

Draft list of distributed generation eligible to qualify to receive avoided cost of transmission payments under regulated terms

Lower North Island
Consultation paper

Submissions close: **5:00pm 3 July 2018**

22 May 2018



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1 What you need to know to make a submission

What this consultation paper is about

- 1.1 The purpose of this paper is to consult on the Authority's proposed list of distributed generation in the lower North Island (LNI) that will be eligible to qualify to receive avoided cost of transmission (ACOT) payments under the regulated terms in Part 6 of the Electricity Industry Participation Code (Code).
- 1.2 The Authority has prepared a draft list of distributed generation in the LNI that will be eligible to qualify to receive ACOT payments under the regulated terms after 1 October 2018. The draft list is attached at Appendix D.
- 1.3 The Authority committed to consult with affected parties prior to finalising and publishing the list. The Authority will use information provided in submissions to help finalise the list.
- 1.4 The relevant Code provisions are attached at Appendix E.

How to make a submission

- 1.5 The Authority's preference is to receive submissions in electronic format (Microsoft Word) in the format shown in Appendix F. Submissions in electronic form should be emailed to submissions@ea.govt.nz with "Consultation Paper – Distributed generation to meet grid reliability standards: Lower North Island" in the subject line.
- 1.6 If you cannot send your submission electronically, post one hard copy to either of the addresses below, or fax it to 04 460 8879.

Postal address

Submissions
Electricity Authority
PO Box 10041
Wellington 6143

Physical address

Submissions
Electricity Authority
Level 7, ASB Bank Tower
2 Hunter Street
Wellington

- 1.7 Please note the Authority wants to publish all submissions it receives. If you consider that we should not publish any part of your submission, please:
 - (a) indicate which part should not be published
 - (b) explain why you consider we should not publish that part
 - (c) provide a version of your submission that we can publish (if we agree not to publish your full submission).
- 1.8 If you indicate there is part of your submission that should not be published, we will discuss with you before deciding whether to not publish that part of your submission.
- 1.9 However, please note that all submissions we receive, including any parts that we do not publish, can be requested under the Official Information Act 1982. This means we would be required to release material that we did not publish unless good reason existed under the Official Information Act to withhold it. We would normally consult with you before releasing any material that you said should not be published.

When to make a submission

- 1.10 Please deliver your submissions by **5pm on 3 July 2018**.

- 1.11 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions' Administrator if you do not receive electronic acknowledgement of your submission within two business days.

2 The Code was amended to change arrangements for paying ACOT

- 2.1 Generation connected to a local distribution network is called distributed generation. It ranges from small-scale (below 10 kW in capacity) such as rooftop solar, to larger hydro power stations and wind farms. In New Zealand, larger-scale plant (above 10 kW) makes up over 98% of total distributed generation by capacity.
- 2.2 Distributed generation owners typically use the distribution network to export (sell) electricity and may provide services to the distribution network or transmission grid (eg, by helping to maintain the reliability of the distribution network or transmission grid).
- 2.3 Distributed generation owners and distributors can negotiate agreements to receive and provide these services. If they do not agree terms, Part 6 of the Code provides for default terms, called regulated terms, to apply. Part 6 includes a set of distributed generation pricing principles (DGPPs) which determine the charges a distributor could impose on a distributed generator under the regulated terms.

The Authority amended the Code to address problems with ACOT payments

- 2.4 In December 2016, the Authority decided to address problems with ACOT payments by amending the DGPPs.
- 2.5 Until the Authority amended the Code in December 2016, the DGPPs required distributors to make ACOT payments to distributed generators on the regulated terms if the distributed generation avoided transmission costs. However, in practice, ACOT payments were set at the level of avoided transmission interconnection charges the distributor would otherwise pay in the absence of the distributed generation (not the actual transmission costs avoided). There was not necessarily any saving in transmission costs. The cost of these ACOT payments was borne by consumers.
- 2.6 The practice of setting ACOT payments based on avoided transmission charges resulted in inefficient investment in, and operation of, distributed generation. We estimated the net value lost to society from inefficiencies caused by ACOT payments at around \$33m in present value terms, calculated over a 15 year period. This includes inefficient investment in future generation (\$23m), inefficient reinvestment in existing generation (\$5.5m) and inefficient operation (\$4.4m).

