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Companion Paper to amendments to the pilot asset health grid output measures and asset health pilot reporting requirements in the Transpower Individual Price-Quality Path Determination 2015

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Associated documents

Publication date	Decision number	Title
29 August 2014	[2014] NZCC 23	Setting Transpower's individual price-quality path for 2015–2020
28 November 2014	N/A	Companion paper to final determination of Transpower's individual price-quality path for 2015-2020
28 November 2014	[2014] NZCC 35	Transpower Individual Price-Quality Path Determination 2015
25 October 2017	N/A	Proposed amendments to pilot asset health grid output measures and asset health pilot reporting
8 December 2017	[2017] NZCC 29	Transpower Individual Price-Quality Path Amendment Determination 2017 (No.2)

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Wellington, NEW ZEALAND

Contents

1. Introduction

1.1 This companion paper accompanies the Transpower Individual Price-Quality Path Amendment Determination 2017 (No.2) which amends Transpower New Zealand Limited's (Transpower) pilot asset health grid output measures in clause 17.2 and the asset health pilot reporting requirements in clause 28.1 of the Transpower Individual Price-Quality Path Determination 2015[1].

1.2 It provides background and context for interested parties about why and how we have made amendments to the asset health grid output measures and the asset health pilot reporting requirements. It also sets out the decisions that we have made on the amendments and the reasons for those decisions.

1.3 In this paper we set out:

1.3.1 Transpower's pilot asset health grid output measures and reporting requirements prior to the new amendments (Chapter 2);

1.3.2 Transpower's requests for exemptions from the asset health pilot reporting requirements (Chapter 3);

1.3.3 Transpower's proposal on alternative pilot asset health measures and reporting (Chapter 4);

1.3.4 the proposed amendments we consulted on (Chapter 5); and

1.3.5 the decisions we have made on the amendments and the reasons for our decisions (Chapter 6).

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[1] *Transpower Individual Price-Quality Path Determination* 2015 [2014] NZCC 35 which applies for the five year regulatory period ending 31 March 2020 available at http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/.

2. Transpower's pre-amendment pilot asset health grid output measures and reporting requirements

2.1 Under Part 4 of the Commerce Act 1986 we are responsible for determining an individual price-quality path (IPP) for the electricity lines services supplied by Transpower.

2.2 We do so by setting the maximum allowable revenues that Transpower can recover from consumers, as well as the quality standards it must meet. The IPP for the regulatory period 1 April 2015 to 31 March 2020 (RCP2) accordingly set Transpower's maximum allowable revenue and grid output measures that are linked to revenue for each year of RCP2.

2.3 The RCP2 IPP also includes three pilot asset health grid output measures that are not yet linked to revenue. These measures are based on the difference in the average remaining life for three asset classes: tower coating of transmission towers, outdoor circuit breakers and power transformers, as assessed at the ends of two consecutive disclosure years. Transpower is required to report to us on these measures annually in October at the end of each disclosure year.[2]

2.4 The same information must also be disclosed in Transpower's annual compliance statement which must also be published by the Friday of the third complete week in October.[3]

2.5 The pilot asset health grid output measures and related reporting requirements were included in the RCP2 IPP to provide some assurance that Transpower was achieving desirable outcomes in average remaining life given the revenue-linked grid output measures in the RCP2 IPP only have volumetric targets.[4, 5]

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[2] The *Transpower Input Methodologies Determination* [2012] NZCC 17 and *Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2 define a disclosure year as meaning a "12 month period ending on 30 June". So, for example, the '2018 disclosure year' means the 12 month period ending on 30 June 2018. This meaning has also been adopted in the RCP2 IPP.

[3] See clauses 19.1 and 20.1.8 of the RCP2 IPP.

[4] See paragraphs 5.1 to 5.10 of the "Companion paper to the final determination of Transpower's individual price-quality path for 2015-2020" dated 28 November 2014 available at http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/.

[5] See table 4.1 of the RCP2 IPP for the volumetric targets.

2.6 It was also anticipated that the asset health pilot reporting requirements would allow both Transpower and the Commission to gain confidence about using asset health for base capex incentive schemes in the future, with the expectation of implementing an asset health incentive mechanism linked to revenue in the next regulatory period (starting on 1 April 2020).[6]

2.7 The pilot asset health grid output measures and related reporting requirements prior to the amendments being made now are set out in Attachment A.

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[6] See footnote 4.

3. Transpower's requests for exemptions from the asset health pilot reporting requirements

3.1 In June 2016, Transpower sought an exemption from complying with the asset health pilot reporting requirements in clause 28.1 for the disclosures that were due by 21 October 2016.

