lowest sustainable” costs and be arrived at on a reasonable basis where the relevant decision maker:
 - places little weight on the information asymmetry problem
 - can engage advisors with appropriate expertise to advise it in the review
 - has in place appropriate governance to ensure the review is undertaken robustly, and to manage the risk of regulatory error (discussed below); and
 - has adequate time to undertake the review.
24. This forecasting approach may affect incentives for a service provider to be dynamically efficient. It might not undermine incentives for dynamic efficiency if the service provider (and other service providers) sees the review as a “one off” decision driven by unusual circumstances. However, incentives for dynamic efficiency could be undermined if the review is perceived by the service provider (and other service providers) as an ex post “changing of the rules” by the AER to remove the efficiencies achieved by the service provider in the previous regulatory period.

25. The costs of this forecasting approach will be significantly higher than the revealed efficient cost approach, which in my view needs to be taken into account in considering whether the forecasts have been arrived at on a reasonable basis.
26. To the extent a relevant decision maker considers there is an information asymmetry problem, then the forecasting approach does not address this problem and there is therefore a risk of regulatory error so that a service provider is unable to recover at least its efficient costs.

2.3 Forecasting approach adopted by the AER for the JGN AA draft determination

27. I considered the forecasting approach adopted by the AER for the JGN AA draft determination as though it were the final determination.
28. The AER draft decision accepted the “base year roll forward approach”² being actual expenditure incurred in the identified base year, 2008–09, less one-off costs, plus approved step changes. The AER then excluded the margin on the Asset Management Agreement (AMA) between JGN and Jemena Asset Management (JAM) from opex forecast because Jemena did not substantiate its proposed expenditure with detailed information.
29. The impact on productive efficiency depends on the extent to which the reduction in opex forecasts to remove the margin earned by JAM does not align with JGN’s efficient costs. I am unable to comment on this. However, this forecasting approach gives little confidence that the opex forecast is a reasonable estimate of the lowest sustainable costs.
30. The impact on economic efficiency is affected by future incentives for dynamic efficiency. The same considerations apply as in paragraph 24.
31. From an economic standpoint, the AER’s actions in deducting the margin on the basis that inadequate information was supplied, lacks logic and is inconsistent with the normal approaches to forecasting. Therefore, the resulting forecasts may not be arrived at on a reasonable basis, as required by the Rules.
32. There is a risk of regulatory error, because the removal of the margin is only an approximate estimate of the adjustment required, in the AER’s view, to ensure that JGN can recover at least its efficient costs. The Rules require that a service provider be given a reasonable opportunity to recover at least its efficient costs.

3 Reasons

3.1 Approach

33. Firstly, I consider and interpret the relevant objectives and criteria established for opex forecasts by the NGL and NGR. I then consider how an opex forecast must be prepared and determined under the NGL and NGR, and give my economic interpretation of these requirements. I then briefly outline relevant concepts in economic regulation theory and practice including incentives, information asymmetry, regulatory error, and

² In this report called the “revealed efficient cost” approach.

information requirements. I set out evaluation criteria, drawing on my interpretation of the law and rules, theory and practical experience of economic regulation, and key areas of difference between the opex forecast approaches. I define the alternative approaches for developing the opex forecasts. In particular, I try to develop a clear understanding of the meaning of a “bottom up” approach, (see Annex 1). Finally, I evaluate each option for developing opex forecasts against the evaluation criteria.

3.2 Objectives and criteria

3.2.1 Relevant Law and Rules

34. In deciding whether to not to approve an AA proposal, the AER must³ have regard to the National Gas Objective (NGO) which 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.

35. The criterion governing opex expenditure (Rule 91 NGR) is

Opex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services⁴.

36. The AER has limited discretion in assessing forecast opex⁵. I understand this means the AER may not withhold approval for an element of an AA proposal if the AER is satisfied that it: (a) complies with the applicable requirements of the NGL; and (b) is consistent with applicable criteria (if any) prescribed by the NGL Subrule 40(2). Further, I understand that when exercising a discretion in approving those parts of an AA relating to a reference tariff the AER must take into account the “revenue and pricing principles” of which the following are relevant:

Section 24 (2) NGL– a service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in: (a) providing reference services; and (b) complying with a regulatory obligation or requirement or making a regulatory payment.

Section 24 (3) NGL - a service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes: (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and (b) the efficient provision of pipeline services; and (c) the efficient use of the pipeline.

³ Section 28 NGL

⁴ Rule 91 (1) NGR

⁵ Rule 91(2) NGR

3.2.2 Interpretation

37. I have been asked for my views on the meaning of “lowest sustainable cost” and “balancing prudence and efficiency” (Rule 91).

38. Wilson Cook were asked by the AER to interpret “lowest sustainable cost” (Rule 71) and the AER accepted⁶ Wilson Cook’s definition as “appropriate for the purpose of assessing JGN’s proposed operating cost”. Wilson Cook stated that their definition was not an attempt to interpret the rules and was prepared for their purposes⁷ (which was as engineering and management consultants, advisers and valuers)⁸. Wilson Cook’s definition of lowest sustainable cost (with parts relevant to opex forecast underlined) was:

the cost to the business (and thence to the customer) of implementing the least-cost option of delivering the required services, constructing the facilities necessary to deliver the services, carrying out operational or maintenance activities necessary to deliver the services, maintaining the required level of safety, integrity or capacity of the services or, in short, meeting the applicable statutory and regulatory obligations and requirements as the case may be.

39. I now set out my interpretation of “lowest sustainable cost”.

40. In my view, the first term to consider in assessing “lowest sustainable cost” is the meaning of “efficiency” which is referred to directly or indirectly in the all the key NGL and NGR requirements listed above: it is part of the National Gas Objective, and informs the meaning of the terms “lowest sustainable cost”. The definition of “efficiency” also informs the meaning of “prudent service provider acting efficiently”, “reasonable opportunity to recover at least the efficient costs”, and “effective incentives in order to promote economic efficiency”.

41. “Efficiency” is a term used in various disciplines, including engineering and management, but I consider that the appropriate framework for considering its meaning is in an economic framework. Alfred Kahn refers to W J Baumol’s⁹ definition of economic efficiency within the context of utility economic regulation

Economic efficiency is defined a state of affairs in which, given the values of resources utilised, one has taken advantage of every available opportunity to increase the economic welfare of consumers through the provision of larger quantities of outputs, better products, or a mixture of outputs better adapted to consumer preferences.

42. Economists define at least two¹⁰ aspects of economic efficiency being productive and dynamic efficiency.

Productive efficiency is said to be achieved when a given output is produced at the minimum possible cost, given the available designs, technologies, processes¹¹ and input prices. This is consistent with Wilson Cook’s

⁶ Pg 178 AER Draft Decision, JGN Access arrangement proposal for the NSW gas networks 1 July 2010 – 30 June 2015, Draft February 2010

⁷ Pg 5, Wilson Cook & Co. Review of Expenditure of ACT & NSW Gas Distributors, JGN Gas Networks (NSW) Ltd

⁸ Pg 1, Wilson Cook & Co. Review of Expenditure of ACT & NSW Gas Distributors, JGN Gas Networks (NSW) Ltd

⁹ Kahn, Alfred, “The Purposes and Limitations of Economic Regulation” in Incentive Regulation: Reviewing RPI-X and Promoting Competition, conference proceedings, Centre for the Study of Regulated Industries, London, July 1992 p255-256.

¹⁰ Allocative efficiency can be important in economic regulation. As I understand, it is not an issue in this matter and is therefore not discussed further.

¹¹ Processes include asset management decision being made a whole of “life cycle” basis.

definition of “lowest sustainable cost”. Costs include costs that are exogenous to the business.¹² Productive efficiency also encompasses broader factors such as adopting the most efficient organisational form (for example, one that takes maximum advantage of available economies of scope and scale). Productive efficiency is a static concept, being concerned with production technology and processes available today. Dynamic efficiency relates to processes of technological and managerial innovation - the ability of producers to improve the quality and cost of their goods and services and to respond to emerging market developments. Dynamic efficiency is concerned with improvement in productive efficiency over time

43. In my view the meaning of “providing a service provider with incentives to promote economic efficiency” means establishing appropriate incentives that will encourage a service provider to be productively efficient (minimise production costs, take up all the available technologies and so on), and dynamically efficient (pursue technological and managerial innovations). Similarly, a “prudent service provider acting efficiently” means acting to promote both productively and dynamically efficient outcomes. It would not be prudent for a service provider to be concerned only with “today”; it should also prepare for the future.
44. Therefore, in my view the meaning of “lowest sustainable cost” includes an economic concept where costs are defined to include those related to the production of services today (including but not limited to the matters identified in Wilson Cook’s definition) and costs related to pursuing dynamic efficiency for the future. To illustrate this, consider two service providers operating and investing in identical gas networks to an optimal technical standard. The first service provider changes its approach and eliminates all non-essential discretionary costs related to preparing for the future¹³, whereas the second service provider continues to incur such future costs prudently. The most likely outcome I would argue is that first service provider may have somewhat lower costs than the second in the short term, but over time, its costs and/or its risks (to its own business and its customers) would increase relative to the second service provider. For example, the second service provider may over time have better information systems, more capable staff and better processes, and be able to undertake capital investment, asset management and operations more effectively. In my view, this could have a material impact on its relative productive efficiency. Therefore, although the first service provider might minimise its costs in the short term, it would not be acting to ensure “lowest sustainable cost”. This view is supported by the observation that regulators do not act to remove all such discretionary costs from regulatory applications.

