

EREC G99 Revised Fast Track Process

Proposed Revisions to ERECs G98 and G99 to introduce new fast track processes for the installation of small generation and storage devices in domestic properties

G99 Legal Text Version

To implement the proposed extended fast track process into ERECs G98 and G99 the changes listed here are proposed. Text in italics is explanatory for the purpose of this note and will not form part of the proposed revised text in G98 and G99.

The text proposed in this note is written as simple replacements for, and additions to, the existing relevant text in G98 and G99.

It is intended to propose an update to the documents at the earliest opportunity.

EREC G98

The only change proposed to G98 is to align, although not duplicate, its definition of Registered Capacity with that proposed for EREC G99. It is intended to simply replace the current definition in G98 with the new text below.

Registered Capacity

The designed maximum **Active Power** capacity of a **Micro-generator**, as declared by the **Manufacturer** which should exclude the **Active Power** consumed by the **Micro-generator** when producing the **Registered Capacity**; ie this will relate to the maximum level of **Active Power** deliverable from the **Micro-generating Plant**. For **Micro-generators** connected to the **DNO's Distribution Network** via an **Inverter**, the **Registered Capacity** of the **Micro-generator** is the lesser of the **Inverter(s)** rating or the rating of the energy source.

EREC G99

The changes to EREC G99 include the introduction of a new definition of Intrinsic Design Capacity (IDC), and modifications to the definitions of Fully Type Tested and Registered Capacity to recognize the IDC concept. It is proposed to add the IDC definition and replace the existing definitions of Fully Type Tested and Registered Capacity with the drafting shown below. A new definition of Small Generation Installation is also proposed to be added.

Fully Type Tested

A **Power Generating Module** with an **Intrinsic Design Capacity** of ≤ 50 kW which has been tested to ensure that the design meets the relevant technical and compliance requirements of this EREC G99, and for which the **Manufacturer** has declared that all similar **Power Generating Modules** supplied will be constructed to the same standards and will have the same performance. In the case where **Interface Protection** functionality is included in the tested equipment, all similar products will be manufactured with the same protection settings as the tested product.

Intrinsic Design Capacity

The designed maximum **Active Power** capacity of a **Generating Unit** or a **Power Generating Module**. In general this will be identical to the **Registered Capacity**, but can be a higher value where the **Manufacturer** has made specific provision for the maximum **Active Power** output to be limited to a defined value less than the designed maximum **Active Power** capacity. Such a limitation will be semi-permanent and

designed in by the **Manufacturer**. It will not be amenable to adjustment by the **Generator**; any such adjustment shall be undertaken by personnel specifically empowered and equipped for that task by the **Manufacturer**.

Small Generation Installation

A **Generator's Installation** that comprises one or more **Low Voltage Power Generating Modules**¹ each with an **Intrinsic Design Capacity** of no more than 32 A and where the aggregate **Registered Capacity** of all the **Power Generating Modules** is no more than 60 A.

Registered Capacity

The normal maximum **Active Power** capacity of:

- A **Generating Unit**; or
- A **Power Generating Module** (in the case of a **Power Park Module**, the lesser of the **Inverter(s)** rating or the rating of the energy source); or
- A **Power Generating Facility**,

as declared by the **Generator** taking into account the **Active Power** consumed when producing the same and the production of the required **Reactive Power** at the **Connection Point**. For the purposes of the **Small Generation Installation** procedure the **Registered Capacity** of a **Power Generating Module** can be a limited (eg by software) to be less than the **Intrinsic Design Capacity** of the **Power Generating Module**.

It is proposed to replace the existing "Integrated Micro Generation and Storage procedure", colloquially referred to as the fast track process, contained in 6.2.2 with the revised section 6.2.2 show below.

6.2.2 Small Generation Installation procedures

6.2.2.1 Where, typically in a domestic, or similarly small **Low Voltage** installation, the **Generator** wishes to install one or more small **Generating Units** where the **Intrinsic Design Capacity** of all existing and intended **Generating Units** is not greater than 32 A per phase, the provisions of the appropriate **Small Generation Installation** procedure can be followed provided that the **Generator's Installation** meets the appropriate conditions set out below. Different connection procedures apply depending on the exact capacities and capabilities of the **Generating Units** and control equipment installed, as summarised in the table below:

Application Procedure	All individual Intrinsic Design Capacities	All individual Registered Capacities	Aggregate of Registered Capacities	EREC G100 limitation scheme required?
EREC G98	-2	≤ 16 A	≤ 16 A	No

¹ In EREC G98 a **Power Generating Module** with nominal current up to and including 16 A per phase is known as a Micro-generator.

² G98 does not include the concept of **Intrinsic Design Capacity**.

