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Dear Sean

## INDEPENDENT DETERMINATION OF REDEMPTION PRICES FOR TRUSTPOWER'S BONDS

### 1. INTRODUCTION

- 1.1 On 18 December 2015, Trustpower Limited ("**TPW**") announced that it was considering separating into two New Zealand incorporated listed companies by way of a court approved scheme of arrangement ("**Demerger**"). The Demerger would result in the formation of two new businesses:
- (a) the owner and operator of TPW's Australian and New Zealand wind farm assets and wind and solar development projects, with the parent entity being Tilt Renewables Limited; and
  - (b) the owner and operator of TPW's Australian and New Zealand hydro power generation assets and New Zealand multi-product retailing businesses, with the parent entity being Bay Energy Limited (to be renamed Trustpower Limited, "**New Trustpower**").
- 1.2 On 18 August 2016, TPW issued a Scheme Booklet relating to the proposed Demerger, in which it mentioned the intention to redeem its listed bonds on issue prior to the Demerger.
- 1.3 TPW has the following four series ("**Series**") of NZX Debt Market listed bonds on issue ("**Bonds**"):

Series	NZDX Code	Amount	Maturity	Coupon	Ranking
Series 1	TPW090	\$65m	15/12/16	8.00%	Senior
Series 2	TPW100	\$75m	15/12/17	7.10%	Senior
Series 3	TPW110	\$140m	15/09/19	6.75%	Subordinated
Series 4	TPW120	\$105m	15/12/21	5.63%	Senior

- 1.4 The terms of the Bonds are set out in a master trust deed dated 30 October 2009 (as amended by a deed of amendment dated 25 July 2012) ("**MTD**") between TPW as issuer and Trustees Executors Limited ("**Trustee**") as trustee, and in a separate "**Series Supplement**" for each Series of Bonds (together the "**Bond Documents**").
- 1.5 In an NZX announcement on 14 September 2016, TPW announced that it will redeem each Series of Bonds in accordance with their terms prior to the implementation date for the Demerger, and trading of the bonds was halted on the same day. TPW has also issued an NZX announcement dated 20 October 2016 which confirms that a formal redemption notice dated 20 October 2016 has been sent to TPW Bondholders, and the redemption date for the Bonds is 28 October 2016.
- 1.6 The redemption provisions applicable to the Bonds are set out in clause 8.1(c) of the MTD and clause 3.6 of each Series Supplement. If there is any inconsistency between the MTD and a Series Supplement, the Series Supplement will prevail.
- 1.7 Clause 8.1(c) of the MTD provides as follows:

In relation to a Series of Bonds where the Early Redemption Option is specified as applicable in the relevant Series Supplement, the Issuer may elect to redeem the Bonds in that Series for cash by giving five Business Days' notice to each relevant Holder of the date (being (in case of Subordinated Bonds) any Business Day and (in the case of all other Bonds) a date not less than 25 Business Days before the Maturity Date for that Series of Bonds) on which the Issuer will redeem the Bonds (the early redemption date). On the early redemption date, the Issuer will redeem each Bond in the relevant Series for the greater of:

- (i) an amount equal to its Face Value less all withholding tax and other withholdings or deductions required to be made (whether pursuant to clause 16 or otherwise); and
- (ii) the average price, weighted by volume, of all trades of Bonds of that Series through the NZX over the ten Business Days up to the fifth Business Day before the relevant early redemption date.

Where the Bonds of the relevant Series have not traded on the NZX for at least half of the ten Business Days specified in clause 8.1(c)(ii), the average price of those bonds for that period will be determined by an Independent Advisor.

- 1.8 Clause 3.6 of each Series Supplement provides that the amount payable to holders on redemption of the Bonds will be (relevantly) the sum of:
  - (a) where the Bonds of the relevant Series have not traded on the NZX for at least half of the ten business days of the Pricing Period (as defined below), the average price (net of accrued interest) of those Bonds for that period as determined by an Independent Adviser;
  - (b) all accrued but unpaid interest in respect of each Bond; and
  - (c) any other amount due and payable in respect of the Bonds.
- 1.9 As the redemption date is 28 October 2016, the period of ten business days over which the redemption price is calculated ("**Pricing Period**") for each Series of Bonds is 6 October 2016 to 19 October 2016 (inclusive).

1.10 NZX has suspended trading in each Series of Bonds from 14 September 2016. That suspension means that the Bonds have not traded at all on the NZX Debt Market during the Pricing Period, and as a result the average price of those Bonds for that period is to be determined by an Independent Adviser.