3.2 In seeking the exemption Transpower noted that it had developed more mature asset health models that expressed asset health as an index rather than as estimated remaining life, and that estimated remaining life would therefore no longer be an output of its asset health models.

3.3 In explaining the reasons for changing its asset health models Transpower submitted that an incentive linked directly to average remaining life would not be appropriate because this was not the only factor driving investment decisions. Transpower further asserted that a fixed target would not accommodate developments in its asset health models which could change its views of the condition of assets and the appropriate time to invest.

3.4 Transpower also submitted that the alternative measures it had developed better reflected how it intended to use asset health information in its planning decisions and that they would minimise the risk of unintended consequences.

3.5 The Commission granted Transpower an exemption on 11 October 2016 on condition that it proposed an alternative method for setting and reporting on the pilot asset health grid output measures.[7]

3.6 Transpower met the exemption condition and provided its detailed proposal for an alternative form of asset health pilot reporting during July 2017.[8] The proposal also summarises Transpower's reasons for changing its asset health models when it explains Transpower's reasons for seeking the exemption it received on 11 October 2016.[9]

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[7] The letter granting Transpower this exemption is available on our website at http://www.comcom.govt.nz/regulated-industries/electricity/information-disclosure-requirements-for-distributors/exemptions-to-information-disclosure-requirements/exemptions-to-electricity-transmission-information-disclosure-requirements/.

[8] The detailed proposal from Transpower "Asset Health Pilot Report – Our proposal for alternative asset health grid output measures to pilot during RCP2" is available on our website at http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/.

[9] See pages 2 and 3 of Transpower's proposal. (Note: Although Transpower's proposal states that it received the exemption in September 2016 the exemption was in fact only granted in October 2016.)

3.7 On 5 September 2017 we granted Transpower a further exemption from complying with the asset health pilot reporting requirements in clause 28.1 for the disclosures that were due by 20 October 2017. This exemption is subject to the condition that Transpower instead provides the required reports by 22 December 2017. [10]

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[10] The letter granting Transpower this exemption is also available on our website at http://www.comcom.govt.nz/regulated-industries/electricity/information-disclosure-requirements-for-distributors/exemptions-to-information-disclosure-requirements/exemptions-to-electricity-transmission-information-disclosure-requirements/.

4. Transpower's proposal on alternative pilot asset health measures and reporting[11]

4.1 Transpower's proposal on alternative pilot asset health measures and reporting in response to our conditional exemption granted on 11 October 2016 included three asset classes on which it is currently required to report under clause 28.1 of the RCP2 IPP - (tower coating of transmission towers,[12] outdoor circuit breakers, power transformers), and three additional asset classes (tower foundations – other, tower foundations – grillage, and insulators).[13]

4.2 Under Transpower's proposal the six asset classes described in paragraph 4.1 would fall within two asset groups (lines and stations) as set out in Table 4.1 below:

Table 4.1: Asset groups and asset classes[14]

Asset Group	Asset Class
Lines	Tower foundations – other
Lines	Tower foundations – grillage
Lines	Tower protective coating
Lines	Insulators
Stations	Outdoor circuit breakers
Stations	Power transformers

4.3 Transpower's proposal suggested that we replace the current pilot asset health grid output measures, which are based on the average remaining life of the assets, with new measures based on an asset health index (AHI) that scores the health of the assets on a scale of one to ten. Under Transpower's proposal the health of the assets listed in Table 4.1 would be categorised as good (a score from one to six), fair (a score of six to eight), poor (a score of eight to nine and a half) or very poor (a score greater than nine and a half). The proposal also included a range of further scores under the categories, good, fair and poor. The AHI that Transpower proposed is set out in table 4.2 below:

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[11] As noted in footnotes 13 and 15 Transpower has reconsidered some elements of its proposal.

[12] This asset class is referred to as "tower protective coating" in Transpower's proposal.

[13] However, as discussed later in this paper, Transpower subsequently advised us in its submissions on our consultation paper that the inclusion in its proposal of the asset class, tower foundations – other, was an error and that this asset class did not meets its criteria for inclusion in the pilot. See paragraph 1(b) of Transpower's submission "Amendment to Transpower's pilot asset health requirements" (9 November 2017) available at http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/.

[14] These asset groups and asset classes were adopted in the proposed amendments we consulted on.

Table 4.2: Asset Health Index[15]

Asset Health Index							
1-4	>4-5	>5-6	>6-7	>7-8	>8-9	>9-9.5	>9.5
Good			Fair		Poor		Very poor

4.4 According to Transpower's proposal, a score of poor to very poor (eight or above on the AHI) would means that the asset is likely near the end of its useful life.

4.5 Transpower's proposal also discussed how incentives could be applied if the measures were to be linked to revenue in regulatory periods after RCP2.