Application Procedure	All individual Intrinsic Design Capacities	All individual Registered Capacities	Aggregate of Registered Capacities	EREC G100 limitation scheme required?
EREC G99 SGI-1	≤ 32 A	≤ 16 A	≤ 16 A	No
EREC G99 SGI-2	≤ 32 A	≤ 16 A	≤ 32 A	16 A
EREC G99 SGI-3	≤ 32 A	≤ 32 A	≤ 60 A	32 A

6.2.2.2 Small Generation Installation Procedure-1

- (a) This procedure SGI-1 applies where the following conditions are met:
1. The new and existing **Generating Units** are located in a single **Generator's Installation**;
 2. All of the **Generating Units** (including **Electricity Storage** devices) are connected via EREC G98 or G99 **Fully Type Tested** inverters;³
 3. The **Intrinsic Design Capacity** of each **Generating Unit** is no more than 32 A;
 4. Any **Generating Unit** with an **Intrinsic Design Capacity** of greater than 16 A has its **Registered Capacity** limited to 16 A; and
 5. The total aggregate **Registered Capacities** of all **Generating Units** (including **Electricity Storage** devices) is no more than 16 A per phase;
- (b) If all the conditions above are satisfied, the **Generator** can install and commission all the **Power Generating Modules** and shall submit notification in the format as shown in Form A3-3 (Annex A.1);
- (c) If the **Generator** wishes to increase the **Active Power** output of one or more **Generating Units** comprising the **Power Generating Module** from its current **Registered Capacity** such that condition 4 above is no longer satisfied, ie to change or remove the limitation on output, an application in a format as shown in Form A1-1 or Form A1-2 (as applicable and included in Annex A.1) shall be submitted to the **DNO**.

6.2.2.3 Small Generation Installation Procedure-2.

- (a) This procedure SGI-2 applies where the **Generator** wishes to install one or more **Generating Units** and the following conditions, which are essentially the conditions that were applicable for the "Integrated Micro Generation and Storage" procedure in previous versions of EREC G99, are met:
1. The new and existing **Generating Units** are located in a single **Generator's Installation**;
 2. All of the **Generating Units** (including **Electricity Storage** devices) are connected via EREC G98 or G99 **Fully Type Tested** inverters;⁴

³ Or **Type Tested** to EREC G83 or G59 where the **Power Generating Module** was connected prior to 27 April 2019.

⁴ Or **Type Tested** to EREC G83 or G59, where the **Power Generating Module** was connected prior to 27 April 2019.

3. The **Intrinsic Design Capacity** of each new and existing **Generating Unit** is no more than 32A per phase;
 4. The **Registered Capacity** of each new and existing **Generating Unit** is no more than 16A per phase;
 5. The total aggregate **Registered Capacities** of all the **Generating Units** (including **Electricity Storage** devices) is less than 32 A per phase; and
 6. An EREC G100 compliant export limitation scheme is present that limits the export from the **Generator's Installation** to the **Distribution Network** to no more than 16 A per phase.
- (b) If all the conditions above are satisfied, the **Generator** should complete an application in a format as shown in Form A1-2 (Annex A.1).
- (c) The **DNO** will assess the application. No **Power Generating Modules** should be installed or commissioned before this **DNO** assessment is complete and the **Generator** has been advised of the outcome of this assessment. The **DNO** will provide the results of the assessment within 10 working days of receiving the application in (b) above.
- (d) The planned commissioning date stated on the application form shall be between 10 working days and 3 months from the date that the application is submitted to the **Distribution Network Operator**. Confirmation of the commissioning of each **Power Generating Module** shall be made no later than 28 days after commissioning (where tests and checks are not witnessed in accordance with 16.3.1). Confirmation shall be provided in a format as shown in Form A3-2 (Annex A.3). In addition to Form A3-2, an EREC G100 export limitation scheme Installation and Commissioning Tests form shall be submitted to the **DNO**. Confirmation shall be provided in a format as shown in EREC G100 Appendix B.
- (e) If, at (c) above, the **DNO** determines that further analysis is required before a connection offer can be made, the **DNO** will confirm this. This confirmation ends the SGI-2 process for this application which will then be progressed in line with the **DNO's** standard application process.

6.2.2.4 Small Generation Installation Procedure-3.

- (a) This procedure SGI-3 applies where the following conditions are met:
1. The new and existing **Generating Units** are located in a single **Generator's Installation**;
 2. All of the **Generating Units** (including Electricity Storage devices) are connected via EREC G98 or EREC G99 **Fully Type Tested** inverters;⁵
 3. The **Intrinsic Design Capacity** of each new and existing **Generating Unit** is no more than 32 A.
 4. The total aggregate **Registered Capacities** of all the **Generating Units** (including **Electricity Storage** devices) is less than 60 A per phase; and

⁵ Or **Type Tested** to EREC G83 or G59, where the **Power Generating Module** was connected prior to 27 April 2019.

5. An EREC G100 compliant export limitation scheme is present that limits the export from the **Generator's** installation to the **Distribution Network** to 32 A per phase.
 6. Condition 5 above can be waived if the aggregate of the **Registered Capacities** of the **Power Generating Units** is no more than 32 A.
- (b) If all the conditions above are satisfied, the **Generator** should submit an application in a format as shown in Form A1-2 (Annex A.1).
- (c) The **DNO** will make an initial assessment of the application. No **Power Generating Modules** should be installed or commissioned before this initial **DNO** assessment is complete and the **Generator** has been advised of the outcome of this initial assessment. The **DNO** will confirm within 10 working days of the submission whether it is necessary for the **DNO** to undertake site specific analysis of the application, taking into account the **Intrinsic Design Capacities**, the aggregated **Registered Capacities** of the **Generating Units** and the local network conditions. Where the **DNO** has identified there is a need for further analysis, no further submission of information is required, but commissioning must not proceed until the **DNO** has established if it is necessary to upgrade the network, and whether such work may be chargeable to the **Generator**, if the **Generator** wishes to go ahead with the installation.
- (d) The planned commissioning date stated on the application form shall be between 10 working days and 3 months from the date that the application is submitted to the **DNO**. Confirmation of the commissioning of each **Power Generating Module** shall be made no later than 28 days after commissioning (where tests and checks are not witnessed in accordance with 16.3.1). Confirmation shall be provided in a format as shown in Form A3-2 (Annex A.3). In addition to Form A3-2, if an EREC G100 export limitation scheme has been installed, then the G100 Installation and Commissioning Tests form shall also be submitted.