1.11 Clause 1.6 of the MTD is headed "Independent Adviser" and states:

If an Independent Adviser is required for any of the purposes of this Deed the Trustee shall select an investment banker, chartered accountant, or other financial adviser (in each case appropriately qualified having regard to the purpose of the appointment) and shall notify the Issuer of the name of the adviser. The Issuer shall within 5 Business Days thereafter advise the Trustee whether or not it approves that adviser. If the Issuer does not approve an adviser, the Trustee shall select another until a suitable adviser is approved.

1.12 Deloitte has been selected by the Trustee to be an Independent Adviser for the purposes of determining the average price of each Series of Bonds during the Pricing Period under clause 8.1(c) of the MTD and clause 3.6 of each Series Supplement. The Trustee has notified TPW that it has selected Deloitte as the Independent Adviser and TPW has advised both the Trustee and Deloitte that it approves the appointment. Deloitte has been appointed to perform that role pursuant to an engagement letter dated 27 April 2016.

## 2. METHODOLOGY

### General Approach

2.1 The role of the Independent Adviser is to determine the average price (net of accrued interest) of each Series of Bonds during the Pricing Period. Deloitte's approach has been to estimate the redemption price without capturing any effects that the announcements on 18 August 2016 of the proposed Demerger and redemption may have had on the value of the Bonds. This is consistent with how the redemption provisions would normally operate if the only event occurring was a redemption, there had been no trading halt, and as is usual the Pricing Period is completed prior to the redemption being announced so that trading during the Pricing Period is unaffected by any expectation of an early redemption.

2.2 Our approach involves, for each Series of TPW Bonds, the following six steps:

- (a) determine from historical trading data the correlation between the daily yields-to-maturity of the Bond Series and the yields of other listed corporate bonds with similar maturity dates, and choose the combination of corporate bonds (the "**Reference Portfolio**") that best correlates to the yields for the Bond Series;
- (b) calculate the difference (or spread) between the average historical daily trading yields of the bonds in the Reference Portfolio and the yields of the Bond Series, and calculate the average yield spread (over an appropriate time period);
- (c) use this average yield spread, and the observed average daily trading yields for the Reference Portfolio during the Pricing Period, to estimate the yield at which the TPW Bond Series would have traded on each day of the Pricing Period;
- (d) use these Bond yields to estimate the price at which the Bond Series would have traded each day of the Pricing Period, being the present value of the remaining cash payments of interest and principal for the Bond Series, using the estimated yield as the discount rate. These prices include the value of accrued interest;

- (e) calculate the accrued interest component included in each of the 10 estimated daily prices derived in (d), and subtract those amounts to derive the 10 daily prices net of accrued interest during the Pricing Period for each Series of Bonds; and
  - (f) average these 10 estimated daily prices during the Pricing Period, calculated net of accrued interest, to determine the redemption price. The resulting redemption price excludes the value of accrued interest and is before any deductions for withholding tax or other amounts payable by TPW.
- 2.3 Steps (c), (d), (e), and (f) above are straightforward calculations. Our methodology hinges on steps (a) and (b), and being able to determine (separately for each TPW Bond Series) an optimal Reference Portfolio and a stable yield spread between the Reference Portfolio and the Bond Series that can be used to accurately predict the yields at which the Bonds would have traded during the Pricing Period.
- 2.4 Consistent with the approach outlined in paragraph 2.1 above, we have only used bond trading data up to the day before the Scheme Booklet for the Demerger was published on TPW's website (18 August 2016) to determine the optimal Reference Portfolios and their yield spreads to the Bonds. This avoids capturing in the spreads any influence that the announcement of the Demerger proposal or the redemption itself may have had on the trading yields of the Bonds. However it also means that we are using data that is at least 36 trading days old to predict how the Bonds would have traded during the Pricing Period. Our method therefore assumes that the average spread adopted from data up to 17 August 2016 remains a reasonable estimate of the spreads that would have occurred during the Pricing Period (in the absence of the Demerger and redemption proposals). While we cannot be certain this is the case, we believe that:
- (a) our method is the best available and would be viewed as conventional; and
  - (b) as discussed later in this report, back-testing the approach on the historical data indicates that the differences between the predicted and actual Bond prices are modest and fall within an acceptable range.

