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Ltd

# **Review of AER Draft Decisions on Envestra Queensland's and Envestra South Australia's Input Price Escalators**

Report prepared for  
**Envestra Ltd**

**22 March 2011**

**Denis Lawrence**

**Economic Insights Pty Ltd**  
6 Kurundi Place, Hawker, ACT 2614, AUSTRALIA  
Ph +61 2 6278 3628 Fax +61 2 6278 5358  
WEB [www.economicinsights.com.au](http://www.economicinsights.com.au)  
ABN 52 060 723 631

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## EXECUTIVE SUMMARY

Envestra Ltd has commissioned Economic Insights to review the Australian Energy Regulator (AER 2011a,b) Draft Decisions on input price escalators applying to Envestra Queensland ('Envestra Qld') and Envestra South Australia ('Envestra SA').

This review has identified a number of fundamental concerns with the AER (2011a,b) draft recommendations. We recommend the AER reconsider its draft decisions regarding Envestra Qld's and Envestra SA's input price escalators to take account of:

- The use of Average weekly ordinary time earnings (AWOTE) as the most appropriate price index of labour inputs for regulatory purposes rather than the Labour price index (LPI). AWOTE takes account of compositional changes in employment over time and the payment of bonuses whereas the LPI assumes a constant composition of employment and provides an abstract 'underlying' price measure which, while of interest for statistical and macroeconomic purposes, is not relevant for regulatory purposes. The LPI fails to take account of the dynamic nature of the economy and does not recognise the role of upskilling in productivity improvement. The regulatory requirement of financial capital maintenance states that GDBs should have a reasonable expectation of being able to maintain their financial capital in real terms ex-ante. This involves being able to recover prudently incurred costs, including those resulting from compositional changes.
- The AER has not previously included a (non-zero) productivity effect in labour escalators whereas AER (2011a,b) include a productivity effect in the order of 2 to 2.3 per cent thus placing Envestra Qld and Envestra SA at a large disadvantage compared to other regulated businesses. This is particularly the case because the productivity effect is deducted from the LPI which does not allow for compositional changes resulting from upskilling of the workforce – an important part of productivity improvement.
- If a productivity effect were to be included, logic would require it be one for the Electricity, gas and water sector where the Australian Bureau of Statistics series – the only currently available Electricity, gas and water sector productivity series – has consistently declined at an annual rate of 3.6 per cent since 1998. The apparent drivers of this ongoing decline seem set to continue so a negative or, at best, zero forecast of the productivity effect appears more plausible than the 2 to 2.3 per cent currently included. This points to continuing the AER's erstwhile practice of effectively including a zero productivity effect.
- Major recent developments which will significantly tighten the labour market conditions Envestra Qld and Envestra SA face need to be included in the forecasts. These include the reconstruction efforts required following the catastrophic Queensland floods and Cyclone Yasi and the earlier than expected go aheads for major Queensland LNG projects. These will all significantly increase the demand for field labour of the type used by Envestra Qld and Envestra SA.
- The use of materials-specific forecasts where possible rather than use of the CPI as the latter is an index of consumption output prices and will generally be a poor proxy for the price of materials inputs used by businesses.

## 1 INTRODUCTION

Envestra Ltd ('Envestra') has commissioned Economic Insights Pty Ltd ('Economic Insights') to review the Australian Energy Regulator (AER 2011a,b) Draft Decisions on input price escalators applying to Envestra Queensland ('Envestra Qld') and Envestra South Australia ('Envestra SA'). The AER Draft Decisions draw on the advice of the AER's consultant, Access Economics Pty Limited (Access Economics 2010).

In this report we identified a number of fundamental concerns with the AER (2011a,b) draft recommendations. AER (2011a,b) reject the BIS Shrapnel (2010) input price escalators put forward in Envestra Qld's and Envestra SA's access arrangement proposals in favour of those presented in Access Economics (2010). The real labour cost escalators contained in Access Economics (2010) are, in our view, too low due to the following factors:

- failure to use the correct price index;
- overly optimistic forecasts of labour productivity; and
- recent developments including the impact of the Queensland and Victorian floods, Cyclone Yasi and early go ahead approvals of major Queensland LNG resource projects are not incorporated.

In addition, the CPI will generally not be a good proxy for material costs facing GDBs.

