



Victoria Government Gazette

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National Electricity (Victoria) Act 2005

ORDER SETTING REQUIREMENTS FOR MODIFICATIONS AND VARIATIONS TO INSTRUMENTS

Order in Council

The Governor in Council, under section 16VE of the **National Electricity (Victoria) Act 2005** makes the following Order:

1. Purpose

The purposes of this Order are to give effect to Subdivision 3 of Division 6A of Part 3 of the Act and to –

- (a) specify particular modifications that must be made to the *2018 rate of return instrument* under section 16VJ of the Act;
- (b) set out the principles with which variations to an *applicable 2016–2020 distribution determination* under section 16VK of the Act, or an *applicable 2021–2026 distribution determination*, must conform;
- (c) set out objectives which must be met by variations to an *applicable 2016–2020 distribution determination* under section 16VK of the Act, or an *applicable 2021–2026 distribution determination*;
- (d) specify matters as matters to which an *applicable 2016–2020 distribution determination* or an *applicable 2021–2026 distribution determination*, must, or must not, apply.

2. Authorising provision

This Order is made under section 16VE of the **National Electricity (Victoria) Act 2005**.

3. Commencement

This Order takes effect on the day it is published in the Victoria Government Gazette.

4. Definitions

In this Order –

2018 rate of return instrument has the same meaning as it has in section 16VA of the Act;
accepted averaging period in relation to the *determination extension period*, means a risk-free rate averaging period or a return on debt averaging period that:

- (a) is nominated by a *distribution network service provider* and satisfies the relevant conditions specified in the *extension period rate of return instrument*; or
- (b) applies in accordance with the *extension period rate of return instrument* as a default period in the event that the *distribution network service provider* does not nominate a period or its nominated period does not satisfy the relevant conditions specified in the instrument;

AER means the Australian Energy Regulator;

annual revenue requirement has the same meaning as it has in the National Electricity Rules;
applicable 2016–2020 distribution determination has the same meaning as it has in section 16VA of the Act;

applicable 2021–2026 distribution determination has the same meaning as it has in section 16VA of the Act;

capital expenditure criteria has the same meaning as it has in the National Electricity Rules;

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determination extension period has the same meaning as it has in section 16VA of the Act;
distribution network service provider has the same meaning as it has in the National Electricity Rules;

extension period rate of return instrument means the **2018 rate of return instrument** as it applies to the making of an AER economic regulatory decision in relation to the **determination extension period** of an **applicable 2016–2020 distribution determination** under section 16VJ of the Act with any modifications made under that section;

framework and approach paper has the same meaning it has in the National Electricity Rules;

modified 2021–2026 rate of return instrument means the instrument set out in Attachment A to this Order;

Note: The **modified 2021–2026 rate of return instrument** is based on the **2018 rate of return instrument**, with modifications to the criteria for averaging periods and the formulae for calculating the return on debt to account for the **determination extension period**.

operating expenditure criteria has the same meaning as it has in the National Electricity Rules;

placeholder averaging period in relation to the **determination extension period**, means any risk-free rate averaging period or return on debt averaging period that is applied by the AER as an alternative averaging period in accordance with clause 5 of this Order;

post-tax revenue model has the same meaning it has in the National Electricity Rules;

regulatory control period has the meaning it has in the National Electricity Rules, as modified by section 16VB and section 16VC of the Act;

regulatory year has the meaning it has in the National Electricity Rules, as modified by section 16VB and section 16VC of the Act;

roll forward model has the same meaning it has in the National Electricity Rules;

Standard control services has the same meaning as it has in the National Electricity Rules;

the Act means the **National Electricity (Victoria) Act 2005**;

variation decision has the same meaning it has as in section 16VA of the Act;

Victorian DNSP has the same meaning it has as in section 16VA of the Act.

5. **Rate of return instrument for the determination extension period**

For a **variation decision**, despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules:

- (a) subject to paragraph (b), the rate of return on capital and the value of imputation credits for the **determination extension period** must be determined in accordance with the **extension period rate of return instrument**;
- (b) if the AER considers it necessary or expedient for making the variation decision, it may apply an alternative averaging period that it considers appropriate instead of an **accepted averaging period** in applying the **extension period rate of return instrument** for the purposes the **variation decision**.

Note: If the AER determines to use an alternative averaging period instead of an accepted averaging period in accordance with this clause 5, pursuant to clause 8 appropriate adjustments may be made in an **applicable 2021–2026 distribution determination**.

6. Rate of return instrument for an *applicable 2021–2026 distribution determination*

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for an *applicable 2021–2026 distribution determination*, for the purposes of the definition of ‘applicable rate of return instrument’ in the National Electricity Rules, the *modified 2021–2026 rate of return instrument* applies as the rate of return instrument that is in force when the *applicable 2021–2026 distribution determination* is made.

7. Variations to an *applicable 2016–2020 distribution determination*

Forecast Operating Expenditure

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for a *variation decision*, the forecast operating expenditure for standard control services for the *determination extension period* must be forecast operating expenditure that:

- (a) the AER is satisfied reasonably reflect the *operating expenditure criteria*, having regard to the factors referred to in subparagraphs 6.5.6(e)(4) to (11) of the National Electricity Rules; or
- (b) is forecast operating expenditure not exceeding half of the corresponding forecast operating expenditure as accepted or substituted by the AER for the *regulatory year* commencing on 1 January 2020, adjusted for inflation and any rate of change that the AER considers appropriate having regard to changes in output, prices, productivity and any other relevant factors that the AER may consider relevant.

Forecast Capital Expenditure

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for a *variation decision*, the forecast capital expenditure for *standard control services* for the *determination extension period* must be forecast capital expenditure that:

- (a) the AER is satisfied reasonably reflect the *capital expenditure criteria*, having regard to the factors referred to in subparagraphs 6.5.7(e)(4) to (11) of the National Electricity Rules; or
- (b) is forecast capital expenditure not exceeding half of the corresponding forecast capital expenditure as accepted or substituted by the AER for the *regulatory year* commencing on 1 January 2020 adjusted for inflation.

Post-Tax Revenue Model

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for a *variation decision*:

- (a) subject to paragraph (b), the version of the *post-tax revenue model* that applied when the *applicable 2016–2020 distribution determination* was initially made (initial model) applies to the *determination extension period*; and
- (b) the AER may make any modifications to the application of the initial model to the *determination extension period* that the AER considers necessary to be made as a consequence of the enactment of Subdivision 3 of Division 6A of Part 3 of the Act.

Depreciation

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for a *variation decision*, the AER may apply the depreciation schedules (including the economic life of the relevant assets and the depreciation methods and rates underpinning the calculation of depreciation) relating to standard control services included in the relevant *applicable 2016–2020 distribution determination* to the *determination extension period*, as may be modified by the AER to reflect the length of the *determination extension period*.

Revenue adjustment as a result of any incentive scheme

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for a **variation decision**:

- (a) revenue increments or decrements in respect of one or more of the schemes and mechanism referred to in sub-paragraphs 6.4.3(a)(5) and (b)(5) of the National Electricity Rules may be excluded by the AER from the **annual revenue requirement** for the **determination extension period**;
- (b) where the AER decides that revenue increments or decrements in respect of a scheme or mechanism referred to in sub-paragraphs 6.4.3(a)(5) and (b)(5) of the National Electricity Rules are to be included in the **annual revenue requirement** for the **determination extension period**:
 - (i) the AER may determine that either the latest version of the scheme or mechanism or the version of the scheme or mechanism that applied when the **applicable 2016–2020 distribution determination** was initially made applies; and
 - (ii) the AER may make any modifications to the application of the scheme or mechanism to the **determination extension period** that it considers necessary to be made as a consequence of the enactment of Subdivision 3 of Division 6A of Part 3 of the Act.

Submission of pricing proposals

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, the AER may specify in a **variation decision** the manner and form in which the **distribution network service provider** must submit its pricing proposal for the **determination extension period**.

8. **Applicable 2021–2026 distribution determination**Incentive schemes

Despite anything to the contrary in the National Electricity (Victoria) Law, the National Electricity Rules or an **applicable 2016–2020 distribution determination**, for an **applicable 2021–2026 distribution determination**, for the purposes of determining the amounts of revenue increments or decrements to be included in the **annual revenue requirement** for a **regulatory year** under sub-paragraphs 6.4.3(a)(5) and (b)(5) of the National Electricity Rules, the AER may make any modifications to the application of a scheme or mechanism referred to those sub-paragraphs that it considers necessary to be made as a consequence of the enactment of Subdivision 3 of Division 6A of Part 3 of the Act.

Roll Forward Model

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, in making an **applicable 2021–2026 distribution determination**, the AER may make any modifications to the application of the **roll forward model** that it considers necessary to be made as a consequence of the enactment of Subdivision 3 of Division 6A of Part 3 of the Act.

