28 March 2013

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Dear Dr Roberts

Discussion Paper: The Risk Free Rate and The Market Risk Premium

Origin Energy (Origin) welcomes this opportunity to comment on *The Risk-free Rate and the Market Risk Premium, November 2012, QCA.*

As a major participant in Australian energy markets, Origin is well placed to contribute to this process and has addressed the questions raised in QCA's Discussion Paper in the attached submission.

Origin looks forward to continued participation in the current review. If you have any queries, please contact Keith Robertson on (02) 9503 5674.

Yours sincerely
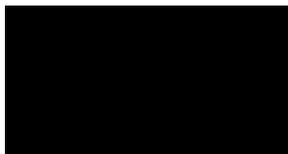
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1. Background

Origin understands that this review will provide the QCA with a framework to develop WACC estimates when setting prices across the range of industries that it regulates. As a major energy retailer, Origin is qualified to comment upon the application of the WACC in regulating electricity retail prices but has not sought to comment upon its application to other industries.

The QCA's current methodology for determining electricity retail tariffs does not rely upon an explicit estimate of the WACC of an energy retailer or generator, although the QCA's draft determination proposes using the retail margin estimated by IPART. IPART in turn estimates an appropriate retail margin with reference to the WACC of an energy retailer.

Should the QCA adopt an alternative approach in future electricity price determinations then the QCA will need to determine an appropriate WACC for retailers and potentially generators. It is within this context that Origin has provided comments on the risk free and market risk premium.

The setting of regulated prices within the competitive energy retail market subjects retailers to an asymmetric risk; any under recovery of costs from low regulated prices (that function to suppress market offers generally) leads to lower margins, yet competitive forces curtail any opportunity for retailers to over recover in circumstances where regulated prices are overestimated. Retailers therefore bear the risk of underestimation of the WACC, but will not benefit from overestimation. This context is important when the QCA's is exercising discretion to determine WACC parameters within a reasonable range.

While the focus of the QCA's discussion paper is upon the market cost of equity and does not canvass views on applying a beta to derive a business specific estimate it is worth briefly considering some of the challenges the QCA faces in taking this next step to determine the WACC:

1. The Australian energy market is characterised by a small number of listed participants and a wholesale market design, regulatory model and level of competition that in many regards is unique and gives rise to a risk profile that overseas energy businesses do not share.

2. In determining a WACC for an efficient benchmark firm, the QCA should be seeking to reflect the capital costs of a new entrant player. Failure to reflect new entrant costs will inhibit competition from new entrants.

3. In establishing a suitable benchmark new entrant firm it is important to note that of the publicly traded Australian energy retailers the majority are large, vertically integrated players with a lower risk profile than would be expected for a new entrant. It is therefore critical that the unique risks faced by new entrant retailers operating in the NEM that may not be evident in comparables are considered when assessing WACC values, particularly the asset beta.

4. The financial circumstances of a new entrant may also require consideration. For example, new entrant retailers or generators are likely to have less debt capacity, a higher risk margin for credit risk and will incur more costs upfront than for an incumbent.

5. These factors will inevitably require the QCA to exercise discretion in setting appropriate WACC parameters and will require adjustment towards the upper end of a reasonable range for the beta and WACC.

Origin has set out its response to the specific issues raised in the discussion paper in the following sections.

2. Consistency of Approach in Estimating the Cost of Equity

The critical issue in determining the cost of equity is to ensure consistency of measurement timeframe when determining the component parts of the cost of equity. The QCA's current approach applies different periods over which rates are estimated and different terms, or investment horizons for each component of the WACC:

- A spot rate (20 day average) is used for averaging the Government Commonwealth Bonds as a proxy for the risk free rate
- Estimation of the Market Risk Premium takes an average from a mixture of approaches, two of which use historical data averaged over a long period.
- Market risk premium is estimated applying a 10 year tenor and the risk free rate assuming a five year investment horizon

This note sets outs Origin's preference for applying long term averages consistently across each parameter. Should the QCA see merit in considering alternative timeframes it is important that each discrete estimate of the WACC is calculated applying internally consistent timeframes. The resulting WACC's from different (internally consistent) approaches can then be been compared.

3. Risk Free Rate

3.1 Choice of Proxy

Origin agrees in principle with the QCA's use of Australian Commonwealth Government Bonds ('Government Bonds') as a proxy for the risk-free asset in the CAPM. However it is essential that, as noted above, consistency in measurement timeframe and tenor is achieved with the other WACC parameters. The remainder of this memo sets out Origin's view on averaging period and tenor of the Government Bonds.