¹² I note that the following observation from Wilson Cooks report on JGN and referenced the AER in the draft decision. (In relation to the proposed step changes)...”in a competitive market, businesses do not normally add to their own costs unless they are satisfied that there is a benefit to customers in terms of the product delivered or to the business in terms of efficiency. Regulation presumably ought to incentivise natural monopolies in a similar way. Second, businesses are dynamic, with variations occurring from year to year. Such variations ought not to form the basis of a claim for a step change, as the effect of that would be to allow costs to be passed on readily in contravention of the efficiency objective implicit in the regulatory framework.” In my view this statement does not take account of exogenous costs. In a competitive market, businesses will seek to recover exogenous cost shocks over time.

¹³ Examples of limiting all non-essential discretionary expenditure include: minimising expenditure on information technology; keeping up to date with technological trends; research; human resource costs such as non essential training and management development, pursuing managerial innovations such as outsourcing, mergers, acquisitions to achieve economies of scope and scale.

45. In summary, while Wilson Cook’s interpretations of sustainability, efficiency and prudence are reasonable from a technical standpoint, I consider their interpretation is overly narrow. “Lowest sustainable cost” and “prudence” must be considered within a broader economic framework that in my view is implied by the NGL and NGR, and by economic theory and practice. Amongst other things, it should take account of dynamic efficiency as well as productive efficiency. “Prudence” is not simply “technical prudence” – such as prudent decisions on how to manage or maintain a particular asset. Prudence includes prudent commercial decision making by managers, such as balancing the needs of the present with preparation for the future.
46. Therefore, from an economic standpoint, I disagree with AER’s conclusion¹⁴ in its draft decision on the JGN Access Arrangement¹⁵ that Wilson Cook’s definition of lowest sustainable cost is appropriate for the purpose of assessing JGN’s proposed operating cost.

3.3 How an opex forecast must be prepared and determined

3.3.1 Law and Rules

47. There are no rules specifying a particular basis for preparing the opex forecast. The forecast basis (or approach) must comply with the law and rules set out above and provisions outlined below for forecasts and estimates, information, and assessment of compliance.
48. The relevant rule applying to forecasts and estimates is:

A forecast or estimate:(a) must be arrived at on a reasonable basis; and (b) must represent the best forecast or estimate possible in the circumstances. (Rule 74)

49. The AER has extensive information gathering powers, in particular the ability to serve a Regulatory Information Notice (RIN)¹⁶.
50. The rule relating to assessment of compliance is:

In determining whether capital or operating expenditure is efficient and complies with other criteria prescribed by these rules, the AER may, without embarking on a detailed investigation, infer compliance from the operation of an incentive mechanism or on any other approach the AER considers appropriate.(Rule 71 (1))

3.3.2 Interpretation

51. As noted above, the NGR do not specify a particular forecasting approach. In a recent matter, the Australian Competition Tribunal noted that it would be inappropriate to require a service provider to forecast operating

¹⁴ Pg 178 AER Draft Decision, JGN Access arrangement proposal for the NSW gas networks 1 July 2010 – 30 June 2015, Draft February 2010

¹⁵ Pg 177 AER Draft Decision, JGN Access arrangement proposal for the NSW gas networks 1 July 2010 – 30 June 2015, Draft February 2010

¹⁶ Division 3 provides the head of power for the RIN. Division 4, Subdivision 1 to 4 deals with interpretation, serving and making of RINs, form and content and compliance

expenditure using a particular methodology in circumstances where the rules (in that case, the National Electricity Rules) did not require the service provider to adopt a particular methodology.¹⁷

52. In my view a “forecast arrived at on a reasonable basis” means that:

- has regard to a workably competitive market standard (see section 3.4.2)
- that the approach has a sound logic
- forecasting is undertaken to a professional standard
- the approach is consistent with any expectations established by the AER¹⁸
- the costs and effort involved in preparing the opex forecast are reasonable
- it has regard to the existence of previous incentive mechanisms.

53. In my view, “best forecast or estimate possible in the circumstances” means that:

- forecasts should be unbiased
- forecasts should be prepared on the basis of information that is accurate, within reason
- relevant circumstances should enable a service provider to base the forecasting approach for its opex forecasts in its AA proposals on the circumstances and expectations established for the service provider at the time the AER promulgates the RIN (discussed below).

3.4 Theory and practice of economic regulation

54. This section sets out relevant areas of the theory and practice of economic regulation that are related to the relevant law and rules that apply to opex forecasts.

3.4.1 Incentive mechanisms

55. Under Rule 71(1), the AER may infer from the operation of an incentive mechanism that an opex forecast is efficient and complies with other criteria. For the purpose of this review, it is enough to define an “incentives mechanism” for opex in simple terms as meaning that the service provider has an opportunity to spend less than the opex forecast amount, while still meeting all service and regulatory requirements, and thereby improve its profitability within the regulatory period. The operation of this incentive over time is said to reveal the efficient costs.

¹⁷ See: Application by EnergyAustralia and Others [2009] ACompT 8 (12 November 2009), [24]. The Australian Competition Tribunal (ACT) made this comment in making orders relating to the forecasting of operating expenditure for EnergyAustralia’s (EA) public lighting services. That part of the AER’s determination relating to public lighting services was remitted to the AER by the ACT. The AER had sought an order that EA prepare “a detailed bottom up model” [20]. In not making the order in the form sought by EA, the ACT noted that [24]: “it should not limit the way EA may advance an operating expenditure model, particularly by a model not necessarily recognised by the Rules. EA has an incentive to provide the AER with sufficient material to support its case, and the AER will again determine the position based on that material.”

¹⁸ Including when the AER promulgated the RIN specifying the information to be provided as part of the AA proposal.

56. A well-understood principle in the theory and practice of economic regulation is that, for an incentive mechanism to operate effectively over time, the regulator should not act opportunistically to materially remove from a service provider any efficiency benefits it has achieved. If a service provider perceives that the regulator may “change the rules” ex post, then any incentives may be muted as a result.

3.4.2 Workably competitive market standard

I consider that, in a regulatory context, the appropriate standard to apply for interpreting efficiency and lowest sustainable cost criteria is a “workably competitive market”¹⁹ standard, not a “perfectly competitive market standard”. This means it is assumed the service provider has an incentive to continuously pursue efficiency, but may not actually achieve the theoretical ideal of operating on the efficiency frontier all of the time across every aspect of their business.

3.4.3 Information asymmetry problem

57. In economics and contract theory, information asymmetry deals with decisions where one party has more or better information than the other. As economic regulation has evolved, regulators in Australia have placed considerable emphasis on the difficulties created by the information asymmetry problem. Regulators and advisors acknowledge the risk in micro managing regulated service providers.
58. For example an advisor, Jeff Balchin²⁰ is referenced in the ACCC’s Statement of Regulatory Principles²¹ for Transmission regulation as follows:

“It is ... widely accepted that the regulator is in a poor position to judge whether a particular project or technology or organisation structure and associated staffing levels represent efficient production. The regulated entity’s knowledge of such matters vastly outweighs that of the regulator, and so attempts by a regulator to disallow perceived inefficiencies are unlikely to be effective. In the presence of information asymmetry, it will be preferable for the regulator to leave a substantial amount of discretion to the firm, while providing a system of broad financial incentives to induce the firm to use that discretion to pursue desirable outcomes”.

59. Referencing the previous Statement of Regulatory Principles decision by the ACCC, the AER in 2005 stated²²

¹⁹ In Re: Dr Ken Michael; Parker J noted, while workable competition may lead to efficiency that is beyond that which could be achieved in a non-competitive market it does not necessarily result in the attainment of the theoretical ideal of ‘perfect’ efficiency. See ex parte EPIC Energy (WA) Nominees Pty Ltd & Anor [2002] WASCA 231 (23 August 2002). See also pg xi “Treatment of Outsourcing Arrangements, Multinet Gas Distribution Partnership”, NERA Economic Consulting, October 2007

²⁰ Jeff Balchin, Allen Consulting Group, Forecasting approach for updating the regulatory value of electricity transmission assets, Final report, August 2003, p. 14.

²¹ The ACCC in its Statement of Regulatory Principles (SRP) for Transmission regulation stated “One key decision that must be faced by the regulator in the design of a regulatory regime is the extent to which the regulator will seek to directly control detailed aspects of the behaviour of the regulated firm. The regulator might attempt to micro manage the Transmission Network Service providers (TNSP) by specifying the make and model of the transformers that must be used by the TNSP, the details of the firm’s maintenance policies or the size and location of the firm’s head office. However, the regulated firm will usually have access to information that is not available to the regulator.” Australian Competition and Consumer Commission, Decision: Statement of principles for the regulation of electricity transmission revenues —background paper; Date: 8 December 2004

²² Pg 17, AER, Statement of Regulatory Principles, August 2005.

“In respect of determining the expenditure allowance for TNSPs, the AER will continue the current practice of relying primarily on historic and forecast expenditures for the TNSP in question.”

60. Therefore, I consider that information asymmetry is a factor to consider in interpreting the AER’s approach to assessing compliance with requirements for a “forecast or estimate arrived at on a reasonable basis” that “must represent the best possible estimate” (Rule 74). In particular, it means that the AER should focus (as it generally does, in my view) on ensuring good processes and forecasting approaches for preparing forecasts, and relying on incentives where it can. It should minimise the degree to which the AER or its advisers “forensically” replicate the service provider’s forecasts.

3.4.4 Regulatory error

61. The revenue and pricing principles²³ require a service provider to be provided a reasonable opportunity to recover “at least the efficient cost”.

62. In the theory and practice of economic regulation, the term “regulatory error” when applied to opex forecasts means the risk of a regulatory decision that results in the total allowed costs²⁴ being set “to high” or “too low” relative to the true efficient costs. Because opex costs are a large proportion of total costs, a material error in opex forecasts can have a material effect on the error in the total allowed costs.