4.6 Transpower's proposal suggested providing forecasts of the percentage of the asset population in poor and very poor health for each asset group and class for the remaining disclosure years of RCP2 when it provides its disclosures for the 2017 disclosure year using its proposed AHI. It would subsequently report the actual percentage of the asset population in poor and very poor health for each asset group and class at end of each relevant disclosure year using its proposed AHI. This would enable a comparison of the forecast performance against actual performance for the relevant disclosure years for the asset health categories poor and very poor.

4.7 Under Transpower's proposal the forecast percentages and actual percentages described in paragraph 4.6 would constitute the pilot asset health grid output measures.

4.8 Transpower's proposal further suggested that the measures should include materiality thresholds for the different asset classes under which actual percentages that are greater than the forecast percentages would be treated as having not exceeded the forecast percentages.[16]

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[15] Transpower's AHI was adopted in the amendments we consulted on. However, as discussed later in this paper Transpower subsequently considered that it would be preferable to allow more time to further develop appropriate descriptors. It submitted that rather than codifying the descriptors now, the rules should instead state how to read the scores. See paragraph 1(a) of Transpower's submission "Amendment to Transpower's pilot asset health requirements" (9 November 2017) available at http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/.

[16] If the pilot asset health grid output measures were to be adopted and linked to revenue in a future regulatory period they would be used to calculate revenue adjustments that would flow through to Transpower's price path. Accordingly, the materiality thresholds would be relevant in future regulatory periods if the forecasts are adopted as quality standards linked to revenue adjustments (or if Transpower is required to explain why the forecasts were not met in its compliance reporting).

4.9   Under its proposal Transpower would also provide asset health scores for each asset group and asset class at the end of each disclosure year calculated using its proposed AHI. These disclosures would cover all asset health categories – good, fair, poor and very poor.

5. The proposed amendments we consulted on

5.1 We published a consultation paper on 25 October 2017 setting out our preliminary views on Transpower's proposal on alternative pilot asset health measures and reporting and our proposed amendments.

5.2 Our view in our consultation paper was that, subject to certain modifications, Transpower's alternative proposed pilot asset health grid output measures (as described in paragraph 4.6) and related asset health pilot reporting requirements (as described in paragraph 4.9) would likely:

5.2.1 meet the purpose of the measures and reporting (as described in paragraphs 2.5 and 2.6) better than the current requirements in clauses 17.2 and 28.1 of the RCP2 IPP; and

5.2.2 reduce the regulatory compliance costs for Transpower.

5.3 In addition to the amendments proposed by Transpower we proposed that Transpower should also provide:

5.3.1 at the end of each disclosure year, additional forecast asset health scores by asset group and class for the next disclosure year, made on the assumption that there was no asset replacement or asset refurbishment expenditure during that (the next) disclosure year;[17]

5.3.2 at the end of the 2017, 2018 and 2019 disclosure years, forecasts of the rate of asset replacement and asset refurbishment for each asset group and asset class for the whole of RCP2 expressed as a percentage of the relevant asset population;

5.3.3 at the end of the 2017, 2018 and 2019 disclosure years, forecasts of the total asset replacement and asset refurbishment expenditure on each asset group and asset class for the whole of RCP2;

5.3.4 at the end of the 2020 disclosure year, the actual rate of asset replacement and asset refurbishment for each asset group and asset class for the whole of RCP2 expressed as a percentage of the relevant asset population;

5.3.5 at the end of the 2020 disclosure year, the actual total asset replacement and asset refurbishment expenditure on each asset group and asset class for the whole of RCP2;

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[17] For example, for its disclosures for the 2017 disclosure year, Transpower would be required to provide forecast asset health scores for the 2018 disclosure year made on the assumption that there was no asset replacement or asset refurbishment expenditure during the 2018 disclosure year.

5.3.6 explanations for the differences between –

    5.3.6.1 the forecast percentages and the actual percentages described in paragraph 4.6;

    5.3.6.2 the forecasts described in paragraphs 5.3.2 and 5.3.3 where the changes to forecasts occur between consecutive disclosure years;

    5.3.6.3 the forecasts for the 2019 disclosure year described in paragraph 5.3.2 and the actual rates described in paragraph 5.3.4; and

    5.3.6.4 the forecasts for the 2019 disclosure year described in paragraph 5.3.3 and the actual expenditures described in paragraph 5.3.5.

5.4 We proposed the additional forecasting requirements in paragraph 5.3 as we considered this information would help us to assess the impact of Transpower's investments on the health of the assets being reported on under the proposed pilot asset health grid output measures.

5.5 In our consultation paper we recognised that there was a trade-off between providing greater flexibility to Transpower and a more prescriptive approach which would provide greater certainty for us and Transpower's stakeholders.