True up for WACC/Adjustments to the weighted average cost of capital for an applicable 2021–2026 distribution determination

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, if, in applying the **extension period rate of return instrument** for the purposes of a **variation decision**, the AER applies a **placeholder averaging period** instead of an **accepted averaging period** in accordance with clause 5, the relevant **applicable 2021–2026 distribution determination** may make provision for appropriate adjustments for the difference between applying the **accepted averaging period** and applying the **placeholder averaging period**.

Framework and Approach

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, for an *applicable 2021–2026 distribution determination*, each of the *framework and approach papers* published by the AER on 31 January 2019 in relation to the *Victorian DNSPs* is taken to be relating to the *regulatory control period* commencing on 1 July 2021.

Draft distribution determinations

Despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, the documents described as ‘draft distribution determinations’ published by the AER on 30 September 2020 in respect of the *Victorian DNSPs* are taken to be draft distribution determinations for the *regulatory control period* commencing on 1 July 2021.

Dated 27 October 2020

Responsible Minister:

THE HON LILY D’AMBROSIO MP

Minister for Energy, Environment and Climate Change

CLAIRE CHISHOLM
Clerk of the Executive Council

National Electricity (Victoria) Act 2005

SCHEDULE TO ORDER IN COUNCIL

Attachment A - Modified rate of return Instrument for the regulatory control period commencing on 1 July 2021 for the Victorian DNSPs

1. This instrument sets out the way to calculate the rate of return on capital and sets out the value of imputation credits for all **Victorian DNSPs** in relation to the **2021-2026 regulatory control period**.
2. Bold italicised expressions in this instrument are defined in the glossary in clause 36.

Allowed rate of return

3. The way to calculate the rate of return for each **regulatory year** t in the **2021-2026 regulatory control period** is as follows:

$$k_t = k^e(1 - G) + k_t^d \cdot G$$

Where:

- a. k_t is the rate of return in **regulatory year** t (the allowed rate of return)
- b. k^e is the allowed return on equity for the **2021-2026 regulatory control period** and is calculated in accordance with clause 4
- c. k_t^d is the allowed return on debt for the **regulatory year** t , and is calculated in accordance with clause 9
- d. G is the gearing ratio, and is set at a value of 0.6.

Return on equity

4. The allowed return on equity for the **2021-2026 regulatory control period** is calculated as follows:

$$k^e = k^f + \beta \cdot MRP$$

Where:

- a. k^f is the allowed risk free rate of return expressed as an effective annual percentage per annum and is calculated in accordance with clause 5.

Note 1: k^f and k^e are set for the **2021-2026 regulatory control period** for which the determination is made.

- b. β is the allowed equity beta, and is set to a value of 0.6
- c. MRP is the allowed market risk premium, and is set to an effective annual value of 6.1 per cent per annum.

Risk free rate of return

5. The allowed risk free rate of return is the simple average of the daily 10-year **YTM**s for a **CGS**, converted into an effective annual rate, for each specific **business day** i over the **risk free rate averaging period** specified in accordance with clause 7 and clause 8, and is calculated as follows:

$$k^f = \frac{1}{|L|} \sum_{i \in L} y_i^f$$

Where

- k^f refers to the allowed risk free rate of return expressed as an effective annual rate percentage.
 - i refers to a specific **business day** i .
 - y_i^f refers to the daily 10-year **YTM** for a **CGS** on **business day** i , converted into an effective annual rate in accordance with clause 6 for each specific **business day** i within the **risk free rate averaging period**, specified in accordance with clause 7 and clause 8.
 - L refers to the set of all **business days** within the **risk free rate averaging period** nominated in accordance with clause 7 and clause 8.
 - $|L|$ refers to the number of **business days** within L .
6. The allowed risk free rate of return requires that daily 10-year **YTM** for a **CGS** be converted into an effective annual rate for each specific **business day** i within the **risk free rate averaging period**, if the daily 10-year **YTM** for a **CGS** is published as a decimal (eg, 5 per cent is expressed as 0.05), it must be converted into an effective annual rate as follows:

$$y_i^f = \left(\left(1 + \frac{y_i^{CGS}}{x^{CGS}} \right)^{x^{CGS}} - 1 \right) * 100$$

Where:

- y_i^f refers to the daily 10-year **YTM** for a **CGS** on **business day** i , converted into an effective annual rate in accordance with this clause.
- y_i^{CGS} refers to the daily 10-year **YTM** for a **CGS** on **business day** i , calculated in accordance with clause 29.
- x^{CGS} refers to the frequency of the compounding interest over the course of a year on the y_i^{CGS} in clause 6 (b) above (determined on the basis that unless specified otherwise, the frequency of the compounding interest over the course of a year is quoted in accordance with the Australian Financial Markets Authority conventions laid out in their Long Term Government Debt Securities Conventions, available at <https://afma.com.au/standards/market->

[conventions/Long%20Term%20Government%20Debt%20Securities%20Conventions.pdf](#)).

Note 2: For the avoidance of doubt, if the frequency of the compounding interest on the **CGS** yield is semi-annual, then x^{CGS} will be 2. If the frequency of the compounding interest on the **CGS** yield is monthly then x^{CGS} will be 12.

- d. If y_i^{CGS} is expressed as a percentage (eg 5 per cent expressed as 5), then the daily 10-year **YTM** for a **CGS** must be converted into effective annual rates as follows:

$$y_i^f = \left(\left(1 + \frac{y_i^{CGS}}{x^{CGS} * 100} \right)^{x^{CGS}} - 1 \right) * 100$$

Risk free rate averaging period

7. The **risk free rate averaging period** is:

- a. the period that was nominated by a **service provider** no later than March 2020 for the **2021-2026 regulatory control period** and that satisfies the conditions set out in clause 8, or
- b. if no period is nominated in accordance with clause 7(a), or a period is nominated that does not meet the conditions set out in clause 8 for the **2021-2026 regulatory control period**, a period of 20 consecutive **business days** in length that finishes 3 **months** before the start of the **2021-2026 regulatory control period**.

8. A **risk free rate averaging period** nominated in accordance with clause 7(a) must:

- a. be over a period of 20 or more **business days** up to a maximum of 60 **business days**.
- b. start no earlier than 7 **months** prior to the commencement of the **2021-2026 regulatory control period**
- c. finish no later than 3 **months** prior to the commencement of the **2021-2026 regulatory control period**, and
- d. be nominated prior to the start of the **risk free rate averaging period**.

Return on debt trailing average portfolio calculation

9. For the **Victorian DNSPs**, the allowed return on debt for each **regulatory year** of the **2021-2026 regulatory control period** is calculated using the following formulas, with $t = 1$ representing the first **regulatory year** of the **transition period** (calendar year 2016) and $t = 7$ representing the first **regulatory year** of the **2021-2026 regulatory control period**:

$$\text{If } 10 \geq t \geq 7;$$

$$k_t^d = \frac{11.5 - t}{10} R_{t_s} + \frac{1}{10} \left(\sum_{j=t_s+1}^5 R_j + \frac{1}{2} R_6 + \sum_{j=7}^t R_j \right) \text{ (regulatory years 7 to 10)}$$

If $14 \geq t \geq 11$;

$$k_t^d = \frac{1}{20} R_{t-10} + \frac{1}{10} \left(\sum_{j=t-9}^5 R_j + \frac{1}{2} R_6 + \sum_{j=7}^t R_j \right) \text{ (regulatory years 11 to 14)}$$

$$\text{If } t = 15; k_t^d = \frac{1}{20} R_5 + \frac{1}{20} R_6 + \frac{1}{10} \left(\sum_{j=7}^t R_j \right) \text{ (regulatory year 15)}$$

$$\text{If } t > 15; k_t^d = \frac{1}{10} \sum_{j=t-9}^t R_j \quad \text{(trailing average)}$$

Where:

- a. k_t^d refers to the allowed return on debt for **regulatory year** t expressed as a percentage, and once finalised, is not updated. k_t^d is deemed to have been finalised on the earlier of:
 - (i) when the AER notifies the **service provider** of the annual estimate, or
 - (ii) eight weeks after the end of the (usually annual) **return on debt averaging period**, calculated in accordance with clause 23 and clause 24
- b. t refers to the **regulatory year** for which the allowed return on debt is being calculated, indexed so that first regulatory year of the **transition period** is $t = 1$, such that:
 - $t = 1$ = calendar year 2016
 - $t = 2$ = calendar year 2017
 - ...
 - $t = 5$ = calendar year 2020
 - $t = 6$ = 1 January 2021 to 30 June 2021 (**determination extension period**)
 - $t = 7$ = financial year 2021-22 (the first **regulatory year** of the **2021-2026 regulatory control period**)
 - $t = 8$ = financial year 2022-23 (the second **regulatory year** of the **2021-2026 regulatory control period**)
 - ... and so on
- c. t_s refers to the first **regulatory year** of the **transition period**; we set $t_s = 1$ so $t_s = t = 1$ = calendar year 2016
- d. R_{t_s} refers to the on-the-day rate of return on debt in **regulatory year** t_s , and is calculated in accordance with clause 10
- e. j indexes a series of **regulatory years** for summation

- f. R_j refers to the on-the-day rate of return on debt in any **regulatory year** in the series j , and is calculated in accordance with clause 10
- g. $k_t^d = \frac{11.5-t}{10} R_{t_s} + \frac{1}{10} \left(\sum_{j=t_s+1}^5 R_j + \frac{1}{2} R_6 + \sum_{j=7}^t R_j \right)$ refers to the calculation of the allowed return on debt in **regulatory year** t during the **regulatory years** seven to ten of the **transition period**.

