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**Preliminary version of the financial model for
electricity default price-quality paths from 2015:
Technical consultation**

Date: 29 November 2013

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1. Introduction

Purpose of paper

1. This document provides an overview of the preliminary version of the financial model that may be used to set starting prices based on current and projected profitability of each distributor when default price-quality paths are reset in November 2014. We invite you to provide your views before **Friday, 14 February 2014**. A question and answer session will be held on **Thursday, 12 December 2013**.

Default price-quality paths for the next regulatory period

2. The default price-quality paths applying to 17 electricity distributors are due to be reset by 30 November 2014. Any changes would take effect during the next 'regulatory period', which starts on 1 April 2015.
3. When resetting starting prices, we must choose one of two options available under the Commerce Act 1986. In particular, starting prices must be either:¹
 - 3.1 the prices that applied at the end of the preceding regulatory period; or
 - 3.2 prices, determined by the Commission, that are based on the current and projected profitability of each distributor.
4. When we last reset starting prices, in November 2012, we published a model for resetting starting prices based on the current and projected profitability of each distributor. This 'financial model' calculated starting prices by converting expenditure and revenue growth forecasts. These forecasts were developed separately.

Feedback received on process to reset default price-quality paths in November 2012

5. In April 2013, we requested feedback on all aspects of our process for resetting the default price-quality paths.² Our focus lay in understanding what worked well, what could be improved, and how any improvements could be made.
6. Amongst other things, the general feedback we received was that distributors prefer:³
 - 6.1 early engagement on the regulatory framework and key issues; and
 - 6.2 for us to seek views on issues before forming any views.

¹ Commerce Act 1986, s 53P(3)

² Commerce Commission "Open letter seeking feedback on the process for setting default price-quality paths" (23 April 2013).

³ Refer, for example: Powerco "Re: Feedback on the process for setting default price-quality paths" (24 May 2013), p1; Unison "Response to open letter seeking feedback on DPP Reset Process" (24 May 2013), p2; Vector "Feedback on the process for setting default price-quality paths" (24 May 2013), p2.

7. For the financial model, distributors indicated a preference for:⁴
 - 7.1 early release; and
 - 7.2 explanations of any changes from previous versions.
8. Distributors also generally provided positive feedback on the question and answer session, and asked for it to be repeated again in future.

Early release of financial model

9. On 6 September, we published a process paper for the next reset. In this process paper, we sought views on the process we propose to follow to set the next default price-quality paths for 17 electricity distributors.
10. In November 2014, it is possible that we may reset starting prices based on the current and projected profitability of each distributor. As noted in paragraph 3, the alternative would be for starting prices to be set on the basis of the prices that previously applied.
11. We have prioritised the early release of the financial model for consultation as part of the process of setting the next default price-quality path. Although we may choose to 'roll over' prices in November 2014, this model gives people the opportunity to see how starting prices would be determined based on current and projected profitability.
12. We also indicated in our process paper that we would hold a question and answer session on the financial model two weeks after it has been released, and invited submissions on:
 - 12.1 the timing of the question and answer session; and
 - 12.2 the amount of time we should allow for written responses.
13. Distributors generally provided positive feedback on these proposals, and provided some useful suggestions. For example, submitters requested that we publish supplementary documents to explain how the model works and changes from the previous model. They also highlighted a specific technical matter as being particularly important; namely, the decision on which 'reference' (or 'base') year would be used in our modelling.⁵
14. For the question and answer session, distributors also made the following recommendations about timing. First, that we should allow two weeks from the day of release for written responses. Second, that we should hold the question and answer session soon after receipt of questions. Finally, that we should allow one week for written responses on the session. These suggestions are largely reflected in the timeframes set out in this paper.

⁴ Refer, for example: Electricity Networks Association "Feedback on process for setting default price-quality paths" (24/05/2013), p2-3; Powerco "Re: Feedback on the process for setting default price-quality paths" (24 May 2013), p2.

⁵ Refer, for example: Powerco "Re: Feedback on the process for setting default price-quality paths" (24 May 2013), p1.

