



ISBN no. 978-1-869453-78-7
Project no. 14.11/14120

Public version

Draft decision on additional revenue-linked grid output measures for Transpower's individual price-quality path

Supplement to 16 May 2014 reasons for draft decision paper

Date: 3 July 2014

[This page has been intentionally left blank]

CONTENTS

PURPOSE OF THIS PAPER.....	4
HOW YOU CAN PROVIDE YOUR VIEWS	4
TRANSPOWER HAS PROPOSED ASSET HEALTH GRID OUTPUT MEASURES	4
OUR DRAFT DECISION ON THE ASSET HEALTH GRID OUTPUT MEASURES.....	5
IMPLEMENTATION OF THE MEASURES	11
WE HAVE ASSESSED THE PROPOSED MEASURES IN ACCORDANCE WITH THE CAPEX IM.....	12

Purpose of this paper

1. This paper provides our draft decision on additional revenue-linked grid output measures for Transpower's individual price-quality path for the next regulatory period (RCP2) from 1 April 2015 to 31 March 2020.
2. These measures will link an amount of revenue to asset-health and output, and were proposed by Transpower in its 27 June 2014 submission on our draft decisions on Transpower's individual price-quality path for RCP2.
3. This paper also describes how the measures would incentivise Transpower to improve the health of its assets and how it relates to Transpower's other incentive mechanisms.

How you can provide your views

4. We seek your views on our draft decision on the asset health grid output measures and how they are best implemented:
 - 4.1 We request that we receive submissions by **5pm on 11 July 2014**.
 - 4.2 There will then be an opportunity for cross-submissions. We request that we receive cross-submissions by **5pm on 18 July 2014**.
5. Please email all submissions to regulation.branch@comcom.govt.nz with the subject line 'Transpower asset health grid output measures submission/cross-submission' and your name.
6. We appreciate these timeframes are tight as a result of the proposal being included in Transpower's submission.
7. As soon as practicable, we intend to issue draft provisions giving effect to the asset health grid output measures.

Transpower has proposed asset health grid output measures

8. Transpower proposed asset health grid output measures in its submission on our 16 May 2014 draft reasons paper.¹
9. In our draft reasons paper, we indicated that we considered Transpower's proposed base capex for replacement and refurbishment to be prudent and efficient.² However, we had concerns with cost estimation and projects rolling out into RCP3.

¹ Transpower "Response to IPP Draft Decision" (27 June 2014).

² Commerce Commission "Setting Transpower's individual price-quality path for 2015—2020: Reasons for draft decision" (16 May 2014), p. 57.

10. Consequently, our draft decision was to decrease the amount allowed for replacement and refurbishment base capex for transmission line and AC stations by \$34.2m, from \$683.5m to \$649.3m (in 2012/13 constant prices). In nominal terms this is approximately a \$40 million decrease. This represented a 5% reduction as calculated by our external consultants, Strata Energy Consulting Limited.
11. The implication of this reduction is a reduced possibility that Transpower would be rewarded by the base capex expenditure adjustment for decreased output, rather than genuine efficiency gains.³ Under the base capex expenditure adjustment, Transpower is rewarded with a percentage of the amount of base capex not spent under the base capex allowance. This is determined by the base capex incentive rate.
12. Our draft decision was for the base capex incentive rate to be set at 33%.⁴ This would mean Transpower would be rewarded 33 cents for every dollar not spent under the base capex allowance.
13. We stated that our proposed reduction could be less if Transpower proposed a suitable grid output measure scheme that linked asset health to revenue in accordance with the *Transpower Capital Expenditure Input Methodology 2012* (Capex IM).⁵ This would help ensure that Transpower is rewarded for efficiencies that have a positive impact on asset health, not for a simple failure to deliver.

Our draft decision on the asset health grid output measures

14. Our draft decision is to accept Transpower's proposed measures, targets, caps, collars and incentives rates. We consider that the measures adequately address the concerns we expressed in our 16 May 2014 draft reasons paper.⁶
15. Given that we consider Transpower's proposed replacement and refurbishment base capex prudent and efficient, if our final decision is to set asset health grid output measures, we would reinstate the \$34.2 million of expenditure in our final decision on the base capex allowances for RCP2.
16. We consider that the asset health grid output measures appropriately incentivise Transpower to improve the health of its assets and note that they are consistent with our draft decision for other revenue-linked grid output measures.⁷

³ The base capex expenditure adjustment is detailed in Schedule B1 of the *Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2.

⁴ Commerce Commission "Setting Transpower's individual price-quality path for 2015—2020: Reasons for draft decision" (16 May 2014), p. 25.

⁵ *Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, clause 2.2.2(1)(c)(iv).

⁶ We have applied the criteria outlined in clauses A4-6 of the Capex IM in reaching our draft decision on the asset health grid output measures as discussed late in this paper.