The Code narrowed the criteria for ACOT payments under regulated terms

- 2.7 The Code change provides for existing distributed generation to be eligible to qualify for ACOT payments under the regulated terms only if the distributed generator is included in a list published by the Authority.
- 2.8 The Authority's list is required to be published after receiving and approving reports on which distributed generation is required for Transpower to meet the grid reliability standards.¹ Transpower's reports are to be prepared for each of the four transmission regions. Its report for the LNI region has informed this consultation paper.
- 2.9 The Authority is to publish, based on Transpower's report, which existing distributed generation will continue to be eligible to qualify to receive ACOT payments from distributors under the regulated terms. The Authority may be informed by Transpower's

¹ Refer Clause 2C, Schedule 6.4 of the Code.

report in developing its list of distributed generation but it makes the final decision as to the distributed generation on the list.

- 2.10 The Code change is intended to better ensure that distributors will not be required to make payments under the regulated terms, unless the distributed generation provides some genuine grid support services (ie, where distributed generation avoids some transmission costs).
- 2.11 Further, distributors will no longer be required to make ACOT payments to new distributed generation. Transpower is responsible for assessing the need for additional grid support from new distributed generation where that is the cheapest way to achieve the required level of transmission service. We note Transpower set out in an open letter on 19 April 2018 its high-level approach to designing a process for assessing potential investments in distributed generation as part of a broader consideration of how it considers transmission alternatives.
- 2.12 All of the other elements of the DGPPs and regulated terms remain in place.

The Code amendment comes into force in four phases

- 2.13 The Code amendment has effect from:
- (a) 1 April 2018 for distributed generation located in the LSI transmission region
 - (b) 1 October 2018 for distributed generation located in the LNI transmission region
 - (c) 1 April 2019 for distributed generation located in the UNI transmission region
 - (d) 1 October 2019 for distributed generation located in the USI transmission region.
- 2.14 This phased approach to implementation allows time for Transpower to identify distributed generation that is needed to meet the grid reliability standards in each region. Getting the implementation process underway allows the net benefits of the new ACOT payment regime to begin to flow to consumers as soon as possible.

The ACOT arrangements are expected to be further refined over time

- 2.15 The Authority expects that further refinement of the ACOT arrangements will occur over time to ensure the rate of ACOT payments is better aligned to the level of transmission benefits and to reduce the over-payment by consumers for the services provided by distributed generation.
- 2.16 The Authority noted in its December 2016 Decision paper on the ACOT Code amendment “If the TPM guidelines change, then in parallel with submitting a new TPM to the Authority for approval, Transpower should also recommend to the Authority further adjustments to the DGPPs that will promote efficiency and competitive neutrality between demand response, distributed generation and grid-connected generation.”²
- 2.17 The Authority also stated that if the current TPM remains in force then it will review the new ACOT arrangements for each region by no later than five years after the new

² Review of distributed generation pricing principles: decisions and reasons, 6 December 2016, page 22, paragraph 2.8. Available online at: <http://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/review-part-6-dg-pricing-principles/development/authority-decision-on-the-review-of-dgpps-and-acot/>.

arrangements have commenced for each region.³ In either case, the review will make sure that the pricing arrangements in place will provide ongoing incentives for efficient investment and operation of distributed generation.

