2 May 2011

Mr Chris Pattas
General Manager
Network Regulation South
Australian Energy Regulator
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MELBOURNE VIC 3001

By email to: qldsagas@aer.gov.au

Dear Chris,

RE: Envestra Draft Decision Market Risk Premium

Multinet Gas and SP AusNet ("the Parties") are responding to elements of the rate of return decision contained in the *Draft Decision, Envestra Ltd, Access arrangement proposal for the SA gas network*. In particular, material is submitted in response to arguments made with respect to the value of the forward looking Market Risk Premium (*MRP*). Attached to this letter are two reports entitled:

- *The Market Risk Premium. A report for Multinet Gas and SP AusNet* by NERA Economic Consulting; and
- *Forward Estimates of Market Risk Premium.* A report prepared Neville Hathaway, Capital Research Pty Ltd, April 2011.

These reports respond to arguments and evidence advanced by the AER in support of its draft decision that the value of the forward looking *MRP* is 6%.

The Parties believe that the AER has not presented persuasive evidence to justify a departure or deviation from the particular value of the MRP set out in the SORI[1]. In fact, the AER has not even attempted to demonstrate that the evidence which it has brought to bear is somehow persuasive or convincing.

The Parties are fully aware that the requirements of Rule 6.5.4(g) of the NER do not apply in the context of a review of gas access arrangements[2]. However, there is a stark contrast between the approach taken by the AER to ascertaining the value of the MRP, and the approach that the Regulator has taken to upholding and defending the value of

[1] Electricity transmission and distribution network service providers. Statement of the revised WACC parameters (transmission). Statement of regulatory intent on the revised WACC parameters (distribution). Australian Energy Regulator, May 2009.

[2] Rule 6.5.4(g) of the National Electricity Rules states that: "A distribution determination to which a statement of regulatory intent is applicable must be consistent with the statement unless there is persuasive evidence justifying a departure, in the particular case, from a value, method or credit rating level set in the statement."

gamma prescribed by the SORI[3]. In the context of the review of the access arrangement proposal by Envestra, the AER appears to have accorded the SORI the status of a non-binding, indicative guideline.

A matter that is especially noteworthy is the lack of quantitative evidence advanced by the AER to support its contention that the effects of the global financial crisis (GFC) on Australia's financial markets have largely subsided. The stance adopted by the AER seems to be untenable once the full range of quantitative evidence has been examined.

The Statement of Regulatory Intent

The AER established an MRP of 6.5% in its *Statement of Regulatory Intent on the revised WACC parameters* (SORI) published in May 2009. With regards to the forward looking value of the *MRP*, the Final Decision concluded[4]:

> *"The AER considers that prior to the onset of the global financial crisis, an estimate of 6 per cent was the best estimate of a forward looking long term MRP, and accordingly, under relatively stable market conditions—assuming no structural break has occurred in the market—this would remain the AER's view as to the best estimate of the forward looking long term MRP.*
>
> *However, relatively stable market conditions do not currently exist and taking into account the uncertainty surrounding the global economic crisis, the AER considers two possible scenarios [that] may explain current market conditions:*
>
> - *that the prevailing medium term MRP is above the long term MRP, but will return to the long term MRP over time, or*
> - *that there has been a structural break in the MRP and the forward looking long term MRP (and consequently also the prevailing) MRP is above the long term MRP that previously prevailed.*
>
> *Whilst it cannot be known which of these scenarios explain current financial conditions, both are possible, and both suggest a MRP above 6 per cent at this time may be reasonable. However, having regard to the desirability of regulatory certainty and stability, the AER does not consider that the weight of evidence suggests a MRP significantly above 6 per cent.*
>
> *Accordingly, the AER considers that a MRP of 6.5 per cent is reasonable, at this time, and [is] an estimate of a forward looking long term MRP commensurate with the conditions in the market for funds that are likely to prevail at the time of the reset determinations to which this review applies."*

While the SORI is not directly applicable to gas access arrangements, the statement was considered to represent the AER's starting point with respect to this sector's rate of return.