Note 3: For example, if for a particular service, t_s is 1 (ie, the first **regulatory year** of the **transition period** for that service):

- and if t is 8, then

$$k_8^d = \frac{11.5-8}{10} R_{t_s} + \frac{1}{10} \left(\sum_{j=t_s+1}^5 R_j + \frac{1}{2} R_6 + \sum_{j=7}^8 R_j \right) \text{ as } 10 \geq t \geq 7 \text{ ie, } 10 \geq 8 \geq 7, \text{ thus}$$

$$k_8^d = 0.35 R_1 + 0.1 R_2 + 0.1 R_3 + 0.1 R_4 + 0.1 R_5 + 0.05 R_6 + 0.1 R_7 + 0.1 R_8$$

- h. $k_t^d = \frac{1}{20} R_{t-10} + \frac{1}{10} \left(\sum_{j=t-9}^5 R_j + \frac{1}{2} R_6 + \sum_{j=7}^t R_j \right)$ refers to the calculation of the allowed return on debt in **regulatory year** t during the **regulatory years** eleven to fourteen of the **transition period**.

Note 3A: For example, if for a particular service, t_s is 1 (ie, the first **regulatory year** of the **transition period** for that service):

- and if t is 12, then

$$k_{12}^d = \frac{1}{20} R_2 + \frac{1}{10} \left(\sum_{j=3}^5 R_j + \frac{1}{2} R_6 + \sum_{j=7}^{12} R_j \right) \text{ as } 15 \geq t \geq 11 \text{ ie, } 15 \geq 12 \geq 11, \text{ thus}$$

$$k_{12}^d = 0.05 R_2 + 0.1 R_3 + 0.1 R_4 + 0.1 R_5 + 0.05 R_6 + 0.1 R_7 + 0.1 R_8 + 0.1 R_9 + 0.1 R_{10} + 0.1 R_{11} + 0.1 R_{12}$$

- i. $k_t^d = \frac{1}{20} R_5 + \frac{1}{20} R_6 + \frac{1}{10} \left(\sum_{j=7}^t R_j \right)$ refers to the calculation of the allowed return on debt in **regulatory year** t for the **regulatory year** 15.

Note 3B: For example, if for a particular service, t_s is 1 (ie, the first **regulatory year** of the **transition period** for that service):

- and if t is 15, then

$$k_{15}^d = \frac{1}{20} R_5 + \frac{1}{20} R_6 + \frac{1}{10} \left(\sum_{j=7}^{15} R_j \right) \text{ as } t = 15, \text{ thus}$$

$$k_{15}^d = 0.05 R_5 + 0.05 R_6 + 0.1 R_7 + 0.1 R_8 + 0.1 R_9 + 0.1 R_{10} + 0.1 R_{11} + 0.1 R_{12} + 0.1 R_{13} + 0.1 R_{14} + 0.1 R_{15}$$

- j. $k_t^d = \frac{1}{10} \sum_{j=t-9}^t R_j$ refers to the calculation of the allowed return on debt in **regulatory year** t using a **trailing average portfolio approach**, upon the completion of the move to financial years (ie when $t > 15$).

Note 3C: For example, if for a particular service, t_s is 1 (ie, the first **regulatory year** of the **transition period**):

And if t is 17 (ie, the 17th regulatory year), then

$$k_{17}^d = \frac{1}{10} \sum_{j=8}^{17} R_j \text{ as } t > 15 \text{ ie, } 17 > 15, \text{ thus}$$

$$k_{17}^d = 0.1 R_8 + 0.1 R_9 + 0.1 R_{10} + 0.1 R_{11} + 0.1 R_{12} + 0.1 R_{13} + 0.1 R_{14} + 0.1 R_{15} + 0.1 R_{16} + 0.1 R_{17}$$

On-the-day return on debt calculation

10. The on-the-day rate of return on debt for **regulatory year** j is calculated as follows:

$$\begin{aligned} \text{If } D \geq 17/12/18; R_j &= \frac{1}{|L_j|} \sum_{i \in L_j} y_{i,j}^d \\ \text{If } D < 17/12/18; R_j &= k_j^d \end{aligned}$$

Where

- D refers to the date of the commencement of the **regulatory control period** within which **regulatory year** j commences.
- R_j refers to the on-the-day rate of return on debt for **regulatory year** j expressed as a percentage effective annual rate.

Note 4: Clause 10 also applies to the calculation of R_{t_s} (ie, replace ' j ' with ' t_s ').

- $y_{i,j}^d$ refers to the daily 10-year **YTM** effective annual rate estimate for **business day** i within the **return on debt averaging period** for **regulatory year** j and is calculated in accordance with clause 11.
- L_j refers to the set of all **business days** within the **return on debt averaging period** for **regulatory year** j , nominated in accordance with clause 23 and clause 24.
- $|L_j|$ refers to the number of **business days** within L_j .
- k_j^d refers to the on-the-day rate of return on debt for **regulatory year** j previously determined by the AER and deemed finalised in accordance with the methodology set out in its relevant determination.
- $\sum_{i \in L_j} y_i^d$ refers to the sum of $y_{i,j}^d$ for each business day i over the **return on debt averaging period** for **regulatory year** j , where the **return on debt averaging period** is determined in accordance with clause 23 and clause 24.

Note 5: For the avoidance of doubt, for the calculation of R_j , where the on-the-day rate of return on debt for **regulatory year** j is to be calculated on or after 17/12/2018, each **business day** i within the L_j may be on or before 17/12/2018 as long as it complies with clause 23 and clause 24.

11. Subject to the contingencies in clause 26, the daily yield estimates over the **return on debt averaging period** for **regulatory year** j , used in clause 10(c) above, must be calculated as an average of each **curve provider's** daily yield estimates as follows:

$$y_{i,j}^d = \frac{1}{3} \cdot \frac{1}{|A|_i} \cdot \sum_c y_{i,j}^{cA,EAR} + \frac{2}{3} \cdot \frac{1}{|B|_i} \cdot \sum_c y_{i,j}^{cB,EAR}, c \in \{BVA, RBA, TR\}$$

Where:

- a. $y_{i,j}^d$ refers to the daily 10-year **YTM** effective annual rate estimate for **business day** i within the **return on debt averaging period** for **regulatory year** j
- b. $y_{i,j}^{cA,EAR}$ refers to the $y_{i,j}^{cY,EAR}$ for **curve provider** c 's broad A-rated curve on **business day** i within the **return on debt averaging period** for **regulatory year** j .
- c. $y_{i,j}^{cB,EAR}$ refers to the $y_{i,j}^{cY,EAR}$ for **curve provider** c 's broad BBB-rated curve on **business day** i within the **return on debt averaging period** for **regulatory year** j
- d. $y_{i,j}^{cY,EAR}$ refers to the daily broad credit rating band (band Y) 10-year **YTM** converted into an effective annual rate on **business day** i within the **return on debt averaging period** for **regulatory year** j , for **curve provider** $c \in \{BVA, RBA, TR\}$ calculated in accordance with clause 12.
- e. $|A|_i$ refers to the number of **curve providers** for which a daily credit band A 10-year **YTM** estimate is calculated in accordance with clause 31 and converted into an effective annual rate in accordance with clause 12 on **business day** i
- f. $|B|_i$ refers to the number of **curve providers** for which a daily credit band BBB 10-year **YTM** estimate is calculated in accordance with clause 31 and converted into an effective annual rate in accordance with clause 12 on **business day** i
- g. BVA refers to the **curve provider** Bloomberg
- h. RBA refers to the **curve provider** Reserve Bank of Australia
- i. TR refers to the **curve provider** Thomson Reuters

Note 6: for the avoidance of doubt, the following example clarifies how this clause 11 will apply if clause 26 (a) applies. If on a specific **business day** i , Bloomberg does not publish a broad BBB-rated credit band but does publish a broad A-rated credit band and all other curve providers publish both curves, then $|B|_i$ will be 2 and the $|A|_i$ will be 3. Then, $\sum_c y_{i,j}^{cB,EAR}$ will be the sum of the RBA and TR daily BBB-rated 10-year **YTM**s, converted into an effective annual rate, while the $\sum_c y_{i,j}^{cA,EAR}$ will be the sum of the RBA, BVA, and TR daily A-rated 10-year **YTM**s, converted into an effective annual rate.