The following parts of this section of the report summarise the terms of reference for this report and list Economic Insights' and Denis Lawrence's price and productivity measurement and regulatory experience and qualifications. In section 2 of the report we review the use of labour cost measures in AER (2011a,b). We then review the inclusion for the first time of a 'productivity effect' in section 3 before reviewing the likely impact of recent major developments on labour market conditions in section 4 and materials escalators in section 5.

### 1.1 Terms of reference

The terms of reference for this report state that Envestra wished to engage Economic Insights to prepare a report which reviewed the analysis and conclusions of AER (2011a,b) regarding input price escalators applying to Envestra Qld and Envestra SA. In particular, advice was sought on the appropriate labour cost index to use. Advice was also sought on the productivity effects included in AER (2011a,b), whether other factors should have been incorporated in the Access Economics (2010) report to the AER and the appropriate real escalator for materials inputs.

A copy of the letter of retainer for the review is presented in Attachment A.

### 1.2 Economic Insights' experience and consultant's qualifications

Economic Insights has been operating in Australia for 17 years as an infrastructure consulting firm. Economic Insights provides strategic policy advice and rigorous quantitative research to industry and government. Economic Insights' experience and expertise covers a wide range of economic and industry analysis topics including:

- 
- infrastructure regulation;
  - infrastructure pricing issues;
  - benchmarking of firm and industry performance;
  - productivity measurement; and
  - analysis of competitive neutrality issues.

This report has been prepared by Dr Denis Lawrence who is a Director of Economic Insights.

**Denis Lawrence** has undertaken numerous major energy supply industry regulation studies including: advising the Australian Energy Market Commission on its review of productivity-based regulation; advising the New Zealand Commerce Commission on all aspects of its price cap regulation of energy distribution; benchmarking the productivity of Australian and US gas distribution businesses; benchmarking the performance of New Zealand's 29 electricity lines businesses and advising the Commerce Commission on appropriate X factors for each of the distribution businesses; benchmarking the performance of Australian and New Zealand gas distribution businesses for the Commerce Commission; benchmarking the productivity performance of the Australian state electricity systems against best practice in the US and Canada at both the system-wide level and for individual power plants; benchmarking the productivity, service quality and financial performance of 13 Australian electricity distribution businesses; and reviewing benchmarking work undertaken for regulators in NSW and Victoria. Denis has worked on productivity and regulatory issues for electricity utilities, regulators, state Treasury departments, international agencies and prospective investors.

Denis holds a PhD in Economics from the University of British Columbia, Canada, where he studied under Professor Erwin Diewert, one of the world's leading price and productivity measurement academics. Denis' summary CV is presented in Attachment B.

Denis Lawrence has read the Federal Court Guidelines for Expert Witnesses and this report has been prepared in accordance with the Guidelines. A declaration to this effect is presented in Attachment C to the report.

## 2 WHAT IS THE CORRECT PRICE INDEX FOR REGULATORY PURPOSES?

AER (2011a,b) and Access Economics (2010) argue for using forecasts of the Labour Price Index (LPI) as the appropriate escalator for labour costs instead of forecasts of Average Weekly Ordinary Time Earnings (AWOTE) as preferred by BIS Shrapnel (2010).

AWOTE shows average employee earnings from working the standard number of hours per week and includes agreed base rates of pay, over-award payments, penalty rates and other allowances, commissions and retainers, bonuses and incentive payments (including profit share schemes), leave pay and salary payments made to directors. It excludes overtime payments, termination payments and other payments not related to the reference period.

The LPI, on the other hand, is a measure of changes in wage and salary costs based on a weighted average of a surveyed basket of jobs. It excludes bonuses and also excludes the impact of changes in the quality or quantity of work performed and compositional effects such as shifts between sectors and within firms. It is a notional measure of ‘underlying’ labour prices rather than a reflection of the labour prices firms actually face.

AWOTE is, thus, more likely to accurately capture compositional changes in the workforce. This means it will capture the effect of upskilling as employers rely less on unskilled labour and as capital is progressively substituted for labour. These are important means of achieving productivity growth over time. They are not picked up by the LPI which effectively assumes a completely static situation. Moreover, AWOTE will better reflect labour price pressures in a tight labour market as it picks up the effect of employers prematurely promoting individuals they want to retain and ‘reclassifying’ jobs as a means of paying staff more to prevent them from being poached by other organisations. The LPI will fail to capture these important characteristics of a tight labour market situation in a particular industry as it uses a fixed basket of job classifications that is not updated to reflect changing circumstances and the ongoing dynamics of labour markets.