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[3] Based on oral and written submissions by the AER to the Australian Competition Tribunal in the matter of: *Application by Energex Limited (No. 2) [2010] ACompT7.*

[4] Final Decision, Electricity transmission and distribution network service providers. Review of the weighted average cost of capital (WACC) parameters. Australian Energy Regulator, May 2009, pages xiv to xv.

AER Draft Decision[5]

Since 2009 the AER has maintained the position outlined above in its price review decisions. However, in the current draft decision, the AER has lowered the value of the MRP to 6%. The substantive part of the AER's conclusion is reproduced below:

> *"The latest long term historical estimates of excess returns produce a range of 6.1–6.6 per cent (assuming an imputation credit utilisation rate of 0.65). However, consistent with previous regulatory practice, the AER has not mechanistically relied on these figures. This is because such measures may overstate the forward looking MRP, are highly sensitive to additional years of observations and are also inherently imprecise. The AER does not consider the latest historical excess return estimates are inconsistent with the long term MRP value of 6 per cent previously estimated by the AER and other regulators.*
>
> *Survey based estimates of the MRP indicate that the forward looking MRP expected to prevail in the future has not changed as a result of the GFC. Survey based estimates of the MRP both before and following the GFC suggests a value of 6 per cent is consistent with the views of market practitioners, academics and independent valuation reports.*
>
> *Comments from the OECD, the IMF and the RBA indicate a robust outlook for the Australian economy, which further suggests that investor expectations of market returns would now reflect those seen prior to the onset of the GFC.*
>
> *Estimates derived from DGM analysis currently suggest a MRP of at least 8 per cent, however this appears to be entirely dependent on the time at which the estimates are prepared and assumptions used.*
>
> *Overall the available evidence on the MRP is imprecise and as a result the MRP is subject to a wide margin of variation. The AER has used its judgment to interpret the evidence currently before it and considers the available evidence both prior to, and following, the GFC supports 6 per cent as the best estimate of the forward looking 10 year MRP in the current market circumstances."*

AER interpretation of economic commentaries by the RBA and the OECD

In reaching its decision about the appropriateness of a 6% *MRP*, the AER has relied, in part, upon commentaries in relation to the macro-economic environment made by the Reserve Bank of Australia (RBA) and the Organisation for Economic Co-operation and Development (OECD). Specifically, the AER has reproduced sub-sections from the RBA Statement on Monetary Policy (November 2010) and the OECD country summary for Australia, which accompanied the Economic Outlook report, version 88[6].

> *GDP is expected to expand by 3.5 per cent over 2010 and then by 3.75–4 per cent over both 2011 and 2012. This forecast continues to be driven by the effects of the*

[5] Draft Decision. Envestra Ltd., Access Arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016. Australian Energy Regulator, February 2011.

[6] Draft Decision. Envestra Ltd., Access Arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016. Australian Energy Regulator, February 2011, page 90.

income boost flowing from the very high level of the terms of trade and the expected substantial increase in business investment, particularly in the resource sector[7].

And:

The Australian economy, fuelled by the mining boom, should grow robustly in 2011 and 2012 at a rate of between 3½ and 4%. Strong growth, driven by terms of trade gains and dynamic investment, will reduce unemployment[8].

The OECD country summary for Australia discusses basic macro-economic indicators, and presents medium term forecasts for core variables. However, there is no detailed discussion about financial market conditions in Australia, and certainly no reference to the market risk premium. The RBA Statement on Monetary Policy considers the state of financial markets in Australia however this discussion is contained in a separate section of the report, and not the particular part from which the AER has extracted its quote. The RBA analysis is mainly centred on conditions in the inter-bank lending market, and the yields on Commonwealth Government Securities. The discussion of household financing and business financing is primarily concerned with debt markets. Although the Statement of Monetary Policy considers equity markets briefly, the discussion is retrospective and simply reports on developments in the latter part of 2010. The RBA does not attempt to provide forecasts of the return on equity, and no information is provided from which it could be reasonably inferred that the forward-looking MRP has fallen to 6%.

Accordingly, the AER has failed to establish a connection between the outcomes for real economic variables (such as the growth in investment and gross domestic product, and the change in unemployment) and the premium required by investors in Australian equity markets. The AER has simply asserted that:

The robust economic outlook in Australia, as noted by statements from the IMF, the OECD and the RBA suggest[s] that market conditions appear to have stabilised to the extent that investors are no longer factoring the substantial volatility experienced at the height of the GFC into their expectations of the future.