Other G99 amendments

- 2.4 Specific separate requirements apply to **Power Generating Facilities** connected at **LV** comprising **Fully Type Tested, Type A, Power Generating Modules** 16 A/phase or less (micro-generators) and these are covered in EREC G98. All **Power Generating Modules** 16 A/phase or less connecting to the **DNO's Distribution Network** shall be **Fully Type Tested**.⁶

- 4.2 Illustrative examples of **Power Generating Module** types and categorisation

Figures 4.2 to 4.6 illustrate examples of different **Power Generating Modules** comprising **Power Park Modules** and **Synchronous Power Generating Modules** to assist with the interpretation of **Power Park Module** categorisation.

Figure 4.7 illustrates an example of an **Integrated Micro Generation and Storage Small Generation** Installation.

Figure 4.7 Example of a **Integrated Micro Generation and Storage Small Generation Installation**

Figure 6.10 Example of a Vehicle to Grid Electric Vehicle where the charging device is included in the EV and there is a stationary Electricity Storage device and a solar PV Power Park Module at the same premises

The **Vehicle to Grid Electric Vehicle** is a **Power Generating Unit**. The **Power Generating Module** is comprised of the stationary **Electricity Storage** device, the solar PV **Power Park Module** and the **Vehicle to Grid Electric Vehicle**.

Before a **Vehicle to Grid Electric Vehicle** is connected to the fixed installation the **Customer** must ensure there is an appropriate **Connection Agreement** with the **DNO** and that the whole **Power Generating Module** is compliant with this EREC G99.

Figure 6.11 Example of a Vehicle to Grid Electric Vehicle where the Inverter is located in the Customer's Installation and there is a stationary Electricity Storage device and a solar PV Power Park Module at the same premises

The **Vehicle to Grid Electric Vehicle** charging device in the **Customer's Installation** is a **Power Generating Unit**. The **Power Generating Module** is comprised of the stationary **Electricity Storage** device, the solar PV **Power Park Module** and the **Vehicle to Grid Electric Vehicle Power Generating Unit**.

Before an **Vehicle to Grid Electric Vehicle** is connected to the fixed installation the **Customer** must ensure there is an appropriate **Connection Agreement** with the **DNO** and that the whole **Power Generating Module** is compliant with EREC G99.

- 6.4.1.2 Except for **Fully Type Tested Type A Power Generating Modules** (including **Integrated Micro Generation and Storage Small Generation** Installations),

⁶ This EREC G99 contains **an Integrated Micro Generation and Storage Small Generation Installation** procedures, details of which are given in 0.

Generators shall provide the following minimum information to the **DNO** during the connection application process or otherwise as requested by the **DNO**:-

14.3.1 In order to comply with the Distribution Planning and Connection Code DPC 5.4.3 of the **Distribution Code** a Site Responsibility Schedule (SRS) should be prepared by the **DNO** in conjunction with the **Generator**. The SRS should clearly indicate the ownership, operational and maintenance responsibility of each item of equipment at the interface between the **Distribution Network** and the **Power Generating Module**, and should include an operational diagram so that all persons working at the interface have sufficient information so that they can undertake their duties safely and to minimise the risk of inadvertently interrupting supplies. The SRS should also record the agreed method of communication between the **DNO** and the **Generator**. Where the **Power Generating Facility** has a **Registered Capacity** of 50 kW (or 17 kW per phase) or less and is connected at **LV** then only compliance with paragraph 14.3.3 is required (this includes [Integrated Micro Generation and Storage](#) [Small Generation Installations](#)).

15.1.3 Compliance at a **Customer's Installation** with, for example:

- both **Electricity Storage** devices and demand, or
- both [Power Generating Units](#) and/or **Power Generating Modules** that are not **Electricity Storage** devices, and **Electricity Storage** devices,

can be demonstrated through the combined capability of all **Power Generating Modules** that form the **Generator's Installation**. Demonstration that each **Power Generating Module** (including **Electricity Storage** devices) individually meets the requirements in this EREC G99 is required where the **Generator** intends to operate the [Power Generating Units](#) in their installation individually, for example, if the **Electricity Storage** devices are out of service.

For a **Type A Power Generating Module** comprised of more than one [Power Generating Unit](#) with separate primary energy sources, demonstration of compliance of each group of [Power Generating Units](#) with a separate primary energy source is an acceptable method of demonstrating compliance for the **Power Park Module**.

15.3.2 The following tests shall be carried out by the **Installer** at all **Power Generating Facilities** and on all **Power Generating Modules** irrespective of whether they have been **Fully Type Tested** or **Type Tested**:

- (a) Complete functional tests to ensure each **Power Generating Module** synchronises with, and disconnects from, the **DNO's Distribution Network** successfully and that it operates without tripping under normal conditions;

.....

- (e) For any installations using an export limitation scheme, including those connecting under the [Integrated Micro Generation and Storage](#) [Small Generation Installation](#) procedures, the commissioning tests detailed in EREC G100 shall be carried out for the export limitation scheme, with the results recorded in the form contained in the relevant EREC G100 appendix. This is in addition to the **Power Generating Module** compliance and commissioning tests required by EREC G98 and EREC G99.