5.6 However, given the evolving state of Transpower's asset health models during the pilot phase of Transpower's asset health reporting we considered it important to allow Transpower flexibility to make changes even where this would impact on its disclosures.

5.7 We therefore proposed allowing Transpower to:

    5.7.1 make changes to the asset health models that it applies when making the disclosures under the new reporting requirements so that it reports using its 'live' models;[18] and

    5.7.2 choose the materiality thresholds referred to in paragraph 4.8 while the new measures were being piloted rather than prescribing them ourselves.

5.8 However, we also proposed requiring Transpower to explain:

    5.8.1 any material changes to its 'live' models and the impact of the changes on its disclosures where it makes such changes between consecutive disclosure years; and

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[18] Under the RCP2 IPP, **live model** means the relevant asset health model used by Transpower for asset management purposes in the form it existed at the end of the **relevant disclosure year**.

5.8.2 any changes to the materiality thresholds where it makes such changes between consecutive disclosure years.

5.9 We further noted that we would reconsider the appropriate materiality thresholds (if any) and whether the balance between flexibility and certainty was set correctly when we considered the asset health grid output measures during the process to set Transpower's IPP for the next regulatory period (RCP3).

5.10 The amendments we proposed in our consultation paper are set out in Attachment B.

6. Our decisions and the reasons for our decisions

6.1 We received submissions from Transpower and Vector Limited (Vector) on our proposed amendments.[19]

6.2 Vector did not suggest any changes to the amendments we proposed in our consultation paper, but emphasised the importance of ensuring that any regulatory schemes for efficient investment took account of declining energy usage per customer and heightened risks for network investment given emerging energy technology. Vector also asserted that any financial incentives for asset health indicators should not encourage outmoded models for asset management.

6.3 Having assessed the issues raised by Vector we do not consider that they warrant making any changes to our proposed amendments given the evolving nature of the asset health grid output measures and their pilot status during RCP2. However, we recognise that the matters raised in Vector's submission are likely to be important considerations when we assess the potential asset health requirements for Transpower's IPP for RCP3. We will therefore consult on and consider the issues raised by Vector as part of the process to set Transpower's IPP for RCP3.

6.4 Transpower was largely supportive of the proposed amendments but suggested changes to:

6.4.1 remove the asset class 'tower foundations – other' from the AHI and related tables containing the reporting requirements that it had included in its proposal in error;

6.4.2 provide for greater flexibility to accommodate further development of the asset health measures and reporting during RCP2 (including where Transpower had reconsidered aspects of its proposal); and

6.4.3 simplify and/or improve the clarity of the reporting requirements.

6.5 Having considered Transpower's submission we have decided to accept some of Transpower's proposed changes, but to modify and reject others.

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[19] Transpower "Amendment to Transpower's pilot asset health requirements" (9 November 2017) and Vector "Submission on proposed changes to Transpower' pilot asset health grid output measures November 2017" (9 November 2017) available at http://www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-individual-price-quality-regulation/transpowers-price-quality-path-from-2015-to-2020/.

Changes to asset health descriptors

6.6   In its July 2017 proposal to the Commission, Transpower described an asset health index using the descriptors Good, Fair, Poor and Very Poor which were linked to specific scores. Transpower now considers that it would be preferable to allow more time to further develop appropriate descriptors. Transpower submitted that rather than codifying the descriptors now, the rules could instead state how to read the scores. It proposed deleting the descriptors and inserting a description on how to read the scores: "Read scores from left to right: left-hand side scores mean better condition than right-hand side scores."

6.7   We agree with Transpower that there should be greater flexibility in relation to the descriptors. However, we consider that it is desirable to provide greater context for the scores to interested parties (including ourselves) than only the description on how to read the scores.

6.8   We have therefore adopted Transpower's description on how to read the scores, but have also included a requirement that Transpower must include descriptors when it provides its disclosures. We have included examples of possible descriptors that Transpower could adopt which include "as new condition", "at end of life", "should be replaced", or "high asset related risk". We think that this approach will provide Transpower with sufficient flexibility to further develop descriptors during RCP2 while still providing sufficient context for the asset health indices.

Changes to the asset classes included in the measures

6.9   We have accepted Transpower's submission that the asset class, 'tower foundations – other', should be removed from the pilot asset health grid output measures.

6.10   We are comfortable that the five remaining asset classes (which are two more than the three asset classes presently in place in the RCP2 IPP) are sufficient for purposes of the pilot asset health grid output measures and related reporting.

Changes to the reporting requirements relating to changes to the 'live' models

6.11   Transpower proposed the removal of certain disclosure requirements relating to changes to the 'live' models. We have retained the requirements to identify the changes to the 'live' models and to give the reasons for the changes. We have, however, amended the wording relating to the requirement to provide information about the impact of the changes to make it clear that an overview of the impact of the changes is sufficient rather than very detailed explanations.