The AER has presumed that there is a direct and seamless connection between developments in the real economy and conditions in Australian equity markets. The commentaries from the OECD and the RBA do not demonstrate that market conditions have stabilised, and that volatility has dissipated. The arguments advanced by the AER are based on conjecture.

The AER has also referred to a financial conditions index compiled by the OECD, stating that the index gives an indication of likely future GDP growth[9]. The OECD reported on financial conditions indices (FCIs) in its macro-economic summary released in November

[7] Statement on Monetary Policy, November 2010. Reserve Bank of Australia, 4th November 2010, page 3.
[8] OECD, Australia economic outlook 88 – country summary, November 2010, viewed online 23rd December 2010.
[9] Draft Decision. Envestra Ltd., Access Arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016. Australian Energy Regulator, February 2011, page 90.

2010[10]. According to the agency, the indices of financial conditions for the leading economies - the USA, Japan, and the Euro area - stabilised at close-to-normal levels over the course of calendar 2010. The OECD further noted that, on account of the lags involved, the earlier improvements in aggregate financial conditions would continue to support activity for some time.

The AER has claimed that the levelling off of financial conditions indices is supportive of a positive global market outlook. However, an important consideration which the AER has overlooked is that the recent stability of the aggregate FCIs has masked disparate developments in the underlying components of real interest rates, bond spreads, credit conditions, real exchange rates, and household net wealth. Specifically, the OECD recorded that in the United States, continued weakness in household net wealth was only just offset by lower real interest rates, particularly at the long end of the yield curve, and looser credit conditions. In the euro area, lending standards had been tightened to some degree, and there had been some diminution of the offset that had previously been provided by a weaker exchange rate. In Japan, the improvement in credit conditions and spreads had broadly offset the impact of the yen appreciation and equity price declines.

The AER appears therefore to have considered the aggregate result for the FCIs, without analysing in any depth the fragility of the constituent series for the indices. Moreover, the AER has not demonstrated or explained the linkage between the FCIs for the leading economies, and the MRP which investors expect in Australia.

Current conditions in the market for funds

There are a number of indicators that have been found to forecast the *MRP*. Included amongst them are:

- The spread between the yields on BBB bonds and AAA bonds (the default spread); and
- The volatility of the return to the market portfolio implied by option prices.

NERA Economic Consulting[11] has referred to the relevant literature which shows support for the proposition that default spreads have a positive influence on the *MRP*. SFG has provided data showing that the default spread remains very high by historic standards, even though the yield differential between AAA and BBB bonds has fallen from the peak values achieved during the global financial crisis[12]. The value of the default spread suggests very strongly that the amount of risk involved in holding a broad portfolio of equities, and the price of that risk, (being the additional return required in relation to each unit of risk) are currently at elevated levels. Consequently, the turmoil in financial markets which occurred during the GFC continues to exert a lingering effect on risk premiums.

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[10] OECD Economic Outlook, Volume 2010/2, Preliminary Version. Chapter 1, General Assessment of the Macroeconomic Situation, page 16. Organisation for Economic Co-operation and Development.

[11] The Market Risk Premium. A report for Multinet Gas and SP AusNet by NERA Economic Consulting, page 8.

[12] Issues affecting the estimation of MRP. A Report for Envestra by Strategic Finance Group. SFG Consulting, 21st March 2011, page 12.

The logic applied by the AER in setting the MRP is incongruous with the approach that it has taken to setting the debt risk premium. As noted by CEG, the DRP has been estimated by drawing upon information provided by independent financial market participants and information providers[13]. The parties do not endorse the particular method chosen by the AER, but recognise that the Regulator has at least attempted to make use of current market data. The value of the DRP settled upon by the AER is above the long-run average and pre-GFC levels.

