



# **NK1408**

## **Applications and Standards for Connection to a Distributed Generation Greater than 10kW in Total**

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# NK1408 Applications and Standards for Connection to a Distributed Generation Greater than 10kW in Total

## Overview

**Document purpose** This document outlines the preliminary process for distributed generation (DG) applications under Part 6 of the Electricity Industry Participation Code for connections great than 10kW in total.

**Intended audience** This document applies to anyone involved in connecting DG over 10kW to the Unison Network.

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Recommended review period – annually, or earlier if any of the following occur:

- Changes to legislation, regulation or best practice
- changes to the Electricity Industry Participation Code 2010
- continuous improvements
- user feedback, or
- audit findings.

**Referenced Documents****Legislation**

- Electricity Industry Act 2010
- Health and Safety at Work Act 2015
- Privacy Act 2020
- Electricity (Safety) Regulations 2010
- Electricity Industry (Enforcement) Regulations 2010
- Electricity Industry Participation Code 2010

**Standards**

- AS/NZS 4777.1:2024 Grid connection of energy systems via inverters  
Part 1: Installation requirements
- AS/NZS 4777.2:2020 Grid connection of energy systems via inverters  
Part 2: Inverter requirements
- AS/NZS 5033:2021 Installation and Safety requirements for photovoltaic (PV) arrays

**Unison Policy**

- FC0006 Privacy Policy
- FC0043 Conflicts of Interest, Gifts and Hospitality Policy

**Unison Standards**

- CM2001 Network Connection Standard
- CM0003 Applications and Standards for Connection to a Distributed Generation of 10kW or Less in Total

**Content**

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## Definitions/Abbreviations

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<b>Applicant</b>	System integrator for the distributed generation and responsible for the technical performance of the system.
<b>Code</b>	Electricity Industry Participation Code 2010.
<b>Competitive bids</b>	Where there is a final application received within 20 business days of another final application that would affect the approval of the first (pursuant to clause 17, Part 2 or Part 6 of the Code).
<b>DG</b>	Distributed Generation – electrical power generation by any means, including from stored electricity, which is interconnected to Unison at a Point of Common Coupling. All generation that is connected to the Unison network is distributed generation.
<b>ICP</b>	Installation Control Point - this is the individual number allocated to each point where customer power usage is measured for billing by the retailer.
<b>POC</b>	Point of Connection.
<b>Retailer</b>	An Electricity Retailer – the company that supplies electricity to consumers with installations connected to the distributor's network.
<b>The Act</b>	Electricity Industry Act 2010.
<b>Unison</b>	Unison Networks Limited.

# 1. Distributed Generation Overview

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## 1.1 What is distributed generation?

Distributed generation is a small-scale power generator installed at residential or small commercial premises with an existing electricity connection (ICP) to a distribution network. Small generation systems are likely to include photovoltaic (solar cells), micro hydro and micro wind.

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## 1.2 Why Unison needs to be informed of a Generation Connection

The Electricity Industry Participation Code 2010 (the Code) requires Distributors (Unison) to be informed if a generation is to be connected to electrical circuits. This is a requirement as distributed generation is connected to the network and could result in electricity flowing into the network. Distributors must be informed:

- for reasons of safety associated with the generation and network, and
- to ensure the integrity of market reconciliation.

If you intend to connect distributed generation or make changes to existing distributed generation, you will need to notify Unison and gain approval.

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## 1.3 How to gain approval

To gain approval for the connection, you must comply with the requirements of this document. You must gain approval from Unison to ensure:

- it can be operated safely, and
- it meets electricity market requirements of the Code.

### Note

Refer to Unison's website [www.unison.co.nz](http://www.unison.co.nz) for details.

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## 1.4 Processing of applications to be Arm's Length

When considering and processing applications to connect distributed generation, Unison will deal with all applicants in the same way (without the perception for or actual influence of a conflicted party). Where there is a conflict of interest then this will be properly identified and managed in accordance with Unison's **FC0043 Conflicts of Interest, Gifts and Hospitality Policy**.

All applications will be processed on a 'first in, first served' basis.

Where Unison considers that applications are competitive bids then 'first in, first served' will prevail (unless Unison determines that the purpose of Part 6 of the Code justifies a different variance from this principle).