Conversion to effective annual rates

12. Subject to the contingencies in clause 26, all daily Bloomberg, RBA and Thomson Reuters band Y 10-year **YTM** estimates, if expressed as a decimal (eg, 5 per cent is expressed as 0.05), must be converted into effective annual rates as follows:

$$y_{i,j}^{cY,EAR} = \left(\left(1 + \frac{y_i^{cY}}{x^{cY}} \right)^{x^{cY}} - 1 \right) \cdot 100$$

Where:

- a. $y_{i,j}^{cY,EAR}$ refers to the daily band Y 10-year **YTM** estimate on **business day** i within the **return on debt averaging period** for **regulatory year** j , for **curve provider** $c \in \{BVA, RBA, TR\}$ converted into an effective annual rate.
- b. y_i^{cY} refers to the daily band Y 10-year **YTM**s for **curve provider** c on **business day** i calculated in accordance with clause 31.

Note 7: for the avoidance of doubt, Bloomberg and Thomson Reuters currently publishes daily semi-annually compounded 10-year **YTM** estimates, and so extrapolation and interpolation is not required. However, extrapolation may be required for these estimates, in the event that the term to maturity of their **YTM** estimates is not exactly 10 years. The RBA currently publishes 10-year broad A-rated and broad BBB-rated **YTM** estimates to be assumed to be semi-annually compounded for conversion to effective annual rates that have **Effective tenors** of less than 10 years and so extrapolation is currently required to extend their term to maturity to exactly 10 years in accordance with clause 14. The RBA also publishes its 10-year **Target Tenor** yield to maturity estimates for one day at the end of each month (a publication frequency of monthly), and so interpolation is required to obtain daily estimates in accordance with clause 16, clause 17, clause 18 and clause 19.

- c. x^{cY} refers to the frequency of the compounding interest over the course of a year on the y_i^{cY} calculated in accordance with clause 12(b) above.

Note 8: For the avoidance of doubt, if the frequency of the compounding interest on the y_i^{cY} is semi-annual, then x^{cY} will be 2. If the frequency of the compounding interest on the y_i^{cY} is monthly then x^{cY} will be 12.

- d. If a daily band Y 10-year **YTM** for **curve provider** c on **business day** i is expressed as a percentage (eg 5 per cent is expressed as 5), it must be converted into effective annual rates as follows:

$$y_{i,j}^{cY,EAR} = \left(\left(1 + \frac{y_i^{cY}}{x^{cY} \cdot 100} \right)^{x^{cY}} - 1 \right) \cdot 100$$

Linear extrapolation

Calculation of daily CGS and ADSWAP yields using linear extrapolation

13. Where linear extrapolation is necessary to calculate a daily **CGS** or **ADSWAP YTM** estimate for a target term to maturity on **business day** i , under the conditions specified in clause 29 for **CGS** calculations and clause 30 for **ADSWAP** calculations. The linearly extrapolated **CGS** or **ADSWAP YTM** must be calculated as follows:

$$y_i^{\emptyset} = y_b^{\emptyset} + (m_i^{\emptyset} - m_b^{\emptyset}) \frac{(y_b^{\emptyset} - y_a^{\emptyset})}{(m_b^{\emptyset} - m_a^{\emptyset})}, \text{ for } m_a^{\emptyset} < m_b^{\emptyset} < m_i^{\emptyset}$$

Where:

- a. y_i^\emptyset refers to the daily **CGS** or **ADSWAP YTM** estimates for a target term to maturity on **business day i**, which is calculated using linear extrapolation when applying the formula in this clause 13.
- b. \emptyset refers to either the **CGS** or **ADSWAP**, depending on which is being calculated in clause 13 a) above.
- c. m_i^\emptyset refers to the target term to maturity of \emptyset for a specific **business day i**

Note 9: If extrapolation is required to calculate a 10-year **YTM** for a **CGS** on **business day i**, m_i^\emptyset will be 10 years.

- d. y_b^\emptyset refers to the un-extrapolated **CGS** or **ADSWAP YTM** for the longest published term to maturity, greater than or equal to $|m_i^\emptyset - 3|$ but less than m_i^\emptyset on **business day i**, sourced in accordance with clause 32 for **CGS** calculations and sourced in accordance with clause 35 for **ADSWAP** calculations.
- e. y_a^\emptyset refers to the un-extrapolated **CGS** or **ADSWAP YTM** for the second longest published term to maturity, greater than or equal to $|m_i^\emptyset - 3|$ but less than m_i^\emptyset on **business day i**, sourced in accordance with clause 32 for **CGS** calculations and sourced in accordance with clause 35 for **ADSWAP** calculations.
- f. $|m_i^\emptyset - 3|$ refers to the term to maturity that is 3 years earlier than the target term to maturity.

Note 10: for the avoidance of doubt, if m_i^\emptyset is 10 years, then $|m_i^\emptyset - 3|$ will be equal to 7 years.

- g. m_b^\emptyset is the term to maturity for y_b^\emptyset
- h. m_a^\emptyset is the term to maturity for y_a^\emptyset

Note 11: m_a^\emptyset and m_b^\emptyset are specific for each **business day i**

Linear extrapolation of curve provider yields

14. If linear extrapolation is necessary to calculate a band Y exact 10-year term to maturity **YTM** estimate for the RBA on a specific **business day i**, it must be calculated as follows:

$$y_i^{cY} = y_b^{cY} + (10 - m_b^{cY}) \left(\frac{sts_b^{cY} - sts_a^{cY}}{m_{sts_b}^{cY} - m_{sts_a}^{cY}} \right), \text{ for } c = RBA$$

Where the **curve provider** is the RBA:

- a. y_i^{cY} refers to the band Y 10-year **YTM** for the RBA on **business day i**, which is derived via extrapolation when applying the formula in this clause 14.
- b. y_b^{cY} refers to the un-extrapolated band Y **YTM** for the longest published **target tenor**, greater than or equal to 7 years but less than or equal to 10 years on **business day i**, sourced in accordance with clause 33

- c. sts_b^{cY} refers to the spread to swap rate for the longest published **target tenor**, greater than or equal to 7 years but less than or equal to 10 years for credit rating band Y on **business day** i , sourced in accordance with clause 34
- d. sts_a^{cY} refers to the spread to swap rate for the second longest published **target tenor**, greater than or equal to 7 years but less than or equal to 10 years for credit rating band Y on **business day** i , sourced in accordance with clause 34
- e. m_b^{cY} refers to the **effective tenor** for y_b^{cY}
- f. $m_{sts_b}^{cY}$ refers to the **effective tenor** sts_b^{cY}
- g. $m_{sts_a}^{cY}$ refers to the **effective tenor** sts_a^{cY}

Note 12: Clause 14 only applies to **business days** for which the **curve provider** c has published **YTM** estimates. In the case of the RBA, they only publish these monthly, so Clause 14 will only apply to the month-end publication **business day**. These month-end 10 year extrapolated RBA yields will then be used in Clause 17.

15. If linear extrapolation is necessary to calculate a band Y exact 10-year term to maturity **YTM** estimate for TR or BVA, the extrapolated **YTM** on a specific **business day** i must be calculated as follows:

$$y_i^{cY} = y_b^{cY} + (10 - m_b^{cY}) \frac{(y_b^{cY} - y_b^{ADS}) - (y_a^{cY} - y_a^{ADS})}{(m_b^{cY} - m_a^{cY})} + (y_{10}^{ADS} - y_b^{ADS}),$$

for $c = TR$ or BVA

Where the **curve provider** is TR or BVA:

- a. y_i^{cY} refers to the band Y 10-year **YTM** for **curve provider** c on **business day** i , which is derived via extrapolation when applying the formula in this clause 15.
- b. y_b^{cY} refers to the un-extrapolated band Y **YTM** for **curve provider** c for the longest published term to maturity, greater than or equal to 7 years but less than 10 years, on **business day** i , sourced in accordance with clause 33
- c. y_a^{cY} refers to the un-extrapolated band Y **YTM** for **curve provider** c for the second longest published term to maturity, greater than or equal to 7 years but less than 10 years, on **business day** i , sourced in accordance with clause 33
- d. m_b^{cY} refers to the term to maturity for y_b^{cY}
- e. m_a^{cY} refers to the term to maturity for y_a^{cY}
- f. y_b^{ADS} refers to the **ADSWAP YTM** with a term to maturity, with the same maturity of m_b^{cY} , calculated in accordance with clause 30.
- g. y_a^{ADS} refers to the **ADSWAP YTM** with a term to maturity, with the same maturity of m_a^{cY} , calculated in accordance with clause 30.
- h. y_{10}^{ADS} refers to the **ADSWAP YTM** with a term to maturity of 10 years, calculated in accordance with clause 30.

