

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

Upper North Island and upper South Island
Consultation paper

Submissions close: 5pm Tuesday 9 October 2018

28 August 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 lists of distributed generation in the upper North Island (UNI) and upper South Island (USI) 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 draft lists of distributed generation in the UNI and USI that will be eligible to qualify to receive ACOT payments under the regulated terms. The draft list for the UNI is attached at Appendix E, and the draft list for the USI is attached at Appendix F.
- 1.3 The Authority committed to consult with affected parties prior to finalising and publishing the lists. The Authority will use information provided in submissions to help finalise the lists.
- 1.4 The relevant Code provisions are attached at Appendix G.

How to make a submission

- 1.5 The Authority's preference is to receive submissions in electronic format (Microsoft Word or pdf) in the format shown in Appendix H. Submissions in electronic form should be emailed to submissions@ea.govt.nz with "Consultation Paper – Distributed generation to meet grid reliability standards: Upper North Island and upper South 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, Harbour 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 - (a) indicate which part should not be published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- 1.8 If you indicate there is part of your submission that should not be published, we will discuss with you before deciding whether to not publish that part of your submission.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 **9 October 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 the 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 set the limits of 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 reports for the UNI and USI regions have informed this consultation paper.
- 2.9 The Authority is to publish, based on Transpower's reports, 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.

reports in developing its lists of distributed generation but it makes the final decision as to the distributed generation on each 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 service².
- 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 lower South Island (LSI) transmission region
 - (b) 1 October 2018 for distributed generation located in the lower North Island (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 allowed time for Transpower to identify distributed generation that is needed to meet the grid reliability standards in each region. Getting the implementation process underway enabled 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.”³ The Authority is still considering these issues and may decide to address them in this way or in another way.

² Transpower released its Transmission Alternatives engagement process: consultation paper on 29 June 2018, seeking feedback on development of a process to identify and assess potential opportunities for transmission alternatives, including new distributed generation, see <https://www.transpower.co.nz/resources>

³ 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/>.

- 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 arrangements have commenced for each region.⁴ 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 draft lists of distributed generation for the UNI and USI

- 3.1 The Authority has prepared draft lists of distributed generation for the UNI and USI transmission regions.
- 3.2 The Authority published its final list for the LSI on 27 March 2018, having consulted on a draft during December 2017 and January 2018. Consultation on a draft list for the LNI ended on 3 July 2018 and the final list is published on 28 August 2018.

Points of connection for the UNI list

- 3.3 The UNI region is that part of the North Island situated above 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 situated in the North Island below that line was covered under the list for the LNI.
- 3.4 Table 1 shows the points of connection (POCs) to the grid in the UNI 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.
- 3.5 The distributed generation located behind these POCs will be eligible to qualify to receive ACOT payments under the regulated terms from 1 April 2019. Appendix E 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 for UNI

| POC identifier | POC name | Connecting asset owner | # ICPs with DG (at 6 December 2016) | | |
|------------------|--------------|------------------------|--|--------|-------|
| | | | <=10 kW | >10 kW | Total |
| ALB0331, ALB1101 | Albany | Vector | 428 | 3 | 431 |
| BOB0331, BOB1101 | Bombay | Counties Power | 311 | 9 | 320 |
| BRB0331 | Bream Bay | Northpower | 57 | 1 | 58 |
| GLN0332 | Glenbrook | Counties Power | 159 | 4 | 163 |
| HEN0331 | Henderson | Vector | 320 | 0 | 320 |
| HEP0331 | Hepburn | Vector | 214 | 2 | 216 |
| KOE1101 | Kaikohe | Top Energy | 378 | 6 | 384 |
| MPE1101 | Maungatapere | Northpower | 340 | 9 | 349 |

⁴ Review of distributed generation pricing principles: decisions and reasons, 6 December 2016, page 22, paragraph 2.9.

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

| POC identifier | POC name | Connecting asset owner | # ICPs with DG (at 6 December 2016) | | |
|---------------------------|------------|------------------------|--|-----------|--------------|
| | | | <=10 kW | >10 kW | Total |
| OTA0221 | Otahuhu | Vector | 53 | 1 | 54 |
| PAK0331 | Pakuranga | Vector | 221 | 3 | 224 |
| PEN0221, PEN0331, PEN1101 | Penrose | Vector | 333 | 9 | 342 |
| SVL0331 | Silverdale | Vector | 330 | 4 | 334 |
| TAK0331 | Takanini | Vector | 297 | 2 | 299 |
| TWH0331 | Te Kowhai | WEL Networks | 190 | 6 | 196 |
| Totals | | | 3,631 | 59 | 3,690 |

Points of connection for the USI list

- 3.6 The USI region is that part of the South Island situated above a line passing through 43°30'S and 169°30'E, and 44°40'S and 171°12'E.^{6,7} Distributed generation situated below that line was covered in the list for the LSI.
- 3.7 Table 2 shows the points of connection (POC) to the grid in the USI 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.
- 3.8 The distributed generation located behind these POCs will be eligible to qualify to receive ACOT payments under the regulated terms from 1 October 2019. Appendix F lists the POC, ICP identifier, capacity, and connection date for each ICP with distributed generation located behind these POCs.