16.2.1 The **Installer** shall discuss the installation project with the local **DNO** at the earliest opportunity. The connection application will need to be in format as shown in Form A1-1 (Annex A.1) for **Power Generating Modules** less than 50 kW, Form A1-2 (Annex A.1) for **Integrated Micro Generation and Storage Small Generation Installations**, or for **Power Generating Modules** greater than 50 kW by using the Standard Application Form (generally available from the **DNO's** website). Where a **Power Generating Module** is **Fully Type Tested** and registered with the Energy Networks Association Type Test Verification Report Register, the application should include the **Manufacturer's** reference number (the system reference), and the compliance test results do not need to be submitted as part of the application.

16.2.6 Where commissioning tests are not witnessed, confirmation of the commissioning of each **Power Generating Module** will need to be made no later than 28 days after commissioning; the format and content shall be as shown in Form A3-1 (Annex A.3) Installation Document for **Type A Power Generating Modules** or Form A3-2 (Annex A.3) Installation Document for **Small Generation Installations Integrated Micro Generation and Storage installations**. The **Installer** or **Generator**, as appropriate, shall complete the declaration at the bottom of the Installation Document (Form A3-1 or Form A3-2) noting that this declaration also covers the Site Compliance and Commissioning Test Form Form A2-4 (Annex A.2). Where the tests are witnessed a copy shall be provided to the **DNO** at the time of commissioning.

16.3.1 The **DNO** will not normally witness the commissioning checks and tests for **Fully Type Tested Power Generating Modules** or **Small Generation Installations Integrated Micro Generation and Storage installations** connected to the **DNO's Distribution Network** at LV. In such cases, where the **DNO** does decide to witness it will advise this as part of the connection offer. Reasons for witnessing such installations may include:

16.4.2 The **Installer**, or an agent acting on behalf of the **Installer**, shall supply separate Installation Documents (Form A3-1 (Annex A.3) for **Type A Power Generating Modules** or Form A3-2 (Annex A.3) for **Small Generation Installations Integrated Micro Generation and Storage installations**) for each **Power Generating Facility** installed under EREC G99 to the **DNO**. Documentation shall be supplied either at the time of commissioning (where tests are witnessed) or within 28 days of the commissioning date (where the tests are not witnessed) and may be submitted electronically

22.2 Annex Contents and Form Guidance

Annex	Application	Form Title
A.0	Cover Sheet for Type A Power Generating Facility Forms	

A.1	<p>Connection Application for Type A Fully Type Tested (<50 kW) Power Generating Modules</p> <p>Connection Application for Small Generation InstallationsIntegrated Micro-Generation and Storage</p> <p>Note for all other Power Generating Modules the DNO's Standard Application Form shall be used.</p>	<p>Form A1-1: Application for connection of Power Generating Module(s) with Total Aggregate Capacity <50 kW 3-phase or 17 kW single phase</p> <p>Form A1-2: Application for connection of an Small Generation InstallationIntegrated Micro-Generation and Storage installation</p>
A.2	Compliance report for Type A Type Tested	<p>Form A2-1: Compliance Verification Report for Synchronous Power Generating Modules up to and including 50 kW</p> <p>Form A2-2: Compliance Verification Report for Synchronous Power Generating Modules > 50 kW and also for Synchronous Power Generating Modules ≤ 50 kW where the approach of this form is preferred to that in Form A2-1</p> <p>Form A2-3 Compliance Verification Report for Inverter Connected Power Generating Modules</p>
A.2	Additional Compliance and Commissioning test requirements for Type A Power Generating Modules	Form A2-4: Site Compliance and Commissioning test requirements for Type A Power Generating Modules
A.3	Installation and Commissioning a Power Generating Facility comprising one or more Type A Generating Modules	<p>Form A3-1: Installation Document for Type A Power Generating Modules</p> <p>Form A3-2: Installation Document for Small Generation InstallationIntegrated Micro-Generation and Storage installations</p> <p>Form A3-3: Installation Notification Form for Small Generation Installation Procedure 1</p>

A.0 Type A Power Generating Module Forms Cover Sheet

A number of forms are required to be completed and submitted to the **DNO** for the connection of **Type A Power Generating Modules** and any subsequent **Modifications** to equipment, and/or permanent decommissioning. These are summarised in the table below. The stages in the table below are described in more detail in the Distributed Generation Connection Guides, which are available free of charge on the Energy Networks Association website.

Stage	Form	Notes / Description	Complete Y/N
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1. Find an Installer	N/A	No form required – see ENA Distributed Generation Connection Guides for more information. Outside of the scope of this document.	
2. Discuss with the DNO	N/A	As above.	
3. Submit application	<p>Form A1-1: Application Form (< 50 kW)</p> <p>OR</p> <p>Form A1-2: Application Form (Integrated Micro Generation and Storage Small Generation Installations)</p> <p>OR</p> <p>Standard Application Form (> 50 kW)</p>	<p>Submit an application, so that the DNO can assess whether there is a requirement for network studies and network reinforcement, and whether it wants to witness the commissioning.</p> <p>For Power Generating Modules < 50 kW three phase or 17 kW single phase, Form A1-1 should be used.</p> <p>For Small Generation Installations Integrated Micro Generation and Storage installations, Form A1-2 should be used.</p> <p>For larger schemes, the Standard Application Form should be used, which is generally available on DNO websites.</p>	
4. Application acceptance	N/A	<p>If the DNO determines that network reinforcement is required to facilitate connecting your PGMs, it will make you a Connection Offer. Once you have accepted the DNO's Connection Offer, construction can begin.</p> <p>See ENA Distributed Generation Connection Guides for more information.</p>	

**Form A1-1 : Application for connection of Power Generating Module(s) with
Total Aggregate Capacity <50 kW 3-phase or 17 kW single phase**

If the **Power Generating Module** is neither **Fully Type Tested** or **Type Tested** then and Form A2-1 or A2-2 or A2-3 should be submitted to the **DNO** with this form. Alternatively the Standard Application Form should be submitted instead of this form.