63. In my view, Section 24(2) of the NGL establishes that there is an asymmetry between the risks of setting total costs “too high” or “too low”. It is important that service providers have a reasonable opportunity to recover at least their efficient costs, but it is less important if a service provider recovers something more than the efficient cost.²⁵

64. Therefore, I consider that the risk of regulatory error should be a factor used to evaluate the different approaches to setting opex forecast.

3.4.5 Planning and promulgation of information requirements

65. In my experience, both regulators and service providers recognise that effective economic regulation requires careful up front planning in relation to the information to support a regulatory submission. The collection of information, preparation of accurate and robust forecasts, and developing a complying proposal takes significant time and resources for the service provider. Once the proposal is lodged, the AER wishes to focus its review efforts on analysis and decision making, not on further information collection. Therefore, both the AER and service providers understand that the service provider needs to know what information the AER expects well in advance of the lodgement date.

²³ Section 24 (3)

²⁴ Consideration of the consequences of regulatory error in the opex forecast should be in the context of the total building blocks calculation. This is because it is the total allowed costs which need to be set at least at an efficient level – the regulated company has flexibility to manage its actual expenditures within the total allowed costs.

²⁵ See Australian Competition Tribunal interpretation of the meaning of “at least” in the context of a similar provision in section 7A in the National Electricity Law. Para 81 Australian Competition Tribunal, Application by Energy Australia and Others [2009] ACompT 8

66. As noted in paragraphs 52 and 53, I consider this information planning process and the promulgation of the RIN is relevant to the interpretation of “forecast arrived at on a reasonable basis”, and to “best forecasts or estimates possible”.

3.5 Evaluation criteria

67. I have been asked to identify the strengths and weaknesses of each of the approaches. Based on my interpretation of the law and rules, the theory and practical experience of economic regulation, and the key areas of difference between the approaches, I have developed a relatively simple evaluation framework. The framework establishes criteria that assist in understanding the strengths and weaknesses of the alternative opex forecasting approaches.

Table 1 - Evaluation Framework

Criteria	Description	Content of Law and Rules	Reference to Law and Rules
Efficiency	Does the forecasting approach result in an opex forecast that is efficient and prudent? (Where efficiency includes productive and dynamic efficiency)	Efficient operation of natural gas services for the long term interests of consumers Prudent service provider acting efficiently Lowest sustainable cost Reasonable opportunity to recover at least the efficient costs Effective incentives in order to promote economic efficiency Inference from prior incentive mechanism	Section 23 NGL Rule 91 Rule 91 Section 24 (2) NGL Section 24 (3) NGL Rule 71(1)
Ability to verify	Does the forecasting approach support verification of opex forecast as having been arrived at on a reasonable basis? Does the forecasting approach support verification of lowest sustainable costs?	A forecast or estimate must be arrived at on a reasonable basis Lowest sustainable cost	Rule 74 Rule 91
Cost of undertaking opex forecasting	Does the approach result in a forecast that is prepared on a reasonable basis including the costs associated with preparing the forecast, regulatory review, disputes and appeals?	A forecast or estimate must be arrived at on a reasonable basis	Rule 74
Information asymmetry	How well does the forecasting approach address the information asymmetry problem?	A forecast or estimate must be arrived at on a reasonable basis	Rule 74
Regulatory error	What risk of regulatory error does the approach create?	Reasonable opportunity to recover at least the efficient costs	Rule 24 (2)

3.6 Alternative approaches to developing opex forecasts

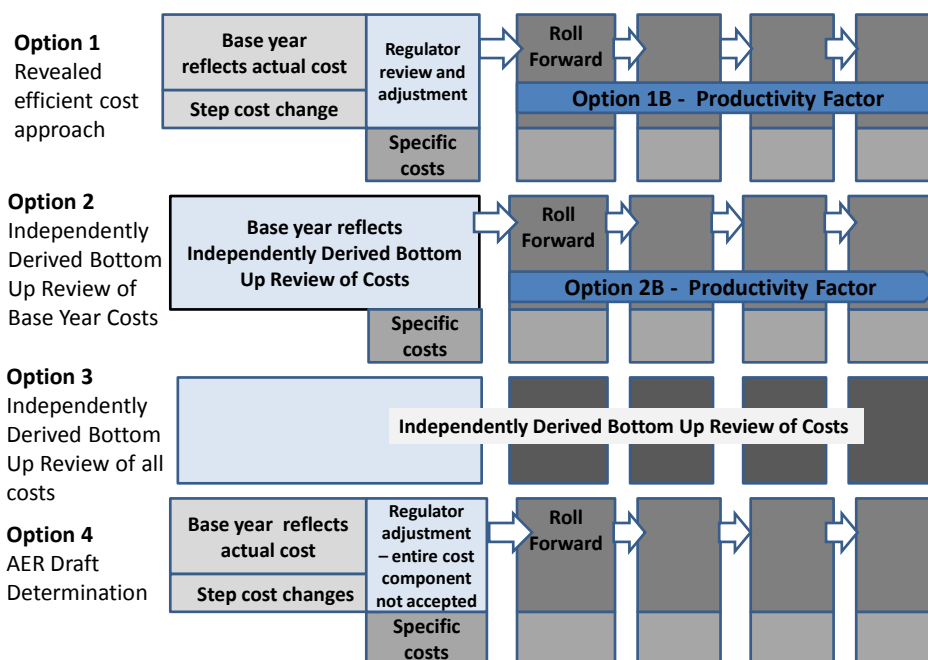
68. I have been asked to consider the following options for the approach on which a forecast of operating expenditure may be derived:

- a revealed efficient cost approach

- a bottom up approach or approach
- a forecasting approach as adopted by the AER for the JGN AA draft determination
- any other methods or methodologies I considered relevant.

69. Figure 1 summarises the key features of the specific opex forecasting approaches that I have identified.

Figure 1



3.6.1 Revealed efficient cost (Option 1)

Terminology

70. JGN used the term “base year roll forward approach” in its AA proposal. Different methods could be used to establish base year opex costs, and then roll these costs forward. The essential feature of the approach JGN adopted is that base year costs are said to be “revealed as efficient”. This is due to:

- the assumed effect on the service provider of incentives established in the previous regulatory period, and
- service provider expectations of how any efficiency gains achieved will be treated by the regulatory regime in the future.

In order to clearly distinguish this approach, it is called the “revealed efficient cost” approach.

Components of the Revealed efficient cost approach

71. The components of the revealed efficient cost approach are

- Base Year reflects actual costs - The key feature of this step is that the base year costs are based on verified actual costs. Information is gathered on actual and historic opex to develop a forecast for each cost category for delivering the reference service in the base year, which is reflective of the actual costs

providing the reference service at the end of the previous regulatory period. Actual costs available in the full year closest to the determination are used. The costs categories are set according to the AER's Regulatory Information Notice. In applying the forecasting approach, adjustments may be required to ensure the base year costs are an appropriate reflection of the future costs for producing the reference services. In JGN's case, these adjustments represent changes to outsourcing arrangements and removing costs for one-off events.

- *Step changes* are step changes in expenditure that are not reflected in current costs and that are forecast to be incurred in the future.
- *Roll Forward* – the base year costs are rolled forward to subsequent years based on escalation factors to reflect assumed rates of change in growth / volumes, material costs and labour costs.
- *Specific costs* are specific year-by-year forecasts for items where the base year is not representative.

AER Review

72. The AER undertakes a review of the services providers' application of the revealed efficient cost approach
73. In principle, the AER's approach to the review of the base year costs, is to check that the translation of actual and historic opex into base year costs is undertaken in a sound manner, but otherwise accepts that the base year costs are efficient.
74. The AER stated in the draft decision on the JGN AA²⁶

“The AER considers that the advantage of using the base year estimated actual expenditure is that it provides a recent and reliable estimate of actual network expenditure requirements. Coupled with a detailed analysis of activity that will not be required looking forward (one-off costs) in addition to new expected activity (step changes), this should result in a forecast that meets the requirements of r. 91 of the NGR.”

75. The AER reviews the claimed step changes, specific costs and escalation factors. A key issue that arises in such a review is how it should assess the efficiency of these components. In my view a key choice is the extent to which the AER should rely on detailed bottom up review; and to what extent it should rely on the operation of broadly based efficiency incentives over time (both in the previous period and in future) recognising the information asymmetry problem as discussed in section 3.4.3.
76. The AER draft decision makes no comment on the extent to which it is relying on the operation of any incentive regime. In my view while a bottom up review of the step changes, specific costs and escalation factors is necessary and appropriate it is a legitimate area for debate and judgement as how detailed this review should be.

3.6.2 Independently Derived Bottom Up Review of Base Year Costs (Options 2 and 3)

77. I have been asked to evaluate a “bottom up approach or approaches”.

²⁶ Pg 190 AER Draft Decision, JGN Access arrangement proposal for the NSW gas networks 1 July 2010 – 30 June 2015, Draft February 2010

78. Both the AER and Wilson Cook use the term “bottom up review”. I am not aware this term has a commonly accepted meaning. Annex 1 considers the meaning of “Bottom up review”. For the reasons set out in Annex 1, I assume that the appropriate approach to consider in this context is an “Independently Derived Bottom Up Review”. This approach reflects Wilson Cook’s preferred approach to reviewing JGN’s opex forecasts as set in footnote 53 of Wilson Cook’s review of the JGN AA proposal.
79. There are various ways an Independently Derived Bottom Up Review could be undertaken. Option 2 and Option 3 in Figure 1 indicate two of these. For the reasons outlined in Annex 1, I have only evaluated Option 2.
80. An Independently Derived Bottom Up Review of base year costs (Option 2) could be undertaken by the AER determining its own forecast of base year opex and then roll this forward using escalation factors. A possible approach to development of the base year forecasts is discussed in section 4.3.