BIS Shrapnel (2010) forecast that wages growth in the Electricity, gas and water (EGW) sector will increase by 5 per cent per annum over the next 6 years while the corresponding LPI will increase by 4.7 per cent annually. EGW wages are forecast to grow strongly over the three years to 2014 as demand for labour by the EGW sector and competing sectors (including construction, mining and manufacturing) picks up as the economy and investment recover solidly.

Skill shortages have been evident in the EGW sector in recent years and the ‘Skills in Demand’ lists released in May 2010 by the Department of Education, Employment and Workplace Relations show that shortages in the engineering trades, shortages of gas fitters and shortages in the electrical trades are widespread (BIS Shrapnel 2010, p.32). The EGW sector is competing with the fast-growing mining and construction sectors and with manufacturing for skilled engineering labour.

Other key factors driving up EGW sector wages have been the increase in infrastructure maintenance programs and ongoing industry restructuring. Following key privatisations in the 1990s, many utilities downsized their workforces, reduced capital expenditure and

contracted out key functions. As labour shortages have begun to bite, some utilities have moved to restore their in-house capabilities. Combined with the entry of new players, particularly in the energy retail sector, increased construction of renewable generation and increased competition through product differentiation, the demand for both technical and customer service staff has increased significantly. The demand for staff with similar skills to those required by the GDBs has been further increased by the trend to building gas-fired power stations and the need for many electricity utilities to refurbish their networks, many of the key assets of which are nearing the end of their expected lives. The increasing demand for high levels of reliability in the essential EGW industries is also further increasing labour demand.

The input price escalator used in regulation needs to reflect the actual costs incurred by GDBs. In tight labour markets this means changes in composition of the workforce in response to shortages, substitution towards capital and associated ‘upskilling’ and changes in response to technological change and productivity growth over time all need to be allowed for. The correct measure thus needs to reflect changes in the actual composition of employment rather than an abstract measure of ‘underlying’ wage inflation which makes no allowance for compositional changes and their ongoing drivers. All else equal, the LPI will tend to understate the rate of labour cost increase GDBs face in achieving productivity growth.

To not allow escalation based on the actual costs incurred by GDBs runs contrary to the fundamental principle of financial capital maintenance (FCM). FCM states that GDBs should have a reasonable expectation of being able to maintain their financial capital in real terms ex-ante. This involves a reasonable expectation of being able to recover actual prudently incurred costs. This is spelt out explicitly in National Gas Law (NGL) Section 24(2) which states:

‘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.’

Because the LPI proposed by Access Economics (2010) and the AER (2011a,b) does not recognise the effect of compositional changes and additional payments such as bonuses, it is theoretically the wrong index for regulatory purposes because it does not provide suppliers with a reasonable expectation of being able to recover actual prudently incurred costs. That is, compositional changes in the workforce – which are ongoing and which occur in response to a wide range of forces including productivity improvement – are not recognised by the LPI which instead assumes a static view of conditions facing utilities. The LPI is thus fundamentally at odds with FCM and Section 24(2) of the NGL.

Similarly, Rule 91 of the National Gas Rules (NGR) states:

‘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.’



Because the LPI does not recognise the impact of compositional change which prudent service providers acting efficiently inevitably face then its use as a roll forward escalator for the labour component of opex is not consistent with Rule 91.

Because AWOTE, on the other hand, does recognise the impact of labour compositional changes that prudent suppliers acting efficiently inevitably face then its use is consistent with FCM and with Section 24(2) of the NGL and Rule 91 of the NGR.

Access Economics (2010, pp.86–7) justifies its preference for the LPI on the grounds that it is the Australian Bureau of Statistics’ preferred measure of labour prices and because it is less volatile than the AWOTE measure. However, the preferred index for abstract statistical purposes or for macroeconomic analysis is not automatically the correct index for regulatory purposes. As indicated above, given the central role of FCM in building blocks regulation, the correct index is the one that best reflects movements in actual labour prices faced by the GDB, not an abstract ‘underlying’ index that may not well reflect conditions on the ground.