EREC G99 Form A1-1

Post Code								
Contact person								
Telephone Number								
E-mail address								
Installation details:								
Address								
Post Code								
MPAN(s)								
Details of Existing PGMexisting Generating Units – where applicable:								
Manufacturer	Approximate Date of Installation	Technology Type	Manufacturer's Ref No. where available	PGM Generating Unit Registered Capacity (kW)				
				3-phase units	Single Phase Units			Power Factor
					PH1	PH2	PH3	
Details of Proposed Additionalproposed additional Generating Unit(s):								
Manufacturer	Approximate Date of Installation	Technology Type	Manufacturer's Ref No. where available	Generating Unit Registered Capacity (kW)				
				3-phase units	Single Phase Units			Power Factor
					PH1	PH2	PH3	
Balance of Multiple Single Phasemultiple single phase Generating Units – where applicable								
I confirm that design of the Generator's Installation has been carried out to limit output power imbalance to below 16A/phase, as required by EREC G99.								
Signed :				Date :				
Use continuation sheet where required.								
Record Power Generating Module Unit Registered Capacity kW at 230 AC, to one decimal place, under PH1 for single phase supplies and under the relevant phase for two and three phase supplies. Detail on a separate sheet if there are any proposals to limit export to a lower figure than the aggregate Registered Capacity of all the Power Generating Modules Units in the Power Generating Facility .								

It is proposed to replace the existing Form A1-2 with the form shown below:

<p>Form A1-2 : Application for connection of Fully Type Tested Integrated Micro Generation and Storage installations</p> <p>For Integrated Microunder the Small Generation and Storage installationsInstallation Procedure</p> <p><u>For Small Generation Installation Procedures 2 or 3</u>, this simplified application form can be used where all of the following eligibility criteria<u>apply</u>conditions are met:</p> <ul style="list-style-type: none"> • The Power<u>new and existing</u> Generating ModulesUnits are located in a single Generator's Installation; • The total aggregate capacity<u>Intrinsic Design Capacity</u> of the Power<u>each new and existing</u> Generating ModulesUnit is <u>no more than 32 A</u>; • <u>All of the Generating Units (including Electricity Storage devices) is between 16 A and 32 A per phase;</u>are connected via EREC G98 or EREC G99 Fully Type Tested inverters;⁷ • The total aggregate capacity<u>Registered Capacities</u> of <u>all the Power Generating Modules that areUnits (including Electricity Storage devices do not exceed 16)</u> is <u>less than 60 A</u> per phase; and • Where required by the total aggregate capacity of the Power Generating Modules that are not Electricity Storage devices do not exceed 16 A per phase. Note that if the total aggregated capacity of Electricity Storage and non-Electricity Storage devices is no greater than 16 A per phase, the single premises<u>relevant Small Generation Installation procedure described in EREC G98 applies;</u> • All of the Power Generating Modules (including Electricity Storage units) are connected via EREC G98 Type Tested Inverters (or EREC G83 Type Tested Inverters, where the Power Generating Module was installed prior to 27 April 2019) • An<u>SGI-2 or SGI-3, an</u> EREC G100 compliant export limitation scheme is present that limits the export from the Generator's Installation to the Distribution Network to 16 A per phase; and; • The Power Generating Modules will not operate when there is a loss of mains situation. <p>DNOs may have their own forms; refer to the DNO's websites and online application tools. If the Power Generating Module is registered with the ENA Type Test Verification Report Register, the The application should include the Manufacturer's reference number (the Product ID<u>-system reference</u>) from the ENA Type Test Verification Report Register.</p> <p>If all the eligibility criteria<u>conditions</u> apply the DNO will confirm that the installation can proceed. The planned commissioning date stated on the application shall be <u>within</u>between 10 working days and 3 months from the date the application is submitted.</p> <p>On completion of the installation the Installer shall submit the commissioning sheets, as required in EREC G100 alongside the EREC G99 forms.</p>		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>To ABC electricity distribution</p> <p>99 West St, Imaginary Town, ZZ99 9AA</p> </td> <td style="width: 50%; vertical-align: top;"> <p>DNO</p> <p>abcded@wxyz.com</p> </td> </tr> </table>	<p>To ABC electricity distribution</p> <p>99 West St, Imaginary Town, ZZ99 9AA</p>	<p>DNO</p> <p>abcded@wxyz.com</p>
<p>To ABC electricity distribution</p> <p>99 West St, Imaginary Town, ZZ99 9AA</p>	<p>DNO</p> <p>abcded@wxyz.com</p>	
<p>Generator <u>Details</u>details:</p>		

⁷ Or **Type Tested** to EREC G83 or G59; where the **Generating Unit** was connected prior to 27 April 2019.