Linear interpolation*Calculation of daily CGS or ADSWAP yields using linear interpolation*

16. Where linear interpolation is necessary to calculate a daily **CGS** or **ADSWAP YTM** estimate for a target term to maturity on **business day** i , under the conditions specified in clause 29 for **CGS** calculations and clause 30 for **ADSWAP** calculations. The linearly extrapolated **CGS** or **ADSWAP YTM** must be calculated as follows:

$$y_i^\emptyset = y_a^\emptyset + (m_i^\emptyset - m_a^\emptyset) \frac{(y_b^\emptyset - y_a^\emptyset)}{(m_b^\emptyset - m_a^\emptyset)}, \text{ for } m_a^\emptyset < m_i^\emptyset < m_b^\emptyset$$

Where:

- a. y_i^\emptyset refers to the daily **CGS** or **ADSWAP YTM** estimates for a target term to maturity on **business day** i , which is derived via interpolation using this clause 16.
- b. \emptyset refers to either **CGS** or **ADSWAP**, depending on which is being calculated in clause 16(a) above.
- c. m_i^\emptyset refers to the target term to maturity of \emptyset for a specific **business day** i

Note 13: For the avoidance of doubt, If extrapolation is required to calculate a 7-year **ADSWAP YTM** estimate for **business day** i , m_i^\emptyset will be 7 years.

- d. y_a^\emptyset refers to the un-extrapolated **CGS** or **ADSWAP YTM** for the longest published term to maturity, greater than or equal to $|m_i^\emptyset - 3|$ but less than m_i^\emptyset on **business day** i , sourced in accordance with clause 32 for **CGS** calculations and sourced in accordance with clause 35 for **ADSWAP** calculations.
- e. y_b^\emptyset refers to the un-extrapolated **CGS** or **ADSWAP YTM** for the shortest published term to maturity, greater than m_i^\emptyset on **business day** i , sourced in accordance with clause 32 for **CGS** calculations and sourced in accordance with clause 35 for **ADSWAP** calculations.
- f. $|m_i^\emptyset - 3|$ refers to the term to maturity that is 3 years earlier than the target term to maturity.

Note 14: for the avoidance of doubt, if m_i^\emptyset is 7 years, then $|m_i^\emptyset - 3|$ will be equal to 4 years.

- g. m_b^\emptyset is the term to maturity for y_b^\emptyset
- h. m_a^\emptyset is the term to maturity for y_a^\emptyset

Note 15: m_a^\emptyset and m_b^\emptyset are specific for each **business day** i

Calculation of non-daily curve provider spreads

17. Where interpolation is necessary to determine a daily band Y 10-year spread to CGS for **curve provider c**, the non-daily band Y 10-year spread to **CGS** for **curve provider c** on the publication frequency-end dates under the conditions specified in clause 31 (extrapolated to an exact term to maturity of 10 years in accordance with clause 14 or clause 15, whichever applies, if linear extrapolation is required) must first be converted into a spread to **CGS** as follows:

$$stc_F^{cY} = y_F^{cY} - y_F^{CGS}$$

Where:

- stc_F^{cY} refers to the non-daily band Y 10-year spread to **CGS** for **curve provider c** at a particular publication frequency-end date F .
- y_F^{cY} refers to the non-daily band Y 10-year **YTM** for **curve provider c** on the same **business day** as the frequency-end publication date in clause 17(a) above. It is sourced in accordance with clause 33 if non-daily band Y 10-year **YTM**s are observable in the nominated data source, or is calculated in accordance with clause 14 or clause 15, whichever is applicable, if linear extrapolation is required to calculate a non-daily band Y exact 10-year **YTM**.
- y_F^{CGS} refers to y_t^{CGS} estimate for a 10-year target term to maturity on the same **business day** as the frequency-end publication date in clause 17(a) above and is calculated in accordance with clause 29.

Note 16: the RBA is currently the only curve provider that does not publish daily **YTM** estimates of its curves. When applying this clause 17 to the RBA, the publication frequency-end date is the last **business day** on the month-end publication date. If the RBA were to publish its curves at a weekly frequency, The AER would use the last **business day** on the week-end publication date.

Note 17: in accordance with the contingency in clause 26 (f), if Thomson Reuters or Bloomberg commences publishing **YTM** estimates of a different frequency (eg. monthly or weekly) then interpolation is necessary to obtain daily yield estimates. For this clause 17, (c) would be TR or BVA, and the publication frequency-end date would become week-end or month-end, depending on the frequency of publication.

Note 18: this clause does not apply in the situation where a **curve provider c** publishes daily estimates but there are missing observations as a result of the **curve provider c** failing to publish on a single or multiple **business days**. The contingency Clauses 26(a)-(b) will apply in this situation.

Calculation of daily curve provider spreads

18. Where interpolation is necessary to calculate a daily band Y 10-year spread to **CGS** for **curve provider c** on **business day i**, the interpolated rate must be calculated as follows:

$$stc_i^{cY} = stc_{Fa}^{cY} + (D_i^{cY} - D_{Fa}^{cY}) \frac{(stc_{Fb}^{cY} - stc_{Fa}^{cY})}{(D_{Fb}^{cY} - D_{Fa}^{cY})}$$

Where:

- a. D_t^{cY} refers to the date for which an estimate is being interpolated
- b. D_{Fa}^{cY} refers to the date of the **curve provider** c publication frequency-end estimate immediately preceding the interpolation date.
- c. D_{Fb}^{cY} refers to the date of the **curve provider** c publication frequency-end estimate immediately following the interpolation date.
- d. stc_t^{cY} refers to the daily band Y 10-year spread to **CGS** for **curve provider** c , on the same **business day** as D_t^{cY} in clause 18(a) above
- e. stc_{Fa}^{cY} refers to the non-daily band Y 10-year spread to **CGS** for **curve provider** c , on the same **business day** as D_{Fa}^{cY} in clause 18(b) above, it is calculated in accordance with clause 17.
- f. stc_{Fb}^{cY} refers to the non-daily band Y 10-year spread to **CGS** for **curve provider** c , on the same **business day** as D_{Fb}^{cY} in clause 18(c) above, it is calculated in accordance with clause 17.
- g. $(D_t^{cY} - D_{Fa}^{cY})$ is the number of **business days** between D_t^{cY} and D_{Fa}^{cY}
- h. $(D_{Fb}^{cY} - D_{Fa}^{cY})$ is the number of **business days** between D_{Fb}^{cY} and D_{Fa}^{cY}

Note 19: The publication frequency-end estimates must be assigned to the last **business day** of each relevant publication interval.

Note 20: If the annual rate of return on debt estimate must be finalised before a final publication frequency-end estimate is available, the last observed RBA spread to **CGS** must be held constant to the end of the **return on debt averaging period** which has been determined in accordance with clause 23 and clause 24.

Note 21: In accordance with the contingency in clause 26 (f), if Thomson Reuters or Bloomberg commences publishing yield estimates of a different frequency (eg, monthly or weekly), then interpolation is necessary to obtain daily band Y 10-year **YTM** estimates. For this clause 18, c would be TR or BVA, and the publication frequency-end date would become week-end or month-end, depending on the frequency of publication.

Calculation of the daily 10-year curve provider yields

19. Where interpolation is necessary to calculate a daily band Y 10-year **YTM** for **curve provider** c on **business day** i ; the daily 10-year **CGS YTM**, and daily band Y 10-year spread to **CGS** for **curve provider** c must be combined as follows:

$$y_i^{cY} = stc_i^{cY} + y_i^{CGS}$$

Where:

- a. y_i^{cY} refers to the daily band Y 10-year **YTM** for **curve provider** c on **business day** i , which is calculated via linear interpolation when applying the formula in this clause 19.

- b. stc_i^{cY} refers to the daily band Y 10-year spread to **CGS** for **curve provider** c on the same **business day** i as the **business day** date in 19(a), it is calculated in accordance with clause 18.
- c. y_i^{cGS} refers to the daily 10-year **CGS YTM** on the same **business day** i as the **business day** date in 19(a), it is calculated in accordance with clause 29.

Historical average yields

Calculation of the CGS or ADSWAP YTM using a historical average

20. If a historical average is necessary to calculate the daily **CGS** or **ADSWAP YTM**s with a target term to maturity on **business day** i , the following formula applies:

$$y_i^{\emptyset} = \frac{1}{100} \sum_{n(i) \in N(i)^{\emptyset}} y_{n(i)}^{\emptyset}$$

Where:

- a. y_i^{\emptyset} refers to the daily **CGS** or **ADSWAP YTM** estimates for a target term to maturity on **business day** i , calculated using historic **CGS** or **ADSWAP YTM**s averaged over $N(i)^{\emptyset}$
- b. \emptyset refers to either **CGS** or **ADSWAP**, depending on which is being calculated in clause 20 (a) above.
- c. $n(i)$ refers to a specific historical **business day** i
- d. $N(i)^{\emptyset}$ refers to the period of 100 historical **business days** for which a daily **CGS** or **ADSWAP YTM** can be calculated in accordance with clause 29 (a)-(c) for **CGS YTM**s or clause 30(a)-(c) for **ADSWAP YTM**s, prior to the **business day** i for which y_i^{\emptyset} is being calculated in clause 20 (a) above.