3.6.3 Forecasting approach adopted by the AER for the JGN AA draft determination (Option 4)

81. The AER draft decision accepted the revealed efficient cost approach being actual expenditure incurred in the identified base year, 2008–09, less one-off costs, plus approved step changes. The AER then excluded the margin on the Asset Management Agreement (AMA) between JGN and Jemena Asset Management (JAM) from opex forecast because Jemena did not substantiate its proposed expenditure with detailed information.
82. As I understand it, it is the AER’s final determination which is relevant to compliance with the law and rules. The forecasting approach adopted by the AER for the JGN AA draft determination has been evaluated as though it were the final determination.

3.7 Productivity factor (Options 1A and 2A)

83. A productivity factor approach has been proposed as a forecasting approach on its own²⁷, but work has not progressed sufficiently for this to be identified as a feasible forecasting approach for determining opex forecasts. A possible²⁸ additional component for each of option 1, and 2 would be to include a factor that allows for trend improvement in productivity. This is shown in Figure 1 as options 1A and 2A²⁹. Including this component would establish a formal basis for sharing assumed efficiency gains with consumers in the last four years of the forecast regulatory period. This factor could be determined based on a study of past trends in partial factor productivity³⁰. I have not evaluated these options further.

²⁷ Australian Energy Markets Commission, “Review into the use of Total Factor Productivity for the Determination of Prices and Revenues, See <http://www.aemc.gov.au/Market-Reviews/Open/Review-Into-the-Use-of-Total-Factor-Productivity-for-the-Determination-of-Prices-and-Revenues.html>

²⁸ I have not reviewed JGN’s opex forecasts in detail to determine whether or not there are any productivity effects already taken into account, for example in the assumed functional relationship between certain cost categories and volume growth.

²⁹ It would not make sense to apply a productivity factor in option 4 if an Independently Derived Bottom up Review had been done for each year, because this may double count assumed efficiency improvements.

³⁰ This approach was adopted by the Essential Services Commission in Victoria for the 2003-2007, and 2008-2012 Gas Access Arrangement Revision

3.8 Benchmarking and Total Factor Productivity (TFP) studies

84. Opex cost benchmarking studies and TFP studies are not sufficiently reliable to use as a forecasting approach on their own but are useful as a separate check on other forecasting approaches.

3.9 Evaluation of opex forecasting approaches

3.9.1 Revealed efficient cost Forecasting approach (Option 1)

85. My evaluation of the Revealed efficient cost approach is as follows.

Does the forecasting approach result in an opex forecast that is efficient and prudent?

86. In my view the answer is “yes” if the relevant decision maker:

- decides under Rule 71 (1) to rely on an “incentive mechanism” as the approach for inferring the opex is efficient and other criteria have been met
- having considered whether the overall incentive framework is operating effectively, concludes it will continue (perhaps with amendment) to operate effectively into the future to encourage the service provider to reveal efficient operating cost over time
- can verify that the actual cost information appropriately establishes the base year costs and are reasonable in the circumstances; and can verify the step changes, the roll forward of base costs, and specific components.

87. The answer is “no” if the regulator, either:

- under rule 71 (1) decides to use an approach *other than* reliance on incentive mechanisms for determining compliance, or
- sees merit in using an incentive mechanism as the approach for determining compliance with Rule 71(1), but is unable to verify material aspects in the application of the forecasting approach to determine base year costs to its satisfaction so that, on balance, another forecasting approach is preferred

Does the forecasting approach support verification of opex forecast as having been arrived at on a reasonable basis?

88. This forecasting approach uses actual costs to establish base year costs which should be verifiable.

89. I note the Terms of Reference comment that, while the base year roll forward approach - called revealed efficient cost approach in this opinion - is supported in principle by the AER in the draft decision and is the exact approach underpinning JGN's forecasts, the AER's draft decision cited the following primary concerns that were impeding the AER's approval of JGN's proposed opex forecast:

- a perceived lack of a verified account of actual 2008-09 base year costs, given that JGN's proposal was based in part on estimates for that year
- a desire to see further 'bottom-up' detail of the activities and drivers for operating and maintenance (O&M) expenditure and an associated belief that the AER could not rely on benchmarking analysis submitted by JGN absent such 'bottom-up' information

- a view that JGN had not adequately demonstrated that the commercial margin it will pay JAM for O&M 'is efficient or consistent with lowest sustainable cost'.

90. I was asked my opinion as to what facts, materials or evidence would enable the regulator to infer that forecast opex expenditure is efficient. My answer is set out in section 4 below.

91. Whether this approach is reasonable for opex forecasting depends on the AER's decision on which approach to use to assess compliance under Rule 71 (1). If the AER accepts the use of an incentive mechanism, then it is a reasonable basis because Rule 71 enables the AER to accept the opex forecast without embarking on a detailed investigation.

Does the forecasting approach support verification of lowest sustainable costs?

92. The evaluation is the same as in the previous section.

Does the approach result in a forecast that is prepared on a reasonable basis including the costs associated with preparing the forecast, regulatory review, disputes and appeals?

93. This forecasting approach is a relatively low cost way of preparing forecasting because:

- For the service provider:
 - Actual cost information, which should be readily available is used to establish majority of the cost base, with forecasting effort focused on the step changes, the roll forward of base costs, and specific costs components.
 - This forecasting approach is consistent with normal business practices for forecasting opex costs. In general, businesses will prepare forecasts based on roll forward of previous years costs. Initiatives to improve opex efficiency generally are undertaken separately from the forecasting process.
- For the AER:
 - Provided the base year costs are verifiable, then its review efforts can be focused on step changes, the roll forward of base costs, and specific costs.
 - It avoids the costs associated with undertaking an independently derived bottom up review, and dealing with the outcomes of this review (including disputes and appeals).

How well does the forecasting approach address the information asymmetry problem

94. The forecasting approach has positive features in dealing with the problem of information asymmetry. It does not require a detailed review of the majority of opex, but rather relies on the operation of a broadly based financial incentive to infer efficiency.

What risk of regulatory error does the approach create

95. To the extent a relevant decision maker considers there is an information asymmetry problem, then compared with other forecasting approaches, this approach is likely to create a lesser risk of regulatory error that the opex forecast will be set "too low" (i.e. it does not allow the service provider to recover at least its efficient

costs). This is because the bulk of the opex forecast will be established by the service provider, rather than determined by the regulator.

96. The risk of regulatory error for the opex forecast being set “too high” is relative; it depends on assessment of the counterfactual opex forecasting approach. For example, to the extent that a relevant decision maker considers that an independently derived bottom up analysis can be undertaken successfully, then there is a comparatively higher risk of the opex forecast being set “too high” under a revealed efficient cost approach.

Assessment of the AER draft decision

97. In respect of the revealed efficient cost approach, the AER states

(It) considers that the advantage of using the base year estimated actual expenditure (revealed efficient cost) is that it provides a recent and reliable estimate of actual network expenditure requirements. Coupled with a detailed analysis of activity that will not be required looking forward (one-off costs) in addition to new expected activity (step changes), this should result in a forecast that meets the requirements of r. 91 of the NGR.

98. The benefits the AER identifies for the base year roll forward approach (revealed efficient cost approach) are that it provides a recent and reliable estimate, in other words is a verifiable estimate of costs; and (implicitly) that it assists in dealing with the problem of information asymmetry; and therefore supports Rule 91.

99. Whereas I consider that other potential strengths of the revealed efficient cost approach are:

- It is a relatively low cost way of undertaking opex forecasting which I consider contributes to the “reasonable basis requirements” of Rule 74.
- To the extent there is an information asymmetry problem, it reduces the risk of regulatory error which I consider relevant to Section 24 (2).
- It is expressly recognised in the Assessment of Compliance, Rule 71 (1) – I note the AER can infer opex is efficient and complies with other criteria on any approach the AER considers appropriate.

3.9.2 Evaluation of Independently Derived Bottom Up Approach (Option 2)

100. This opex forecasting approach is described in section 3.6.2, with details on how it could be undertaken set out in section 4.3.

Does the forecasting approach result in an opex forecast that is efficient and prudent?

101. In regards to determining an opex forecast that is efficient in a productive efficiency sense, the answer is “yes” if the relevant decision maker

- places little weight on the Information asymmetry problem (see ACCC view noted in footnote 21)
- considers it can engage advisors with appropriate expertise to advise it in the review
- has in place appropriate governance to ensure the review is undertaken robustly, and to manage the risk of regulatory error
- has adequate time to undertake the review.

102. The answer is “no” if a relevant decision maker cannot satisfy itself of any of these matters.

103. The impact on incentives to encourage dynamic efficiency should be considered. The impact is difficult to assess, as it depends on service provider’s perceptions of the overall regulatory regime. The forecasting approach might not undermine incentives for dynamic efficiency if the service provider (and other service providers) see the AER decision as a “one off” driven by unusual circumstances, and perceives that it is unlikely to be repeated. Incentives for dynamic efficiency could however be undermined if the review is perceived by the service provider (and other service providers) as an ex post “changing of the rules” and that this may be repeated in future. If so, service providers could perceive that benefits from pursuing efficiency gains may be muted in future, and be less likely to pursue them.

Does the forecasting approach support verification of opex forecast as having been arrived at on a reasonable basis?

104. The answer depends on the same issues as in the previous section as well as the conclusion on whether this forecasting approach address the information asymmetry problem (see below).