Core model broadly unchanged—Layout and presentation improved

15. In developing a preliminary version of the financial model for early release, we have generally repeated the core elements of the model used to reset starting prices in November 2012. However, a number of changes have been made to that model when updating it to the next regulatory period. In addition, changes have been made to improve the presentation and layout.
16. This paper is intended to be read alongside the preliminary version of the financial model. The focus of this paper is to provide an overview of the preliminary version of the financial model, and summarise the main changes from the last model. A full reconciliation of rows with the November 2012 version of the model can be found within the updated version of the model itself.⁶
17. We do not address other models in this paper. In particular, we do not discuss the models used to forecast inflation, expenditure, and revenue growth. The outputs of these models are inputs to the preliminary version of the financial model.
18. In addition, we have not addressed the issue of which base year should be used in the modelling, although we acknowledge that this is an important issue if starting prices are reset based on the current and projected profitability of each distributor. At this stage, we invite your views on factors you think we should consider when selecting the base year.
19. We also note that this model is preliminary and, as part of our consultation on the default price-quality paths, changes may be required before we publish our decision to reset the default price-quality paths. For example, the model may need to be updated in light of:
 - 19.1 responses to this paper;
 - 19.2 identified errors; or
 - 19.3 any changes to input methodologies.
20. However, we do not intend to release another version of the financial model prior to releasing our draft decision for the next reset. Further written submissions will be sought on all aspects of our draft decision, including the financial model.

Providing submissions

21. We invite you to provide your views on any aspect of this paper before Friday, 14 February 2014. Further details about how you can provide your views can be found in Chapter 5 alongside the arrangements for the question and answer session.

⁶ The model contains a 'mapping' worksheet that relates each calculation row in the model to the corresponding row in the 2010-2015 model.

2. Overview of model

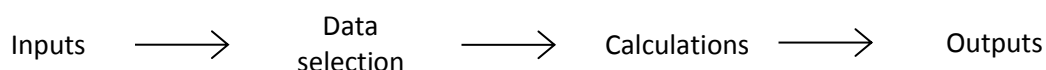
Purpose of chapter

22. This chapter provides an overview of the preliminary version of the financial model that was released alongside this paper.

Structure of model

23. The financial model is comprised of a series of worksheets including:
- 23.1 inputs;
 - 23.2 data selection;
 - 23.3 calculations; and
 - 23.4 outputs.
24. These worksheets are organised as follows.

Figure 1: Four main parts of the model



25. An overview of each part of the model is provided below. A more detailed description of each of the calculation sheets can be found in Chapter 3.

Inputs sheet

26. The data entered in the inputs sheet will be drawn from a variety of sources, including information previously disclosed by distributors. The model is populated with null data. Small positive values have been used where a null entry would display an error in the calculation. We distinguish between:
- 26.1 inputs that are the same for all distributors, such as forecast changes in inflation, and the industry-wide cost of capital; and⁷
 - 26.2 inputs that are specific to individual distributors, including initial conditions and forecast information.
27. Notably, the initial conditions for each distributor will depend on the year selected as the base year. We invite your views on which base year would be the most appropriate for us to use in light of the conditions facing distributors (individually or as a group).

⁷ The weighted average cost of capital (WACC) used for the electricity distribution default price-quality paths will be determined by 30 September 2014.

Data selection

28. The data selection sheet is included to allow the user to select inputs that are relevant to only one distributor. The selection of the distributor can be made by selecting from the drop down list that appears at the top of the sheet. The information that appears on this sheet is then used as inputs in the calculation sheets.

Calculation sheets

29. The calculation sheets are used to determine starting prices that are based on the current and projected profitability of the selected distributor. Specifically, the sheets calculate the amount of revenue that the distributor would need to earn in 2015/16 such that forecast revenue equals forecast costs over the regulatory period.
30. To forecast costs for each distributor, we applied the 'building block' based approach that is consistent with the input methodologies for default price-quality paths.⁸ The main building block cost categories are:⁹
- 30.1 the return *on* capital, net of any revaluations of the Regulatory Asset Base (RAB);¹⁰
 - 30.2 the return *of* capital, to allow recovery of depreciation;
 - 30.3 operating expenditure (excluding pass through costs and recoverable costs); and
 - 30.4 tax costs.
31. A brief explanation of each of the calculation sheets can be found in Chapter 3.

⁸ Notably, in December 2010 we determined the key rules, requirements and processes of regulation, collectively known as input methodologies. However we did not specify input methodologies for cost allocation, asset valuation and the treatment of taxation as applicable to default price-quality paths. In September 2011 the High Court held that these input methodologies must also be specified as applicable for default price-quality paths. We therefore, on 28 September 2012 re-determined input methodologies for electricity distribution, gas distribution and gas transmission services to effect this. The input methodologies for cost allocation, asset valuation and the treatment of taxation affect our assessment of the main building block cost components when we set starting prices based on the current and projected profitability of each supplier.