⁷ Commerce Commission "Setting Transpower's individual price-quality path for 2015—2020: Reasons for draft decision" (16 May 2014), p. 46.

17. The asset health grid output measures will feed into the grid output adjustment as set out in the Capex IM.⁸ This is the approach we have used for our draft decisions on other revenue linked grid output measures.
18. Each measure will be symmetric, meaning Transpower can be rewarded or penalised depending on its performance relative to the target.
19. Transpower has also proposed an 'aggregate cap' that would apply to the net benefit accrued across all measures.⁹ This would ensure that there cannot be an aggregate monetary benefit under the asset health grid output measures for 'over-delivery' across all measures.
20. In principle we agree with an aggregate cap to net benefits for the asset health grid output measures. We will work to implement the cap within our current incentive regime and also seek your feedback on how this cap may be best implemented.
21. As per other revenue-linked grid output measures, the targets for each measure will be quality standards for RCP2. Therefore, the targets for the asset health grid output measures will be quality standards.
22. Table 1 summarises our draft decision. This includes the measures, and the portfolios covered by the measures. It also includes the targets, caps, collars, revenue at risk and incentive rates for each measure over RCP2.

⁸ *Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, Schedule B3.

⁹ Transpower "Response to IPP Draft Decision" (27 June 2014), p. 40.

Table 1: Draft decision on asset health grid output measures

	Revenue at risk (\$m)	Target/quality standard	Cap	Collar	Incentive rate (\$m)
<u>Tower painting (change in average coating life in years)</u>					
2015/16	1.128	-0.696	-0.674	-0.718	52.4
2016/17	1.128	-0.565	-0.543	-0.587	52.4
2017/18	1.128	-0.678	-0.656	-0.700	52.4
2018/19	1.128	-0.712	-0.690	-0.734	52.4
2019/20	1.128	-0.697	-0.675	-0.719	52.4
RCP2 total	5.64	-3.348	-3.240	-3.456	-
<u>Outdoor Circuit breakers (change in average remaining life in years)</u>					
RCP2 total	0.57	-0.258	0.010	-0.526	2.1
<u>Transformers (change in average remaining life in years)</u>					
RCP2 total	2.74	-0.194	-0.028	-0.359	16.5
<u>Outdoor indoor conversions (Number commissioned)</u>					
RCP2 total	2.71	16	17	15	36.3
<u>Grillages (Number commissioned)</u>					
2015/16	0.306	408	438	378	36.3
2016/17	0.306	408	438	378	36.3
2017/18	0.306	408	438	378	36.3
2018/19	0.306	409	439	379	36.3
2019/20	0.306	409	439	379	36.3
RCP2 total	1.530	2,042	1,892	2,192	-
<u>Insulators (Number commissioned)</u>					
2015/16	0.216	1,526	1,630	1,422	36.3
2016/17	0.216	1,466	1,570	1,362	36.3
2017/18	0.216	1,402	1,506	1,298	36.3
2018/19	0.216	1,315	1,419	1,211	36.3
2019/20	0.216	1,380	1,484	1,276	36.3
RCP2 total	1.080	7,089	7,609	6,569	-

Note: A measure is the yearly target for one portfolio or the RCP2 target. Where the target is for the whole of RCP2 as opposed to yearly, any revenue adjustment made through the grid output adjustment mechanism will be in the final year of RCP2. RCP2 totals for portfolios with yearly measures, eg, tower painting, are for information value only. The 'cap' in this table is not the 'aggregate cap.'

Six portfolios will be covered by the measures

23. Transpower has proposed that the measures cover six portfolios in the replacement and refurbishment transmission line and AC Stations base capex programme.
24. These portfolios represent 68% of the total proposed transmission line and AC stations replacement and refurbishment base capex. We consider that this provides sufficient coverage.
25. Transpower has stated that these portfolios are the most suitable because:
 - 25.1 tower painting, outdoor circuit breakers, and transformers have existing asset health data; and
 - 25.2 outdoor indoor conversions, grillages and insulators are large portfolios with relatively uniform outputs that are discrete and identifiable.
26. For outdoor indoor conversions, grillages, and insulators, the number commissioned will be used as a proxy for asset health as these portfolios do not currently have comprehensive asset health data.
27. Tower painting, grillages and insulators will be assessed in each year of RCP2 whereas outdoor circuit breakers, transformers, and outdoor indoor conversions will be assessed over the whole of RCP2 due to expenditure in these portfolios being 'lumpy' and setting an annual target may not produce the right incentives.

The target for each measure is based off Transpower's RCP2 proposal

28. The targets for each measure are derived from Transpower's 2 December 2013 RCP2 proposal.¹⁰ The targets therefore derive from what Transpower considers is the efficient level of output/asset health.¹¹
29. We will work with Transpower to ensure that the practical implementation of the measures encourages efficient investment and is in line with its intent, i.e. that Transpower is rewarded for improvements in asset health, not updated condition assessment data.