Does the forecasting approach support verification of lowest sustainable costs?

105. The answer depends on the same issues as in previous section.

Does the forecasting approach result in a forecast that is prepared on a reasonable basis including the costs associated with preparing the forecast, regulatory review, disputes and appeals?

106. The costs of this forecasting approach will be significantly higher than Option 1 including the cost associated with preparing information, engagement of consultants, the regulatory review process, disputes and possible appeals. To the extent the review becomes intrusive, then this may lead to the engagement of multiple consultants.

How well does the forecasting approach address the information asymmetry problem?

107. To the extent a relevant decision maker considers there is an information asymmetry problem, then this forecasting approach does not address it, and may not be a reasonable basis for arriving at the opex forecast. Conversely, if a decision maker considers information asymmetry is not a material problem, then this forecasting approach may be reasonable basis for arriving at the opex forecast.

What risk of regulatory error does the approach create?

108. To the extent there is (or is not) an information asymmetry problem, then the forecasting approach increases (or does not increase) the risk of regulatory error. If there is considered to be information asymmetry, then the AER would be determining the entire base year of regulatory costs for a business it knows little about. On the other hand, if there is not considered to be an information asymmetry problem, then this implies that the AER can obtain appropriate advice to understand the business.

3.10 Forecasting approach adopted by the AER for the JGN AA draft determination

Does the forecasting approach result in an opex forecast that is efficient and prudent?

109. The impact on productive efficiency depends on the extent to which the AER's decision to reduce the opex forecasts to remove the margin does not align with JGN's actual efficient costs. I am unable to comment on this.

110. The impact on incentives for dynamic efficiency depends on the decision's impact on the perceptions of JGN and other service providers as to any future incentives regime that will apply. If the decision is perceived as an ex post removal of efficiency benefits that "changes the rules of the game", then the impact on incentives may be adverse. To the extent the decision is seen as a legitimate one, to remove inappropriate costs, or seen as a one-off event, then there may be no impact on incentives.

111. If the AER does not accept any margin in the final decision, a possible outcome is to make outsourcing arrangements commercially unviable at least where they have not been competitively bid. This would affect (not affect) productive and dynamic efficiency to the extent non-arm's length outsourcing arrangements are (are not) a more efficient way of managing gas distribution businesses. One reason JGN claims the outsourcing arrangements with JAM contributes to productive efficiency is because of the economies of scope and scale created by JAMs spread of asset management activities.

112. As noted above, the AER is silent on the issue generally of the incentive properties of the opex forecast mechanism, and makes no comment on the incentive properties of the revealed efficient cost approach.

Does the forecasting approach support verification of opex forecast as having been arrived at on a reasonable basis

113. From a standpoint of good regulatory practice, the deduction of the margin by the AER on the grounds that inadequate information had been supplied, is not a very satisfactory approach for determining the opex forecast, and so it is difficult to support it as being a reasonable basis.

114. I have not reviewed: the AER and JGN expectations at the time of the RIN was promulgated, of the content of JGN's AA proposal; the reasonableness of the AER's request for additional information; or JGN's performance in responding to AER requests for additional information.

115. In my view, it would have been preferable and more consistent with good regulatory practice if the exact information requirements were resolved earlier, so that JGN's original regulatory proposal could provide the information, and the draft decision could reflect a more settled, predictable position..

Does the forecasting approach support verification of lowest sustainable costs?

116. From an economic and commercial standpoint, this forecasting approach gives little confidence that the opex forecast is a reasonable estimate of the lowest sustainable costs.

117. The AER makes it clear that the margin was deducted because the AER considered JGN had not substantiated its proposed expenditure with detailed information that clearly sets out the margin and the underlying costs. This approach lacks economic logic and is inconsistent with normal approaches to forecasting.

118. Whatever justification there may be for this decision, in my view it is unlikely that this opex forecast would be consistent with an economic or commercial interpretation of Rule 91: opex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

Does the forecasting approach result in a forecast that is prepared on a reasonable basis including the costs associated with preparing the forecast, regulatory review, disputes and appeals?

119. The costs of the regulatory review process to date are likely not to be high compared to other regulatory reviews. The future costs are yet to be determined.

How well does the forecasting approach address the Information asymmetry problem

120. The AER approach can be seen as being an attempt to provide incentives to JGN to provide further information.

What risk of regulatory error does the approach create

121. There is a risk of regulatory error in either direction (up or down), because the removal of the margin is only an approximate estimate of the adjustment required, in the AER's view, to ensure that JGN can recover at least its efficient costs. As the NGL requires that a service provider should be given a reasonable opportunity to recover at least its efficient costs, it is an open question whether section 24 (2) would be complied with.

4 Additional question

122. I was asked the following additional question.

In your opinion, what facts, materials or evidence would enable the regulator to infer that forecast opex expenditure is efficient?

4.1 Key assumptions

123. I answer this question in relation to the following two opex forecasting approaches³¹:

- Revealed efficient cost approach
- Independently Derived Bottom Up Review of Base Year Costs.

124. The criterion governing opex expenditure (Rule 91 NGR) is

Opex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

³¹ The AERs draft decision is not considered in this answer.

125. The existence of an outsourcing contract between a regulated service provider and a related third party may give rise to a concern under Rule 91 that the arrangements may transfer profits from the regulated service provider to the third party, and result in inflated end user prices and reduced efficiency.

4.2 Revealed efficient cost approach

126. Under Rule 71 (1)) the regulator may, without embarking on a detailed investigation, infer compliance from the operation of an incentive mechanism. In my view, an opex forecast developed under the revealed efficient cost approach might be considered compliant *without* detailed investigation by reference to the following facts, materials and evidence.

Rules and law

- Evidence on the relevant rules and law:
 - An interpretation of Rule 91 (NGR) within the context of the NGL (including the National Gas Objective) based on accepted economic theory (including productive, dynamic and allocative efficiency) and a workably competitive market
 - An interpretation of the National Gas Objective's reference to "long term interest of consumers of natural gas"³².

Regulatory context

- Evidence generally of productivity outcomes where economic regulation has included incentives for opex efficiency and avoided detailed investigation, including for gas distribution companies and other utility companies in Australia.

Past incentives and performance

- Evidence on past opex incentives and efficiency applying to the service provider that shows the service provider to have been acting efficiently by improving its efficiency over time:
 - Evidence on past trends in opex cost productivity changes in the period between the time the service provider became subject to economic regulation under the Gas Code and prior to the current regulatory period including:
 - description of the incentives established in relevant Access Arrangements
 - evidence on opex productivity outcomes.
 - Evidence of trends and outcomes for opex productivity changes in the most recent regulatory period, including:

³² This evidence would include analysis of dynamic efficiency. Dynamic efficiency is argued to be a key factor that leads to the steady improvement in productivity over time and hence affects the long term interests of consumers

- the basis on which the regulator established the opex forecast and the price control for the most recent regulatory period and incentives these created on the service provider to improve opex productivity
 - other productivity factors incorporated by the regulator
- evidence on the out turn of actual opex against the opex forecast provided by the regulator for the end of the previous regulatory period.
- Evidence from TFP studies on the service provider's relative productivity improvement compared to its peers.

Current performance

- Evidence on the service provider's current opex efficiency that shows the service provider to be acting efficiently and in accordance with accepted good industry practice including:
 - factual material on relevant strategies, policies and procedures (for example, maintenance policies and procedures)
 - evidence from benchmarking studies
 - facts and evidence on productive efficiency arising from any current outsourcing arrangements including, economies of scope and scale arising from the way the outsourcing services are provided, and incentive structures in outsourcing agreements.

Review of opex forecasts

- Review of the base year costs to ensure these reference back to actual costs
- Review (not a detailed investigation) to assess the reasonableness of forecast step changes, escalation factors and specific costs

Future incentives

- Material on likely future incentives for opex productivity improvement that may induce the service provider to reveal opex efficiency and ensure that consumers benefit from increased efficiency in the long term:
 - the basis on which the regulator intends to establish the opex forecasts and the price control for the forthcoming regulatory period and incentives created on the service provider to improve opex productivity
 - material on other broadly based incentive mechanisms the AER could include in the AA to strengthen those incentives and/ or share benefit of efficiency gains with consumers, including
 - an efficiency carryover mechanism;
 - productivity factor.

Outsourced Contracts

- In relation to the evaluation of costs and margins in an outsourced contract:

- evidence and argument that “without requiring detailed investigation” satisfies the AER that costs and margins within the outsourced contract are not excessive against a workable competitive standard and the overall benefits of the incentive regime.
- A process to specify a materiality threshold that enables a practical interpretation of “without detailed investigation” in Rule 71 (1) and allow the appropriate information to be collected to an appropriate level. The materiality threshold could for example have regard to the end impact of contract prices and margins on end gas prices paid by consumers.

Assessment

- Overall assessment and conclusion that the balance of evidence supports that the opex forecast complies with Rule 71(1) and meets the opex criteria in Rule 91.

4.3 Independently Derived Bottom Up Review of Base Year Costs

127. Under Rule 71 (1) the AER may infer compliance of the AA proposal on any approach the AER considers appropriate. A possible approach to infer compliance would be an Independently Derived Bottom Up Review undertaken to establish the base year opex forecasts. The roll forward of base year costs and specific costs would be as set out in paragraph 71.

128. As discussed in Annex 1, I consider development of an opex forecast under this approach would require a targeted approach focused on specific components of the service providers costs.

