UBS response to the TransGrid request for interest rate risk analysis following the AER Draft Decision of November 2014

Summary

Consistent with the AER approach used in the draft decision for TransGrid released in November 2014, we have used a fundamental or bottom up approach to review the debt management practices of TransGrid and the impact that those practices have had in regard to its submission for the next regulatory period of 2014/15 – 2017/18.

Our approach was to look back at the 2009 determination and the decisions made by all NSW service providers following that determination and then how those decisions influenced their submissions for the next regulatory period in regard to the cost of debt. We then looked forward following the release of the November 2014 AER draft decision – examining whether a valid case could be made for altering the existing debt management strategy.

The process used was as follows:

1. Conduct a relative merits analysis by looking at the decision by all NSW service providers not to hedge the interest rate risk component of the cost of debt for the 2009 averaging period;
2. Outline a cost benefit analysis – based on 2009 data – of the decision to either hedge interest rate risk during the averaging period or alternatively follow a trailing average approach to funding and hedging risk;
3. Review the impact of the trailing average approach adopted in 2009 and its impact on the NSW service providers' 2014 AER submission; and
4. Price the transaction costs associated with hedging debt – given access to both Australian debt capital markets and offshore markets where the proceeds are swapped back into AUD.

Looking Back

Relative merits

The key question to ask is whether all NSW service providers could or should have hedged the interest rate risk component of the cost of debt associated with the 2009-2014 regulatory period ?

The AER draft decision for TransGrid and Networks NSW in November 2014 made the following observations (in summary):

- The AER accepted a 40 business day averaging period under the on-the-day approach for the 2009-2014 regulatory determination;
- The AER was not satisfied that a benchmark efficient entity with similar risks faced by the NSW service providers would not have hedged at all – estimating that service providers could have hedged over a 60-80 day period;
- The estimated 60-80 day hedge period may be overstated because it is based on NSW service provider's current asset base rather than their asset base at the start of the last regulatory period;
- Activity in Australian dollar-denominated single currency interest rate derivatives is quite liquid.

We note the following in relation to the 2009-2014 regulatory period and specifically the 2009 determination:

- While the National Electricity Rules allowed up to a 40 business day averaging period for the 2009-2014 regulatory determination, the agreed averaging period was 15 business days for Networks NSW and 20 business days for TransGrid. The period of 18 August to 5 September 2008 was used to

set the cost of debt for Networks NSW and 11 August to 5 September 2008 for TransGrid. The AER proposed averaging period dates of equivalent duration but commencing in February 2009.

- The Australian Competition Tribunal set the averaging period for TransGrid in November 2009. There is no derivative product available to hedge historical interest rates;

- Putting to one side the practicalities of hedging rate risk for a period some 15 months in the past, it is instructive to review the liquidity in the Australian derivatives market around the time of the Lehman Brothers collapse in September 2008 and over the course of the next year in the period up to the Australian Competition Tribunal decision in November 2009.

- The median standard transaction size for interest rate and cross currency swaps in January 2009 was A$50m[1].

  "Most respondents reported a significant deterioration in liquidity conditions over the preceding 18 months. In particular, it has become noticeably more difficult to find a counterparty, the standard transaction size has fallen sharply across products, and the price impact of even a standard-sized transaction has increased considerably."[2]

- The AFMA 2009 Australian Financial Markets Report shows AUD interest rate swap annual turnover to be $1,561,178 million[3]. This equates to a $5,988m per business day[4]. Turnover by Survey Respondents declined 12.4% while turnover by other banks declined 20.5% over the previous year. We note from the AFMA Australian Financial Markets Report 2008[5] that swap outstandings for a term of 5 years and greater accounted for 14.4% of total outstandings. If we assume that swap outstandings are a reasonable proxy for swap turnover for a particular maturity, then the AFMA measured average daily turnover for interest rate swaps for terms of 5 years or greater in 2009 was of the order of $862m.