Changes to the reporting requirements relating to materiality thresholds, differences between forecast and actuals, and forecasts over time

6.12   Transpower proposed the removal of certain disclosure requirements relating to the materiality thresholds, differences between forecast and actuals, and forecasts over time. We have retained the proposed reporting requirements included in our consultation paper as we do not consider that they are unduly onerous or that they would hinder the fit for purpose development of changes. However, we have adopted a number of Transpower's proposed amendments where we consider that they simplify the drafting of the reporting requirements.

Changes proposed to the column headings of table 5.5

6.13   Transpower proposed changes to the column headings of table 5.5 to ensure the clarity of data inputs. We have accepted the proposed changes as we consider that Transpower's drafting achieves the result we intended while improving clarity.

Summary of submissions

6.14   The submissions and our decisions on Transpower's proposed changes are summarised in Attachment C.

Attachment A – Transpower's asset health grid output measures and reporting requirements

Clause 17.2 of the RCP2 IPP sets out these measures as follows:[20]

17.2   The pilot **asset health grid output measures** are:

17.2.1   the difference in the average remaining life (years) of the tower coating of transmission towers within **Transpower**'s **asset replacement** and **asset refurbishment** programme between that which exists at the end of a **disclosure year**, and that which existed at the end of the preceding **disclosure year** (and this pilot **asset health grid output measure** is identified in clause 28.1 as AH1RL);

17.2.2   the difference in the average remaining life (years) of outdoor circuit breakers within **Transpower**'s **asset replacement** and **asset refurbishment** programme between that which exists at the end of a **disclosure year**, and that which existed at the end of the preceding **disclosure year** (and this pilot **asset health grid output measure** is identified in clause 28.1 as AH4RL);

17.2.3   the difference in the average remaining life (years) of power transformers within **Transpower**'s **asset replacement** and **asset refurbishment** programme between that which exists at the end of at the end of a **disclosure year**, and that which existed at the end of the preceding **disclosure year** (and this pilot **asset health grid output measure** is identified in clause 28.1 as AH5RL).

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[20]   Bolded words are defined terms in the RCP2 IPP.

Clause 28.1 of the RCP2 IPP requires Transpower to provide the Commission with information about the measures in clause 17.2 annually by the Friday of the third complete week in October as follows:

28.1 No later than the Friday of the third complete week in October after the end of each **disclosure year**, **Transpower** must provide to the **Commission** the following information about pilot **asset health grid output measures** AH1RL, AH4RL and AH5RL:

28.1.1 the average remaining life (years, rounded to three decimal places) that existed at the end of the relevant **disclosure year** for:

(a) AH1RL: tower coating of transmission towers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the tower painting asset health model supplied by **Transpower** to the **Commission** on 27 June 2014;

(b) AH4RL: outdoor circuit breakers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the circuit breaker asset health model supplied by **Transpower** to the **Commission** on 27 June 2014; and

(c) AH5RL: power transformers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the transformer asset health model supplied by **Transpower** to the **Commission** on 27 June 2014;

28.1.2 the difference between the average remaining life (years, rounded to three decimal places) that existed at the end of the relevant **disclosure year** and that which existed at the end of the preceding **disclosure year** for:

(a) AH1RL: tower coating of transmission towers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the tower painting asset health model supplied by **Transpower** to the **Commission** on 27 June 2014;

(b) AH4RL: outdoor circuit breakers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the circuit breaker asset health model supplied by **Transpower** to the **Commission** on 27 June 2014; and

(c) AH5RL: power transformers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the transformer asset health model supplied by **Transpower** to the **Commission** on 27 June 2014;

28.1.3 the difference between the average remaining life (years) that existed at the end of the relevant **disclosure year** and that which existed at the end of the preceding **disclosure year** for:

(a) AH1RL: tower coating of transmission towers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the tower painting **live model**;

(b) AH4RL: outdoor circuit breakers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the circuit breaker **live model**; and

(c) AH5RL: power transformers within **Transpower**'s **asset replacement** and **asset refurbishment** programme, calculated in accordance with the transformer **live model**;

28.1.4 For the purposes of clause 28.1.3, **live model** means the relevant asset health model used by **Transpower** for asset management purposes in the form it existed at the end of the relevant **disclosure year**.