129. In my view, an opex forecast developed under this approach might be considered compliant with Rule 71 (1) by reference to the following evidence, and materials:

Planning Stage

- Reasoning on the relevant law and rules including interpretation of efficiency and prudence that should guide the review.
- Development of an economic framework that enables assessment of the prudence and efficiency of the related party outsourcing contract within the above interpretation of the law and rules, which enables a estimation of an efficient contract price, and which includes assessment of the following
 - appropriate returns on assets used for provision of services,
 - asymmetric risks
 - incentives
 - economies of scale, scope and synergies.
- Development of an approach to applying the economic framework including information requirements and expert analysis required.
- Development of a targeted approach to carrying out the review ensure the costs of the bottom up review are reasonable in accordance with Rule 74. An example would be development of materiality thresholds to establish a practical interpretation of “lowest cost to consumers” and taking into account the workable competition standard

Implementation Stage

- Definition of the scope of regulated reference services to be provided and the scope of contracted services required to enable delivery of the regulated reference services
- Prepare and consult on Term of Reference for outside adviser(s), engage adviser(s), determine information requirements, collect information, undertake expert studies
- Assessment by the regulator of the advisers recommendations
- Develop Base year opex forecast

Assessment

- Overall assessment and conclusion that the balance of evidence supports that the opex forecast complies with Rule 71(1) and meets the opex criteria in Rule 91.

4.4 Process to enable decision on approach

130. I consider that a carefully structured process would be required to enable an informed decision on the choice of approach for preparing opex forecasts. My reasoning is that:

- The choice of approach has significant implications for information requirements (including the Regulatory Information Notice), and the costs and time required for developing the information needed to support development of an AA proposal and its review.
- Opex forecasts and supporting information provided by the service provider must be arrived at “on a reasonable basis” (Rule 74). In my view, in order to comply with a practical interpretation of this rule, the regulator needs to determine whether to adopt one or other of the approaches, (or possibly elements of both approaches), and to make these choices early in the AA review process.

5 Guidelines for Expert Witnesses

131. I have read the Guidelines for Expert Witnesses in Proceedings of the Federal Court of Australia and confirm that I have made all inquiries that I believe are desirable and appropriate and that no matters of significance that we regard as relevant have, to my knowledge, been withheld from the Court.



Geoffrey Jon Campbell Swier (Director, Farrier Swier Consulting)

Annex 1

Bottom Up Review

Introduction

1. Both the AER and Wilson Cook use the term “bottom up review”. I am not aware that “bottom up review” has a commonly accepted meaning, and therefore consider its possible meaning in this annexure.
2. I conclude that the relevant concept for this opinion is an “Independently Derived Bottom Up Review”. One way an Independently Derived Bottom Up Review could be undertaken would be for the AER to determine its own forecast of base year opex and then roll this forward using escalation factors. (See Option 2 in Figure 1.)
3. The development of the base year forecast could involve two stages. The first stage would involve obtaining from the service provider detailed information on opex cost categories and using high level techniques including trend analysis and benchmarking, to identify cost areas for closer investigation. The second stage would review subject these using appropriate review techniques. The AER would determine adjustments to costs based on this review, and submissions.

What does “Bottom up review” mean?

4. In the absence of a well-accepted meaning, I researched how the term “bottom up review” had been applied. I found that it means different things in different contexts, with different implications. I therefore consider it important to be clear about what a “bottom up review” is within its context.
5. First, it is useful to consider a Bottom Up Review to encompass a set of techniques that are used to assess individual components of expenditure. In the context of its review of the JGN AA, Wilson Cook described³³ the range of “Bottom up” review techniques as follows:

A detailed bottom up review would (assess) all opex elements, considering each in detail, reviewing their necessity, scope and timing, obtaining supporting evidence that the costs either have been or will be incurred efficiently (which in essence would require it to be demonstrated that past work was undertaken through competitive procurement processes or at rates that can be confirmed to be competitive market rates; that planned work is based on cost estimates that reflect competitive market rates; that on-costs recover only the verifiable indirect costs of the business and not profit margins and that the returns to the business are matched to the returns agreed by the regulator.

³³ Footnote 53, Wilson Cook & Co. Review of Expenditure of ACT & NSW Gas Distributors, JGN Gas Networks (NSW) Ltd

³³ Pg 15, Wilson Cook & Co, Review of Proposed Expenditure of ACT & NSW Electricity DNSPs Volume 1 – Main Report Final October 2008

6. In Wilson Cook’s review of the NSW DNSPs opex forecasts³⁴ the use of the term “bottom up” was described as follows:

The “bottom-up” approach was made by considering the build-up of [both capex] and opex from projects, programmes and past expenditure levels.

7. I reviewed the AER recent draft decision on opex forecast for the NSW Electricity Distribution Network Service Providers³⁵ to see what forecasting approach the AER had adopted in that determination. In that decision, the AER refers to a “top-down” and “bottom-up approach”. The AER’s conclusion was:

The AER considers that the top-down and bottom-up forecasting approach employed by Wilson Cook to assess the DNSPs’ opex forecasts represents an appropriate approach to the assessment of efficient costs, because in combination the assessments ensure that issues are considered comprehensively.

8. I inspected the application of the bottom up approach Wilson Cook applied to EnergyAustralia’s opex forecasts in order to better understand the meaning of the term. I did not review Wilson Cook’s recommendations.
9. EnergyAustralia used a similar forecasting approach to JGN for determining its opex forecasts³⁶ (although EnergyAustralia do not call this a “base year roll forward approach” (or “revealed efficient cost”) in this report. Wilson Cook undertook a review of capex–opex tradeoffs, a “top down review” and a “bottom up review” which is described on pages 44 to 62 of its report. The “top down review” involved looking at the level of expenditure as a whole in the context of the size and nature of each network and the circumstances of each DNSP.³⁷ The “bottom up review” considered network operating (support) expenditure - escalation rates, and step changes; network maintenance expenditure - maintenance policies and practices; workload escalation; and step changes.

Other Operating (Business Support) Expenditure Workload Escalation Step Changes

10. I consider it reasonable to summarise Wilson Cooks “bottom up approach” to its review of EnergyAustralia’s opex forecast as being a review of the individual components of Energy Australia’s forecasting approach in the terms it was put forward by them. (other than a review of maintenance policies) and not a separately-derived bottom up forecasting approach to prepare the opex forecast.

³⁴ Wilson Cook & Co, Review of Proposed Expenditure of ACT & NSW Electricity DNSPs Volume 1 – Main Report Final October 2008

³⁵ AER, Draft Decision New South Wales draft distribution determination 2009–10 to 2013–14 21, November 2008

³⁶ EnergyAustralia’s “core” network opex forecasts have been derived by establishing actual costs by activity for the base year (FY 2007), removing abnormal costs from that year, applying step increases and decreases by activity, applying input cost escalation factors, applying workload cost escalators by activity including the interaction between opex and capex and converting the model’s output in nominal dollars to year 2009 dollars. See Figure 9.2: opex Forecast Forecasting approach, Review of Proposed Expenditure of ACT & NSW Electricity DNSPs Volume 2 – EnergyAustralia Final October 2008, Wilson Cook

³⁷ Pg 15, Wilson Cook & Co, Review of Proposed Expenditure of ACT & NSW Electricity DNSPs Volume 1 – Main Report Final October 2008

11. I consider the approach adopted by Wilson Cook for EnergyAustralia as reasonable, because it was checking the detailed application of the forecasting approach. I have not reviewed the level of detail in that review.
12. Whereas in the case of JGN AA review, Wilson Cook's preferred approach was (as I understand it) to review the opex forecast independently of the way they were put forward by JGN. It is evident that this difference in definition of "bottom up review" was driven by Wilson Cook's concerns regarding the AMA.³⁸
13. In order to distinguish between the approach adopted by Wilson Cook and the AER for the NSW distribution business and the approach suggested by Wilson Cook in the JGN Review (but not taken forward by AER), I will call the former a "bottom up review" and the latter an "Independently Derived Bottom Up Review."

Independently Derived Bottom Up Review

14. An Independently Derived Bottom Up Review could be applied in several different ways, either partially or in full, which, together with other techniques, would be a forecasting approach for developing the operating expenditure forecast.
15. The first issue is what Independently Derived Bottom Up Review forecasting approach might be applied. In my view such a review could be undertaken either on a comprehensive or a targeted approach. Wilson Cook³⁹ proposes what I would call a comprehensive, "bottom-up" review.
16. In my view, if any actual Independently Derived Bottom Up Review were carried out, then it is very likely to be more targeted than indicated by Wilson Cook. I take the view that a targeted approach would be more likely to be undertaken because a comprehensive approach:
 - raises concerns for the regulator in making decisions over likely disputes over the reasonableness of technical assessments between the service provider (and its consultant) and the consultant that is engaged by the AER to undertake the review
 - risks a range of regulatory errors being made by the consultant which are difficult to identify and manage in a comprehensive review (a targeted review makes this risk more manageable)
 - if undertaken with sufficient rigor, would likely be more costly than the regulator could justify (bearing in mind the AER regulates many regulated businesses) and would impose significant costs on the regulated company.

³⁸ Section 4.6 Footnote 53, Wilson Cook & Co. Review of Expenditure of ACT & NSW Gas Distributors, JGN Gas Networks (NSW) Ltd

³⁹ Footnote 53, Wilson Cook & Co. Review of Expenditure of ACT & NSW Gas Distributors, JGN Gas Networks (NSW) Ltd

Independently Derived Bottom Up Review to establish base year costs

17. The next issue is whether a targeted Independently Derived Bottom Up Review would be:
- undertaken only for the base year to establish new base cost, which then would be rolled forward, (Option 2 in Figure 1); or
 - as implied by Wilson Cook, undertaken for each year of the regulatory period (Option 3 in Figure 1).
18. I consider there is little merit in Option 3, for the same reasons as set out above. Therefore, I conclude that a feasible Independently Derived Bottom Up Forecasting approach that is capable of implementation would be as set out in Option 2, and would be a targeted review to develop an opex forecast.