3 The Authority has prepared a draft list of distributed generation in the lower North Island

- 3.1 The Authority has prepared a draft list of distributed generation for the LNI region.⁴
- 3.2 The lower North Island region is that part of the North Island situated below a line commencing at 38°02'S and 174°42'E, then proceeding in a generally north-easterly direction directly to 37°36'S and 175°27'E, then proceeding north along the 175°27'E line of longitude.⁵ Distributed generation located in the North Island above that line will be covered under the list for the UNI.
- 3.3 Table 1 shows the points of connection (POC) to the grid in the LNI identified by Transpower where distributed generation is required in the period 1 April 2017 to 31 March 2020 to meet the GRS. It also shows the distributor and the number of distributed generation at each of these POCs.
- 3.4 The distributed generation located behind these POCs will be eligible to qualify to receive ACOT payments under the regulated terms from 1 October 2018. Appendix C lists the POC, ICP identifier, capacity, and connection date for each ICP with distributed generation located behind these POCs.

Table 1: Quantity of distributed generation at points of connection to the grid on the draft list

POC	POC name	Distributor	# ICPs with DG (at 6 December 2016)		
			<=10 kW	>10 kW	Total
ANI0331	Aniwhenua	Horizon Energy	0	0	0
BPE0331	Bunnythorpe	Powerco	196	3	199
CPK0331, CPK0111	Central Park	Wellington Electricity	72	4	76
EDG0331	Edgecumbe	Horizon Energy	73	5	78
GYT0331	Greytown	Powerco	101	3	104
HAM0331, HAM0111	Hamilton	WEL Networks	346	5	351
HTI0331	Hangatiki	The Lines Company	18	7	25
HAY0111	Haywards	Wellington Electricity	36	1	37
KAW0111	Kawerau	Horizon Energy	14	1	15
KIN0112, KIN0331	Kinleith	Powerco	44	2	46
LTN0331	Linton	Powerco	68	4	72

³ Review of distributed generation pricing principles: decisions and reasons, 6 December 2016, page 22, paragraph 2.9.

⁴ For the purposes of clause 2(a)(i) of Schedule 6.4 of the Code.

⁵ Refer clause 2A(5), Schedule 6.4 of the Code. Relevant clauses of Part 6 are provided at Appendix C.

POC	POC name	Distributor	# ICPs with DG (at 6 December 2016)		
			<=10 kW	>10 kW	Total
MHO0331	Mangahao	Electra	99	3	102
MST0331	Masterton	Powerco	189	2	191
MAT1101	Matahina	Southern Generation GP Ltd	0	0	0
MTM0331	Mount Maunganui	Powerco	106	1	107
OKN0111	Ohakune	Powerco, The Lines Company	3	1	4
ONG0331	Ongarue	The Lines Company	8	2	10
HWA1101	Patea	Trustpower	0	0	0
RDF0331	Redclyffe	Unison Network	194	5	199
TNG0111, TNG0551	Tangiwai	Winstones, NZ Rail	0	0	0
TWC2201	Tararua Central	Trustpower	0	0	0
TGA0331, TGA0111	Tauranga	Powerco	207	6	213
TMU0111	Te Awamutu	Waipa Networks	45	5	50
TUI1101	Tuai	Eastland Network	140	9	149
UHT0331	Upper Hutt	Wellington Electricity	60	0	60
WKO0331	Waikino	Powerco	108	1	109
WRK0331	Wairakei	Unison Network	99	9	108
WTU0331	Whakatu	Unison Network	195	0	195
WIL0331	Wilton	Wellington Electricity	27	2	29
Totals			2,448	81	2,529

3.5 We note that Transpower's report identifies distributed generation at the Carrington Street and Rotorua POCs that are only required to support the GRS after 31 March 2020. These two POCs are not on the Authority's list for this reason.

We developed the list using Transpower's report

3.6 The Code requires that Transpower provide a report to the Authority that identifies which (if any) distributed generation in the LNI is required to meet the grid reliability standards in the period from 1 April 2017 to 31 March 2020.⁶

3.7 Transpower delivered its report, *Distributed generation to meet Grid Reliability Standards, lower North Island* (Transpower's report, attached at Appendix A) on 21 December 2017.