Note 22: the period $N(i)$ is specific for each **business day** i .

- e. $y_{n(i)}^{\emptyset}$ refers to the **CGS** or **ADSWAP YTM** estimate on each **business day** $n(i)$ within $N(i)^{\emptyset}$, calculated in accordance with clause 29(a)-(c).

Calculation of the curve provider YTM using a historical approach

21. If a historical approach is necessary to calculate the daily band Y 10-year **YTM**s for each **curve provider** c on **business day** i , the following formula applies:

$$y_i^{cY} = \frac{1}{100} \sum_{n(i) \in N(i)^{cY}} sts_{n(i)}^{cY} + y_i^{ADS}$$

Where:

- a. y_i^{cY} refers to the daily band Y 10-year **YTM** for **curve provider** c on **business day** i , calculated using a historical spread to swap rate averaged over $N(i)$ and adding to it the **ADSWAP YTM** for **business day** i .

- b. $n(i)$ refers to a specific historical **business day** i
- c. $N(i)^{cY}$ refers to the period of 100 historical **business days** for which a daily band Y 10-year **YTM** estimate can be calculated in accordance with clause 31 and subclauses 31(b)(i)-(iii) for **curve provider** c prior to the **business day** i for which y_i^{cY} is being calculated in clause 21 (a) above.

Note 23: the period $N(i)^{cY}$ is specific for each **business day** i

- d. $sts_{n(i)}^{cY}$ refers to the daily band Y 10-year spread to swap rate for **curve provider** c , it is calculated for each specific historical **business day** $n(i)$ within $N(i)^{cY}$ in accordance with clause 22.
- e. y_i^{ADS} refers to the daily 10-year **ADSWAP YTM** calculated on the same **business day** i for which y_i^{cY} is being calculated in clause 21(a) above, it must be calculated in accordance with clause 30.

Note 24: For the avoidance of doubt, $\sum_{n(i) \in N(i)^{cY}} sts_{n(i)}^{cY}$, refers to the sum of the spread to swap rates for each historical **business day** $n(i)$ over the 100 historical **business days** within $N(i)^{cY}$.

Note 25: For the sake of clarity, if clause 26 (b) applies, then the y_i^{cY} calculated in this clause 21 will be used as the daily band Y 10-year **YTM** for **curve provider** c in clause 12.

Calculation of the spread to swap for curve providers

22. If a daily band Y 10-year spread to swap is required for all **curve providers** c in order to calculate daily band Y 10-year **YTM**s using a historical approach, the following formula applies:

$$sts_{n(i)}^{cY} = y_{n(i)}^{cY} - y_{n(i)}^{ADS}, \text{ for all } n(i) \in N(i)$$

Where:

- a. $sts_{n(i)}^{cY}$ refers to the daily band Y 10-year spread to swap rate for **curve provider** c on a specific historical **business day** $n(i)$, calculated in accordance with this clause.

Note 26: for the avoidance of doubt, in applying this clause, $sts_{n(i)}^{cY}$ will only be calculated for a historical **business day** $n(i)$ if a daily 10-year band Y **YTM** estimate can be calculated for **curve provider** c in accordance with clause 31(a) and subclauses 31(b)(i)-(iii). In the case where on a historical **business day** $n(i)$, a daily band Y10-year **YTM** estimate for **curve provider** c cannot be calculated in accordance with clause 31(a) and subclauses 31(b)(i)-(iii), it will not be used in clause 21 and therefore will not be required to be calculated using this clause 22.

- b. $y_{n(i)}^{cY}$ refers to the daily band Y 10-year **YTM**s for **curve provider** c on the same historical **business day** $n(i)$ as the date used for clause 22(a) above and calculated in accordance with clause 31(a) and subclauses 31(b)(i)-(iii)

- c. $y_{n(i)}^{ADS}$ refers to the daily **ADSWAP YTM** estimate for a 10-year target term to maturity on the same specific historical **business day** $n(i)$ as the date used for clause 22 (a) above and is calculated in accordance with clause 30.

Return on debt averaging periods

23. For the **Victorian DNSPs**, the **return on debt averaging period** for each **regulatory year** of the **2021-2026 regulatory control period** is:
- a. the period that was nominated by a **service provider** no later than March 2020 for the **2021-2026 regulatory control period** and that satisfies the conditions set out in clause 24 (which will be confidential) or
 - b. if no period is nominated in accordance with clause 23(a), or a period is nominated that does not meet the conditions set out in clauses 24 for a specific **regulatory year** within the **2021-2026 regulatory control period**, a period of 20 consecutive business days in length that finishes 4 **months** before the start of the **regulatory year**.
24. The **return on debt averaging period** nominated in accordance with clause 23(a) must:
- a. be over a period of 10 or more consecutive **business days**, up to a maximum of 12 **months**, and
 - b. start no earlier than 16 **months** prior to the commencement of a **regulatory year**, and
 - c. finish no later than 4 **months** prior to the commencement of a **regulatory year**, and
 - d. be specified for each **regulatory year** within the **2021-2026 regulatory control period**, and
 - e. not overlap for each different **regulatory year** (including the **determination extension period**), although the averaging period is not required to be identical for each **regulatory year** (including the **determination extension period**), and
 - f. not result in the averaging period for the **determination extension period** occurring after the averaging period for the **regulatory year** commencing 1 July 2021, and
 - g. be nominated prior to the start of the **return on debt averaging period**.

Note 27: For the avoidance of doubt, the rate of return on debt must be updated annually using the averaging period nominated for each regulatory year.

Note 28: If the start date of any averaging period, nominated in accordance with clause 24 does not fall on a **business day**, then the start date of the averaging period must be deemed to be the next **business day**. If the end date of any averaging period, nominated in accordance with clause 24 does not fall on a **business day**, then the end date of the averaging period must be deemed to be the previous **business day**. This is so that clause 24(a) and clause 24(c) can be satisfied. However, if the

result is such that clause 24(a) is not satisfied ie, it results in an averaging period of less than 10 **business days**, then clause 23(b) must apply.

25. [NOT USED]

Return on debt contingencies

26. The following contingencies apply to the daily band Y 10-year **YTM** estimates for all **curve providers** in clause 12.

- a. If the data provided by a **curve provider** on **business day** i cannot be used to calculate either a broad A-rated or broad BBB -rated **YTM** estimate in accordance with clause 31(a) and subclauses 31(b) (i)-(iii). Then y_i^{CY} for the **curve provider** band Y on **business day** i in clause 12 will not be calculated, and this curve will not be used in the calculation of $y_{i,j}^d$ in clause 11, clause 11 will use the remaining data from the **curve providers**, subject to clause 26(b).
- b. This clause applies on a **business day** i if the data provided by all **curve providers** can not be used to calculate a single band Y daily 10-year **YTM** estimate in accordance with clause 31(a) and subclauses 31(b) (i)-(iii) (such that there is either not a single A-rated, or not a single BBB-rated yield estimate or both):
 - (i) If the data provided by all **curve providers** cannot be used to calculate a single A-rated daily 10-year **YTM** estimate on **business day** i in accordance with clause 31(a) and subclauses 31(b)(i)-(iii), then the A-rated daily 10-year **YTM** estimate for each **curve provider** in clause 12 will be calculated using a historical approach in accordance with clause 21, or
 - (ii) If the data provided by all **curve providers** cannot be used to calculate a single BBB-rated daily 10-year **YTM** estimate on **business day** i in accordance with clause 31(a) and subclauses 31(b)(i)-(iii), then the BBB-rated daily 10-year **YTM** estimate for each **curve provider** in clause 12 will be calculated using a historical approach in accordance with clause 21,
 - (iii) If the date provided by all **curve providers** cannot be used to calculate a single A-rated and not a single BBB-rated daily 10-year **YTM** estimate on **business day** i in accordance with clause 31(a) and subclauses 31(b)(i)-(iii), then the A-rated and BBB-rated daily 10-year **YTM** estimate for each **curve provider** in clause 12
- c. If any **curve provider** substitutes its current methodology for a revised or updated methodology to replace the current methodology listed in clause 32, clause 33, clause 34, and clause 35, then the revised or updated methodology must be used to calculate y_i^{CY} for **business day** i in clause 12, in accordance with clause 31. The revised or updated methodology can be an entirely new series, not identified in clause 32, clause 33, clause 34, and clause 35, however it must be a replacement after the cessation of the publication of an identified data source.