Information and procedural requirement for undertaking a successful Independently Derived Bottom Up Review

19. As indicated by Wilson Cook, an Independently Derived Bottom Up Review requires a significant amount of information to be collected and supplied by the service provider. As discussed above, if this Opex forecasting approach was to be used then ideally the information to be supplied in AA access revision application should be clearly identified in the early stages of the review process as part of the Regulatory Information Notice.



Annex 2

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**JEMENA GAS NETWORKS (NSW)
ACCESS ARRANGEMENT 2010**
ASSET & PROJECT

**TERMS OF REFERENCE–
APPROACH TO OPEX FORECASTS**

AA10-SR-73705A
DOCUMENT NUMBER

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1 BACKGROUND

Jemena Gas Networks (JGN) is the major gas distribution service provider in New South Wales (NSW). JGN owns 24,000 kilometres of natural gas distribution system, delivering approximately 100 petajoules of natural gas to over one million homes, businesses and large industrial consumers across NSW. Jemena Asset Management (JAM) undertakes the majority of JGN's operating, maintenance, and capital works activity.

The relevant provisions relating to the economic regulation of natural gas distribution networks in NSW are set out in the National Gas Law and National Gas Rules, which are available at www.aemc.gov.au.

JGN is currently engaged with the Australian Energy Regulator (AER) in the AER's review of its Access Arrangement (AA). JGN submitted a revised AA in August 2009 which, if approved, will cover the period 2010/11-2014/15 (July to June financial years).

Under the National Gas Rules (NGR), total revenue for a relevant service provider is determined for each regulatory year of the access arrangement using a building blocks methodology (Rule 76). The building blocks include, amongst others, a forecast of operating expenditure for the year (Subrule 76(e)).

In relation to operating expenditure, the NGR provide (Rule 91):

Operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

Under the National Gas Law (section 28), in making a decision on whether to approve Jemena's AA proposal, the AER must have regard to the National Gas Objective (in section 23 of the National Gas Law), which 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."

In assessing forecast operating expenditure, the AER's discretion is limited. This means that the AER may not withhold its approval to an element of an AA proposal if the AER is satisfied that it: (a) complies with the applicable requirements of the National Gas Law; and (b) is consistent with applicable criteria (if any) prescribed by the National Gas Law (Subrule 40(2)). The National Gas Law requires that the AER must take into account the "revenue and pricing principles" when exercising a discretion in approving those parts of an AA relating to a reference tariff (section 28(2)(a)(i)). These revenue and pricing principles are set out in section 24 of the National Gas Law, which provides:

- (1) The revenue and pricing principles are the principles set out in subsections (2) to (7).
- (2) A service provider should be provided with a reasonably opportunity to recover at least the efficient costs the service provider incurs in—
 - (a) providing reference services; and
 - (b) complying with a regulatory obligation or requirement or making a regulatory payment.

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- (3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—
 - (a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and
 - (b) the efficient provision of pipeline services; and
 - (c) the efficient use of the pipeline.
- (4) Regard should be had to the capital base with respect to a pipeline adopted—
 - (a) in any previous—
 - (i) full access arrangement decision; or
 - (ii) decision of a relevant Regulator under section 2 of the Gas Code;
 - (b) in the Rules.
- (5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which the service provider provides pipeline services.
- (6) Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.
- (7) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services.”

It is also relevant to note that Rule 74, which applies to forecasts and estimates, provides:

- “(1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.
- (2) A forecast or estimate:
 - (a) must be arrived at on a reasonable basis; and
 - (b) must represent the best forecast or estimate possible in the circumstances.”

2 AER DRAFT DECISION

On 10 February 2010 the AER published its draft decision on JGN's AA revision proposal.¹ If JGN wishes to revise its proposal in response to the AER's draft decision, it must submit the revised proposal to the AER by 19 March 2010. Submissions on the AER's draft decision close on 28 April 2010, however

¹ Australian Energy Regulator, *Draft decision, Jemena, Access arrangement proposal for the NSW gas networks*, 1 July 2010 – 30 June 2015 (draft decision), February 2010, can be found at <http://www.aer.gov.au/content/index.phtml/itemId/730676>.

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Jemena is hopeful of submitting both any revised proposal as well as its response to the draft decision at the same time, by 19 March 2010.

JGN proposed forecast opex of \$735.1 million (\$2009-10 real) in its August 2009 submission accounted for 38 per cent of its total proposed building block cost of service. The AER's draft decision concluded that the AER could not satisfy itself that this forecast complied with the requirements of NGR rule 91.

JGN's forecast was predominantly based on a base year roll forward forecasting method. The draft decision noted that 'in principle, the AER accepts the forecasting methodology used by Jemena.' The draft decision noted that:

"The AER considers that the advantage of using the base year estimated actual expenditure is that it provides a recent and reliable estimate of actual network expenditure requirements. Coupled with a detailed analysis of activity that will not be required looking forward (one-off costs) in addition to new expected activity (step changes), this should result in a forecast that meets the requirements of r. 91 of the NGR."

While this is the exact approach underpinning JGN's forecasts, the draft decision cited the following primary concerns that were impeding the AER's approval of JGN's proposed opex forecast:

- a perceived lack of a verified account of actual 2008-09 base year costs, given that JGN's proposal was based in part on estimates for that year
- a desire to see further 'bottom-up' detail of the activities and drivers for operating and maintenance (O&M) expenditure and an associated belief that the AER could not rely on benchmarking analysis submitted by JGN absent such 'bottom-up' information
- a view that JGN had not adequately demonstrated that the commercial margin it will pay JAM for O&M 'is efficient or consistent with lowest sustainable cost.'

3 SCOPE OF WORK

The independent expert is to provide an opinion on what approaches to forecasting operating expenditure would result in a forecast of operating expenditure:

- (a) such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services;
- (b) that will or is likely to contribute to the achievement of the national gas objective;
- (c) that will or is likely to give effect to the revenue and pricing principles; and
- (d) that is arrived at on a reasonable basis and represents the best forecast or estimate possible in the circumstances.

The expert should identify the strengths and weaknesses of each of the approaches identified against (a) to (d) above.

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In providing the above opinion, the independent expert should consider the following methods or methodologies for forecasting operating expenditure

1. Revealed efficient cost approach
2. A bottom up approach or approaches, and
3. A forecasting approach as adopted by the AER for the JGN AA draft determination.
4. Any other methods or methodologies the expert considers relevant.

In addressing the scope, the expert should have regard to:

- JGN's AA and AAI submitted to the AER on 25 August 2009
- The NGR, particularly the definition of operating expenditure, sections 71, 72, 74, and Division 7
- AER's draft decision and the associated Wilson Cook report; in particular to Wilson Cook's definition of the lowest sustainable cost test within rule 91 ('an important element of r. 91 of the NGR is balancing prudence and efficiency, culminating in the lowest sustainable cost of delivering pipeline services')
- the national gas objective and the revenue and pricing principles
- any other matter the expert considers relevant, including information the experts considers should be requested from the AER or Wilson Cook in order to understand the basis upon which either party has reached its conclusions.

4 INFORMATION FROM JGN

The expert is encouraged to draw upon JGN's AAI (confidential version) and its appendices and financial models.

5 OTHER INFORMATION TO BE CONSIDERED

The expert is also expected to draw upon the following additional information:

- such information that, in expert's opinion, should be taken into account to address the questions outlined above
- recent Australian regulatory reviews that dealt with similar issues.

6 DELIVERABLES

At the completion of its review the expert will provide an independent expert report which:

- is of a professional standard capable of being submitted to the AER

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- is prepared in accordance with the Federal Court Guidelines for Expert Witnesses set out in Attachment 1 and acknowledges that the expert has read the guidelines²
- summarises the expert's experience and qualifications and attaches your curriculum vitae
- identifies any person and their qualifications, who assists you in preparing the report or in carrying out any research or test for the purposes of the report
- summarises JGN's instructions and attaches these terms of reference
- (without limiting the points above) carefully sets out the facts that the expert has assumed in putting together his or her report and the basis for those assumptions

The expert report will include the findings for each of the parts defined in the scope of works (Section 2).

² Available at: http://www.fedcourt.gov.au/how/prac_direction.html.

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ATTACHMENT 1: FEDERAL COURT GUIDELINES

EXPERT WITNESSES IN PROCEEDINGS IN THE FEDERAL COURT OF AUSTRALIA

1. Practitioners should give a copy of the following guidelines to any witness they propose to retain for the purpose of preparing a report or giving evidence in a proceeding as to an opinion held by the witness that is wholly or substantially based on the specialised knowledge of the witness (see **Part 3.3 - Opinion** of the *Evidence Act 1995* (Cth)).
2. The guidelines are not intended to address all aspects of an expert witness's duties, but are intended to facilitate the admission of opinion evidence³, and to assist experts to understand in general terms what the Court expects of them. Additionally, it is hoped that the guidelines will assist individual expert witnesses to avoid the criticism that is sometimes made (whether rightly or wrongly) that expert witnesses lack objectivity, or have coloured their evidence in favour of the party calling them.

Guidelines

1. **General Duty to the Court⁴**
 - 1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.
 - 1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential⁵.
 - 1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.
2. **The Form of the Expert Evidence⁶**
 - 2.1 An expert's written report must give details of the expert's qualifications and of the literature or other material used in making the report.
 - 2.2 All assumptions of fact made by the expert should be clearly and fully stated.
 - 2.3 The report should identify and state the qualifications of each person who carried out any tests or experiments upon which the expert relied in compiling the report.
 - 2.4 Where several opinions are provided in the report, the expert should summarise them.