### Constructing Reference Portfolios and Estimating Spreads

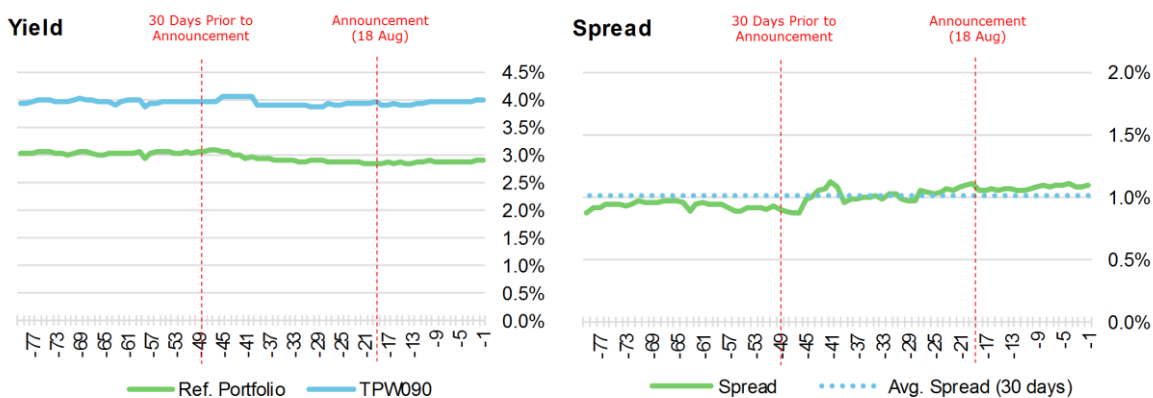
- 2.5 To select the best Reference Portfolio for each Bond Series we:
- (a) sourced historical daily yields-to-maturity and maturity dates from Bloomberg and NZX for all publicly-traded New Zealand corporate bonds;
  - (b) filtered the bonds by maturity date to create a preliminary set of comparable bonds for each Bond Series;
  - (c) calculated the historical correlation coefficient between the yields of each of the preliminary comparable bonds and the relevant TPW Bond Series' yields over various periods up to 100 days prior to 18 August 2016;
  - (d) constructed different portfolios of comparable bonds based on these correlation coefficients, and calculated the correlation coefficients between each portfolio's average yield and the relevant Bond Series' yields; and
  - (e) selected as the Reference Portfolio for each Bond Series the portfolio with the highest correlation coefficient and the most stable spread.

2.6 From this analysis we determined that the correlation coefficients were higher and the spreads more stable when we:

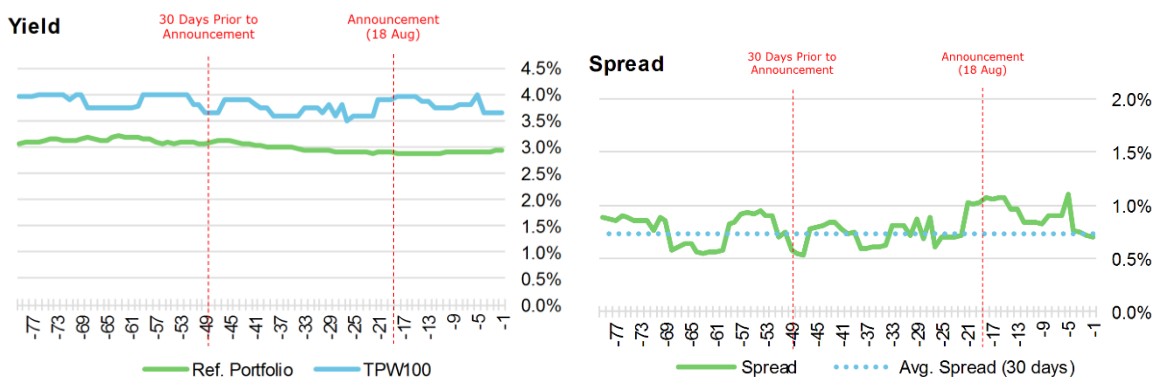
- (a) used corporate bonds rather than government bonds as the reference securities; and
- (b) used the average yield of a portfolio of corporate bonds rather than an individual bond.

2.7 The charts below show, for each Bond Series, the yields of, and yield spread between, the Bond Series and the adopted Reference Portfolio over 79 trading days up to the trading halt on 14 September 2016. The horizontal dotted lines on the spread charts show the average yield spread during the 30 trading days prior to the announcement on 18 August 2016 of the Demerger and bond redemption.

