

# List of distributed generation eligible to qualify to receive ACOT

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Lower South Island  
Consultation paper

Submissions close: 1700 30 January 2018

5 December 2017



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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 South Island that will be eligible to qualify to receive avoided cost of transmission (ACOT) payments under the regulated terms Part 6 of the Electricity Industry Participation Code (Code).

## **The Authority is required to publish a list of distributed generation eligible to qualify to receive ACOT payments under regulated terms**

- 1.2 The Authority amended the Code in December 2016 to change arrangements relating to payments to distributed generation for ACOT. New distributed generation is no longer eligible under the regulated terms, and will instead contract directly with Transpower to receive payment for transmission alternatives. Existing generation can remain eligible to qualify to receive ACOT payments under the regulated terms, provided it is required for Transpower to meet the grid reliability standards (GRS), was connected at 6 December 2016 and meets other relevant requirements set by distributors.
- 1.3 To that end, the Code obliges Transpower to provide reports to the Authority which identify distributed generation in the lower South Island (LSI), upper South Island (USI), lower North Island (LNI), and upper North Island (UNI) (the four transmission pricing regions) required for Transpower to meet the GRS between 1 April 2017 to 31 March 2020.
- 1.4 The Code obliges the Authority, once it has received the Transpower reports, to publish a list of distributed generation for the purposes of clause 2(a)(i) of Schedule 6.4 of the Code.
- 1.5 Transpower provided its report for the LSI in April 2017 (Transpower report). The Authority approved the report in June 2017. The Transpower report is attached at Appendix A. An accompanying analysis prepared for Transpower by Mitton ElectroNet is attached at Appendix B.
- 1.6 The Authority has prepared a proposed list of distributed generation in the LSI that will be eligible to qualify to receive ACOT payments under the regulated terms after 1 April 2018, at least until 31 March 2020. The proposed list is attached at Appendix C.
- 1.7 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.
- 1.8 The relevant Code provisions are attached at Appendix D.

## **How to make a submission**

- 1.9 The Authority's preference is to receive submissions in electronic format (Microsoft Word) in the format shown in Appendix E. Submissions in electronic form should be emailed to [submissions@ea.govt.nz](mailto:submissions@ea.govt.nz) with "Consultation Paper—List of distributed generation eligible to receive ACOT, lower South Island" in the subject line.
- 1.10 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

- 1.11 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).
- 1.12 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.
- 1.13 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**

- 1.14 Please deliver your submissions by **5pm** on **30 January 2018**.
- 1.15 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 10kW) 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 (\$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. The relevant Code provisions are attached at Appendix D.
- 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.<sup>1</sup> Transpower's reports are to be prepared for each of the four transmission regions, beginning the LSI, which is the subject of this consultation paper.
- 2.9 The Authority will then decide, based on Transpower's advice, which existing distributed generation will continue to be eligible to qualify to receive ACOT payments from

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<sup>1</sup> Refer Clause 2C, Schedule 6.4 of the Code.

distributors under the regulated terms. The Authority may be informed by Transpower's 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 there is 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.
- 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 reduces Transpower's initial resource requirements and allows time for Transpower to identify distributed generation that is needed to meet the grid reliability standards. 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."<sup>2</sup>
- 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.<sup>3</sup> 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.

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<sup>2</sup> 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/>.

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

### 3 The Authority has prepared a proposed list of distributed generation in the lower South Island

- 3.1 The Authority has prepared a proposed list of distributed generation for the LSI region.<sup>4</sup>
- 3.2 The lower South Island region is that part of the South Island situated below a line passing through 43°30'S and 169°30'E, and 44°40'S and 171°12'E.<sup>5, 6</sup> Distributed generation located in the South Island above that line is excluded from the Authority's list and will be covered under the list for the USI.
- 3.3 Table 1 shows the grid exit points (GXPs) in the LSI identified by Transpower where distributed generation is required in the period 1 April 2017 to 31 March 2020 to meet the GRS.
- 3.4 The distribution generation located behind these seven GXPs will be eligible to qualify to receive ACOT payments under the regulated terms from 1 April 2018, at least until 31 March 2020. Appendix C lists the GXP/Point of connection, ICP identifier, capacity, and connection date for each ICP with distributed generation located behind these GXPs.