Professor Bruce Grundy has calculated that if a firm has 60% debt financing, and if the asset pricing model does not imply an equity risk premium of at least 2.66 times the observed debt risk premium, then the asset pricing model is under-estimating the true cost of equity for the firm[14]. The AER, drawing upon advice from Associate Professor Handley, has interpreted the calculations by Grundy as demonstrating that debt and equity may be priced in segmented markets, with the result that the Modigliani and Miller theorem cannot be used to imply that equity is mispriced relative to debt[15]. In this regard, we support the conclusion reached by CEG which is that if capital markets are segmented in the manner described by the AER, then not only is the Modigliani and Miller theorem inapplicable, but the CAPM also becomes redundant[16]. Consequently, the argument by the AER that there might be disintermediation between debt and equity markets is spurious and cannot be upheld. Instead, the markets for debt and equity are integrated, and the equity risk premium has been set at too low a level by the AER.

Principle findings from the reports by Capital Research and NERA Economic Consulting

The reports commissioned by Multinet Gas and SP AusNet address both the absolute value of the MRP and the comparative value of the MRP, both pre and post-GFC.

Capital Research has determined that an appropriate method of calculating an ex ante MRP is to apply a dividend discount model (DDM) to the entire stock market in Australia. Provided that sensible, long-term assumptions are used in relation to market-wide growth, then a simple model can be derived which will give an estimate for the forward-looking MRP.

The dividend discount model is a direct approach to extracting an MRP which can be inferred from market data. The DDM offers an alternative to indirect methods, such as the use of the implied volatility of options. The logic behind the use of the DDM is that the current price of shares has been set by rational investors who have used their expected MRP when deciding on the current value of those shares.

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[13] WACC Estimation. A report for Envestra by Tom Hird, PhD. Competition Economists Group, March 2011, page 29, paragraph 99.
[14] The Calculation of the Cost of Capital. A Report for Envestra, Professor Bruce D. Grundy, 30th September 2010, page 18, paragraph 41.
[15] Draft Decision. Envestra Ltd., Access Arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016. Australian Energy Regulator, February 2011. Page 264.
[16] WACC Estimation. A report for Envestra by Tom Hird, PhD. Competition Economists Group, March 2011, page 29, paragraph 100.

There is no reason to believe that analysts would alter their MRP estimate depending upon whether they were valuing individual shares or the entire Australian market. The MRP is not an equity-specific variable. Accordingly, a well-accepted model that can be applied to the whole market is a preferred method of estimation. Such a model eliminates the need to estimate extraneous, company-specific variables such as stock betas or stock-specific volatility estimates.

In addition, aggregate forecasts are available at the whole market level for basic variables such as dividends per share (DPS), earnings per share (EPS), and cash flow per share (CPS), while long term growth estimates can also be sourced for earnings per share (EPS). The 'forecasts' are available over an historical period from February 1999 to February 2011. Capital Research has used an arithmetic average of the EPS forecasts put out by analysts over this period, and has found that the resultant value (8.81%) also coincides with the long run projection of EPS recorded by analysts.

Capital Research has reported that the forward dividend estimates over periods of quite different tax regimes can easily accommodate the changes to the treatment of franking credits. The time interval from 2001 to 2004 encompasses the old imputation tax system and the new simplified imputation tax system (STS) which was introduced on 1st July 2002 and had extensive transition arrangements.

The application of the DDM over the full 12-year interval to February 2011 has given rise to an MRP which varies between 6.6% and 7.5%, across a realistic range of values of net theta[17]. Note that net theta is the product of the proportion of dividends distributed which are franked and the actual theta per credit. If the DDM is applied to a narrower timeframe of only the GFC period, (June 2008 to September 2009), or the post-GFC period, (October 2009 to February 2011), then the implied MRP results obtained by Capital Research are higher. **In addition, the estimates of the MRP for the post-GFC period are higher than values of the implied MRP obtained for the period preceding the GFC.**

Capital Research briefly considered the possibility of using an earnings yield model to compute the MRP in preference to a dividend yield model. However, the author, Neville Hathaway, found that:

- The estimates of future dividend payout ratios from future earnings are biased, inasmuch as they differ significantly from realised payout ratios; and
- There is no way to directly include franking credits within future earnings without referring back to future dividends, which requires the use of the flawed future payout ratio estimate.