EREC G99 Form A1-2

Generator (name)	
Address	
Post Code	
Contact person (if different from Generator)	
Telephone number	
E-mail address	
MPAN(s)	
Installer Details (Generation): details:	
Installer	
Accreditation / Qualification	
Address	
Post Code	
Contact person	
Telephone Number	
E-mail address	
Installer Details (Electricity Storage, if different from above):	
Installer	
Accreditation / Qualification	
Address	
Post Code	
Contact person	
Telephone Number	
E-mail address	
Installation details:	
Address	

EREC G99 Form A1-2

Post Code									
MPAN(s)									
Details of Existing PGMs Existing Generating Units – where applicable:									
Manufacturer	Approximate Date of Installation	Technology Type (e.g. Solar, Wind, Biomass, Diesel/CHP)	Manufacturer's Ref No. where available	PGM Registered Capacity (kW)					
				3-phase units	Single-Phase Units			Power Factor	
					PH1	PH2	PH3		
Details of Proposed Additional Generating Unit(s) (including Electricity Storage):									
Manufacturer	Approximate Date of Installation	Technology Type (e.g. Solar, Wind, Biomass, Diesel/CHP, Electricity Storage) <u>Energy source and energy conversion technology (enter codes from tables 1 and 2 below form)</u>	Manufacturer's Ref No. where available	Generating Unit <u>Intrinsic Design Capacity & Registered Capacity</u> (kW)*					Energy storage capacity for Electricity Storage devices (kWh)
				3-phase units	Single Phase Units				
					PH1	PH2	PH3		
Please confirm all of the statements are true by ticking each box:									

The Power Generating Modules are located in a single Generator's Installation.								
The total aggregate capacity of the Power Generating Modules (including Electricity Storage units) is between 16 A and 32 A per phase.								
The total aggregate capacity of the Power Generating Modules that are Electricity Storage devices do not exceed 16 A per phase and the total aggregate capacity of the Power Generating Modules that are not Electricity Storage devices do not exceed 16 A per phase.								
All of the Power Generating Modules (including Electricity Storage devices) are connected via EREC G98 Type Tested Inverters (or EREC G83 Type Tested Inverters, where the Power Generating Module was installed prior to 27 April 2019)								
An EREC G100 compliant export limitation scheme is present that limits the export from the Generator's Installation to the Distribution Network to 16 A per phase; and								
The Power Generating Modules will not operate when there is a loss of mains situation.								
				<u>IDC</u>	<u>RC</u>	<u>IDC</u>	<u>RC</u>	
<u>Details of proposed additional Generating Unit(s):</u>								
<u>Manufacturer</u>	<u>Approximate Date of Installation</u>	<u>Energy source and energy conversion technology (enter codes from tables 1 and 2 below)</u>	<u>Manufacturer's Ref No. where available</u>	<u>Generating Unit Intrinsic Design Capacity & Registered Capacity (kW)*</u>				<u>Energy storage capacity for Electricity Storage devices (kWh)</u>
				<u>3-phase units</u>		<u>Single Phase Units</u>		
				<u>IDC</u>	<u>RC</u>	<u>IDC</u>	<u>RC</u>	
<u>Details of Export Limitation Scheme</u>								
<u>Where an export limitation scheme is required by SGI-2 or SGI-3 please state export limit setting in amps.</u>								
<u>Please confirm all of the statements below are true by ticking each box:</u>								

<u>The Generating Unit(s) is located in a single Generator's Installation.</u>	
<u>The Intrinsic Design Capacity of each new and existing Generating Unit is no more than 32 A.</u>	
<u>All of the Generating Units (including Electricity Storage devices) are connected via EREC G99 or G98 Type Tested Inverters (or EREC G59 or G83 Type Tested Inverters, where the Power Generating Unit was installed prior to 27 April 2019)</u>	
<u>The total aggregate Registered Capacity of the Generating Units (including Electricity Storage devices) is no more than 60 A per phase.</u>	
<u>An EREC G100 compliant export limitation scheme is present that limits the export from the Generator's installation to the Distribution Network if required by SGI-2 or SGI-3.</u>	
The following information should be submitted with the application:	
Copy of single line diagram of export limitation scheme.	
<p>Explanation / description of <u>the EREC G100</u> export limitation scheme operation including a description of the fail-safe functionality—<u>eg, ie the response of the scheme following failure of a: any component or device of the fail-safe system, or following any loss of communication between the components and devices of the scheme.</u></p> <ul style="list-style-type: none"> • Power monitoring unit • Control unit • Power Generating Module interface unit • Demand control unit • Communication equipment <p>Note, fail-safe tests are not required at installations where all Generating Units are EREC G83 or EREC G98 Type Tested, aggregated capacity is not more than 32 A per phase and export capacity is limited to 16 A per phase.</p>	

EREC G99 Form A1-2

Additional details:	
Target date for provision of connection / commissioning of Electricity Storage devices: <u>new Generating Units.</u> **	
EREC G100 compliance declaration / EREC G100 Type Test reference as applicable:	
Signed :	Date :
<p>Use continuation sheet where required.</p> <p>* Record Power Generating Module Registered Capacity kW at 230 AC, to one decimal place, under PH1 for single phase supplies and under the relevant phase for two and three phase supplies.</p> <p>Include a schematic diagram for the proposed scheme.</p> <p>*** The planned commissioning date shall be at least<u>between</u> 10 working days <u>and 3 months</u> from the date of application but not more than 3 months in advance (connection offers are only valid for 3 months).</p>	