³ As to the distinction between expert opinion evidence and expert assistance see *Evans Deakin Pty Ltd v Sebel Furniture Ltd* [2003] FCA 171 per Allsop J at [676].

⁴ See rule 35.3 Civil Procedure Rules (UK); see also Lord Woolf "Medics, Lawyers and the Courts" [1997] 16 CJK 302 at 313.

⁵ See *Sampi v State of Western Australia* [2005] FCA 777 at [792]-[793], and *ACCC v Liquorland and Woolworths* [2006] FCA 826 at [836]-[842]

⁶ See rule 35.10 Civil Procedure Rules (UK) and Practice Direction 35 – Experts and Assessors (UK); *HG v the Queen* (1999) 197 CLR 414 per Gleeson CJ at [39]-[43]; *Ocean Marine Mutual Insurance Association (Europe) OV v Jetopay Pty Ltd* [2000] FCA 1463 (FC) at [17]-[23]

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- 2.5 The expert should give the reasons for each opinion.
- 2.6 At the end of the report the expert should declare that "[the expert] has made all the inquiries that [the expert] believes are desirable and appropriate and that no matters of significance that [the expert] regards as relevant have, to [the expert's] knowledge, been withheld from the Court."
- 2.7 There should be included in or attached to the report: (i) a statement of the questions or issues that the expert was asked to address; (ii) the factual premises upon which the report proceeds; and (iii) the documents and other materials that the expert has been instructed to consider.
- 2.8 If, after exchange of reports or at any other stage, an expert witness changes a material opinion, having read another expert's report or for any other reason, the change should be communicated in a timely manner (through legal representatives) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court⁷.
- 2.9 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report (see footnote 5).
- 2.10 The expert should make it clear when a particular question or issue falls outside the relevant field of expertise.
- 2.11 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports⁸.

3. Experts' Conference

- 3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

M E J BLACK
Chief Justice
25 September 2009

⁷ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565

⁸ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Omrod *"Scientific Evidence in Court"* [1988] Crim LR 240

Annex 3



Jemena Gas Networks
(NSW) Ltd
ABN 87 003 004 322

18 March 2010

Email: geoff.swier@farrierswier.com.au

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JGN access arrangement additional question - approach to opex forecasts

Dear Geoff,

We refer to our instructions AA10-SR-73705A Terms of Reference - Approach to OpEx Forecasts to prepare an expert report on approaches to forecasting operating expenditure.

In addition to those questions asked in your original instructions, we would now like you to address one further question:

"In your opinion, what facts, materials or evidence would enable the regulator to infer that forecast operating expenditure is efficient."

You should consider this question a part of your instructions and provide an opinion in response as part of your expert report.

If you have any questions regarding this letter please contact me on (02) 9270 4512 or sandra.gamble@jemena.com.au.

Yours sincerely

A handwritten signature in cursive script that reads "Sandra Gamble".

Sandra Gamble
Group Manager Regulatory
Jemena Limited

Annex 4

Geoff Swier

Curriculum Vitae

Geoff Swier is an economist with extensive experience as a regulator and consultant in the development, implementation and operation of electricity and gas markets in Australia, New Zealand and Asia. His industry sector experience includes electricity, gas and water. He has acted as an expert in dispute resolution, advisory panels and arbitrations.

He recently completed a three year appointment as a part time member of the Australian Energy Regulator.

He is a director of Farrier Swier Consulting (FSC) and independent non executive director of Trustpower (NZ).

Since forming Farrier Swier Consulting in 1999, Geoff's experience and expertise has included:

- appearing as an expert witness and membership of dispute resolution panels in energy sector legal proceedings
- designing, implementing and advising on regulatory regimes and market development
- applying the principles of regulation, government accountability and corporate governance to policy development
- reforming international energy markets through World Bank and Asian Development Bank projects in Indonesia, China, and South Africa.

Qualifications

- Masters of Commerce Degree in Economics, University of Auckland 1981

Expert Witness, Expert Panels, Dispute Resolution

- Chair, expert panel established to advise the AEMC on an application for compensation by Synergen under the National Electricity Rules (2010)
- Independent expert report for Jemena Gas Networks (NSW) on the appropriate classification of the NSW gas networks. (2009).
- Member of Dispute Resolution Panel - TruEnergy vs. Vencorp and others (Victorian National Gas Market, 2009)
- Member of Dispute Resolution Panel - Powercor vs. Vencorp re. Wemen (National Electricity Market 2009, settled)
- Member AEMC advisory panel for establishment of first compensation guidelines, February, 2009
- Member of three person expert panel providing advice to the Ministerial Council of Energy on definitional matters for the National Gas Law (2005); Client Commonwealth Treasury
- Member of three person expert panel providing advice to the Ministerial Council of Energy on definitional matters for the National Electricity Law (2005); Client Commonwealth Treasury

- Expert witness in Arbitration of a dispute under a power purchase agreement. Matters covered in the witness statement included an explanation of how market prices are determined in the electricity market, and a summary of generation investment and market issues that affect the electricity market. (2000)
- Assisted in the preparation of an expert witness statement in an arbitration of a dispute under a Long term Gas Supply Agreement. Matters covered included the effect of the implementation of the national electricity market on future gas prices. (1997).

Selected consultancy experience

Economic Regulation

- Advisor to the New Zealand Commerce Commission on the development of Input Methodologies for capital and operating expenditure forecast information in proposals by a regulated supplier for a customised price-quality path (2009 – ongoing)
- Advisor to SP Ausnet for the Electricity Distribution Price Review (2009 – ongoing)
- Advice to National Transport Commission on application of economic regulation concepts to road pricing reform (2006)
- Provided advice to the Independent Pricing and Regulatory Tribunal (IPART) on its Investigation into Water and Wastewater Service Provision in the Greater Sydney Region (2005).
- Advised TXU Networks in relation to preparation of its submission for the 2005 network price determination. (2004)
- Preparation of revised Electricity Transmission Rules (Part F) for the New Zealand Electricity Market. Developed detailed drafted Transmission rules based on policy framework developed by the Ministry of Economic Development managed consultation with stakeholders and prepared final rules (2003)
- Prepared study for the Australian Utility Regulators Forum on comparing Indexed Approaches with Building Blocks (2002)
- Economic and regulatory advice to Sydney Water (2003)

Industry Reform

- Key adviser in Victorian and Australian national electricity and gas reform (1990s)
- Review of Indonesia Power Sector Reform Strategy, (Client: Asian Development Bank, (2009).
- Prepared a report for the Victoria Competition and Efficiency Commission to review relevant experience and the state of play and thinking on promoting greater competition and urban water markets as input to the Commissions Inquiry into Reform of the Metropolitan Retail Water Sector (2007)
- Advice to Water Corporation (Western Australia) on options for industry structure and enhancing private sector participation and competition. (2006)
- Advice to the Independent Pricing and Regulatory Tribunal (IPART) on its investigation into the structure of the greater metropolitan Sydney water industry. (2005)

- Appointed to an expert panel (Energy System Review Committee - Singapore) to provide advice to the Minister of Energy on energy security and reliability of the Singapore gas and electricity systems following a major incident at a gas receiving facility (2004)
- Member of team undertaking major review of the New Zealand Gas Market for NZ Ministry of Economic Development. (2003)
- Technical assistance study to the Peoples Republic of China for the establishment of the State Electricity Regulatory Commission. Asian Development Bank (2003)

Prizes/Awards

- International Fellow of the Kings Fund, a charitable organisation based in London, which provides management and organisational development advice to the health sector in the United Kingdom and elsewhere
- Caughey Scholarship, Kings College, Auckland NZ

Employment History

1982 - May 1983	Policy Officer, Forecasting and Planning Division, Ministry of Energy (NZ)
May 1983 - June 1984	Economist, Labour Party Parliamentary Research Unit (NZ)
June 1984 - October 1987	Economic Advisor, Office of the Minister of Finance (NZ)
October 1987 - 1988	Associate Director, Investment Banking, DFC New Zealand (NZ)
1988 - 1989	Senior Management Consultant, Ernst & Young, Energy Sector Consulting Group (NZ)
1990	Adviser, Office of State Owned Enterprises (NZ)
1991	Economic and Financial Consulting (NZ) <ul style="list-style-type: none"> ▪ Trans Power (Commercial and pricing issues connected with separation from ECNZ; Governance and ownership issues, Wholesale Market Development) ▪ Airways Corporation ▪ Australia Post
1992 - August 1993	Health Reforms. Director (Economic and Financial Policy), National Interim Provider Board (NZ)
August - September 1993	Consulting (Department of Education (NZ), Government Inquiry into School Property; Aetna Health NZ)

- September 1993 to June 1999
- Department of Treasury and Finance, (Victoria)
- Roles
- Deputy Project Leader, Electricity Supply Industry Reform Unit (1994 – June 1996)
 - Deputy Project Leader, Energy Projects Division (July 1996- June 1999)
 - Victorian representative, National Grid Management Council
 - Government observer
 - Board of Directors, Victorian Power Exchange,
 - Board of Directors, Victorian Energy Networks Corporation
 - Citipower
 - Ecogen
- July 1999 – June 2005
- Director and owner, Farrier Swier Consulting Pty Ltd, Melbourne
 - Director, Victorian Energy Networks Corporation (1999 to 2001)
- July 2005 – June 2008
- January 2007
- Part Time Member, Australian Energy Regulator, Associate Commission of the Australian Competition and Consumer Commission
 - Director, Trustpower (NZ), chair audit committee