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## 1.5 When Unison does not need to be notified

Unison does not need to be notified if your generation system is:

- stand-alone, and
  - not connected to an electrical installation connected to Unison's network.
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## 1.6 DG less than 10kW

For generation less than 10kW, complete the online **DG1 Form: Application for Connection of Distributed Generation 10 kW or less**. This form is available on Unison's website: [www.unison.co.nz](http://www.unison.co.nz).

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**1.7 Information on selecting your system**

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<b>For...</b>	<b>information can be...</b>
Renewable energy sources	found on the Energy Efficiency and Conservation Authority (EECA) website <a href="http://www.eeca.govt.nz/">http://www.eeca.govt.nz/</a>
Solar energy generation	obtained from EECA.
Identifying, selecting and installing an appropriate Distributed Generation system	obtained from your electrician, electricity retailer or electrical equipment supplier.

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## 2. Safety and Standards

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**2.1 Overview** Electricity can cause serious harm, injury and damage, and should only be handled by certified electricians or electrical engineers.

Before making any applications, you should ensure that your electrician (or engineering specialist) is involved before any financial commitment has been made.

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**2.2 Technical standards and safety requirements** You must ensure that your generation scheme will be installed to comply with the technical and safety requirements as set out in the following standards:

- AS/NZS 4777.1:2024 Grid connection of energy systems via inverters Part 1: Installation requirements, except from voltage compliance level in section 4.2, where the compliance level of 230V +/- 10% stated in the Electricity (Safety) Regulations 2010 would apply for installations in New Zealand
- AS/NZS 5033:2021 Installation and Safety requirements for photovoltaic (PV) arrays, and
- AS/NZS 3000:2018 Electrical Installations (known as the Australian/New Zealand Wiring Rules).

**Note**

Standards can be purchased from Standards New Zealand on their website [www.standards.govt.nz](http://www.standards.govt.nz).

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**2.3 System safety** To ensure your system is safe, any inverter-based system itself must comply with AS/NZS 4777.2:2020 Grid connection of energy systems via inverters Part 2: Inverter requirements.

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**2.4 Certificate** The vendor of the equipment you intend to use will need to provide you with a certificate. The certificate must show that the equipment:

- has been tested by an independent test organisation in New Zealand (or Australia), and
- meets the above standards.

SAA Approvals is accredited by the Joint Accreditation Service of Australia and New Zealand ([JAS-ANZ](http://www.jas-anz.com)) as a third party certification body.

A list of inverters currently meeting the standards and approved for connection to Unison's network can be found on Clean Energy Council's website: <https://www.cleanenergycouncil.org.au>.

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### 3. Process to Connect Distributed Generation Greater than 10kW

#### 3.1 Background

This process applies to all DG greater than 10kW and is a two-stage process comprising of:

- an initial application (DG2) for feasibility, and
- a final application (DG3) when the applicant makes the decision to proceed.

Refer to Figure 1 and Figure 2 for detail of this process.

#### Note

As the size of DG increases, the amount of information necessary for assessment and approval will also increase.

#### 3.2 Process summary and timelines

Process	Timeline	Who is responsible
Initial application ( <i>refer to Section 4</i> )	Start of process	Applicant
Confirmation of a complete application ( <i>refer to Section 5</i> )	Within 5 business days of receiving the initial application	Unison
Response to initial application ( <i>refer to Section 5</i> )	Within 30 business days of receiving the initial application	Unison
Request for additional information ( <i>refer to Section 5</i> )	Within 10 business days of receiving the initial application	Unison
Submit final application ( <i>refer to Section 6</i> )	Within 12 months after receiving the applicant's application	Applicant
Third-party notified ( <i>refer to Section 7</i> )	Within 10 business days of receiving the applicant's application	Unison
Decision on final application ( <i>refer to Section 8</i> )	Less than 1MW – 45 business days 1MW to 5MW – 60 business days Greater than 5MW – 80 business days	Unison
Intention to negotiate a connection contract ( <i>refer to Section 9</i> )	Within 30 business days of final approval	Applicant
Contract negotiated ( <i>refer to Section 10</i> )	Within 30 business days	Applicant and Unison
Testing and inspection ( <i>refer to Section 11</i> )	Within reasonable time frame specified by Unison	Unison
Application approved ( <i>refer to Section 12</i> )	End of process	Unison