The LPI was devised by statisticians and macroeconomists as a ‘pure’ price measure which deliberately removes the effects of skill and compositional changes over time. It does this by using fixed base period weights and is thus a Laspeyres type index which is subject to the classic ‘index number problem’. This describes the situation where a fixed base period weight index will progressively diverge from reality and become increasingly inaccurate as the weights actually observed over time change. In many statistical and macroeconomic applications, analysts are interested in separately identifying the ‘pure’ price effects and changes in skill effects. In this instance the pure price term is combined with an augmented quantity of labour that identifies and adjusts for compositional and skill changes over time. In regulatory applications, however, the price index needs to capture both the pure price effect and the effects of compositional change and upskilling because it needs to reflect the actual price paid by businesses for the labour they employ – something that the AWOTE does but the LPI does not.

A relevant analogy to the difference between the LPI and the AWOTE can be found in the difference between underlying inflation measures and the actual consumer price index (CPI). The underlying inflation measure normally excludes certain items such as food and energy products which tend to have more volatile prices and excludes the effects of government revenue raising decisions. It provides an abstract measure of underlying, long-term inflationary pressures but bears little resemblance to the prices consumers actually pay. Similarly, the LPI is an abstract ‘pure’ price measure but bears little resemblance to the average labour price firms have to pay – something that is more accurately captured by the AWOTE measure.

The other argument in favour of the LPI used by Access Economics (2010) regarding the relative volatility of the AWOTE versus LPI measures in the past provides no excuse for not using the theoretically correct index for regulatory purposes. In any case, the BIS Shrapnel (2010) forecasts for AWOTE generally show no more volatility than their forecasts for the LPI.

In the 2007 Victorian GAAR the ESC’s consultant acknowledged that AWOTE was the correct index to use and not the LPI:



‘As a conceptual matter, PEG agrees with Meyrick and BIS Shrapnel that the AWOTE is preferred to the LPI. The main reason is, as Meyrick has written, that the AWOTE is “more likely to accurately capture compositional changes in the workforce. This means it will capture the effect of upskilling as employers rely less on unskilled labour and as capital is progressively substituted for labour.”’ (PEG 2007, pp.24–5)

And KPMG Econtech (2010, p.19) has also recently supported the use of AWOTE as a superior measure to the LPI for regulatory purposes:

‘Overall, we [KPMG Econtech] would suggest that AWOTE is more suitable for the current analysis, which aims to forecast realistic labour cost changes for the DNSPs over the coming five years. In the current economic climate, compositional impacts, as well as competition between industries, are playing an influential role in the overall labour costs faced by employers ... Such changes are not captured by the LPI, but are captured by AWOTE.’

In response the AER (2010b, p.245) argued that the composition of base year opex (including base year labour composition) should be efficient and so there was no need to allow for compositional changes. It went on to argue that DBs had an incentive to change labour composition if it improved their productivity performance. However, as noted above, this static view is at odds with both the dynamic nature of labour markets and the concept of FCM where changes in labour costs associated with compositional change resulting from prudent decision-making should be recognised in the price index. We also note that the AER (2009a) has previously used average weekly earnings (AWE) based price escalators sourced from KPMG Econtech (2009).

For the reasons outlined above we do not view use of the LPI as satisfying Rule 74(2) of the NGR which states that:

‘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.’

The LPI is not a reasonable measure for the purpose at hand. Rather, AWOTE is a superior measure for regulatory purposes.

### 3 PRODUCTIVITY EFFECTS

AER (2011a, p.140) and AER (2011b, p.148) criticise the BIS Shrapnel (2010) labour price escalators for not including productivity effects. Instead, AER (2011a,b) use LPI escalators from Access Economics which include productivity effects (ie annual reduction in labour requirements per unit of EGW output) of around 2.3 per cent annually for Queensland and 2 per cent annually for South Australia (Access Economics 2010, pp.67–8, 76). This produces real labour cost escalators that are, on average, negative. This is at odds with recent AER decisions where labour price escalators have not included this productivity effect. For instance, in its recent Victorian electricity distribution decision AER (2010b, pp.249–50) stated:

‘Access Economics provided the AER with a series of forecast LPIs adjusted for productivity, as well as a series of forecast LPIs which are not adjusted for productivity.

‘In its draft decision, the AER used the unadjusted productivity LPIs provided by Access Economics. ...

‘the AER maintains that, consistent with the AER’s draft decision, productivity unadjusted LPIs most reasonably reflect a realistic expectation of the labour input costs required to meet or manage the expected demand for standard control services over the forthcoming regulatory control period.’