**Table 1: GXPs identified by Transpower where distributed generation is required to meet the GRS for 1 April 2017 to 31 March 2020**

GXP	GXP name	Distributor	Number of ICPs with DG (at 6 December 2016)
BAL0331	Balclutha	OtagoNet	39
CML0331	Cromwell	Aurora	231
FKN0331	Frankton	Aurora	136
GOR0331	Gore	The Power Company	32
BWK1101	Berwick	Aurora	DG recorded under Halfway Bush
HWB0331/0332	Halfway Bush	Aurora	158
NSY0331	Naseby	OtagoNet	11

Source: Transpower report and Electricity Authority.

#### **The list was developed using Transpower's report**

- 3.5 The Code requires that Transpower provide a report to the Authority that identifies which (if any) distributed generation in the LSI is required to meet the grid reliability standards in the period from 1 April 2017 to 31 March 2020.<sup>7</sup>
- 3.6 Transpower delivered its report, *Distributed generation to meet Grid Reliability Standards, lower South Island* (Transpower's report, attached at Appendix A) on 21 April

<sup>4</sup> For the purposes of clause 2(a)(i) of Schedule 6.4 of the Code.

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

<sup>6</sup> The definition of the lower South Island 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. However, this was not problematic in developing the Authority's list because all Westpower distributed generation that received ACOT in the year ended 31 March 2017 is domiciled in the upper South Island and is therefore excluded, and because Alpine Energy did not pay any ACOT in the year ended 31 March 2017.

<sup>7</sup> Clause 2A(1), Schedule 6.4 of the Code.



2017. The report was accompanied by a technical report by Transpower's advisor, Mitton Electronet, *Lower South Island: Distributed Generation Impact Study* (Mitton report, attached at Appendix B).

- 3.7 Transpower took a pragmatic approach to assessing what DG is required in the LSI to meet the GRS over the relevant period. Transpower's report examines the effect that removing distributed generation would have on grid offtake demand, and identifies distributed generation as "required" if the changed grid offtake would result in a breach of the N-1 criterion of the grid reliability standards. The report is structured as follows:
- (a) Section 1 provides a description of Transpower's analytical approach.
  - (b) Section 2 sets out an overview of Transpower's analysis, including key inputs.
  - (c) Section 3 provides the report's findings.
- 3.8 Transpower has confirmed that its report complies with the Code. The Authority approved Transpower's report on 28 June 2017.

### **Development of the proposed list**

- 3.9 The Authority has developed the proposed list using Transpower's report. The Authority:
- (a) identified distributed generation in the LSI using information obtained from distributors and registry information
  - (b) mapped the distributed generation to GXPs in the LSI
  - (c) filtered out the distributed generation connected to GXPs that were not located behind GXPs identified by Transpower (Table 1 above)
  - (d) filtered out distributed generation first connected after 6 December 2016<sup>8</sup>
  - (e) confirmed the nameplate capacity at 6 December 2016 of distributed generation on the list<sup>9</sup>
  - (f) confirmed the distributed generation on the list complies with the Code definition of distributed generation.

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

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

- 3.10 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, the requirements set by distributors. For example, distributors have generally paid ACOT to distributed generation that:

<sup>8</sup> In accordance with Clause 2C(2)(a), Schedule 6.4 of the Code, any distributed generation connected after 6 December 2016 will not be eligible for ACOT payments.

<sup>9</sup> In accordance with Clause 2C(2)(b), Schedule 6.4 of the Code, any increase in nameplate capacity by distributed generation after 6 December 2016 would not be taken into account in the calculation of ACOT in the lower South Island from 1 April 2018.



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

### **Next steps**

- 3.12 We will consider submissions and then finalise the Authority 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 April 2018.
- 3.13 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.
- 3.14 We intend to follow a similar process for the remaining three transmission regions.

## Appendix A Transpower report

## Appendix B Mitton Report

Appendix C Proposed list of distributed generation in the LSI eligible to qualify for ACOT payments

## Appendix D 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**:

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### 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 E 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 South Island that is eligible to qualify to receive ACOT payments under the regulated terms? What are your reasons?</p>	