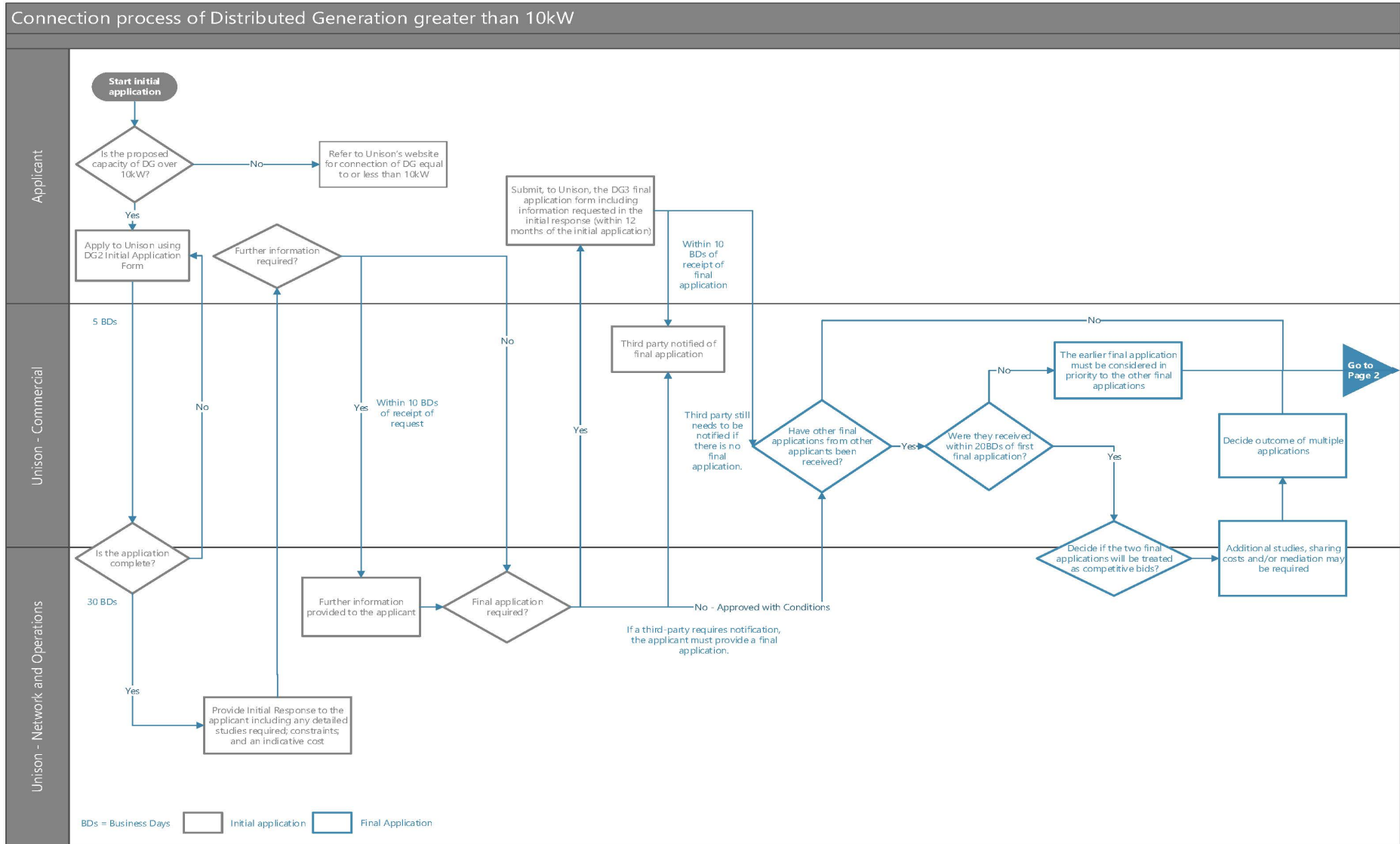


Figure 1: Connection Process of Distributed Generation greater than 10kW page 1 of 2