3.2 Averaging Period

As highlighted in QCA's Discussion Paper, the yields on Australian Commonwealth Government Bonds have decreased significantly since 2007. The lower yields were mainly driven by the Global Financial Crisis (GFC) and also by the European Debt Crisis which caused a "flight to quality" as domestic and international investors sought high investment grade Government Bonds.

Despite this fall, there has not been a decrease in the cost of equity. It is Origin's view that despite the fall in the risk free rate (measured using Government Bond yields) there has not been a corresponding fall in the required returns of equity holders (cost of equity). During a period of market instability investors would not be expected to accept a lower return on equity. This is evidenced by an increase in the spread between the indexed 10 year Government Bonds rates and the forecast dividend yields. This implies that in times of uncertainty, equity market valuations decrease due to the requirement for greater returns on equity (proxied in this instance by the forecast dividends) resulting in increased dividend yields during times of uncertainty.

Due to the disconnect between the decrease in current Australian Government Bond yields and the impact on the cost of equity, Origin believes an upward adjustment is required to the risk free Rate in its application to WACC.

One way to consider such normalised levels of Rf rate is to look at Government Bond rates based on rolling average yields over a five year period. This approach is effective in eliminating distortions from short term declines (or spikes) in bond rates.

The chart below provides a summary of the spot 10 year Government Bond rates as well as the one year and three year moving averages. The adoption of a three year or five year moving average would represent a Risk Free Rate of 4.4 or 4.8 per cent respectively.

Chart 1. Moving Averages for Ten Year Government Bond Rates
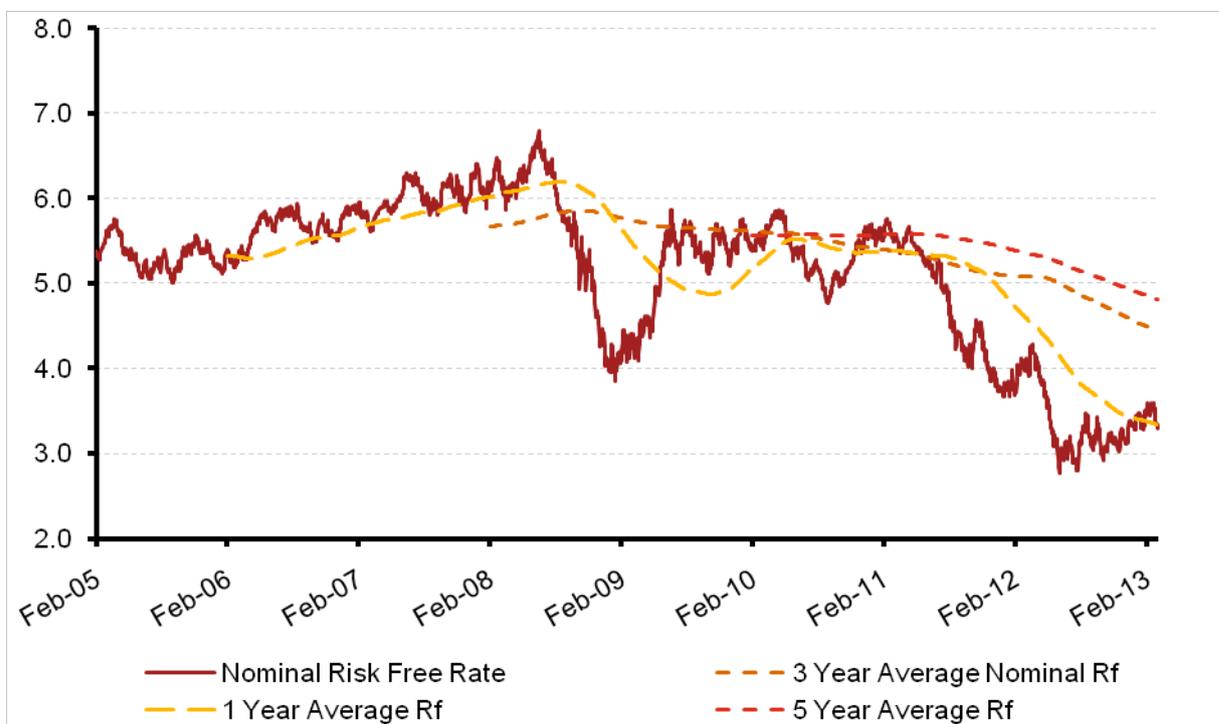
Source: RBA statistics, Bloomberg, PwC analysis

An alternate method for determining a normalised view of 10 Year Australian Government Bond yields is to make an assessment of the individual components being the "implied real risk free rate" and "implied inflation expectations". Based on an analysis undertaken by PWC a normalised estimate of the Risk Free Rate of 5.0 per cent was derived as at 28 March 2013.