- d. If any **curve provider** revises or updates its historical yield estimates, the revised or updated historical yield estimates must not be used to recalculate the allowed rate of return on debt after it has been finalised for any **regulatory year** in accordance with clause 9. The allowed rate of return on debt figures will be deemed to be finalised, at the earlier of the following two dates:
- (i) when the AER notifies the **service provider** of the annual estimate, or
 - (ii) eight weeks after the end of the annual averaging period, calculated in accordance with clause 23 and clause 24.
- e. If the RBA replaces its publication frequency with daily **YTM** estimates, then linear interpolation is no longer required to obtain daily **YTM** estimates, and so the newly published daily **YTM** estimates must be used to calculate y_i^{CY} for **business day** i in clause 12, and must be extrapolated to an exact term to maturity of 10 years if necessary, in accordance with clause 14.
- f. If either Thomson Reuters or Bloomberg replaces their publication with a different frequency (eg, monthly yield estimates instead of daily yield estimates), then the new non-daily **YTM** estimates must be converted into daily **YTM** estimates in accordance with clause 17, clause 18 and clause 19.

Value of imputation credits

27. The value of imputation credits is set at a value of 0.585

Rounding rules

28. All calculations made pursuant to this instrument must be done in Microsoft Excel or a software program that undertakes equivalent calculations, and must be unrounded.

Ordering of clauses

29. Where a daily 10-year **YTM** for a **CGS** is required on a specific **business day** i , in clause 6, clause 17, clause 19, and a specific historical **business day** $n(i)$ in clause 20, the following clauses will apply to the observable data sourced in clause 32, in the following order:

- a. If a **CGS YTM** with a 10-year term to maturity is observable in the data on **business day** i , then the **YTM** from this **CGS** will be used. If there is not a **CGS YTM** with a 10-year term to maturity observable in the data on **business day** i , then
- b. If there is a **CGS YTM** with a longer term to maturity than the target term to maturity, and a **CGS YTM** with a shorter term to maturity than the target term to maturity, then the **CGS YTM** for a target term calculated in accordance with clause 16 will be used for **business day** i . If there is not a **CGS YTM** with a longer term to maturity than the target term to maturity and a **CGS YTM** with a shorter term to maturity than the target term to maturity on **business day** i , then
- c. If there are two **CGS YTMs** with a term to maturity greater than or equal to 7 years but less than 10 years, then the **CGS YTM** for a target term to maturity calculated in accordance with clause 13 will be used for **business day** i . If there are not two **CGS**

YTMs with a term to maturity greater than or equal to 7 years but less than 10 years on **business day *i***, then

- d. A historical average of the **CGS YTM**s calculated in accordance with clause 20 will be used as the **CGS YTM** estimate for **business day *i***.

30. Where daily **ADSWAP YTM** estimates are required for a target term to maturity on a specific **business day *i***, in clause 15 and clause 21, and a specific historical **business day *n(i)*** in clause 20 and clause 22, the following clauses will apply to the observable data sourced in clause 35, in the following order:

- a. If an **ADSWAP YTM** with a target term to maturity is observable in the data on **business day *i***, then the **YTM** from this **ADSWAP** will be used. If there is not a **ADSWAP YTM** with a target term to maturity observable in the data on **business day *i***, then
- b. If there is an **ADSWAP YTM** with a longer term to maturity than the target term to maturity, and an **ADSWAP YTM** with a shorter term to maturity than the target term to maturity, then the **ADSWAP YTM** estimate calculated in accordance with clause 16 will be used for **business day *i***. If there is not an **ADSWAP YTM** with a longer term to maturity than the target term to maturity and a **ADSWAP YTM** with a shorter term to maturity than the target term to maturity on **business day *i***, then
- c. If there are two **ADSWAP YTM**s with a term to maturity greater than or equal to 7 years but less than 10 years, then the **ADSWAP YTM** calculated in accordance with clause 13 will be used for **business day *i***. If there are not two **ADSWAP YTM**s with a term to maturity greater than or equal to 7 years but less than 10 years on **business day *i***, then
- d. A historical average of the **ADSWAP YTM**s calculated in accordance with clause 20 will be used as the **ADSWAP YTM** estimate for **business day *i***.

31. Where 10-year daily band Y **YTM**s for **curve provider *c*** are required for a specific **business day *i*** in clause 12, and required for a specific historical **business day *n(i)*** in clause 22, the following clauses will apply to the observable data sourced in clause 33, under the following conditions:

- a. If a daily band Y 10-year **YTM** for **curve provider *c*** on **business day *i***, then the **YTM** from this data will be used, or
- b. If there is not a daily band Y 10-year **YTM** for **curve provider *c*** observable on **business day *i***, then:
 - (i) If a **curve provider *c*** publishes curves in a daily publication frequency, does not publish a band Y 10-year **YTM** on **business day *i***, and publishes two daily band Y **YTM**s for greater than or equal to 7 years but less than 10 years on **business day *i***. Then the daily band Y 10-year **YTM** for curve provider *c* on **business day *i*** must be calculated using linear extrapolation in accordance with clause 14 or clause 15, whichever applies, or

- (ii) If a **curve provider** *c* publishes curves in a non-daily publication frequency (i.e. weekly or monthly) and publishes a non-daily band Y 10-year **YTM** on the expected publication frequency-end dates immediately prior to and immediately following the **business day** *i* (the relevant publication frequency-end dates). Then the daily band Y 10-year **YTM** for **curve provider** *c* on **business day** *i* must be calculated using linear interpolation, in accordance with clause 17, clause 18 and clause 19, or
- (iii) If a **curve provider** *c* publishes curves in a non-daily publication frequency, does not publish a band Y 10-year **YTM**, and does publish two non-daily band Y **YTM**s greater than or equal to 7 years but less than 10 years on the relevant publication frequency-end dates. Then the non-daily band Y 10-year **YTM**s on the relevant publication frequency-end dates must be calculated using linear extrapolation in accordance with clause 14 or clause 15, whichever applies. These non-daily band Y 10-year **YTM**s on the relevant publication frequency-end dates, must then be converted into a daily band Y 10-year **YTM** for **curve provider** *c* on **business day** *i*, this must be calculated using linear interpolation in accordance with clause 17, clause 18 and clause 19, or
- (iv) If a **curve provider** *c* does not publish a 10-year **YTM** on **business day** *i*, or the relevant publication frequency-end dates (for non-daily publication intervals), and also does not publish two band Y **YTM**s greater than or equal to 7 years but less than 10 years on these days, then contingency clause 26 (a) or clause 26 (b) will apply.

Note 29: for the avoidance of doubt, in applying clause 31(b)(ii) and clause 31(b)(iii), if a **curve provider** publishes in a non-daily publication frequency and does not publish either a 10-year **YTM**s, or **YTM**s greater than or equal to seven years but less than 10 years on both of its expected publication frequency-end dates immediately prior to and immediately following **business day** *i*. Then these clauses will not be used to interpolate a daily band Y 10-year **YTM** estimate for **curve provider** *c*, instead, clause 31(b)(iv) will apply.

Data sources

32. Data for calculating daily 10-year **CGS** yields must be sourced from the RBA's published statistical data, "Indicative Mid Rates of Australian Government Securities – F16".

- a. Data for the **CGS YTM**s used to calculate the risk free rate of return in clause 6, clause 13, clause 16 and clause 19, will be sourced by the AER from the RBA on the next **yield publication day** after the third **business days** after the end of the **risk free rate averaging period** determined in accordance with clause 7 and clause 8.
- b. Data for the calculation of the **CGS YTM**s used to calculate the rate of return on debt, in clause 13, clause 16, clause 17 and clause 19 will be sourced by the AER from the RBA on the next **yield publication day** that is also a **business day** after the

10th day of the month immediately following the month within which the **return on debt averaging period** ends, calculated in accordance with clause 23 and clause 24.

33. Each **curve provider's** yield estimates must be obtained from the following data sources:

- a. RBA's broad A-rated and broad BBB-rated yield estimates must be sourced from the RBA's published statistical data, "Aggregate Measures of Australian Corporate Bond Spreads and Yields – F3".
- b. Bloomberg broad A-rated yield estimates must be obtained from its BVCSAE index, and its broad BBB-rated yield estimates from its BVCSAB index.
- c. Thomson Reuters broad A-rated yield estimates must be obtained from its AAUDBMK index, and its broad BBB-rated yield estimates from its BBBAUDBMK index.
- d. Data for the yield estimates of each curve provider used to calculate the return on debt in clause 12, clause 14, clause 15, clause 17 and clause 22 must be sourced by the AER from each **curve provider c** on the next **yield publication day** that is also a **business day** after the 10th day of the month immediately following the month within which the **return on debt averaging period** ends, calculated in accordance clause 23 and clause 24.

34. Data for the spread to swap rates must be obtained from the RBA's published statistical data, "Aggregate Measures of Australian Corporate Bond Spreads and Yields – F3".