The real annual labour cost escalator used in this case averaged around 1.3 per cent. Similarly, the AER (2010a) did not include a productivity effect in its escalator for JGN.

Apart from the fact that Envestra Qld and Envestra SA have received inconsistent treatment on this issue compared to other AER decisions, there is considerable doubt surrounding the size of an appropriate productivity effect, were one to be included. Furthermore, the inclusion of a productivity effect in conjunction with the LPI appears to be inconsistent because the LPI does not allow for compositional change which will be an important outcome of productivity growth. Envestra Qld and Envestra SA are thus being doubly disadvantaged by the use of the LPI which does not allow for many of the labour price increases associated with productivity growth and the use of a productivity effect which is inappropriately matched with the LPI.

Since the labour price being used relates to the EGW sector then logically the labour productivity effect, were it to be included, should also relate to the EGW sector. The only productivity estimates currently available for the EGW sector are the ABS (2010) multifactor productivity (MFP) estimates. The ABS EGW labour PFP series has consistently *declined* at the annual rate of 3.6 per cent since 1998. This has been due to relatively low growth in value added and very strong growth in hours worked within the sector. The reasons for the strong employment growth have not been fully established by the ABS but they appear to result from network upgrades, the entry of new players and the growth in renewable energy projects. Given that these influences appear set to continue for some time, forecasts of the EGW labour PFP using the ABS definitions and approach would be likely to continue to decline or, at best, remain relatively flat. In this context, the Access Economics (2010)

forecasts of 2 to 2.3 per cent annual productivity growth going forward appear inconsistent. Rather, a productivity effect, were it to be included, should be negative or, at most, zero. This lends further support to the AER's previous approach of not explicitly including a productivity effect – or, equivalently, of implicitly including a productivity effect of zero.

Again, we do not consider the inclusion of the current productivity effect satisfies Rule 74(2) of the NGR which requires forecasts to be arrived at on a reasonable basis and to represent the best forecast possible in the circumstances. The productivity effect is not consistent with official productivity estimates matching the coverage of the price index used most closely. These official estimates point to negative or, at best, zero productivity growth. Furthermore, the inclusion of a productivity effect is inconsistent with all previous AER decisions in this area and inconsistent with the use of the LPI which does not allow compensation for price increases associated with achieving productivity growth.

## 4 THE IMPACT OF RECENT SIGNIFICANT EVENTS

Quite apart from the appropriate choice of the price index to use and whether a productivity effect should be included, there have been a number of significant changes in labour market conditions since the BIS Shrapnel (2010) and Access Economics (2010) reports were prepared. The Queensland and Victorian floods in early 2011 have caused unprecedented infrastructure and building damage and will lead to a marked increase in the demand for tradesmen and blue collar field staff. This will increase the competition for field staff with similar skills and experience to those used by Envestra Qld in particular. This effect will be further exacerbated by the recovery effort required following the recent Cyclone Yasi in North Queensland.

A second major recent event that will impact directly on labour market conditions facing Envestra Qld and Envestra SA is the earlier than expected go ahead approval for two major liquefied natural gas (LNG) projects in the Gladstone area. These projects will require extensive drilling of gas wells and development of supporting gas networks. This will significantly increase the competition for labour of the type used by Envestra Qld and Envestra SA and put significant upward pressure on wage rates and labour costs.

These major recent developments need to be allowed for in any labour input price forecasts used in the access arrangement.

## 5 MATERIALS ESCALATORS

AER (2011a,b) reject the use of the BIS Shrapnel (2010) forecast of polyethylene prices as a proxy for network materials prices in favour of using the CPI instead. AER (2011a, p.142) notes that the AER ‘considers that prices for a diverse basket of goods as described would reasonably be expected to move in line with CPI’. It should be recognised that the CPI is likely to be a poor proxy for materials prices facing a GDB. The CPI is actually an output price index for a basket of consumption goods which likely bear little resemblance to the composition of goods used by GDBs. Although the logic of price cap regulation points to the use of an input price index instead of the CPI in the price cap formula (see, for example, Economic Insights 2010), the CPI has traditionally been used because it is readily available and thought to be relatively robust. However, adjustments then have to be made to compensate for the fact that it is not an input price index (including the use of real escalators in building block regulation). Producer price indexes will normally be a superior proxy for materials prices compared to the CPI because they are designed to reflect the prices of intermediate (ie materials and services) inputs. A representative materials input price index forecast of the type developed by BIS Shrapnel (2010) is likely to be a superior proxy to the CPI forecast.