3.8 Transpower's report for the LNI is consistent with the LSI report, when read together with an explanatory note provided by Transpower (Appendix C). Transpower provided the

⁶ Clause 2A(2), Schedule 6.4 of the Code.

explanatory note after the Authority requested clarification of some aspects of the methodology and conclusions in its report.

- 3.9 The Authority approved Transpower's report on 2 May 2018.
- 3.10 Transpower's report was accompanied by a technical report commissioned by Transpower to assist Transpower's assessment of distributed generation in the LNI required to meet the grid reliability standards in the period from 1 April 2017 to 31 March 2020. This report, by Mitton ElectroNet, *Lower North Island: Distributed Generation Impact Study* is attached at Appendix B.

This is how we developed the draft list

- 3.11 The Authority developed the proposed list for the LNI in the same way that we developed the earlier LSI list, namely we:
- (a) queried the registry⁷ to determine which ICP identifiers have any type of distributed generation recorded against them, and the:
 - (i) network participant identifier that the ICP is connected to
 - (ii) network supply point (NSP)⁸ that the network is connected to
 - (iii) nameplate generation capacity⁹
 - (b) filtered to identify the distributed generation associated with the POC name identified by Transpower in its LNI report to be required for the GRS between 1 April 2017 and 31 March 2020. The distributed generation may be nested or embedded below the distribution network linked to these POCs
 - (c) filtered out distributed generation first connected after 6 December 2016¹⁰
 - (d) filtered to select these columns, which becomes the finished list:
 - (i) POC
 - (ii) ICP
 - (iii) date connected
 - (iv) generation capacity (kW).

We seek to confirm the status of the identified notionally embedded generation

- 3.12 Transpower identified some notionally embedded generation that meets the GRS in the LNI and it included in its report POCs associated with this generation. For some of these POCs we have identified ICPs that appear to identify some of this notionally embedded generation as distributed generation but in other instances we did not identify relevant ICPs.

⁷ On 12 January 2018.

⁸ The Code requires distributors, asset owners and the grid owner to maintain a table of NSPs. The NSP table is maintained by the reconciliation manager and is the industry master set of reconciliation points of connection. It contains parent-child relationships of interconnection points. The NSP obtained from the registry is cross-matched with this table to find the parent GXP, or root POC, matching the name that Transpower provides us in its report.

⁹ In accordance with Clause 2C(2)(b), Schedule 6.4 of the Code.

¹⁰ In accordance with Clause 2C(2)(a), Schedule 6.4 of the Code.

3.13 We had examined one instance of notionally embedded generation in the LSI region. In our Decisions paper for the LSI list of distributed generation dated 27 March 2018, we clarified the reason for our decision on the treatment of notionally embedded generation.

3.14 To quote from our LSI region Decisions paper¹¹ the key reasons for this decision are:

- (a) *generation plant that is solely grid-connected does not meet the definition of distributed generation in the Code.¹² It would therefore be ultra vires for the Authority to include generation plant that is solely grid-connected on the list of distributed generation plant eligible to qualify for ACOT payments on regulated terms*
- (b) *the Authority does not consider that a Code amendment to broaden list eligibility to include notionally embedded generation would be consistent with its statutory objective. It is important to recall that notionally embedded generation is grid-connected. To the extent that ACOT payments have been made in the past to notionally embedded generation, it has been to reduce the incentive on grid-connected generators to make inefficient grid-bypass investments (eg, incurring costs to 'reconnect' to a distribution network). ACOT payments to notionally embedded generators were never intended as a reward for genuinely reducing total transmission costs (unlike the policy intent for distributed generation). If the Code were amended to allow notionally embedded generation to qualify for the regulated ACOT terms, it would effectively treat notionally embedded generation on a preferential basis as compared to other grid-connected generation, and would not promote efficiency or reliability. Finally, the risk of inefficient bypass by grid-connected generation was reduced by the recent Code change, because distributed generation connected after 6 December 2016 cannot qualify for the regulated ACOT terms.*

...