3.3   Term of Proxy

As the energy market is typically a capital intensive business with long-lived assets, contracts and business models, a prudent liquidity management strategy would include matching debt obligations to asset revenues and also mitigating refinancing risk through issuing debt across a range of tenors ranging from short term debt, e.g. 3-5 years, as well as longer term debt that exceeds 10 years.

The inputs into WACC should similarly be formed based on assumptions that support sustainable investments and businesses in the sector. New investments are not typically made reactively based on short term market conditions. The timeframe for making investment decisions and implementing any new investment proposal are based on long term views of viability and sustainability of each investment. In order to better match the WACC to assumptions used by market participants seeking to invest in a market, stable, longer term averages should be used.

As noted in QCA's paper the choice of term has important implications for the choice of bond used as proxy for the risk free rate. Origin does not agree that matching the term to the life of the assets violates the Net Present Value principle or incentivises market participants to take on shorter term debt. Long term assets are usually financed with longer term debt which means market participants would be penalised if a five year term is applied.

Moreover, the timing of refinancing and new debt issues is not linked to the regulatory cycle but rather to the liquidity needs and existing facilities in place for each company. Entities may also select to use derivatives to fix their borrowing costs on particular instruments. This means that is not reasonable to conclude that the average cost of debt of new or existing market participants could be aligned with the short term cost of debt. Origin like other retailers in Queensland operates in multiple states (some of which do not have price regulation) and has multiple lines of business (gas retailing, generation, etc.) and so does not have a strong incentive to align the tenor of its financing with the regulatory cycle as also noted in QCA's paper.

4.0 Market Risk Premium

The Market Risk Premium (MRP) is a measure of the long term excess return earned on a diversified portfolio of equities over the risk free return. As the MRP is not stable over time, a long term averaging period, based on an agreed methodology, should be used to reduce variability around the ultimate WACC measure, providing a greater degree of certainty upon which investment in the sector may be made and continued participation remains viable.

Long term estimates of MRP for the Australian market typically have been 6 per cent, which is consistent with QCA's estimation of 6.0 percent in the draft determination released in November 2012. However, Origin believes there is inconsistency in the way QCA is applying the longer term measure of MRP with a shorter term measure of Risk Free Rate in the WACC.

Chart 2. Forward Earnings Yield (All Ord Forecast Dividend Yield)
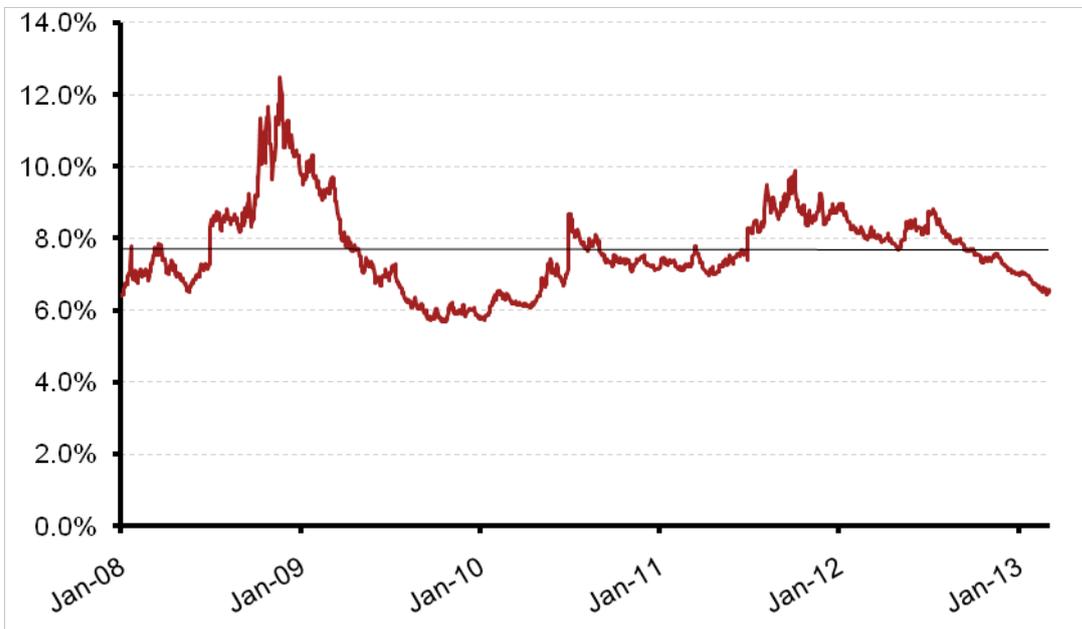
As shown in the graph above the forward earnings yield has remained relatively stable during a period when the Government Bond rate reduced significantly. As a result of this, the spread between these two rates has widened substantially which implies that equity investors require greater returns on equity (proxied by forecast dividends) in times of uncertainty.