## 6 CONCLUSIONS

This review has identified a number of fundamental concerns with the AER (2011a,b) draft recommendations regarding Envestra Qld's and Envestra SA's input price escalators. The real labour cost escalators contained in AER (2011a,b) based on Access Economics (2010) are, in our view, too low due to the following factors:

- failure to use the correct price index;
- overly optimistic forecasts of labour productivity and mismatching with the price index used; and
- recent developments including the impact of the Queensland and Victorian floods, Cyclone Yasi and early go ahead approvals of major Queensland LNG resource projects are not incorporated.

In addition, the CPI will generally not be a good proxy for material costs facing GDBs.

Overall, we do not consider the real escalators presented in AER (2011a,b) satisfy Rule 74(2) of the NGR which requires forecasts to be arrived at on a reasonable basis and to represent the best forecast possible in the circumstances.

We recommend the AER reconsider its draft decision regarding Envestra Qld's and Envestra SA's input price escalators to take account of the factors listed above.

## ATTACHMENT A: LETTER OF RETAINER

JOHNSON WINTER & SLATTERY  
LAWYERS

Partner: Anthony Groom +61 8 8239 7124  
Email: anthony.groom@jws.com.au  
Our Ref: A3170  
Doc ID: 61254210.1

21 March 2011

Dr Denis Lawrence  
Economic Insights Pty Ltd  
6 Kurundi Place  
HAWKER ACT 2614

Dear Dr Lawrence

**Envestra Limited – South Australian and Queensland Access Arrangement Reviews**

We act for Envestra Limited in relation to the AER's review of Envestra's Access Arrangements for South Australia and Queensland.

As you have discussed with Envestra, Envestra Limited wishes to engage you to prepare an expert report in connection with the AER's review of Envestra's Access Arrangements for South Australia and Queensland.

This letter sets out the matters which Envestra Limited wishes you to address in your report and the requirements the report must comply with to be capable of use in the AER review.

*Terms of Reference*

We refer you to the Draft Decisions of the AER in respect of the South Australian and Queensland Access Arrangements, specifically:

1. AER Draft Decision entitled "Envestra Ltd Access arrangement proposal for the SA gas network 1 July 2011 – 30 June 2016" and dated February 2011; and
2. AER Draft Decision entitled "Envestra Ltd Access arrangement proposal for the QLD gas network 1 July 2011 – 30 June 2016" and dated February 2011.

We also refer to the analysis undertaken by the AER's consultant, Access Economics, which is referred to in those decisions.

In its Draft Decisions in respect of the South Australian and Queensland Access Arrangements the AER has rejected the proposal by Envestra to use Average Weekly Ordinary Time Earnings (AWOTE) as the measure with which to forecast labour prices for

Level 10, 211 Victoria Square  
ADELAIDE SA 5000  
T +61 8 8239 7111 | F +61 8 8239 7100

[www.jws.com.au](http://www.jws.com.au)

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the purposes of real cost escalation. The AER has instead concluded that the appropriate measure to use for such forecasts is the Labour Price Index (LPI).

Envestra seeks your opinion, as an expert, as to which measure, being either the LPI or the AWOTE measure, best forecasts labour prices for the purposes of real labour cost escalation over the access arrangement period, being 1 July 2011 to 30 June 2016. Please also comment on any other matters relevant to currently forecasting labour costs which you consider relevant.

Envestra also seeks your opinion as an expert on:

- (a) whether the productivity effect adjustment made by the AER produces forecasts of labour prices for the purposes of real cost escalation which have been arrived at on a reasonable basis and which are a best estimate;
- (b) whether there are factors that should be incorporated into the Access Economics forecast of labour costs but which do not appear to have been so incorporated; and
- (c) the appropriate escalator to be used for forecasting materials prices for the purposes of real cost escalation.

In providing your opinion, you should have regard to the relevant requirements of rule 74(2) of the National Gas Rules.

Rule 74(2) provides:

*"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."*

#### *Use of Report*

It is intended that your report will be included by Envestra in its response to the AER's Draft Decision. The report may be provided by the AER to its own advisers.

The report must be expressed so that it may be relied upon both by Envestra and by the AER.