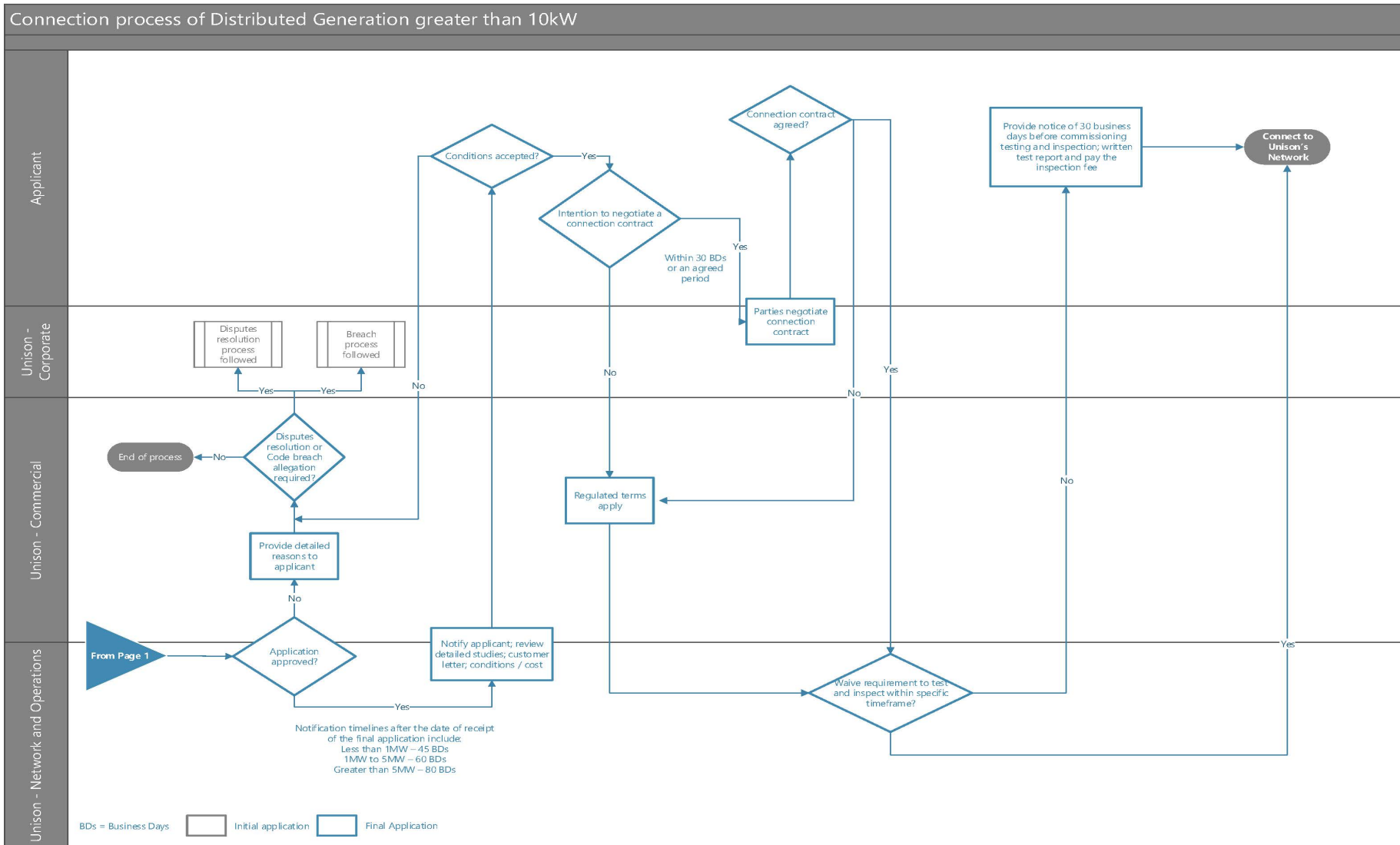


Figure 2: Connection Process of Distributed Generation greater than 10kW page 2 of 2

## 4. Initial Application

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### 4.1 Introduction

The initial application to connect DG greater than 10kW (DG2) requires compliance with Part 6 of the Code - Connection of Distributed Generation. By following the process outlined in this document, the initial application for connection is in accordance with Clause 11, Part 2, Schedule 6.1 of the Code.