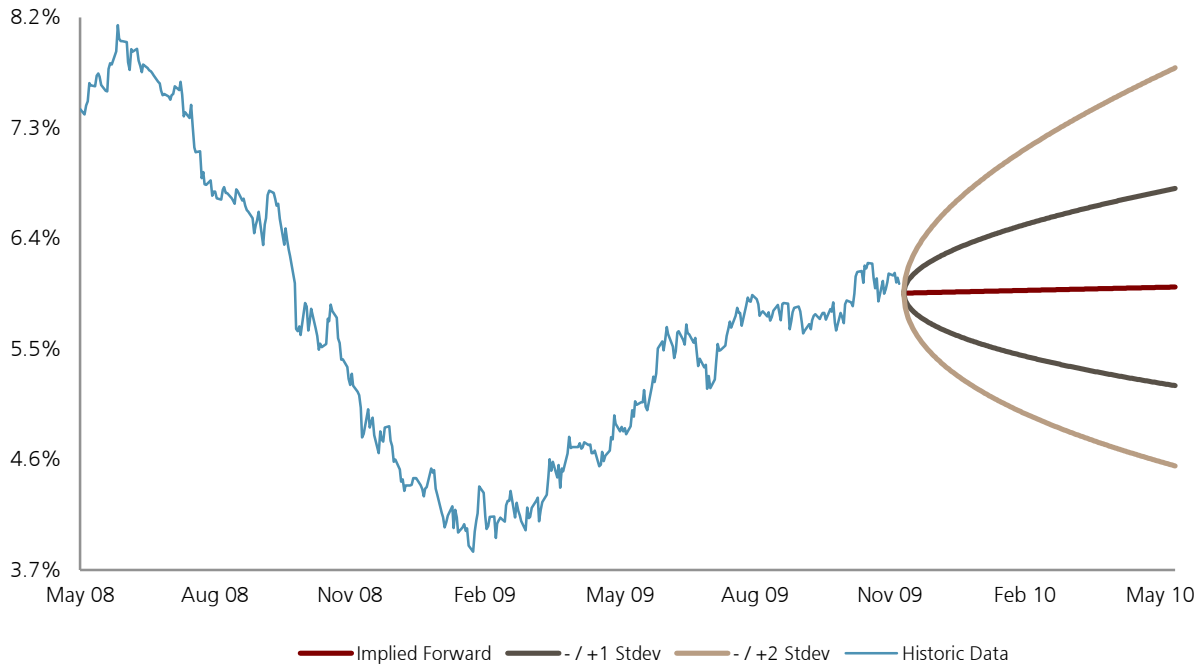
- The notional debt for Networks NSW at the time of the 2009 determination was $9,801m (equivalent to 60% of RAB at that time). TransGrid, TasNetworks and ACTEWAGL had notional debt totaling $3,461m and were subject to the same timing in regard to determination and cost of debt specifically. The total on the day notional debt amount for the service providers subject to a determination at that time was $13,262m. However, over the term of the 2009-2014 regulatory period the appropriate hedge amount was $18,263m i.e. the average notional debt amount for all entities over the period. The quantum at risk at the time was the forecast notional debt for the full regulatory period, not the day one debt amount. Based on the median standard transaction size at the time of $50m, the total hedge requirement for NSW Networks, TransGrid, TasNetworks and ACTEWAGL represented 365 times the standard transaction size. It is reasonable to assume that the service providers may, at that time, have transacted up to $200m of fixed rate interest rate swaps per day without causing market dislocation or exhausting available liquidity. On that basis, the total notional debt amount may have been hedged in 91 business days. We regard that as an aggressive assumption in the context of a median transaction size of $50m and daily market turnover of $862m at that time.

- We regard any requirement to hedge outside of an averaging period as an unacceptable risk as it exposes the entity to potential material loss. UBS analysis in the regard to the 2009-2014 regulatory period measured the degree of risk and the potential cost and volatility associated with fixed rate risk outside of averaging periods. Risk was measured based on swap rate data in November 2009 on a one and two standard deviation basis in the same way that we measure credit risk for all derivative counterparties. We used that data to measure the quantum of risk associated with an estimated hedge period of 91 business days versus an averaging period of 15 - 20 days in 2008 as determined by the Australian Competition Tribunal and used by the AER. The approach that we used was as follows:

  - We assumed that all service providers hedged the maximum amount possible of $200m per day for 15 consecutive business days – that is, $3 billion of the total requirement. The remaining hedge requirement was then $15,263m over a 76 business day period (i.e.