⁹ An overview of the building block approach can be found in 2.8.5 to 2.8.20 of Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services), Reasons Paper*, 22 December 2010.

¹⁰ Where necessary, the return *on* capital includes a term credit spread differential allowance to recognise additional costs that can be incurred by suppliers with longer term debt.

Outputs sheet

32. The outputs sheet uses Excel's data table facility to summarise the key outputs from the model. The key outputs on this sheet are:
- 32.1 maximum allowable revenue in 2015/16, for each distributor, using the industry-wide X factor; and
 - 32.2 maximum allowable revenue in 2015/16, for each distributor, using an alternative X factor (if applicable).
33. The output sheet also sets out the present value of building blocks allowable revenue, for each distributor, over the regulatory period.

Changes since November 2012

34. As noted in the Introduction, the preliminary version of the financial model is based on the model used for the reset on 30 November 2012, although we have made a few changes. This section sets out the main changes. A full reconciliation of rows can be found in a separate tab within the workbook.
35. The main changes are:
- 35.1 the present value of forecast revenue is set equal to the present value of forecast costs over a 5 year regulatory period (previously a 3 year period was used due to the reset occurring midway through the regulatory period);
 - 35.2 the time period covered by the model has been extended from 6 years to 8 years (due to data availability at the time of our draft and final decisions);¹¹
 - 35.3 the complications associated with the mid-period reset under s 54K(3) have been removed, ie, no calculation of mid-period claw-back amounts;
 - 35.4 the worksheet for forecast CPI has been removed; and
 - 35.5 the method used to calculate the implied price adjustments has been removed.

¹¹ We have designed the model to be applied using data available at the time of our draft decision, ie, starting from the year ending 31 March 2013. For example, by deleting a column, the base year could be the year ending 31 March 2013 or 31 March 2014. This model therefore does not preclude us from using a different base year, including for cost allocation, and the opening RAB value. In addition, the model may need to be adjusted if the regulatory period is less than 5 years in length.

36. There are also a number of new inputs, which result in minor consequential modelling changes. The new inputs include:
- 36.1 'Additional allowance in April 1 2015 PV terms';
 - 36.2 base year input value for 'Adjustment arising from asset allocation', which enables the final closing base year RAB value to be derived;
 - 36.3 base year input value for 'Opening deferred tax balance', which allows deferred tax from the end of the previous regulatory period to be included; and
 - 36.4 an explicit forecast of 'Value of disposed assets' and 'Other regulated income'. The preliminary version of the model does not derive these values from base year figures.
37. We have also made a number of presentational changes, such as grouping related calculations on individual worksheets, and adding colours and borders where appropriate.

3. Calculation sheets

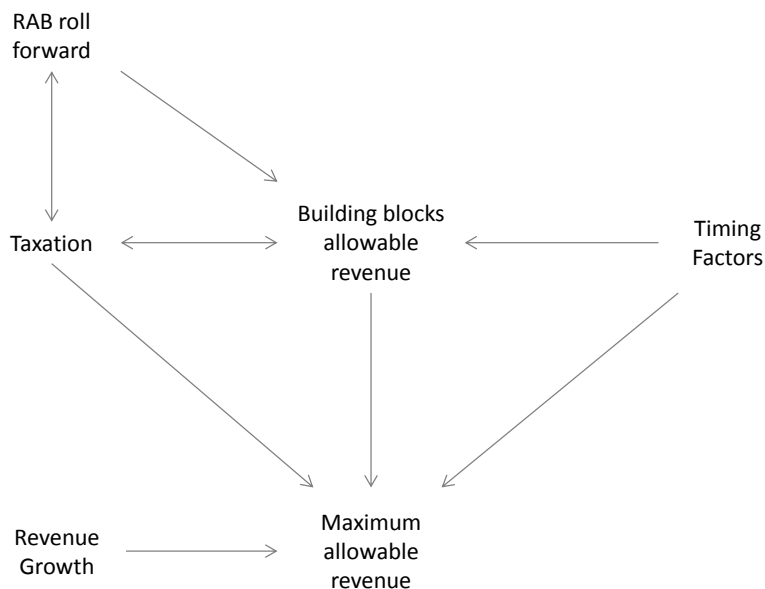
Purpose of chapter

38. This chapter provides a more detailed overview of the calculation worksheets in the preliminary version of the financial model. We also provide an overview of how each of these worksheets fit together.