The report will be reviewed by Envestra's legal advisers and will be used by them to provide legal advice to Envestra as to its rights and obligations under the National Gas Law and National Gas Rules. You will be required to work with these legal advisers and Envestra personnel to assist them prepare Envestra's submissions in response to the draft and final decisions made by the AER.

#### *Compliance with the Code of Conduct for Expert Witnesses*

Attached is a copy of the Federal Court's Practice Note CM 7, entitled "Expert Witnesses in the Federal Court of Australia", which comprises the code of conduct for expert witnesses in the Federal Court of Australia (**the Code of Conduct**).

Please read and familiarise yourself with the Code of Conduct and comply with it at all times in the course of your engagement by Envestra.

In particular, your report prepared for Envestra should contain a statement to the effect that the author of the report has read the Code of Conduct and agrees to comply with it.

Your report must also:

- 1 give details of the expert’s qualifications and of the literature or other material used in making the report;
- 2 state all of the questions or issues that the expert has been asked to address;
- 3 state all of the factual premises upon which the report proceeds; and
- 4 otherwise comply with the Code of Conduct.

It is also a requirement that the report be signed by the expert and include a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate and that no matters of significance which the expert regards as relevant have, to the expert’s knowledge, been withheld from the report.

Please also attach a copy of these terms of reference to the report.

***Terms of Engagement***

Your contract for the provision of the report will be directly with Envestra Limited. You should forward to Envestra Limited any terms you propose govern that contract as well as your fee proposal. Your invoices for the production of the report are to be addressed and sent to Envestra Limited.

***Contact with us***

We request that you contact us or Envestra Limited by telephone in the first instance to discuss any requests for the provision of data or your preliminary conclusions. All enquiries to Envestra Limited should be made to Craig de Laine or Geoff Barton.

Please sign a counterpart of this letter and forward it to Envestra Limited to confirm your acceptance of the engagement by Envestra.

Yours faithfully

*Johnson Winter & Slattery*

Enclosed: Federal Court of Australia Practice Note CM 7, “Expert Witnesses in Proceedings in the Federal Court of Australia”

*D.A. Lawrence*  
.....  
Signed and acknowledged by Dr Denis Lawrence

Date 21/3/2011.....

## ATTACHMENT B: CURRICULUM VITAE

### Dr Denis Lawrence

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Position	Director, Economic Insights Pty Ltd
Business address:	6 Kurundi Place, Hawker, ACT 2614
Business telephone number:	02 6278 3628
Email address	denis@economicinsights.com.au

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### Qualifications

Doctor of Philosophy (Economics), University of British Columbia, Canada, 1987.

Bachelor of Economics (Honours), Australian National University, 1977.

### Key Skills and Experience

For the past 20 years Dr Denis Lawrence has played a leading role in the regulation, benchmarking and performance measurement of infrastructure enterprises. He has advised Australian and overseas regulators and utilities on a wide range of quantitative and strategic issues in the energy, telecommunications, post and transport sectors. Denis has been a consultant on energy regulation since 1996. Recent key projects include:

- Assisting the AEMC with its review of total factor productivity-based regulation including advice on data requirements and specification issues, constructing a detailed model comparing outcomes under productivity-based and building block regulation and drafting and review of sections of AEMC reports (2008-2010).
- Advice to the New Zealand Commerce Commission on asset valuation and total factor productivity measurement in the presence of sunk costs and incorporating the principle of financial capital maintenance (2008–09).
- Advice to the Commerce Commission on using the comparative or benchmarking option for resetting the price path threshold for electricity transmission and distribution businesses using total factor productivity and econometric techniques (2003–09).
- Advice to the Commerce Commission on key aspects of its inquiry into whether the distributor Unison Networks should be subject to price control for having breached price thresholds (2006–07).
- Advice to the Northern Territory Utilities Commission on the setting of key price control parameters for electricity distribution (2008–09).
- Benchmarked the productivity, operating and capital expenditure, reliability and price performance of 13 of Australia's 15 electricity distributors for a consortium of distribution businesses (2004).
- Reviewed total factor productivity modelling of electricity distribution in Victoria undertaken for the Essential Services Commission and assessed regulatory implications (2005).