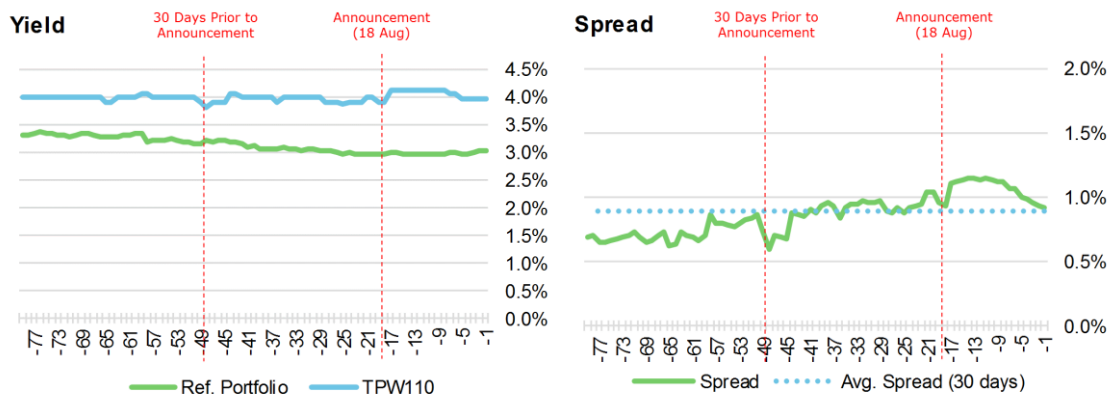
### Series 1 (TPW090)



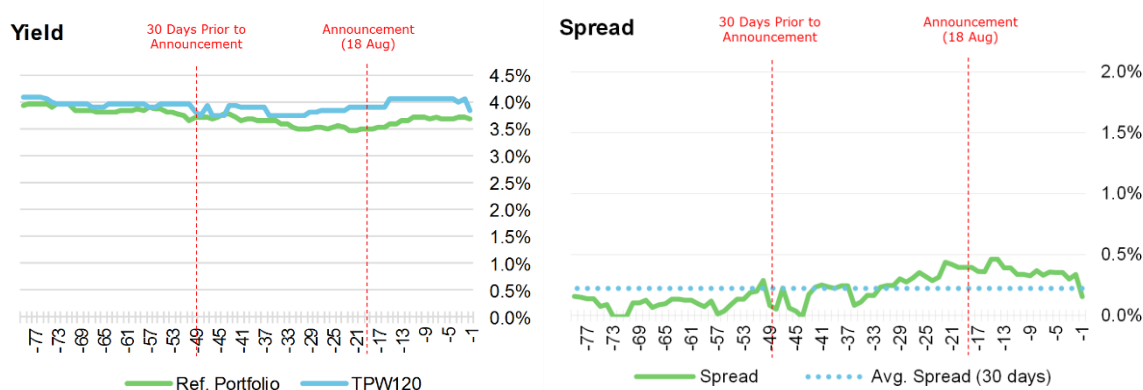
### Series 2 (TPW100)



## Series 3 (TPW110)



## Series 4 (TPW120)



- 2.8 As can be seen in the charts, the spreads between the yields for each Bond Series and its related Reference Portfolio are relatively stable (i.e. do not exhibit material secular trends) but do show some daily volatility. While the Bonds and the Reference Portfolios generally respond similarly to changes in the overall interest rate environment, they will not necessarily do so to the same extent on the same day. The spread is affected by security-specific trading and by the absence of trading in some securities on some days.
- 2.9 For all Bond Series we have elected to use the average spread over the last 30 trading days up to 17 August 2016 as the spread figure to use in our estimation of the Bonds' trading yields during the Pricing Period. In our view this 30 day period is:
- (a) long enough that it contains sufficient data points to provide a reasonable estimate of the average spread; but
  - (b) sufficiently recent that it represents a reasonably current estimate of the spread for the purpose of estimating the Bonds' yields in the Pricing Period.

## Testing the Methodology's Accuracy

- 2.10 We tested the accuracy of our methodology using the historical trading data at various points up to 17 August 2016. In each test we adopted a period of 10 trading days as the notional "pricing period", and assumed that the Demerger had been announced 36 trading days prior to this period. We then used the 30 trading days prior to that notional announcement date to calculate an average spread between each Bond Series and the relevant Reference Portfolio. We used these average spreads to estimate the Bonds' yields and prices during our notional pricing period, and compared the results to the Bonds' actual prices in that period (both net of accrued interest).
- 2.11 In most cases the difference between our estimate of the Bonds' average price during our notional pricing period and the Bonds' actual average price in that period was less than 0.05 of a cent per Bond. Only very rarely did the observed variance approach 1.0 cent per Bond.
- 2.12 An alternative methodology we considered was using linear regression to derive a formula relating the yields on the Bonds and their relevant Reference Portfolios, and using that equation to estimate the Bonds' yields in the Pricing Period. However, our back-testing of this approach indicated that it was not as accurate as using the Reference Portfolio's yield plus the average spread over 30 days.