$18,263m - $3,000m). Each 1 basis point shift in fixed rates for this notional amount over a 5 year term was worth $7m (DV01).

- Credit risk is measured on a two standard deviation basis. Applying that same two standard deviation measure for the change in fixed rate for a 3-month calendar period past the 15 day averaging period implied risk of 125.8bp. Assuming a value per basis point of $7m, this implies potential risk at the time of $881m for all service providers subject to determination at that time. NSW service providers accounted for some 93% of notional debt at that time. On that basis, the implied potential risk for NSW service providers was $819m. The TransGrid share of this risk amount was $157m.



Source: UBS, Bloomberg, Australian dollar 5 year interest rate swap rates

	Spot (16-Nov-09)	1 week	1 month	3months
1 Standard dev.	5.905	6.065	6.240	6.502
2 Standard dev.	5.905	6.229	6.594	7.163

Source: UBS, Bloomberg, Australian dollar 5 year interest rate swap rates

The November 2014 draft decision for TransGrid draws conclusions with regard to liquidity and the ability of NSW service providers to hedge interest rate risk for the 2009 determination by reference to "Australian OTC Derivatives Market Activity", October 2012 prepared by the RBA. The report uses data as at June 2012. We see no relevance in this document as a measure of market liquidity for either the 2009 or 2014 determination. The UBS analysis – by way of contrast - has been based on AFMA data in 2009 in order to review liquidity and the ability to hedge risk at that time. The impact of the Lehman Brothers default in September 2008 – around the time of the NSW service providers' averaging period - had a material impact on market liquidity that was not relevant some 3 years later in 2012.

"While the Australian OTC derivatives market generally remained robust to the turbulence that followed the bankruptcy of Lehman brothers in September 2008, there was widespread uncertainty among participants. This contributed to an increase in price volatility and deterioration in liquidity conditions across products"[6]

In the interests of clarity, we have reconciled the derivative markets activity data in 2012 with the AFMA data in 2009. It is worth noting that the RBA data is drawn from AFMA and other sell-side and buy-side institutions. We had estimated – based on the 2009 AFMA data – that the average daily turnover of interest rate swaps with a term of 5 years or more was $862m.

The data indicated that over the year to end June 2012, OTC interest rate derivatives (both single currency and cross currency) turnover was $65b. Of this amount, daily turnover in Australian dollar denominated single currency interest rate derivatives accounted for $50b. Further, of this amount, 75% was inter-bank related, leaving $12.5b to account for corporate related hedging, traditional fund managers, hedge funds, CTAs, Government and offshore central banks. Previous AFMA Australian Financial Markets Reports[7] show that the corporate related hedging (from survey respondents and other banks) accounts for ~70% of the non-interbank / in-house transactions. Therefore non-interbank hedging turnover – across all tenors – for counterparties that were not traditional fund managers, hedge funds / CTAs, Government or offshore central banks - accounted for $8.75b (i.e. $12.5b x 70%).

Previous AFMA data had shown that outstandings for a term of 5 years or more accounted for 14.4% of total volume outstanding[8]. Applying that same logic would show that in 2012 the daily corporate related turnover for AUD interest rate swaps for a term of 5 years or more was $1,260m (i.e. $8.75b x 14.4%). Daily turnover of $1,260m in 2012 is consistent with turnover of $862m per day in the year post the Lehman Brothers default.

We note that 2.5% of turnover relates to terms of 10 years or more – equivalent to daily turnover of $220m. While we have argued that derivatives turnover data published in June 2012 is of little relevance to a 2014 determination, we believe that liquidity for long dated single currency interest rate swaps has declined since 2012 as the full impact of global regulatory reform – Basle 3, the Wall Street Reform and Consumer Protection Act (also known as the Dodd Frank Act) and the European Market Infrastructure Regulation - has seen costs for capital and credit increase and liquidity decline. Proprietary trading activity in interest rate swaps has all but disappeared. We regard a daily hedge requirement of $300m for a term of 10 years for the 2014-2019 determination as a highly aggressive assumption.