- Econometric modelling of operating and maintenance expenditure efficiency based on a sample of electricity distributors and taking operating environment differences into account (2005).
- Presented commentaries on the principles behind incentive regulation and the implementation of total factor productivity measurement to support incentive regulation for a Utility Regulators' Forum workshop on future electricity networks regulation (2003).
- Examined the relative efficiency performance of Australian State electricity supply industries in response to energy reforms from 1975 to 2001 for the Parer Review of Energy Market Reform (2001).
- Advised ENMAX Corporation (Alberta, Canada) on developing the case for moving from cost-of-service to formula-based regulation (2006-09).
- Prepared case studies for the Ontario Energy Board of international best practice in distribution pricing structures, allowing for distributed generation, incorporating energy conservation and demand management incentives (2006).
- Advised the Australian Energy Networks Association on development of a nationally consistent suite of service quality performance indicators and assisted with developing the ENA's position on service quality incentive regulation (2006).
- Advised CitiPower and Powercor on developing a robust and defensible case for a revised Service Incentive Scheme for their 2006 Price Review submissions (2005).
- Assisting the Commerce Commission with reviewing the regulated gas distribution businesses' pricing principles and quantitative cost of service models (2007-09).
- Studies of the comparative efficiency performance of gas distribution for the Victorian gas distribution businesses (2006-07).
- Benchmarking of the efficiency of gas transmission and distribution pipelines in Australia and New Zealand for the Commerce Commission (2004).

### Selected Publications

Coelli, T.J. and D. Lawrence (eds.) (2006), *Performance Measurement and Regulation of Network Utilities*, Edward Elgar Publishing, Cheltenham, UK.

Lawrence, D., W.E. Diewert and K.J. Fox (2006), "The Contribution of Productivity, Price Changes and Firm Size to Profitability", *Journal of Productivity Analysis* 26, 1-13.

Zeitsch, J. and D. Lawrence (1996), "Decomposing Economic Inefficiency in Base Load Power Plants", *Journal of Productivity Analysis* 7(4), 359-378.

Zeitsch, J., D. Lawrence and J. Salerian (1994), "Comparing Like With Like in Productivity Studies - Apples, Oranges and Electricity", *Economic Record* 70(209), 162-70.

Lawrence, D., P. Swan and J. Zeitsch (1991), 'The Comparative Efficiency of State Electricity Authorities', in P. Kriesler (ed.), *Contemporary Issues in Australian Economics*, MacMillan.

## ATTACHMENT C: DECLARATION

I, Denis Anthony Lawrence, Director of Economic Insights Pty Ltd, declare that I have read the Federal Court Guidelines for Expert Witnesses and that I have made all inquiries I believe are desirable and appropriate and that no matters of significance which I regard as relevant have, to the best of my knowledge, been withheld.



Denis Anthony Lawrence

22 March 2011

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- Access Economics (2010), *Forecast Growth in Labour Costs: Queensland and South Australia*, 13 December.
- Australian Bureau of Statistics (ABS) (2010), *Experimental Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates*, Cat No 5260.0.55.002, Canberra.
- Australian Energy Regulator (AER) (2009a), *New South Wales Distribution Determination, 2009–10 to 2013–14*, Final Decision, April.
- Australian Energy Regulator (AER) (2009b), *South Australia Draft Distribution Determination 2010–11 to 2014–15*, Draft Decision, November.
- Australian Energy Regulator (AER) (2010a), *Jemena, Access Arrangement Proposal for the NSW Gas Networks, 1 July 2010 – 30 June 2015*, Draft Decision, February.
- Australian Energy Regulator (AER) (2010b), *Victorian Electricity Distribution Network Service Providers, Distribution Determination 2011–2015, Appendices*, Final Decision, October.
- Australian Energy Regulator (AER) (2011a), *Envestra Ltd, Access Arrangement Proposal for the Qld Gas Network, 1 July 2011 – 30 June 2016*, Draft Decision, February.
- Australian Energy Regulator (AER) (2011b), *Envestra Ltd, Access Arrangement Proposal for the SA Gas Network, 1 July 2011 – 30 June 2016*, Draft Decision, February.
- BIS Shrapnel (2010), *Real Cost Escalation Forecasts to 2015/16 – Queensland and South Australia*, North Sydney, August.
- KPMG Econtech (2009), *Updated Labour Cost Growth Forecasts*, Canberra, 25 March.
- KPMG Econtech (2010), *Assessment of the AER's Draft Decision on Labour Cost Escalation: Victoria*, Canberra, 13 July.
- Pacific Economics Group (2007), *Opex Rate of Change and Productivity: Response to Meyrick and Associates Reports*, Report prepared for the Essential Services Commission, Madison, July.