We note that the situation for each notionally embedded generator can be quite unique and when assessing any notionally embedded generation in the other transmission regions we will assess each generation plant according to its particular circumstances.

3.15 We need to confirm whether notionally embedded generation is also distributed generation to include it on the list of distributed generation that is eligible to qualify to receive ACOT under the regulated terms. This requires evidence the notionally embedded generation is also distributed generation. Part 1 of the Code defines "distributed generation" as "generating plant that is connected, or that a distributed generator proposes to connect, to a distribution network or to a consumer installation that is connected to a distribution network". Generation plant that is physically connected to the transmission grid does not meet this definition.

¹¹ Paragraphs 4.6 and 4.8 of the *List of distributed generation eligible to qualify to receive ACOT, lower South Island: Decision, dated 27 March 2018* are quoted. The paper can be accessed at: <https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/acot-code-change-implementation/development/list-of-distributed-generation-eligible-for-acot-in-the-lower-south-island/>

¹² Part 1 of the Code defines "distributed generation" as "generating plant that is connected, or that a distributed generator proposes to connect, to a distribution network or to a consumer installation that is connected to a distribution network". Generation plant that is physically connected to the transmission grid does not meet this definition. Furthermore, section 2C(1) of Schedule 6.4 of the Code requires the Authority to compile and publish a list of eligible **distributed generation** (emphasis added).

Q1. What, if any, changes should be made to the list of distributed generation in the lower North Island that is eligible to qualify to receive ACOT payments under the regulated terms? What are your reasons?

Q2. If you own generation identified in Transpower's report as "notionally embedded" and you consider your plant is distributed generation, please provide information to show the capacity of your plant and where / how it is connected to a distribution network.

Inclusion on the list does not necessarily mean a distributed generator will receive ACOT payments

3.16 The proposed list identifies distributed generators that will be eligible to qualify to receive ACOT payments on the regulated terms. To actually receive such ACOT payments, distributed generators must still meet the other existing requirements, and particularly the requirements set by distributors. For example, distributors have generally paid ACOT to distributed generation that:

- (a) is connected to the distribution network under the regulated terms in Part 6
- (b) generates during regional coincident peak demand (RCPD) periods
- (c) has export capable metering (this is the case for about 99% of distributed generation).

3.17 As well, many distributors have a policy of not paying ACOT to distributed generation with capacity under 10 kW.

Next steps

3.18 We will consider submissions and then finalise and publish the LNI list. Distributed generation on the final list will continue to qualify for ACOT payments based on the regulated terms, and other distributed generation will not qualify from 1 October 2018.

3.19 All other elements of the DGPPs and regulated terms remain in place. For example, distributors and owners of distributed generation remain free to contract on alternative terms by mutual consent.

3.20 We intend to follow a similar process for the remaining two transmission regions.

Appendix A Transpower report

Appendix B Mitton ElectroNet Report

Appendix C Explanatory note from Transpower

Appendix D Draft list of distributed generation in the LNI that will be eligible to qualify for ACOT payments

Appendix E Relevant requirements under schedule 6.4 of Part 6 of the Code

2 The pricing principles are as follows:

Charges to be based on recovery of reasonable costs incurred by distributor to connect the distributed generator and to comply with connection and operation standards within the distribution network, and must include consideration of any identifiable avoided or avoidable costs

- a. subject to paragraph (i), **connection** charges in respect of **distributed generation** must not exceed the **incremental costs** of providing **connection** services to the **distributed generation**. To avoid doubt, **incremental cost** is net of—
 - i. if the **distributed generation** is included in a list **published** by the **Authority** under clause 2C(1), transmission costs that an efficient **distributor** would be able to avoid as a result of the **connection** of the **distributed generation** at the **nameplate capacity** specified for that **distributed generation** in the list; and
 - ii. **distribution** costs that an efficient **distributor** would be able to avoid as a result of the **connection** of the **distributed generation**:

.....