\$14.3 million of revenue will be at risk

30. \$14.3 million of revenue will be at risk during RCP2 over all six portfolios covered by the asset health measures. To calculate the revenue at risk, Transpower has multiplied our proposed reduction in replacement and refurbishment transmission line and AC stations base capex (\$40 million in nominal terms) by an incentive rate of 36%. The incentive rate is discussed below.

¹⁰ This is subject to the condition assessment data being updated to align with Transpower's proposed expenditure. See Commerce Commission "Setting Transpower's individual price-quality path for 2015—2020: Reasons for draft decision" (16 May 2014), para. G9.2.

¹¹ See Transpower "Response to IPP Draft Decision" (27 June 2014), p. 42.

31. The total revenue at risk is then allocated to the six portfolios based upon their relative forecast expenditure.
32. We consider \$14.3 million to be an appropriate amount of revenue to be at risk over RCP2 such that it is large enough to incentivise Transpower to deliver the required level of asset health and outputs.
33. We note that Transpower also has other incentives to ensure delivery of the base capex identified in its RCP2 proposal, including other revenue-linked grid output measures, and reputational effects, etc.

The incentive rate is a 'mark-up' on the base capex incentive rate

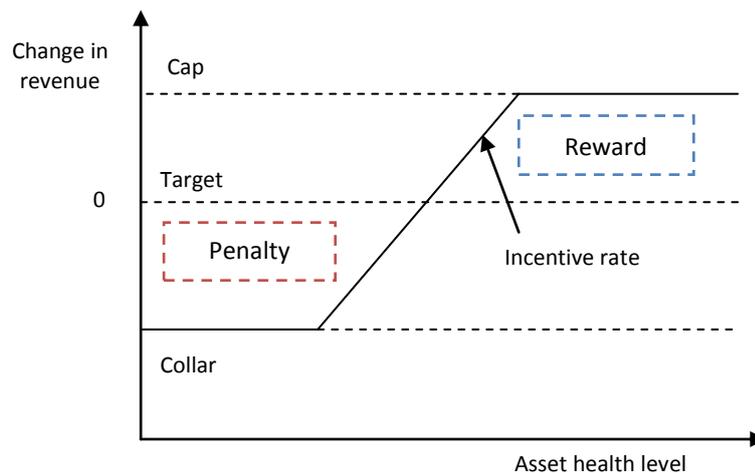
34. As mentioned, our draft decision was for the base capex incentive rate to be set at 33%. For the asset health grid output measures incentive rate, Transpower has proposed a 10% 'mark-up' to the base capex incentive rate giving an incentive rate of 36%.¹²
35. We consider that the 10% mark-up is appropriate in that it incentivises Transpower to improve its asset health levels.
36. The 10% mark-up acts to:
 - 36.1 recover any reward gained under the base capex expenditure adjustment owing to reduced output (the 33% of reduced base capex), and
 - 36.2 provide further incentives for Transpower to improve its levels of asset health and deliver outputs in the portfolios covered by the asset health grid output measures by either:
 - 36.2.1 providing a penalty greater than the benefits from the base capex expenditure adjustment for underspend due to reduced outputs, or
 - 36.2.2 providing a reward greater than the reward lost from the base capex expenditure adjustment for additional base capex.
37. The incentive rate in dollar terms, shown in Table 1, is the cost of delivering a unit increase in asset health or output multiplied by the 36% incentive rate.
38. If our final decision on the base capex incentive rate is different from our draft decision, we consider that a 10% mark-up would continue to be appropriate.

¹² We note that due to the low volume, the incentive rate mark-up for outdoor indoor conversions is 29%.

The measures will be symmetric but there will be an 'aggregate cap'

39. Our draft decision is that each asset health grid output measure will be symmetric ie, Transpower can be rewarded or penalised. This will ensure Transpower can substitute between fleets and from year to year as new information becomes available. We consider this will lead to more efficient investment.
40. However, in principle we agree there should be an 'aggregate cap.' An aggregate cap would ensure that Transpower does not earn a net benefit from 'over-delivery' ie, more than proposed in its RCP2 proposal. Given these are new grid output measures and that some are based on developing condition assessment data sets, the cap will operate to reduce the risk of over-compensating Transpower at the expense of consumers.
41. Figure 1 illustrates the design of the asset health grid output measures. The caps and collars for each measure are found using the revenue at risk and dollar incentive rate.