Overview of calculation worksheets

39. The calculation worksheets comprise an integrated package that:
- 39.1 calculate timing factors ('TIMING sheet');
 - 39.2 roll forward the value of the Regulatory Asset Base ('RAB sheet');
 - 39.3 calculate tax costs ('TAX sheet');
 - 39.4 calculate building blocks allowable revenue ('BBAR sheet');
 - 39.5 calculate revenue growth ('REV sheet'); and
 - 39.6 calculate maximum allowable revenue in year 1 ('MAR sheet').
40. These sheets interact in the following way.

Figure 2: Overview of calculation worksheets



41. Notably, the BBAR sheet determines the amount of revenue that each distributor should be allowed to recover over the regulatory period, and the MAR sheet determines the recovery profile. The remaining sheets contain intermediary calculations.

Calculation of timing factors

42. The TIMING sheet is designed to calculate timing factors for each cash flow item. Timing factors are required to recognise that distributors incur and receive cash flows continuously throughout the year.
43. Timing factors are required for:
 - 43.1 operating expenditure;
 - 43.2 capital expenditure;
 - 43.3 tax costs;
 - 43.4 revenue; and
 - 43.5 other regulatory income.
44. In our November 2012 final reasons paper, we explain the timing factors that we considered appropriate.¹²

Roll forward of the Regulatory Asset Base

45. The calculations on the RAB worksheet were determined by applying input methodologies for default price-quality paths. Amongst other things, these input methodologies set out how forecast and existing investments are valued, and how depreciation and revaluations are calculated.
46. This worksheet calculates five outputs that are used as inputs on other sheets. In particular, for each year of the regulatory period, the RAB sheet calculates:
 - 46.1 remaining asset life of existing assets;
 - 46.2 total depreciation;
 - 46.3 adjusted depreciation;
 - 46.4 aggregate opening RAB value; and
 - 46.5 total revaluation.
47. These outputs are inputs on the BBAR sheet and/or the TAX sheet.

¹² Commerce Commission “Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors” (30 November 2012).

Calculation of tax costs

48. The calculations on the TAX worksheet were determined by applying input methodologies for default price-quality paths. Amongst other things, these input methodologies set out how tax costs are calculated using a 'tax expense' approach during the regulatory period. These input methodologies also set out how a 'deferred tax balance' is calculated to ensure distributors do not over-recover their tax costs over time.
49. The five outputs from this sheet are used as inputs on other sheets. In particular, for each year of the regulatory period, the RAB sheet calculates:
- 49.1 total adjusted depreciation of commissioned assets;
 - 49.2 adjusted depreciation of existing assets;
 - 49.3 opening deferred tax;
 - 49.4 closing deferred tax; and
 - 49.5 regulatory tax adjustments.
50. These outputs are inputs on the RAB sheet or BBAR sheet respectively.

Calculation of building blocks allowable revenue

51. The BBAR sheet calculates the present value of the revenue that a distributor should be allowed to recover, during the regulatory period, on the basis of the building block costs forecast for each year. These costs are calculated for each year of the regulatory period by applying the relevant input methodologies.
52. First, we add together the various cost components to determine 'building blocks allowable revenue' in each and every year of the regulatory period. These amounts will vary depending on a number of factors, such as the age profile of the asset base, annual movements in operating expenditure, and changes in our assessment of tax costs.
53. Then, we calculate the present value of building blocks allowable revenue over the regulatory period. This is the amount of revenue that we expect the supplier would require to be able to earn a normal return from 1 April 2015. The discount rate used in the present value calculation is the industry-wide cost of capital.¹³
54. An algebraic derivation of the formula used to calculate building blocks allowable revenue can be found on our website.¹⁴ This formula incorporates the timing assumptions reflected in the TIMING sheet.

¹³ The WACC used for the electricity distribution default price-quality paths will be determined by 30 September 2014.

¹⁴ Refer: <http://www.comcom.govt.nz/dmsdocument/9493>.

Calculation of revenue growth

55. The REV sheet calculates an index that is intended to reflect forecast changes in Maximum Allowable Revenue in each year of the regulatory period. Under an inflation indexed price path, changes in revenue are attributable to:
- 55.1 annual changes in the allowed price, ie, $CPI-X\%$ per year;¹⁵ or
 - 55.2 annual changes in quantities billed, ie, 'constant price revenue growth'.
56. The REV sheet calculates a revenue index by combining the forecast changes in inflation, with the applicable X factor, and the forecast of revenue growth for each distributor. The calculation is performed twice: first, to determine the revenue index if the industry-wide X factor is applied; secondly, to determine the revenue index with the X factor that applies to the distributor.