All information provided to Unison in the application will be confidential and in accordance with the Privacy Act 2020 and Unison's **FC0006 Privacy Policy**.

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### 4.2 Who is responsible?

The Applicant.

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### 4.3 What will it cost?

The following fees are applicable for distributed generation above 10kW:

Application for Distributed generation of above 10 kW in total but less than 100 kW in total (GST exclusive)	\$770
For an inspection of Distributed generation of above 10 kW in total but less than 100 kW in total (GST exclusive)	\$180
Application for Distributed generation of 100 kW or above in total but less than 1 MW (GST exclusive)	\$1,540
Application for Distributed generation of 1 MW and above (GST exclusive)	\$7,690
For an inspection of Distributed generation of 100 kW and above (GST exclusive)	\$1,850

#### Note

For the most up-to-date application costs please refer to the: [Unison website](#).

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### 4.4 When to use

When you are wanting to make an initial application to connect DG greater than 10kW.

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### 4.5 Before you begin

Before you begin this application, ensure that you have read and understood the process and timelines for connection of DG greater than 10kW (refer to *Section 3*).

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**4.6 Steps**

Complete these steps when making an initial application.

<b>Step</b>	<b>Action</b>
1	Complete DG2 Form Initial Application to Connect Distributed Generation >10kW (on <a href="#">Unison's website</a> ).
2	Submit to Unison the DG2 Form Initial Application to Connect Distributed Generation >10kW.

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**4.7 Where to next?**

Unison will notify you within **five business days** if the application is complete. If the application is accepted, then the next phase is initiated (refer to *Section 5*).

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## 5. Response to Initial Application

### 5.1 Who's responsible?

Unison Networks Limited

### 5.2 When to use

When responding to the initial application and requesting additional information from the applicant.

### 5.3 Steps

Follow the steps below to respond to an initial application made by the applicant.

Step	Action
1	<p>Check that the required information within the DG2 Form Initial Application to Connect Distributed Generation of 10kW or More is complete and correct.</p> <p><b>Note</b> An introductory meeting with the applicant is recommended.</p>
2	<p>Notify the applicant within <b>five business days</b> of receiving an initial application if the application is complete.</p> <p>If the application is accepted, proceed to Step 3.</p> <p>If the application is not complete and/or not correct, proceed to Step 4.</p>
3	<p>Provide the following information to the applicant:</p> <p>a) Capacity of the affected distribution network, e.g. design, operational and fault levels.</p> <p><i>Default Initial Study Scope:</i> Load flow and net export to GXP (network normal, n-1).</p> <p>b) Notification of any breaches as a result of the proposed DG, e.g. relevant safety, voltage, power quality, and reliability at POC (not limited to customers POC). Note points deemed relevant for Unison to define e.g. by network simulations.</p> <p><i>Default Initial Study Scope:</i></p> <ul style="list-style-type: none"> <li>• protection concept</li> <li>• voltage compliance steady state, and</li> <li>• voltage regulation DG on/off (tap changes).</li> </ul> <p>c) Measures and conditions to avoid a) and b) above (breach of standards) either on Unison or applicant's side.</p> <p>d) Approximate cost of the above measures and timelines, noting any known constraints which could delay the connection.</p> <p>e) Information about further required studies relating to solving identified issues from point c), and:</p>

	<ul style="list-style-type: none"> <li>• indication if Unison agrees on consultants conducting the studies, or</li> <li>• Unison provides the studies at reasonable estimated cost to the DG applicant.</li> </ul> <p><i>Default Final Study Scope:</i></p> <ul style="list-style-type: none"> <li>• requirements review from third parties, e.g. Transpower (the system operator)</li> <li>• harmonic analysis with final design, and</li> <li>• system dynamic study with DG controller model (stability analysis).</li> </ul> <p>f) Obligations to Transpower and other third parties.</p> <p>g) Information about planned and unplanned outages which will impact the DG (three years of statistics to be included), and</p> <p>h) Any other information which may assist the applicant.</p>
4	<p>Within <b>10 business days</b>, additional information can be requested if it is relevant to process the information provided by Unison in the initial response.</p> <p>This information may entail single line diagrams, equipment ratings, normal switch configurations (including fault levels), and protection system details relevant to POC.</p> <p>Both the applicant and Unison to share new information relevant to the Code (reasonable endeavours).</p>

#### 5.4 Where to next?

Once all additional information is provided (if requested), the applicant will submit the final application (DG3 Form - Final Application to Connect Distributed Generation of 10kW or More) within 12 months of initial application (refer to *Section 3* and the [Unison website](#)).