Accordingly, Origin considers that it is not appropriate to use the observed spot Government Bond rate, or a short term moving average of 20 days, as the basis for determining the Rf in conjunction with the estimate of MRP as adopted in the QCA draft report. However, if a short

term measure were to be used, adjustments to reflect the abnormally low level of Government Bond yields could be made by:

- Adding an amount to the spot measure of Rf; or
- Adjusting the measure of MRP used to reflect an additional short term component of risk over and above the depressed measure of Rf.

In the absence of such adjustments, Origin believes that using short term data reflects the cost of capital to invest at a point in time only and would not typically reflect the basis of investment decisions made over the regulated period regarding meaningful new investments in long term assets. Moreover, usage of short term data in a regulatory environment could lead to under investments by participants which would not be in the best interest of consumers in the long term.

4.1 MRP Methodologies

In terms of a transparent model to be applied, the Capital Asset Pricing Model (CAPM) is well understood and one of the most extensively used models in corporate finance. The model is applied by Australian state and commonwealth regulators as well as in many foreign jurisdictions. For this reason, as well as the fact that the cost of equity being calculated is not being calculated in respect of a specific entity where more bespoke data and analysis may be possible, but rather for a "benchmark utility", Origin believes it is appropriate to base the cost of equity calculation on the CAPM model.

Using a well understood and extensively used model also results in increased transparency and improved forecasting ability upon which investment decisions can be made.

Origin recognises that there are a number of reasonable approaches to estimating the MRP. The key issue is that the approach used for the MRP should be consistent in terms of timeframe with that used for other parameters of the WACC. The QCA's current approach to estimating the MRP takes an average from a mixture of approaches, two of which use historical data averaged over a long period.

Using a long term historic averaging period assists in removing any short term impacts of abnormal market conditions and provides a more stable outcome than short term or forward looking approaches. Origin does not believe that forward looking models for MRP provide a greater degree of certainty or accuracy around the MRP than historical averages. Origin is also concerned that a forward looking approach will introduce a higher level of volatility in the estimates. This increases the risk that a WACC at the peak or trough of a cycle is applied in a determination that is not representative of the cost of capital over the period of the determination. A less volatile (averaged) measure is more likely to approximate to the capital cost incurred in the period across which investments are made. The QCA has previously recognised this issue in determining how to set the market cost for wholesale energy. Rather than take an "on the day" or mark to market approach to pricing hedge contracts the QCA takes an average across the period in which it judges retailers are likely to enter into hedging contracts.

5. Conclusion

The critical issue for the QCA is to ensure that the overall cost of equity reflects investor's required returns, rather than to determine the "best" methodology independently for the risk free rate and the market risk premium. It is important to ensure consistency in approach, i.e. long term measures or short term measures throughout. The current QCA methodology will understate the cost of equity as it combines a short term measure of Government bonds as a

proxy for the risk free rate with a market risk premium based largely on historic and market survey data. Where market survey are used the survey should apply to all components so that any decision made on survey data is consistent with regards to tenor, averaging period, etc.

Origin recognises that there are a number of reasonable solutions to align estimates of the risk free rate and market premium. Origin's preference in this regard is to apply longer term measures for both the risk free rate and market risk premium. This ensures consistency of timeframe for input data and avoids using approaches that deliver more volatile results for infrequent price resets. A volatile measure increases the risk that the cost of capital allowed at the start of the regulatory period varies markedly from the cost incurred during the period when investments are made by a retailer.