- a. Data for the RBA spread to swap rates used to calculate the return on debt in clause 14 must be sourced by the AER from each **curve provider c** on the next **yield publication day** that is also a **business day** after the 10th day of the month immediately following the month within which the **return on debt averaging period** ends, calculated in accordance with clause 23 and clause 24.

35. Data for the **ADSWAP YTM** estimates must be sourced from Bloomberg's ADSWAP index.

- a. Data for the **ADSWAP YTM** estimates used in calculate the return on debt in clause 13 and clause 16, must be sourced by the AER from Bloomberg on the next **yield publication day** that is also a **business day** after the 10th day of the month immediately following the month within which the **return on debt averaging period** ends, calculated in accordance with clause 23 and clause 24 .

Glossary

36. The following terms are defined as follows:

- a. **2021-2026 regulatory control period** means the **regulatory control period** commencing on 1 July 2021.
- b. **ADSWAP** refers to the Australian dollar interest rate swap rates sources from Bloomberg's ADSWAP index
- c. **Allowed rate of return** refers to the rate of return calculated in accordance with clause 3. It is a nominal vanilla rate of return that is consistent with the value of

imputation credits and does not include transaction costs associated with raising capital.

- d. **Business day** refers to a day that is not:
- a Saturday or Sunday; or
 - a state wide public holiday in New South Wales; or
 - a bank holiday in New South Wales
- e. **CGS** refers to Commonwealth Government Securities.
- f. **CGS publication days** refers to **business days** on which a **CGS YTM** estimate can be calculated in accordance with clause 29(a)-(c), specifically not including clause 29(d).
- g. **Credit rating band** refers to the broad BBB-based or broad A-based credit rating band published by a curve provider.
- h. **Curve provider** refers to the Reserve Bank of Australia (RBA), Bloomberg Valuation Service Limited (Bloomberg) or Thomson Reuters, as relevant.
- i. **Determination extension period** has the same meaning as in section 16VA of the *National Electricity (Victoria) Act 2005*.
- j. **Effective tenor** refers to the effective tenor quoted by the RBA in Statistical Table F03 for the relevant curve and **Target tenor**.
- k. **Target tenor** refers to the Target tenor quoted by the RBA in Statistical table F03 for the relevant yield curve.
- l. **Term to Maturity** refers to the quoted term to maturity of the debt curve or ADSWAP quotation, or the remaining life of the debt instrument (in the case of individual instruments).
- m. **Gearing ratio** refers to the proportion of debt in total financing.
- n. **Month** refers to calendar month.
- o. **Regulated service** means a direct control network service for the purposes of the National Electricity Law.
- p. **Regulatory control period** has the meaning as it has in the National Electricity Rules, subject to modifications under section 16VB and section 16VC of the *National Electricity (Victoria) Act 2005*.
- q. **Regulatory year** has the meaning as it has in the National Electricity Rules, subject to modifications under section 16VB and section 16VC of the *National Electricity (Victoria) Act 2005*.
- r. **Return on debt averaging period** refers to an averaging period determined in accordance with clause 23, clause 24.
- s. **Risk free rate averaging period** refers to an averaging period determined in accordance with clause 7 and clause 8.

- t. **Service provider** means a **Victorian DNSP**.
 - u. **Trailing average portfolio approach** refers to the return on debt approach of using the average of the return on debt for each **regulatory year** over a period of ten years.
 - v. **Transition period** refers to the period commencing at the start of the first **regulatory year**, for which the return on debt is calculated using a trailing average for the first time for the relevant **regulated service** for the **Victorian DNSPs** (calendar year 2016) and ends after 14 years and 6 months.
 - w. **Victorian DNSP** has the same meaning as in section 16VA of the *National Electricity (Victoria) Act 2005*.
 - x. **Yield publication day** means the **business day** on which the specific data source publishes its data.
 - y. **YTM** refers to the yield to maturity of a financial instrument, or to the quoted yield to maturity of a curve provider.
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National Electricity (Victoria) Act 2005
ORDER MODIFYING THE NATIONAL ELECTRICITY LAW
AND NATIONAL ELECTRICITY RULES

Order in Council

The Governor in Council, under section 16VF(1)(b) of the **National Electricity (Victoria) Act 2005** (the Act), makes the following Order:

1. Purpose

For the purposes of giving effect to an Order under section 16VE of the Act made on the same day, this Order is to make necessary modifications to the operation of the National Electricity Rules as they have the force of law in Victoria.

2. Authorising provision

This Order is made under sections 16VF(1)(b) of the Act.

3. Commencement

This Order takes effect on the day it is published in the Victoria Government Gazette.

4. Definitions

In this Order –

applicable 2021–2026 distribution determination has the same meaning as it has in section 16VA of the Act;

roll forward model has the same meaning as it has in the National Electricity Rules;

the Act means the **National Electricity (Victoria) Act 2005**.

5. Modification of the Roll Forward Model

In giving effect to an Order under 16VE of the Act made on the same day to modify the application of the *roll forward model* for the purposes of making an *applicable 2021–2026 distribution determination* and despite anything to the contrary in the National Electricity (Victoria) Law or the National Electricity Rules, in making the distribution determination that applies immediately after the *applicable 2021–2026 distribution determination*, the AER may make any modifications to the application of the *roll forward model* that it considers necessary to be made as a consequence of the enactment of Subdivision 3 of Division 6A of Part 3 of the Act.

Dated 27 October 2020

Responsible Minister:

THE HON LILY D'AMBROSIO MP

Minister for Energy, Environment and Climate Change

CLAIRE CHISHOLM
Clerk of the Executive Council

National Electricity (Victoria) Act 2005**F-FACTOR SCHEME AMENDMENT ORDER 2020****Order in Council**

The Governor in Council, under section 16C(1) of the **National Electricity (Victoria) Act 2005**, makes the following Order:

1. Purpose

The purpose of this Order is to amend the f-factor scheme Order that commenced on 22 December 2016.

2. Definitions

f-factor scheme Order means the Order published in the Victoria Government Gazette No. G 51 on 22 December 2016, and dated 20 December 2016.

3. Commencement

This Order comes into effect on the day it is published in the Victoria Government Gazette.

4. Amendment of the f-factor Order

(1) In clause 4, after the definition of ‘Central Plan Office’ insert the following definition – ‘**determination extension period**’ has the same meaning it has as in section 16VA of the **National Electricity (Victoria) Act 2005**;

(2) In clause 4, after the definition of ‘previous f-factor scheme Order’ insert the following definition –

‘**regulatory year**’ has the meaning it has in the National Electricity Rules, as modified by section 16VB and section 16VC **National Electricity (Victoria) Act 2005**;

(3) In clause 4, for the definition of ‘relevant financial year’ substitute –

‘**relevant financial year**’, for the purpose of calculating a revenue adjustment under clause 9, an IRU target or an IRU amount, means

(a) for regulatory years commencing on or prior to 1 January 2020, the financial year ending 18 months prior to the commencement of the regulatory year for which the revenue adjustment is being calculated;

(b) for regulatory years commencing on or after 1 July 2021, the financial year ending 24 months prior to the commencement of the regulatory year for which the revenue adjustment is being calculated;

Note: There is no f-factor revenue adjustment for the determination extension period.

Example: For the regulatory year commencing 1 July 2021, the relevant financial year is the 2018/19 financial year.

(4) In the Note to clause 4(2) of the f-factor Order 2016 omit ‘regulatory year’.

(5) In clause 9(4), after the words ‘for each subsequent regulatory year’, insert ‘(other than the determination extension period)’.

(6) For the Note at Clause 9(4)(iv) substitute –

Note: See the definition of ‘relevant financial year’ in clause 4. Therefore, the IRU target for FY2017/18 is used to calculate the revenue adjustment for 2020. The IRU target for FY2018/19 is to be used to calculate the revenue adjustment for the 2021–22 regulatory year and so on.

- (7) After clause 9(4), insert:
- (4A) There is no revenue adjustment for the determination extension period.
- (8) For the Note at Clause 10(1) substitute –
- Note: See the definition of ‘relevant financial year’ in clause 4. Therefore, the IRU target for FY2017/18 is used to calculate the revenue adjustment for 2020. The IRU target for FY2018/19 is to be used to calculate the revenue adjustment for the 2021–22 regulatory year and so on.*
- (9) For Clause 10(3) substitute –
- (3) If the Minister does not publish the IRU target for a relevant financial year under subclause (2), the IRU target for that financial year is the same as the IRU target most recently published under subclause (2).

5. Continued effect of 2016 Order

The *f-factor scheme Order*, as amended by this Order, continues to have full effect.

Dated 27 October 2020

Responsible Minister:

THE HON LILY D’AMBROSIO MP

Minister for Energy, Environment and Climate Change

CLAIRE CHISHOLM
Clerk of the Executive Council

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