## 6. Final Application

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**6.1 Who's responsible?** The Applicant.

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**6.2 When to use** When submitting the final application DG3 Form - Final Application to Connect Distributed Generation of 10kW or More (refer to [Unison's website](#)).

**Note**

The initial application may be a final application if the applicant and Unison agree, and there is no one else that Unison must give notice to, otherwise the steps below must be followed.

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**6.3 Before you begin** Ensure that you have completed the initial application process (refer to *Section 4*) and received a response from Unison.

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**6.4 Steps** Follow the steps below to submit the final application.

Step	Action
1	Submit the final application (DG3) within <b>12 months</b> of the initial application (unless the initial application is terminated in writing).  <b>Note</b> Unison may require a review of information provided by the applicant if network status has changed within the 12 months.
2	Submit detailed studies as outlined by the Unison in the initial response, unless Unison has agreed to supply engineering studies at cost to the applicant.

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**6.5 Where to next?** After a final application is received, Unison will provide written notice no later than **10 business days** after receiving the final application.

**Note**

If there is no agreement or final application, the initial application then lapses.

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## 7. Third Party Notification

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**7.1 Who's responsible?** Unison Networks Limited

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**7.2 When to use** When notifying third parties involved in the initial and final applications who are potentially affected by the DG installation.

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**Steps** Follow the steps below to notify third parties.

Step	Action
1	Provide written notice no later than <b>10 business days</b> after receiving the final application to: <ul style="list-style-type: none"> <li>• everyone involved in the initial and final applications potentially affected by the installation, and</li> <li>• all other DG installed on the network that may be affected.</li> </ul>
2	Assess multiple final applications (from different applicants) if they are received within <b>20 business days</b> of each other, and are competing bids that are potentially dependent on each other. <p><b>Note</b> Industry guidelines on what is a reasonable set of criteria for determining competitive bids must be disclosed and could include:</p> <ul style="list-style-type: none"> <li>• impact to the network and customers</li> <li>• capacity, i.e. is the available network capacity fully committed by one of the DG, and/or</li> <li>• likely life of the DG connection.</li> </ul>

**Where to next?** If the conditions are met, Unison will accept the application (refer to *Section 8*).

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## 8. Decision on Final Application

### 8.1 Introduction

Unison must approve or decline a final application no later than:

- **45 business days** for less than 1MW
- **60 business days** for 1MW to 5MW, or
- **80 business days** for greater than 5MW.

Unison can ask the applicant for an extension in writing of up to **40 business days** to finalise its decision.

### 8.2 Who's responsible?

Unison Networks Limited.

### 8.3 When to use

When deciding on an applicant's final application.

### 8.4 Steps

Follow the steps below to decide on a final application.

Step	Action
1	<p>Approve the final application if the following conditions are met:</p> <ul style="list-style-type: none"> <li>• the applicant has provided sufficient information as required by Part 6 of the Code and sufficient information to assess the applicant: <ul style="list-style-type: none"> <li>- complies with the Health and Safety at Work Act 2015</li> <li>- ensures to be compliant with the Electricity Industry Act 2010 and the Code, and</li> <li>- complies with Unison's policies and standards.</li> </ul> </li> </ul> <p><b>Note</b> If the application is declined go to Step 3.</p>
2	<p>If the final application is approved, then ensure the notice states:</p> <ul style="list-style-type: none"> <li>• conditions or measures for the Applicant to connect (if any)</li> <li>• reasons for above measures and conditions</li> <li>• detailed description of charges from or to Unison, including how they are calculated, and</li> <li>• information of the default dispute process.</li> </ul>
3	<p>If the application is declined, provide the following information:</p> <ul style="list-style-type: none"> <li>• detailed reasons for rejecting the application</li> <li>• actions the applicant can take to get approval under a new</li> </ul>

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	<p>application</p> <ul style="list-style-type: none"><li>• criteria for decision(s) if there were multiple dependent applications, and</li><li>• information of the default dispute process.</li></ul> <p><b>Note</b> If the applicant is not a participant in the default dispute process, the applicant may report to the Authority under the Electricity Industry (Enforcement) Regulations 2010 if they believe Unison has breached any requirements in Part 6 of the Code.</p>
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**8.5 Where to next?**

If there is an intention to negotiate a connection contract, notice must be given within **30 business days** (refer to *Section 9*).