Figure 1: Design of the asset health grid output measures



The financial incentives created by the asset health grid output measures

42. A symmetric mechanism, based on an incentive rate equal to the base capex incentive rate plus 10% uplift, will incentivise Transpower to increase overall asset health. The mechanism will improve incentives to invest efficiently in asset health. This will be achieved through:
- 42.1 Better incentives to change the current level of asset health to that which best reflects the costs and benefits of doing so; and
- 42.2 Better incentives to substitute between asset health portfolios based on the costs and benefits of doing so.

43. If the cost of marginal improvements in asset health turns out as forecast in Transpower's RCP2 proposal, then Transpower will be incentivised to improve asset health in all portfolios covered by the measures. This is because the incentive rate is based on the cost of delivering improved asset health/output and is higher than the incentive rate applying to portfolios not covered by the asset health measures.
44. We considered whether an asymmetric scheme (penalty only for each measure) would better achieve the desired outcomes. However, we have concluded that a symmetric measure gives Transpower more flexibility to reassess its work-programme in light of better information, eg, updated cost information or condition assessment data, and to make efficient investment decisions.
45. An aggregate cap has similar features to the symmetric scheme in that it better allows for substitution, but offers consumers some of the protection of an asymmetric scheme.

Implementation of the measures

46. Our draft decision is that the asset health grid output measures will feed into the grid output adjustment in accordance with the Capex IM.¹³
47. The revenue adjustment arising from the grid output adjustment is required to be disclosed under Transpower's information disclosure requirements.¹⁴ We do not expect that any changes to the information disclosure determination will be required to account for the asset health measures and that additional reporting will be completed via compliance reporting requirements.

Implementation of the aggregate cap

48. As discussed, we agree in principle with Transpower's proposed aggregate cap.
49. We will work to devise a way in which the aggregate cap can operate within our current incentive regime. We intend to issue draft provisions giving effect to the asset health grid output measures, and the aggregate cap, as soon as practicable.

The targets each asset health measure will be quality standards

50. Consistent with our draft decision for other revenue-linked grid output measures, the asset health/output target for each measure will be a quality standard.¹⁵ For portfolios where the target is for the whole of RCP2, the quality standard will apply to the last year of RCP2.
51. Having the targets as quality standards means that, for any performance below the target but above the collar, Transpower will be automatically penalised by the asset health grid output measure.

¹³ *Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, Schedule B3.

¹⁴ *Transpower Information Disclosure Determination 2014* [2014] NZCC 5, clause 8.17.

¹⁵ Commerce Commission "Setting Transpower's individual price-quality path for 2015—2020: Reasons for draft decision" (16 May 2014), p. 44.

52. In exceptional circumstances where Transpower delivers a level of asset health or output below the cap, we may seek pecuniary penalties under s 87 of the Commerce Act 1986.¹⁶
53. We will include the targets caps, collars, and incentive rates for portfolios covered asset health grid output measures in the individual price-quality path determination. This would affect Part 4 of the determination.

Changes in asset health data and assumptions

54. The models used for the asset health grid output measures will be frozen at the time of the final decision. We note Transpower has proposed that where material divergence emerges between the frozen models and the live operational models, it will approach the Commission to reopen the incentive settings to ensure the regime properly recognises the optimal work-plan.¹⁷
55. We invite submissions on how this might be achieved. For example, whether it contemplated that this will be done using the 'm' term in the grid output adjustment.
56. We envisage that any material changes arising from improvements in asset health data or modelling assumptions will be appropriately accounted for in calculating the grid output adjustments.

We have assessed the proposed measures in accordance with the Capex IM

57. The Capex IM sets out specific criteria for considering grid output measures that we have taken into account in reaching our draft decision on the asset health grid output measures.¹⁸
58. Our draft decision is that we agree that the key features asset health measures proposed by Transpower are appropriate as they:
 - 58.1 quantify the reliability of the grid assets;
 - 58.2 have a direct link with base capex and the base capex incentives mechanisms;
 - 58.3 are designed according to policies referred to in the base capex proposal, albeit, Transpower has not been able to consult on its proposed measures;
 - 58.4 align with the business processes used by Transpower to make decisions on assets;
 - 58.5 are becoming a recognised measure of grid output and are valued by consumers¹⁹; and

¹⁶ For additional detail see Commerce Commission "Setting Transpower's individual price-quality path for 2015—2020: Reasons for draft decision" (16 May 2014), p. 49.

¹⁷ Transpower "Response to IPP Draft Decision" (27 June 2014), para. 6.1.5.

¹⁸ *Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2, clauses A4-A6.

58.6 are quantifiable, controllable by Transpower, auditable and replicable over time.

¹⁹ In response to our draft decision, Pacific Aluminium stated “We also consider that the additional performance measure proposed by Strata Energy – a network health measure – would be useful addition to the Commission’s proposed measures”. See Pacific Aluminium “Submission on the draft decision on setting Transpower’s individual price-quality path for 2015-2020”, Para. 30.