We conclude that a decision to hedge a component of the cost of debt calculation by using interest rate swaps in 2008/2009 would not have been achievable for NSW service providers over the 15 - 20 day period set by the Australian Competition Tribunal and implemented by the AER. The maximum averaging period of 40 days – while not implemented – would still not have been sufficient to hedge the fixed rate risk component of the cost of debt determination. Interest rate swap liquidity at the time was uncertain at best. A partial hedge may have been achievable, but it would also have exposed the NSW service providers to potential risk of $819 million and TransGrid specifically, to risk of $157m. No compensation was made available to cover risk outside of the averaging period. The low risk alternative was to adopt a trailing average hedge strategy.

Trailing Average

A hedge of the interest rate risk component of the cost of debt determination in 2009 failed for two reasons:

1. As previously reviewed, the NSW service providers were not able to hedge the interest rate risk component of the cost of debt determination within the averaging period. The risk at the time has been estimated at $819m if a decision had been made to hedge risk outside of the averaging period based on interest rate volatility at that time; and

2. A hedge of the interest rate risk component – even if it was achieved - could only ever be considered a partial hedge - unless the credit spread component of the cost of debt calculation was also hedged at the same time. The only way to hedge credit spread risk i.e. the debt risk premium (DRP), would

have been to issue the total notional debt amount of $12,332m for the NSW service providers during the same averaging period of 18 August – 5 September 2008 for Networks NSW and 11 August – 5 September 2008 for TransGrid. Putting to one side that the averaging period was decided by the Australian Competition Tribunal in November 2009 and that debt cannot be issued in the past, we note that there was no corporate issuance in the Australian domestic debt market in the immediate aftermath of the Global Financial Crisis. Total domestic issuance in 2009 was A$2.4b. There was no capacity in the Australian debt capital markets to hedge the credit spread component of the cost of debt calculation for the NSW service providers in 2008 / 2009.

Even if an averaging period was agreed at the maximum length allowed by the Rules, i.e., 40 days with an inability to hedge the interest rate risk component in that time period and a domestic debt market that was closed in the immediate aftermath of the Lehman Brothers default, NSW service providers had no access to hedge the cost of debt i.e. the interest rate risk and the credit spread. In 2009 the low risk alternative for NSW service providers was to implement a trailing average strategy

The trailing average approach implemented by TransGrid and Networks NSW resulted in fixed rate debt issued throughout the 2009-14 regulatory period as financial markets allowed. With interest rates falling since the 2008 averaging period closed, the TransGrid and Networks NSW fixed rate debt issuance has moved out of the money when measured against the current spot 10 year fixed rate. The current impact of the trailing average issuance program is reflected in the cost of debt submission for each NSW service provider when compared with the current spot rate 10 year fixed rate:

	2014-18 TransGrid proposal	**2014-18 AER draft decision**
Nominal risk free rate	n.a.	3.55%
Nominal pre-tax return on debt	7.72%	6.67%

	2014-19 Ausgrid proposal	**2014-19 AER draft decision**
Nominal risk free rate	4.78%	3.55%
Nominal pre-tax return on debt	7.98%	6.51%

	2014-19 Endeavour proposal	**2014-19 AER draft decision**
Nominal risk free rate	4.78%	3.55%
Nominal pre-tax return on debt	7.98%	6.51%

	2014-19 Essential proposal	**2014-19 AER draft decision**
Nominal risk free rate	4.78%	3.55%
Nominal pre-tax return on debt	7.98%	6.51%

The trailing average approach used by TransGrid and Networks NSW was consistent with debt management strategies adopted by non-regulated entities in the infrastructure sector – ports, airports, roads and railways.

UBS

Looking Forward

Cost of hedging for the 2014/15 – 2017/18 regulatory period

We understand that the AER did not explicitly provide an allowance for transaction costs associated with hedging debt issuance into either an AUD fixed rate or from a foreign currency back into AUD. We will not comment on this issue in regard to past determinations other than to make two observations:

1. We note references in the recent Draft Decision to the cost of hedging as being insignificant[9].

2. NSW service providers had no ability to hedge interest rate risk within the agreed term of the averaging period in 2008 or the maximum averaging period that may have been available at that time. We have measured the risk associated with a hedge outside of the agreed averaging period to be $819m. With no domestic debt issuance in the Australian debt capital markets in the period immediately after the averaging period over the remainder of 2008 and only $2.4b of issuance in 2009, it is reasonable to assume that liquidity and appetite to take and hold corporate risk was constrained at that time. Given the liquidity and credit risk constraints at the time, we are not able to accurately quantify the cost of hedging some $18,263m of notional debt (total debt amount forecast for the full regulatory period for all service providers subject to determination in 2009).