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## 9. Intention to Negotiate a Connection Contract

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**9.1 Who's responsible?** The Applicant.

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**9.2 When to use** When Unison has accepted the final application, and a connection contract is to be negotiated.

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**9.3 Steps** Follow the steps below to negotiate a connection contract.

Step	Action
1	<p>Provide written notice (within <b>30 business days</b>, unless agreed otherwise) of the intention to proceed and negotiate a connection contract. The written notice must include:</p> <ul style="list-style-type: none"> <li>• details of the DG, and</li> <li>• confirmation that you accept all conditions.</li> </ul> <p><b>Note</b> If all conditions are not agreed with, the dispute resolution process in Schedule 6.3 of the Code will apply.</p>

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**9.4 Where to next?** If notice to proceed has not been given within the prescribed timeframes, then Unison has no more obligations under Part 6 of the Code. A new application however can be made.

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## 10. Contract Negotiated

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### 10.1 Introduction

The applicant and Unison must attempt to negotiate a contract in good faith.

If the connection contract is negotiated, Unison must allow the applicant to connect as soon as practicable.

If the connection contract is not negotiated, Unison must allow the applicant to connect the DG on the regulated terms as soon as practicable after the latter of the following:

- the expiry of the period for negotiating a connection contract under Part 2, Schedule 6.1 of the Code, and
  - the date on which the applicant has fully complied with any conditions (or other measures) that were specified by Unison as conditions of the connection.
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### 10.2 Who's responsible?

The Applicant and Unison Network Limited.

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### 10.3 Process

The negotiation of a connection contract starts with the applicant notice (refer to *Section 9*) and should take no more than **30 business days**.

The applicant and Unison can agree to extend the negotiation period if required.

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### 10.4 Where to next?

The DG may be tested and inspected within a reasonable timeframe specified by Unison (refer to *Section 11*).

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## 11. Testing the Distributed Generation

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**11.1 Introduction** If Unison is satisfied that the DG complies with connection and operation standards (refer to Unison's **CM2001 Network Connection Standard**), testing may not be necessary.

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**11.2 Process** Follow the steps below if DG testing is required:

Step	Action
1	The applicant must test the installation within a reasonable time specified by Unison.
2	Unison can waive the tests if satisfied that they comply with the connection and operational standards (refer to Unison's <b>CM2001 Network Connection Standard</b> ).
3	The applicant must give adequate notice of the testing and inspection.
4	The applicant must provide a test report to Unison showing that they comply with the connection and operational standards.
5	The applicant must pay Unison a fee for testing and inspection (refer to <i>Section 4.3</i> ).

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**11.3 Where to next?** The application moves to the approval stage (refer to *Section 12*).

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## 12. Approval of Application

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**12.1 Approval process** If a contract has been negotiated and agreed, Unison must connect the DG as soon as practicable (refer to *Section 10*).

If the application is to renew an existing connection under Schedule 6.1, Clause 1B(b) of the Code, Unison will endeavour to ensure the new terms under which the DG's existing connection continues to apply:

- as soon as practicable, if the previous connection contract has expired, or
- no later than the expiry of the previous connection contract if the contract is in force. Refer to Schedule 6.1, Clause 23(3) of the Code.

**Note**

The DG may be connected under the 'regulated terms' if the contract negotiation period expires without a signed contract.

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**12.2 Where to next?** The DG is connected to Unison's network.

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## Appendix A - Summary of Document Changes

Date	Version No.	Changes to Document	Owner	Authoriser	Approver
21/01/2026	1.0	New document.	Network Analysis and Solutions Team Leader	Innovative Solutions Manager	General Manager Networks and Operations