2A Transpower to provide reports to Authority in relation to distributed generation

- (2) **Transpower** must, by 15 March 2017 (or such later date as the **Authority** may allow), provide a report to the **Authority** that identifies which (if any) **distributed generation** located in the Lower South Island is required for **Transpower** to meet the **grid reliability standards** in the period from 1 April 2017 to 31 March 2020.
- (3) **Transpower** must, by 30 August 2017, provide a report to the **Authority** that identifies which (if any) **distributed generation** located in the Lower North Island is required for **Transpower** to meet the **grid reliability standards** in the period from 1 April 2017 to 31 March 2020.
- (4) **Transpower** must, by 31 January 2018, provide a report to the **Authority** that identifies which (if any) **distributed generation** located in the Upper North Island is required for **Transpower** to meet the **grid reliability standards** in the period from 1 April 2017 to 31 March 2020.
- (5) **Transpower** must, by 31 January 2018, provide a report to the **Authority** that identifies which (if any) **distributed generation** located in the Upper South Island is required for **Transpower** to meet the **grid reliability standards** in the period from 1 April 2017 to 31 March 2020.
- (6) In this clause,—

- a. Upper North Island is that part of the North Island situated on, or north and west of, a line—
 - i. commencing at 38°02'S and 174°42'E; then
 - ii. proceeding in a generally north-easterly direction directly to 37°36'S and 175°27'E; then
 - iii. proceeding north along the 175°27'E line of longitude; and
- b. Lower North Island is that part of the North Island not referred to in subclause (a); and
- c. Upper South Island is that part of the South Island situated on, or north of, a line passing through 43°30'S and 169°30'E, and 44°40'S and 171°12'E; and
- d. Lower South Island is that part of the South Island not referred to in subclause (c).

Clause 2A: inserted, on 9 January 2017, by clause 5 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2016.

2B Authority to review Transpower's reports in relation to distributed generation

- (1) The **Authority** must, as soon as practicable after receiving a report from **Transpower** under clause 2A,—
 - a. approve the report; or
 - b. decline to approve the report.
- (2) If the **Authority** declines to approve the report,—
 - a. the **Authority** must, as soon as practicable,—
 - i. advise **Transpower** of its reasons for declining to approve the report; and
 - ii. direct **Transpower** as to how it should amend the report before resubmitting it; and
 - b. **Transpower** must amend the report in accordance with the **Authority's** direction, and resubmit the report to the **Authority**,—
 - i. for the report provided under clause 2A(1), within 10 **business days**; and
 - ii. for reports provided under clauses 2A(2), (3), or (4), within 20 **business days**
- (3) The **Authority** must, as soon as practicable after receiving a resubmitted report from **Transpower**,—
 - a. approve the report; or
 - b. decline to approve the report.
- (4) Subclause (2) applies to the resubmitted report as if it were the report originally provided under clause 2A.

Clause 2B: inserted, on 9 January 2017, by clause 5 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2016.

2C Authority to publish list of distributed generation

- (1) The **Authority** must, after approving a report provided by **Transpower** under clause 2A, **publish** a list of **distributed generation** for the relevant region for the purposes of clause 2(a)(i).
- (2) A list **published** under subclause (1) must include—
 - a. only **distributed generation** that is **connected** as at 6 December 2016; and
 - b. the **nameplate capacity** of the **distributed generation** as at 6 December 2016.

Clause 2C: inserted, on 9 January 2017, by clause 5 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2016.

Appendix F Format for submissions

Submitter	
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Question	Comment
<p>Q1. What, if any, changes should be made to the list of distributed generation in the lower North Island that is eligible to qualify to receive ACOT payments under the regulated terms? What are your reasons?</p> <p>Q2. If you own generation identified in Transpower's report as "notionally embedded" and you consider your plant is distributed generation, please provide information to show the capacity of your plant and where / how it is connected to a distribution network.</p>	