NERA Economic Consulting, working on behalf of Multinet Gas and SP AusNet, examined a number of issues in relation to the historical MRP and a forward-looking MRP. Specifically, NERA was asked to examine whether:

- The historical evidence indicates that a long-term average market risk premium (MRP) of 6 per cent per annum inclusive of the value of imputation credits is appropriate;

[17] Forward Estimates of Market Risk Premium. A report prepared by Neville Hathaway, Capital Research Pty Ltd, April 2011. Table 2, page 17.

- Current conditions warrant an MRP at its long-term average or above its long-term average;
- The survey papers of Fernández (2009) and Fernández and del Campo (2010) to which the AER refers provide support for an MRP of 6 per cent per annum inclusive of the value of imputation credits; and
- The volatility of the return to the market portfolio implied by option prices can provide a guide as to the MRP.

A summary of the core findings reported by NERA is presented below:

- The historical evidence indicates that the Australian market portfolio was substantially less risky in the later part of the 19th century and the earlier part of the 20th century than in the later part of the 20th century and the start of the 21st century. The variance of the return to the Australian market portfolio has been three times as high in the later period than in the earlier period. This empirical result casts considerable doubt on the wisdom of the AER's decision to combine, without any adjustment for differences in risk, data from the earlier period with data from the later period in order to estimate the MRP. Either adjusting the earlier data or throwing out the earlier data will lead to an MRP of at least 6.5% per annum;
- Current conditions suggest that the MRP is above its long-term average. The spread between BBB bond yields and AAA bond yields, while lower than during the worst of the Global Financial Crisis, is still well above its long-run average. Also the volatility of the return to the Australian market portfolio implied by option prices suggests that the risk of the market sits at a level that is above where it sat for much of the last decade;
- The survey papers of Fernández (2009) and Fernández and del Campo (2010) provide little information about whether responders are measuring the Australian MRP inclusive or exclusive of imputation credits. The only piece of evidence pertaining to the issue in the papers indicates that responders are measuring the MRP exclusive of imputation credits. A weighted average of the Australian responses adjusted for the value of imputation credits indicates that inclusive of the value of imputation credits, the MRP is at least 6.5% per annum;
- There is evidence in the literature that the volatility of the return to the market portfolio implied by option prices can provide a guide as to the MRP. In addition, the implied volatility of stock market returns, inferred from option prices, is a reasonable predictor of future volatility. The AER has misinterpreted the results of a study by Chernov (2007) which actually suggests that there is information about future volatility contained in implied volatility; and
- The literature also documents, consistent with the existence of a positive link between expected volatility and the MRP, that there is a negative relation between unexpected changes in volatility and the return to the market portfolio.

Conclusions

The use by the AER of an historical MRP computed using excess return data, which has been aggregated from 1883 to 2010 and then averaged, is inappropriate. The more

recent annual data is simply not comparable, on an unadjusted basis, with the earlier, pre-1958, annualised series.

Multinet Gas and SP AusNet understand that historical excess returns have been calculated by Handley using data on stock returns and the return on ten-year government bonds[18]. The Parties consider that if the raw, historical data on excess returns is to be used at all, then the series from 1958 onwards should be given greater weight than the pre-1958 data.

This means that, in Table 5.4 of the AER Draft Decision, the calculated values of the historical equity risk premium in respect of the 1883 to 2010, and 1937 to 2010 periods are inapplicable[19].

Furthermore, the AER should have regard to forward-looking measures of the MRP which have been estimated directly using dividend yield models or indirectly using methods such as the measurement, via options prices, of the implied volatility of stock market returns.

The evidence from Capital Research and from Bishop and Officer demonstrates unreservedly that there is no case for the AER to bring down the applicable value of the MRP from 6.5% to 6.0%.

Should you have any queries in relation to this submission, please do not hesitate to call Jeremy Rothfield, regulatory economist, on (03) 8540 7808.

Yours sincerely,

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Andrew Schille
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Multinet Gas

[18] An Estimate of the Historical Equity Risk Premium for the Period 1883 to 2010, John C. Handley, University of Melbourne. Final, 25th January 2011.
[19] Draft Decision. Envestra Ltd., Access Arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016. Australian Energy Regulator, February 2011, page 82.