Attachment B – Proposed amendments in consultation paper

Replace the current pilot asset health grid output measures in clause 17.2 of the RCP2 IPP with the following –

17.2 The pilot **asset health grid output measures** are the forecast percentages and the actual percentages of the asset population in poor and very poor health determined in accordance with the asset health index set out in clause 17.2.1 below, for the asset groups and classes within **Transpower's asset replacement** and **asset refurbishment** programme set out in clause 17.2.2 below, based on scores calculated using Transpower's applicable **live models**:

17.2.1

Asset Health Index							
1-4	>4-5	>5-6	>6-7	>7-8	>8-9	>9-9.5	>9.5
Good			Fair		Poor		Very poor

17.2.2

Asset Groups	Asset Classes
Lines	Tower foundations – other
Lines	Tower foundations – grillage
Lines	Tower protective coating
Lines	Insulators
Stations	Outdoor circuit breakers
Stations	Power transformers.

Replace the current asset health pilot reporting requirements in clause 28.1 of the RCP2 IPP with the following -

28.1 No later than the Friday of the third complete week in October after the end of each **disclosure year**, **Transpower** must provide the **Commission** with separate tables containing the information set out in Tables 5.2 to 5.4 below, determined using its **live models**, together with the required explanatory notes:

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Tables

Table 5.2: Report on pilot asset health grid output measures and materiality thresholds

Asset Group	Asset Class	Asset population for the relevant disclosure year	Percentage of asset population not scored during the relevant disclosure year	Percentage of asset population in poor and very poor health (taken together) / Asset Health Index >8							
				Actual % for 2017 disclosure year	Forecast % for 2018 disclosure year	Actual % for 2018 disclosure year	Forecast % for 2019 disclosure year	Actual % for 2019 disclosure year	Forecast % for 2020 disclosure year	Actual % for 2020 disclosure year	Materiality Thresholds
Lines	Tower foundations - other										
	Tower foundations - grillage										
	Tower protective coating										
	Insulators										
Stations	Outdoor circuit breakers										
	Power Transformers										

where –

28.1.1 the forecast percentages for the 2018, 2019 and 2020 **disclosure years** (columns 6, 8 and 10) are as forecast in the disclosures due for the 2017 **disclosure year**;

28.1.2 the actual percentages for the 2017, 2018, 2019 and 2020 **disclosure years** (columns 5, 7, 9 and 11) are as assessed at the end of each of the **relevant disclosure years**; and

28.1.3 the materiality thresholds (column 12) are the thresholds under which the actual percentages that are greater than the forecast percentages would be treated as having not exceeded the forecast percentages;

Table: 5.3 Report on asset health scores

Asset Group	Asset Class	Asset population for the relevant disclosure year	Percentage of assets not scored for the relevant disclosure year	Asset health scores expressed as a percentage of the population of each asset class							
				1-4	>4-5	>5-6	>6-7	>7-8	>8-9	>9-9.5	>9.5
				Good			Fair		Poor		Very poor
Lines	Tower foundations - other										
	Tower foundations - grillage										
	Tower protective coating										
	Insulators										
Stations	Outdoor circuit breakers										
	Power Transformers										

Table 5.4: Report on forecast asset health scores assuming no asset replacement or asset refurbishment expenditure

Asset Group	Asset Class	Forecast asset health scores expressed as a percentage of the population of each asset class							
		1-4	>4-5	>5-6	>6-7	>7-8	>8-9	>9-9.5	>9.5
		Good			Fair		Poor		Very poor
Lines	Tower foundations - other								
	Tower foundations - grillage								
	Tower protective coating								
	Insulators								
Stations	Outdoor circuit breakers								
	Power Transformers								

where –

28.1.4   the forecast percentages (columns 3, 4, 5, 6, 7, 8, 9 and 10) are for the **disclosure year** following the **relevant disclosure year** assuming there will be no **asset replacement** or **asset refurbishment** expenditure during that **disclosure year**;

Table 5.5: Report on forecasts of asset replacement & asset refurbishment expenditure rates and total expenditure for RCP2

Asset Group	Asset Class	Asset population for the relevant disclosure year	Forecasts of the average rate of asset replacement & asset refurbishment expenditure for the whole of RCP2 expressed as a percentage of the relevant asset population	Forecasts of total asset replacement & asset refurbishment expenditure for the whole of RCP2	Actual average rate of asset replacement & asset refurbishment expenditure for the whole of RCP2 expressed as a percentage of the relevant asset population	Actual total asset replacement & asset refurbishment expenditure for the whole of RCP2
Lines	Tower foundations - other					
	Tower foundations - grillage					
	Tower protective coating					
	Insulators					
Stations	Outdoor circuit breakers					
	Power Transformers					

where -

28.1.5   the forecast average rates of **asset replacement** and **asset refurbishment** expenditure (column 4) and forecast total **asset replacement** and **asset refurbishment** expenditure (column 5) must be disclosed in each of the disclosures due for the 2017, 2018 and 2019 **disclosure years**; and