It is proposed to replace Form A3-2 with the form shown below

<p align="center">Form A3-2: Installation DocumentNotification Form for Integrated MicroSmall Generation Installation Procedures 2 and Storage—3</p> <p>Please complete and provide this document for each Integrated Micro-Generation and Storage installation.</p> <p>Part 1 should be completed for the Integrated Micro-Generation and Storageoverall installation.</p> <p>Part 2 should be completed for each of the Power-Generating ModulesUnits (ie for the Electricity Storage Invertersdevices and non-Electricity Storage Power-Generating Module-InvertersUnit inverters) being commissioned. Where the installation is phased the form should be completed on a per Generating Unit basis as each part of the installation is completed in accordance with EREC G99 paragraph 15.3.3. For phased installations reference to PGM in this form should be read as reference to Generating Units.</p>	
<p>Form A3-2 Part 1</p>	
<p>To ABC electricity distribution DNO</p> <p>99 West St, Imaginary Town, ZZ99 9AA abcded@wxyz.com</p>	
<p>Generator Detailsdetails:</p>	
Generator (name)	
Address	
Post Code	
Contact person (if different from Generator)	
Telephone number	
E-mail address	
MPAN(s)	
Generator signature	
<p>Installer Detailsdetails:</p>	
Installer	

EREC G99 Form A3-2

Accreditation / Qualification								
Address								
Post Code								
Contact person								
Telephone Number								
E-mail address								
Installer signature								
Installation details:								
Address								
Post code								
Location within Generator's Installation								
Location of Lockable Isolation Switch								
Summary details of Power Generating Modules (including Electricity Storage) Units - where multiple Power Generating Modules Units will exist within one Generator's Installation.								
Manufacturer / Reference	Date of Installation	Technology Type Energy source and energy conversion technology (enter codes from tables 1 and 2 below)	Manufacturers Ref No. (Product ID/system reference) or Reference to Form A2-3	Power Generating Module Unit Registered Capacity in kW				Power Factor
				3-Phase Units	Single Phase Units			
					PH 1	PH 2	PH 3	
Emerging technology classification (if applicable):								

Commissioning Checks:	
Description	Confirmation
Generator's Installation satisfies the requirements of BS7671 (IET Wiring Regulations).	Yes / No*
Suitable lockable points of isolation have been provided between the PGMs <u>PGM(s)</u> and the rest of the Generator's Installation .	Yes / No*
Labels have been installed at all points of isolation in accordance with EREC G99.	Yes / No*
Interlocking that prevents PGMs <u>the PGM(s)</u> being connected in parallel with the DNO's Distribution Network (without synchronising) is in place and operates correctly.	Yes / No*
Balance of Multiple Single Phase PGMs <u>Generating Units</u> . Confirm that design of the Generator's Installation has been carried out to limit output power imbalance to below 16 A per phase, as required by EREC G99.	Yes / No*
<u>The PGM complies with cyber security requirements</u>	<u>Yes / No*</u>
Export limitation scheme meets the requirements of EREC G100 and has been commissioned in accordance with EREC G100.	Yes / No*
Information to be enclosed:	
Description	Confirmation *
As installed Standard Application Form data, unless already provided.	Yes / No*
Final copy of circuit diagram	Yes / No*
EREC G100 Export limitation scheme installation and commissioning test form.	Yes / No*

Form A3-2 Part 2	
Power Generating Module reference or name	
Information to be enclosed.	
Description	Confirmation *
Schedule of protection settings (may be included in circuit diagram)	Yes / No*
Commissioning Checks <u>checks</u>	
The Interface Protection settings have been checked and comply with EREC G99.	Yes / No*
The PGM successfully synchronises with the DNO's Distribution Network without causing significant voltage disturbance.	Yes / No*
The PGM successfully runs in parallel with the DNO's Distribution Network without tripping and without causing significant voltage disturbances.	Yes / No*
The PGM successfully disconnects without causing a significant voltage disturbance, when it is shut down.	Yes / No*
Interface Protection operates and disconnects the DNO's Distribution Network quickly (within 1 s) when a suitably rated switch, located between the PGM and the DNO's incoming connection, is opened.	Yes / No*
The PGM remains disconnected for at least 20 s after switch is reclosed.	Yes / No*
Loss of tripping and auxiliary supplies. Where applicable, loss of supplies to tripping and protection relays results in either PGM <u>the</u> forced trip <u>of the PGM (or relevant Generating Unit)</u> or an alarm to a 24 hour manned control centre.	Yes / No*
*Circle as appropriate. If "No" is selected the Power Generating Facility is deemed to have failed the commissioning tests and the Power Generating Module <u>PGM</u> shall not be put in service.	
Additional comments / observations:	

Declaration – to be completed by **Generator** or **Generator's** Appointed Technical Representative

I declare that for the **Power Generating Module** within the scope of this EREC G99, and the installation:

1. Compliance with the requirements of EREC G99 and EREC G100 is achieved.
2. The **Power Generating Module** is **Fully Type Tested**.
3. The commissioning checks detailed in this Form A3-2 Part 2 have been successfully completed.

Name:

Signature:

Company Name:

Position:

Date:

This form is to be used for the notification to the **DNO** of **Generating Units** installed and commissioned under **Small Generation Installation** Procedure 1 and where the eligibility conditions are met:

- DNOs** may have their own forms; refer to the **DNO's** websites and online application tools. The application should include the **Manufacturer's** reference number (the system reference) from the ENA Type Test Verification Report Register.

On completion of the installation the **Installer** shall submit this form A3-3, alongside an application for the removal of the limitation on the appropriate EREC G99 forms (if permission is being sought for the removal of the limitation at the same time as submitting this notification).

Please complete and provide this document for each premises, once the installation is complete.