Calculation of Maximum Allowable Revenue in 2015

57. The MAR sheet is used to determine the path of revenue that would mean that the distributor is able to recover the present value of the building blocks allowable revenue over the regulatory period. In particular, we apply the relevant revenue indices to the present value of building blocks allowable revenue calculated in the BBAR sheet.
58. Notably, we have provided for the possible inclusion of an additional allowance for certain distributors. The reasons why we might include an additional allowance are explored in Attachment H of our final reasons paper for the November 2012 reset.¹⁶ Any additional allowance would be included by adding it to the present value of building blocks allowable revenue.

¹⁵ CPI-X% is the traditional form of incentive-based price path, where X is a percentage differential known as the 'X factor'.

¹⁶ Commerce Commission "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors" (30 November 2012).

4. Issues to consider

Purpose of chapter

59. As noted in our 6 September 2013 process paper, we propose to publish an issues paper in February or March 2014 and invite submissions on issues that we should consider ahead of our draft determination. This chapter sets out two issues related to the modelling that would be likely to feature in that paper.
60. We will canvas views on these modelling issues more fully in our issues paper, but you are welcome to provide an early indication of your view at this stage. You are also invited to identify any other issues that you would like to see us cover in our issues paper.

Initial list of modelling issues

61. Two modelling issues appear relevant if starting prices are reset based on the current and projected profitability of each distributor. These issues are as follows.
 - 61.1 How we should determine the 'base year' to be used when applying input methodologies. As noted earlier in this paper, the base year we select will affect the period covered by our financial model. It also affects cost allocation for operating expenditure, and the opening RAB value. We welcome views on the options we should consider for the base year, as well as feedback on any factors we should consider in reaching our decision
 - 61.2 How we should best calculate the price changes that would be implied by our draft or final decision. In the preliminary version of the financial model, we have not included the method we used last time to calculate price adjustments. Before we attempt any modelling, we are interested in the information that distributors could provide to ensure any price changes are calculated accurately. We are also interested in understanding more about the information that stakeholders would like to see us communicate to interested parties.
62. We welcome any input you wish to provide at this stage on these two issues.

5. How you can provide your views

Purpose of chapter

63. This chapter sets out how you can respond to this paper and the arrangements for the question and answer session.

Responding to this paper

64. We invite you to provide your views on any aspect of this paper, or any other issue, before 14 February 2014. You should address your responses to this paper to:

John G. McLaren (Chief Adviser, Regulation Branch)
c/o regulation.branch@comcom.govt.nz

65. We prefer responses in a file format suitable for word processing, rather than the PDF file format.

Arrangements for question and answer session

66. A question and answer session is scheduled for 2:30pm - 4:30pm, on 12 December 2013. The focus of this session will be to answer any questions about the model that are submitted in advance. Any questions that you would like us to respond to must be provided by email (to the address above) by Tuesday, 10 December 2013. This timeframe gives parties seven working days to submit questions. We are also happy to provide a written response to any questions received in writing before 23 December 2013.
67. Persons interested in attending will need to make their own arrangements to be present. Our address is Level 6, 44 The Terrace, Wellington. We anticipate this is likely to be of most interest to staff of regulated suppliers and consultants involved with financial modelling.
68. Please use the email address listed above to confirm your attendance or intention to listen via teleconference. Emails should have "financial model question and answer session" in the subject line.

Requests for confidentiality

69. We encourage full disclosure of submissions so that all information can be tested in an open and transparent manner, but we offer the following guidance.¹⁷
- 69.1 If it is necessary to include confidential material in a submission, the information should be clearly marked, with reasons why that information is confidential.
 - 69.2 Both confidential and public versions of the submissions should be provided.
 - 69.3 The responsibility for ensuring that confidential information is not included in a public version of a submission rests entirely with the party making the submission.
70. We request you provide multiple versions of your submission if it contains confidential information or if you wish for the published electronic copies to be 'locked'. This is because we intend to publish all submissions on our website. Where relevant, please provide an 'unlocked' electronic copy of your submission, and clearly labelled 'public version'.

¹⁷ You can also request that we make orders under s 100 of the Act in respect of information that should not be made public. Any request for a s 100 order must be made when the relevant information is supplied to us, and must identify the reasons why the relevant information should not be made public. We will provide further information on s 100 orders if requested by parties. A key benefit of such orders is to enable confidential information to be shared with specified parties on a restricted basis for the purpose of making submissions. Any s 100 order will apply for a limited time only as specified in the order. Once an order expires, we will follow our usual process in response to any request for information under the Official Information Act 1982.