28.1.6   the actual average rates of **asset replacement** and **asset refurbishment** expenditure (column 6) and actual total **asset replacement** and **asset refurbishment** expenditure (column 7) must be disclosed in the disclosures due for the 2020 **disclosure year**; and

Explanatory Notes

28.1.7   an explanation for any differences between the forecast percentages in Table 5.2 (columns 6, 8 and 10) and actual percentages in Table 5.2 (columns 7, 9 and 11);

28.1.8   an explanation for any changes to the materiality thresholds in Table 5.2 (column 12) where the changes occur between consecutive **disclosure years**;

28.1.9   an explanation for any changes in the forecasts relating to **asset replacement** and **asset refurbishment** expenditure in Table 5.5 (columns 4 and 5) where the changes occur between consecutive **disclosure years**;

28.1.10   an explanation for any differences between the forecasts relating to **asset replacement** and **asset refurbishment** expenditure in Table 5.5 (columns 4 and 5) disclosed for the 2019 **disclosure year** and the actual rates and total expenditure relating to **asset replacement** and **asset refurbishment** expenditure in Table 5.5 (columns 6 and 7) disclosed for the 2020 **disclosure year** ; and

28.1.11   details of the following matters where the changes occur between consecutive **disclosure years**:

(a)   any material changes to the **live models**;

(b)   the reasons for any material changes to the **live models**; and

(c)   the effect of any material changes to the models on any of the information provided in Tables 5.2 to 5.5.

Insert the following definition as clause 28.4:

For the purposes of clauses 28.1 **relevant disclosure year** means the **disclosure year** being reported on as required in clause 28.1.

Attachment C – Summary of submissions and decisions

Submitter and doc details	Key points and issues submitted on	Decision
High level comments in submissions with no specific change proposed		
Vector Para 2	Historically asset management has involved replacing or augmenting assets well in advance of any future need. This approach has an implicit underlying presumption of increasing load growth and energy usage to cover the costs of investment.	We have acknowledged Vector's submission and indicated that we will consider and consult on these issues as part of the process to set Transpower's IPP for RCP3.
Vector Para's 3 and 4	The changing profile for customer energy usage over the last 10 years has been from one of increasing energy usage per customer to sustained declining usage. The design of regulatory schemes for efficient investment must reflect on the experience of recent history and not the experiences of previous decades where growing electricity usage could be reliably forecasted.	
Vector Para 5	Network asset planning must address the heightened risks for network investments given the current rate of change in emerging energy technology. Given the changing risks involved with investment suppliers must consider alternatives to refurbishing or replacing assets including harnessing innovative solutions for maintaining infrastructure.	
Vector Para 6	The Commission should ensure that any financial incentives for asset health indicators do not encourage outmoded models for asset management	
Transpower Para 3	Ultimately the role for the pilot development of asset health measures is to link interventions for asset health with incentives on revenue. As the measures are new and untested, the IPP provides for a pilot to enable investigation and development of a meaningful construct.	We have considered and addressed these points in our decisions.
Transpower Para 4	Flexibility is required during the pilot so that ongoing development is not constrained unintentionally and to remove the risk of further administrative intervention. … . However, we propose amendments for clarity, efficiency and to allow for further development in the pilot phase.	

Transpower Para 5	The level of detail in the drafting proposed is not supported with cost-benefit rationale, including any assessment of the potential compliance cost, or an explanation of the benefit to be achieved by the Commission's use of this information. Our preference for flexibility means drafting should enable fit for purpose information to be developed during the pilot.	
Submitter and doc details	**Proposed changes and reasons for changes**	
Proposed drafting changes		
Transpower – Point 1 a. and Appendix A	***Changes proposed to the table in clause 17.2.1 and tables 5.2 to 5.4: <u>Delete score descriptors Good, Fair, Poor and Very Poor and rather provide explanation on how to read the scores</u>*** In our July 2017 proposal to the Commission, we described in our draft table an asset health index using the descriptors Good, Fair, Poor and Very Poor. On reflection, we would like to have time to further develop, during the pilot, appropriate descriptors. Once developed and discussed with stakeholders, the descriptors can be included in our disclosures. Rather than codifying the descriptors now, the rules could instead state how to read the scores. We propose deleting the descriptors in the table in rule 17.2.1 and inserting a description on how to read the scores. Asset Health Index 1-4 >4-5 >5-6 >6-7 >7-8 >8-9 >9-9.5 >9.5 ~~Good~~ ~~Fair~~ ~~Poor~~ ~~Very poor~~ Read scores from left to right: left-hand side scores mean better condition than right-hand side scores. The removal of the descriptors also results in changes to the column headings of tables 5.2 to 5.4.	We have accepted Transpower's proposed change with modifications. We have removed the descriptors and included Transpower's description on how to read the scores – "Read scores from left to right: left-hand side scores mean better condition than right-hand side scores." We have also included a requirement that Transpower must provide descriptors with its annual disclosures.
Transpower – Point 1 b. and Appendix A	***Change proposed to the identified asset classes in clause 17.2.2 and tables 5.2 to 5.5: <u>Delete asset class Tower foundations – other</u>*** The asset class *Tower foundations – other* should be removed from the pilot asset health grid output measures*.* Its inclusion in our July 2017 proposal tables was in error. This asset class does not meet our	We have accepted Transpower's proposed change.