We will focus the remainder of our comments on the TransGrid cost of hedging for the period 2014/15 – 2017/18.

We note the following:

- AusNet is one of the few service providers with publicly available financial accounts. Their financial accounts show that 72% of total debt is raised offshore and swapped back into AUD using cross currency swaps[10];

- The AUD debt capital markets have little capacity to fund BBB+ credit risk for a term of 10yrs.

Assuming that the majority of debt to be raised by NSW service providers will – of necessity - be raised in foreign currencies and swapped back into AUD, we estimate the costs – assuming a benchmark efficient entity credit rating and a term of 10-years - to be as follows:

- Cross currency swap credit, capital & execution costs for a BBB+ rated entity 18bp;

- AUD interest rate swap credit, capital & execution costs for a BBB+ rated entity 5bp;

- Tracking risk between the RBA & Bloomberg estimates and market fixed rates (based on 2 standard deviation measure of intra-day volatility) 9bp. Ideally the benchmark efficient entity would hedge all interest rate risk at the exact time that both the RBA and Bloomberg set fixed rates. There is insufficient disclosure as to the exact source and timing for both the RBA & Bloomberg data, the RBA data is published monthly and not daily and the RBA data is calculated by reference to Commonwealth Government Securities and not swap rates. Tracking risk reflects the potential for a differential between a the swap rate at any given time on any day during the averaging period and the methodology, source and timing for the data used by the RBA & Bloomberg;

- Deferral – a hedge of interest rate risk in advance of the start of a regulatory period will incur additional cost given the normal shape of the AUD yield curve. Depending upon the term of the mismatch between the averaging period and the regulatory period i.e. the deferral, the cost will be of the order of 6bp.

The 38bp all in cost of hedging is before any adjustments for liquidity premiums based on the size of the NSW service provider requirements and currency related volatility outside of averaging periods. We note that NSW service providers will also face material bank counterparty risk and market disclosure issues. Few Australian banks trade derivatives within information barriers – the effect of which may be heightened market volatility when large risk positions are hedged in the market.

The cost of hedging for TransGrid - on a standalone basis - is calculated as follows:

38bp x DV01 (value of 1bp pa based on the TransGrid nominal debt amount as at June 2014 of $3,929m for a 10 year period) of $3.37m = $128m. This is before costs for any additional liquidity premium and currency related volatility associated with offshore debt issuance can be quantified.

We see no valid argument that supports the view that the cost of hedging either interest rate risk or foreign currency debt issuance swapped back into AUD is "insignificant".

Global regulatory reform – particularly Basel 3 and the fourth Capital Requirements Directive (CRD IV) in Europe – have resulted in interest rate derivatives becoming a "very capital intensive product". Deutsche Bank Chief Risk Officer, Stuart Lewis commented as follows in October 2014:

"If I look at the consumption of risk-weighted assets (RWAs) versus the revenues this generates for the bank, those revenues are relatively small, resulting in a very poor return on RWAs," he said. "The gross-ups on derivatives that we face as an institution are substantial. So whatever metrics you use, whether it's return on assets, return on CRD IV or Basel III assets, the one product that sticks out as low return is derivatives instruments – in particular on the core rates side."[11]

And then domestically, as reported in KangaNews[12]

"At its simplest level, the driver behind increasing cross-currency swap costs for corporate borrowers is a common theme across post-financial crisis capital markets: the requirement for additional capital – to be held against risk assets – in an environment where all capital is more expensive.
However, the drivers of greater cost in cross-currency swap provision are not purely regulatory. Having been caught cold in the financial crisis, individual banks are making concerted efforts better to model the volatility of both derivatives transaction components and – even more significantly – the credit quality of their counterparties.

In the corporate world, the new dynamics in the swap market are already adding to the cost of repatriating funds sourced in foreign currencies – and there may be even greater imposts in future. Derivatives bankers say a typical high triple-B rated Australian corporate has likely already seen the cost of a clean-line cross-currency swap for seven- to 10-year funds raised in the US private placement (USPP) market increase to 15-25 basis points from something closer to 10 basis points pre-financial crisis."