Table 2: Quantity of distributed generation at points of connection to the grid on the draft list for USI

| POC identifier | POC name | Connecting asset owner | # ICPs with DG (at 6 December 2016) | | |
|----------------|------------|-------------------------------------|--|-----------|------------|
| | | | <=10 kW | >10 kW | Total |
| ALB0111 | Albury | Alpine Energy | 9 | 1 | 10 |
| HKK0661 | Hokitika | Westpower | 5 | 6 | 11 |
| STK0331 | Stoke 33kV | Nelson Electricity / Network Tasman | 474 | 12 | 486 |
| STK0661 | Stoke 66kV | Network Tasman | 135 | 8 | 143 |
| Totals | | | 623 | 27 | 650 |

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

⁷ The definition of the USI is based on a pricing region and does not necessarily fully align with the electrical network. However, according to Transpower, a demarcation between Tekapo B and Studholme allows for a simple separation of the upper and lower South Island regions, for the purpose of network studies. The demarcation between the lower South Island and the upper South Island cuts through Westpower Limited and Alpine Energy Limited territories.

We developed the lists using Transpower's reports

- 3.9 The Code requires that Transpower provide reports to the Authority that identify which (if any) distributed generation in the UNI and USI is required to meet the GRS in the period from 1 April 2017 to 31 March 2020.⁸
- 3.10 Transpower delivered its reports on the dates shown in Table 3. Both reports were accompanied by technical reports by Transpower's advisor, Mitton ElectroNet.

Table 3: Reports delivered by Transpower for the UNI and USI transmission regions

| Region | Reports delivered | Date delivered | Attached as |
|--------|--|----------------|-------------|
| UNI | <i>Distributed generation to meet Grid Reliability Standards, upper North Island</i> (Transpower's UNI report) | 31 May 2018 | Appendix A |
| | <i>Upper North Island: Distributed Generation Impact Study</i> (Mitton ElectroNet UNI report) | | Appendix B |
| USI | <i>Distributed generation to meet Grid Reliability Standards, upper South Island</i> (Transpower's USI report) | 25 May 2018 | Appendix C |
| | <i>Upper South Island: Distributed Generation Impact Study</i> (Mitton ElectroNet USI report) | | Appendix D |

- 3.11 Transpower's reports for the UNI and USI are consistent with each other and with the reports for the LNI and LSI.⁹
- 3.12 The Authority approved Transpower's UNI and USI reports on 6 August 2018.

This is how we developed the draft lists

- 3.13 The Authority developed the proposed lists for the UNI and USI in the same way that we developed the earlier LNI and LSI lists, namely we:
- (a) queried the registry¹⁰ 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)¹¹ that the network is connected to
 - (iii) nameplate generation capacity¹²

⁸ Clause 2A(2), Schedule 6.4 of the Code.

⁹ The UNI and USI reports use the same approach as the LNI report. All three reports are consistent with the LSI report when read together with an explanatory note that was provided by Transpower, and which was included in the consultation materials for the draft LNI list. Transpower provided the explanatory note after the Authority requested clarification of some aspects of the methodology and conclusions in its LNI report. See <https://www.ea.govt.nz/dmsdocument/23436>

¹⁰ On 5 July 2018.

¹¹ 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.

- (b) filtered to identify the distributed generation associated with the POC name identified by Transpower in its UNI and USI reports 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 2016¹³
- (d) filtered to select these columns, which becomes the finished list:
 - (i) POC
 - (ii) ICP
 - (iii) date connected
 - (iv) generation capacity (kW).

3.14 As a result of an issue raised during the draft LNI list consultation, we clarify that our registry query is of ICPs with an 'active' status.

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

Q2. What, if any, changes should be made to the list of distributed generation in the upper South Island that is eligible to qualify to receive ACOT payments under the regulated terms? What are your reasons?

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

3.15 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 other requirements, particularly those set by distributors. For example, many distributors have a policy of not paying ACOT to distributed generation with capacity under 10 kW. 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).

Next steps

3.16 We will consider submissions, finalise and publish the UNI and USI lists. Distributed generation on the lists will continue to qualify for ACOT payments based on the regulated terms. Other distributed generation will not qualify from the effective date for each region, which for the UNI is 1 April 2019 and for the USI is 1 October 2019.

3.17 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.

¹² In accordance with Clause 2C(2)(b), Schedule 6.4 of the Code.

¹³ In accordance with Clause 2C(2)(a), Schedule 6.4 of the Code.

Appendix A Transpower report: Distributed generation to meet Grid Reliability Standards, upper North Island

Appendix B Transpower report: Distributed generation to meet Grid Reliability Standards, upper South Island

Appendix C Mitton Electronet: UNI: Distributed Generation Impact Study

Appendix D Mitton Electronet: USI: Distributed Generation Impact Study

Appendix E Draft list of distributed generation eligible to qualify to receive ACOT payments, upper North Island

Appendix F Draft list of distributed generation eligible to qualify to receive ACOT payments, upper South Island

Appendix G 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 H Format for submissions

| | |
|-----------|--|
| Submitter | |
|-----------|--|

| Question | Comment |
|---|---------|
| <p>Q1. What, if any, changes should be made to the list of distributed generation in the upper North Island that is eligible to qualify to receive ACOT payments under the regulated terms? What are your reasons?</p> <p>Q2. What, if any, changes should be made to the list of distributed generation in the upper South Island that is eligible to qualify to receive ACOT payments under the regulated terms? What are your reasons?</p> | |