criteria for inclusion. (The rationale for including selected asset classes in the pilot includes, for each respective class, the maturity of the asset health model and data inputs; the importance of asset health as an investment driver; the size of the asset class by expenditure and asset population.)

The removal of this asset class results in changes to the first row of tables 5.2 to 5.4. The removal will mean that five asset classes remain.

Transpower – Point 3 and Appendix A (Column headings for table 5.5)	*Change proposed to the column headings of table 5.5: <u>Amend column headings in table 5.5 to ensure clarity of the data inputs :</u>*	We have accepted Transpower's proposed changes with modifications.

Change proposed to the column headings of table 5.5: <u>Amend column headings in table 5.5 to ensure clarity of the data inputs :</u>

Asset Group	Asset Class	Asset population for the relevant disclosure year	Forecasts of the ~~average~~ rate of asset replacement & asset refurbishment ~~expenditure for the whole of RCP2~~ expressed as a percentage of the ~~relevant~~ asset population (total RCP2 replacements divided by the total population)	Forecasts of total asset replacement & asset refurbishment expenditure for the whole of RCP2	Actual rate of ~~average~~ asset replacement & asset refurbishment ~~expenditure for the whole of RCP2~~ expressed as a percentage of the ~~relevant~~ asset population (total RCP2 replacements divided by the total population)	Actual total asset replacement & asset refurbishment expenditure for the whole of RCP2
			%	$	%	$

We have included the % and $ figure references in columns 4 to 8 and removed the words "average" and "expenditure" in columns 4 and 6. We have also added the words (total RCP2 replacements divided by the total population).

However, we have retained the words "relevant" and "for the whole of RCP2" in columns 4 and 6.

Transpower – Point 2.a and Appendix A (clause 28.1.11)	***Change proposed to the reporting requirements in clause 28.1.11 relating to changes to the 'live' models to allow flexibility instead of prescribing detail.***
	
	Replace-
	
	28.1.11 details of the following matters where the changes occur between consecutive **disclosure years**:
	
	    (a) any material changes to the **live models**;
	
	    (b) the reasons for any material changes to the **live models**; and
	
	    (c) the effect of any material changes to the models on any of the information provided in Tables 5.2 to 5.5.
	
	with
	
	28.1.11 an explanation of any material changes to the live models.
		We have retained the substance of the disclosures proposed in our draft but have combined clauses 28.1.11(a) and (b), and amended clause 28.1.11 (c) to only require an overview of the impact of the 'live' models on the disclosures rather than detailed explanations.

Transpower – Point 4 and Appendix A (clause 28.1.11)	***Changes proposed to the reporting requirements in clauses 28.1.7 – 28.1.10 w.r.t tables 5.2 and 5.5 to remove detail and allow fit for purpose development of explanations for differences between forecast and actuals*** Replace- 28.1.7 an explanation for any differences between the forecast percentages in Table 5.2 (columns 6, 8 and 10) and actual percentages in Table 5.2 (columns 7, 9 and 11); 28.1.8 an explanation for any changes to the materiality thresholds in Table 5.2 (column 12) where the changes occur between consecutive **disclosure years**; 28.1.9 an explanation for any changes in the forecasts relating to **asset replacement** and **asset refurbishment** expenditure in Table 5.5 (columns 4 and 5) where the changes occur between consecutive **disclosure years**; 28.1.10 an explanation for any differences between the forecasts relating to **asset replacement** and **asset refurbishment** expenditure in Table 5.5 (columns 4 and 5) disclosed for the 2019 **disclosure year** and the actual rates and total expenditure relating to **asset replacement** and **asset refurbishment** expenditure in Table 5.5 (columns 6 and 7) disclosed for the 2020	We have retained the substance of the disclosures proposed in our draft. However, the original clauses 28.1.7 and 28.1.10 have been combined and simplified in a new clause 28.1.7. Clauses 28.1.8 and 28.1.9 have also been simplified to align with the drafting of the new clause 28.1.7.

	disclosure year;	
	with	
	28.1.7 an explanation of differences between the forecasts and actuals in the tables 5.2 and 5.5	