We estimate the hedging transaction costs for TransGrid to be of the order of $128m before additional adjustments for liquidity premiums and currency related volatility. Given that debt related transaction costs have been allowed in the draft determination, we believe that there is a valid case to argue – based on consistency – that the transaction costs associated with hedging risk should also be allowed – particularly since the domestic capital markets are not in a position to fund service providers and debt issuance, capex and opex will largely be funded in offshore capital markets and swapped back into AUD.

Conclusion

We have reviewed AFMA data covering the TransGrid / Networks NSW averaging period in 2008 and also that applicable at the time that the Australian Competition Tribunal made its decision in 2009.
It is our view that NSW service providers could not have hedged interest rate risk within the 2008 averaging period. We have quantified the potential risk of a partial hedge and of entering a hedge in the period beyond the averaging period at $819m.

It is our view that NSW service providers could not have hedged the credit spread component of the cost of debt calculation within the averaging period unless all debt was refinanced in that period. As no debt was issued in the Australian capital markets in the period from the Lehman default to the end of 2008 and $2.4b was issued in total in 2009, it is our view that the credit spread component of the cost of debt calculation could not have been hedged within the averaging period.

The trailing average debt management approach adopted by TransGrid was the appropriate low risk strategy at that time. As interest rates have fallen throughout the 2009 – 2014 regulatory period, the cost of the trailing average debt management strategy has been reflected in the TransGrid nominal pre-tax return on debt for the 2014/15 – 2017/18 regulatory period. This is higher than the current spot rate for nominal pre-tax return on debt.

It is our view that the cost of hedging for the 2014/15 – 2017/18 regulatory period is a material cost. We have quantified that cost to be $128m before any additional adjustments for liquidity premiums and currency related volatility.

Reference sources:

1. "Survey of the OTC Derivatives Market in Australia", May 2009, prepared by APRA, ASIC and the RBA page 13.
2. "Survey of the OTC Derivatives Market in Australia", May 2009, prepared by APRA, ASIC and the RBA pages 12-13.
3. AFMA 2009 Australian Financial Markets Report – Interest Rate and Cross Currency Swaps annual turnover summary 2008-09, Fixed AUD : Floating AUD - includes survey respondents and other banks (excludes in-house transactions fund managers, hedge funds / CTAs, Government, other central banks and other) page 37
4. $1,561,178m / 365 * (7/5) = $5,988m per business day
5. AFMA Australian Financial Markets Report 2008, Interest Rate and Cross-Currency Swap Outstandings by Maturity at 30 May 2008, page 28. Data on swap outstandings was not included in the AFMA 2009 report.
6. "Survey of the OTC Derivatives Market in Australia", May 2009, prepared by APRA, ASIC and the RBA pages 1-2
7. AFMA 2009 Australian Financial Markets Report – Interest Rate and Cross Currency Swaps annual turnover summary 2008-09, Fixed AUD : Floating AUD - includes survey respondents and other banks (excludes in-house transactions fund managers, hedge funds / CTAs, Government, other central banks and other) page 37
8. AFMA Australian Financial Markets Report 2008, Interest Rate and Cross-Currency Swaps Outstandings by Maturity at 30 May 2008, page 28
9. Draft decision TransGrid transmission determination 2015-16 to 2017-18, attachment 3: Rate of return, November 2014 page 3-297
10. AusNet Services Debt Securities Information http://www.ausnetservices.com.au/None/Debt+Securities+Information+Folders.html
11. Risk.net "Deutsche Bank CRO: derivatives becoming loss leader" 23 October 2014 http://www.risk.net/risk-magazine/news/2377264/deutsche-bank-cro-derivatives-becoming-loss-leader?utm_term=&utm_content=Deutsche%20Bank%20CRO%3A%20derivatives%20becoming%20loss%20leader&utm_campaign=RN.All.DU.A.MF0600&utm_medium=Email&utm_source=RN.DCM.Scheduled_Updates
12. KangaNews "A Heavy Cross to Bear", July August 2012 http://www.kanganews.com/magazine/2012/212-2012-july-august-magazine