To ABC electricity distribution
99 West St, Imaginary Town, ZZ99 9AA

DNO
abcd@wxyz.com

Customer details:

Customer (name)	
Address	
Post Code	
Contact person (if different from Customer)	
Telephone number	
E-mail address	
Customer signature	

⁸ Or **Type Tested** to EREC G83 or G59⁷, where the **Generating Unit** was connected prior to 27 April 2019.

Installer details:								
Installer								
Accreditation / Qualification								
Address								
Post Code								
Contact person								
Telephone Number								
E-mail address								
Installer signature								
Installation details								
Address								
Post Code								
MPAN(s)								
Location within Customer's Installation								
Location of Lockable Isolation Switch								
Details of Generating Units. Use a separate line for new and existing installations and for different technology types. Use PH 1 column for single phase supply.								
Manufacturer	Date of Installation	Energy source and energy conversion technology (enter codes from tables 1 and 2 below)	Manufacturer's Ref No (this number should be registered on the ENA Type Test Verification Report Register as the system reference)	Generating Unit capacities in kW			Energy storage capacity for Electricity Storage devices (kWh)	
				3-Phase Units	Single Phase Units			
					PH1	PH2	PH3	
				Intrinsic Design Capacity (kW)*				
				Registered Capacity (kW)*				
				Intrinsic Design Capacity (kW)				

EREC G99 Form A3-3

				Registered Capacity (kW)				
				Intrinsic Design Capacity (kW)				
				Registered Capacity (kW)				
				Intrinsic Design Capacity (kW)				
				Registered Capacity (kW)				
Declaration – to be completed by Installer for Generating Units tested to EREC G98 or EREC G99.								
I declare that the relevant Generating Units and the installation which together form a Power Generating Module at the above address, conform to the requirements of EREC G99.								
Signature:				Date:				

* **Intrinsic Design Capacity** is the basic design capacity of the **Generating Unit** (and will be the value of **Registered Capacity** in the ENA's Type Test Register). For SGI-1, where the **Registered Capacity** is limited and is less than the **Intrinsic Design Capacity**, both values should be recorded here.

Table 1

	Energy Source
A	Advanced Fuel (produced via gasification or pyrolysis of biofuel or waste)
B	Biofuel - Biogas from anaerobic digestion (excluding landfill & sewage)
C	Biofuel - Landfill gas
D	Biofuel - Sewage gas
E	Biofuel - Other
F	Biomass
G	Fossil - Brown coal/lignite
H	Fossil - Coal gas
I	Fossil - Gas
J	Fossil - Hard coal
K	Fossil - Oil
L	Fossil - Oil shale

	Energy Source
M	Fossil - Peat
N	Fossil - Other
O	Geothermal
P	Hydrogen
Q	Nuclear
R	Solar
S	Stored Energy (all stored energy irrespective of the original energy source)
T	Waste
U	Water (flowing water or head of water)
V	Wind
W	Other

Table 2

	Energy Conversion Technology
1	Engine (combustion / reciprocating)
2	Fuel Cell
3	Gas turbine (OCGT)
4	Geothermal power plant
5	Hydro - Reservoir (not pumped)
6	Hydro - Run of river
7	Hydro - Other
8	Interconnector
9	Offshore wind turbines
10	Onshore wind turbines
11	Photovoltaic
12	Steam turbine (thermal power plant)
13	Steam-gas turbine (CCGT)
14	Tidal lagoons
15	Tidal stream devices
16	Wave devices
17	Storage - Chemical - Ammonia
18	Storage - Chemical - Hydrogen
19	Storage - Chemical - Synthetic Fuels
20	Storage - Chemical - Drop-in Fuels
21	Storage - Chemical - Methanol
22	Storage - Chemical - Synthetic Natural Gas

	Energy Conversion Technology
23	Storage - Electrical - Supercapacitors
24	Storage - Electrical - Superconducting Magnetic ES (SMES)
25	Storage - Mechanical - Adiabatic Compressed Air
26	Storage - Mechanical - Diabatic Compressed Air
27	Storage - Mechanical - Liquid Air Energy Storage
28	Storage - Mechanical - Pumped Hydro
29	Storage - Mechanical - Flywheels
30	Storage - Thermal - Latent Heat Storage
31	Storage - Thermal - Thermochemical Storage
32	Storage - Thermal - Sensible Heat Storage
33	Storage - Electrochemical Classic Batteries -Lead Acid
34	Storage - Electrochemical Classic Batteries -Lithium Polymer (Li-Polymer)
35	Storage - Electrochemical Classic Batteries -Metal Air
36	Storage - Electrochemical Classic Batteries -Nickel Cadmium (Ni-Cd)
37	Storage - Electrochemical Classic Batteries -Sodium Nickel Chloride (Na-NiCl ₂)
38	Storage - Electrochemical Classic Batteries -Lithium Ion (Li-ion)
39	Storage - Electrochemical Classic Batteries -Sodium Ion (Na-ion)
40	Storage - Electrochemical Classic Batteries -Lithium Sulphur (Li-S)
41	Storage - Electrochemical Classic Batteries -Sodium Sulphur (Na-S)
42	Storage - Electrochemical Classic Batteries -Nickel –Metal Hydride (Ni-MH)
43	Storage - Electrochemical Flow Batteries - Vanadium Red-Oxide
44	Storage - Electrochemical Flow Batteries - Zinc – Iron (Zn –Fe)
45	Storage - Electrochemical Flow Batteries - Zinc – Bromine (Zn –Br)
46	Storage - Other
47	Other