## 3. REDEMPTION PRICES

- 3.1 We used the methodology outlined above to estimate the yield of each Bond Series for each of the ten days in the Pricing Period.
- 3.2 We then used a standard bond pricing formula to calculate the Bonds' daily prices, being the sum of the remaining contractual cash flows of each Bond discounted to present value by the yield. This approach generates prices which include the value of accrued interest, and are before any withholding tax or other deductions. (Note that we tested our bond pricing formula to confirm that it produced results consistent with the bond prices and yields quoted by Bloomberg and NZX).
- 3.3 Deloitte then determined the accrued interest component included in each of these 10 estimated daily prices during the Pricing Period, and deducted that amount to derive the prices net of accrued interest for each of those days. We then averaged these 10 daily prices to derive the redemption price (excluding accrued interest, and before any withholding tax or other deductions) for each Series of Bonds.
- 3.4 We note that the redemption price referred to in paragraph 1.7(ii) above is a volume weighted average price. However the Bonds have not traded during the Pricing Period and Deloitte, as the Independent Advisor, is required to calculate the "average price of those bonds". If that average price was meant to be a volume weighted average price, it is not clear how trading volumes would be estimated. Accordingly, our calculation proceeds on a simple averaging basis that effectively assumes equal volumes are traded in each of the ten days in the Pricing Period.



- 3.5 Using our approach, Deloitte has determined the redemption price (excluding accrued interest, and before any withholding tax or other deductions) for each Series of Bonds to be as follows:

<b>Series</b>	<b>NZDX Code</b>	<b>Redemption Price (excl. interest)</b>
Series 1	TPW090	100.71 cents
Series 2	TPW100	103.91 cents
Series 3	TPW110	107.71 cents
Series 4	TPW120	107.64 cents

## 4. DISCLAIMERS

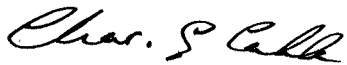
- 4.1 The above redemption prices are Deloitte's estimates of how the Bonds would have traded over the Pricing Period in the absence of the Demerger proposal and the associated trading halt (i.e. as if the only event occurring is a redemption of the Bonds). We cannot be certain how the Bonds would actually have traded in this scenario, but as discussed above we believe our redemption prices are reasonably accurate estimates.
- 4.2 TPW is offering holders of Series 2, 3 and 4 Bonds (Codes TPW100, TPW110 and TPW120) the choice of redeeming for cash, or exchanging their TPW bonds for new bonds to be issued by New Trustpower after the implementation of the Demerger. The New Trustpower bonds have equivalent coupons, ranking and maturity dates to the TPW bonds being exchanged. We note that our redemption prices are not estimates of the value of the New Trustpower bonds, or how those bonds might trade when listed. The trading prices of the New Trustpower bonds may differ from our redemption prices for the TPW Bonds due to factors including:
- (a) general interest rate movements between the Pricing Period and the listing of the new bonds;
  - (b) investors' views on the credit quality of New Trustpower relative to TPW; and
  - (c) the balance between supply and demand for the new bonds, particularly in the early days of trading.
- 4.3 Deloitte is not providing any recommendation on whether or not holders of Series 2, 3 or 4 Bonds should subscribe for the new bonds to be issued by New Trustpower.
- 4.4 In preparing this report we have relied upon and assumed, without independent verification, the accuracy and completeness of all information used from public sources or provided by TPW or its advisers, and all NZX bond trading data used. We assume no responsibility to any party arising in any way whatever for any errors or omissions in the report resulting from our reliance on information provided by others or assumptions disclosed in the report or reasonably taken as implicit.



- 4.5 Deloitte consents to the release of this report to TPW, its advisers, and to holders of the Bonds, however:
- (a) neither the whole nor any part of this report, nor any reference thereto, may be included in any other document without Deloitte's prior written consent as to the form and context in which it appears; and
  - (b) Trustees Executors Limited is our only client in relation to this report.

Yours sincerely

**DELOITTE**



**Chas Cable**

Partner