

## Notice of Embedded Generation Network (EGN Part-A) Information Sheet

Note: There are Embedded Generation (Solar etc) being developed for installation into existing Multiple Occupancies that connect a single embedded generator (ie PV panels and inverter) to 2 or more customers “behind” the meter.

### Existing Multiple Occupancy Site - 2a. BIG “Shared” PV System - Concept

A Large system “could”  
be wired to all apartments



PV is connected  
“Behind the Meter” in  
each premise to  
maximise avoided  
costs



Separate systems  
creates conflict  
where roof area is  
limited

A possible  
solution is to  
install a shared  
big PV System

COMMERCIAL IN CONFIDENCE

This Generation System is wired to each tenant on the load side of the NEM Metering, and is distributing and selling electricity to the customers and hence is technically an Embedded Network, however there is no “Parent” Meter, and the tenancy meters are NOT “Child” Meters, (no Embedded Network code).

The Generation System may have its own “EG” meters to record and bill the generation energy supplied to each tenant, however those “EG” meters have no status in the NEM. (they do not have NMI's etc)

Hence the installation needs to register as an Embedded Generator against each of the participating tenancy NMI's as well as register as an Embedded Network, despite there not being any NEM Parent Meter or Child Meters.

## Existing Multiple Occupancy Site - 2b. BIG “Shared” PV System – “Challenges”!

A Large system could be wired to all apartments



BUT, there are issues regarding:  
1. safety (no anti-islanding?)  
and  
2. equity – ie how much PV does each apartment use? (need more meters?)

COMMERCIAL IN CONFIDENCE



**There are AS3000, VSIR & NER compliance issues**

However a shared system creates its own challenges!

Without reverse flow protection, one apartment's grid meter could be supplying other apartments – this is both a safety issue and a billing issue

The Issues that need to be addressed in this installation are:

1. The Embedded Network Operator (ENO) needs to comply with Victorian ESC and AER guidelines for Embedded Networks.

2. There is no market “Embedded Network” processes required by the LNSP.

2.1 – There is NO parent Meter.

2.2 – There is NO child Meters.

2.3 – There is NO Embedded Network Code.

3. The Embedded Generation Installer / Operator is the ENO/EENSP

4. There ARE “Embedded Generation” processes required by the LNSP

4.1 – Pre-Approval of the total Embedded Generation Capacity via E-connect (apportion total proposed capacity per tenancy, lodge per tenancy)

4.2 – Submission of Solar / CES for each participating Tenancy via E-connect (apportion total installed capacity per tenancy, lodge per tenancy)

Note: Lodge the Inverter serial number with a “/X” subscript to reflect each tenancy

4.3 – Notification of Solar Installation to Retailers of participating Tenancies

5. Submission of “Multi-Occ Embedded Generation” Part EG-A

5.1 – Inspection of Embedded Generation by CTA prior to energisation

5.2 – Installation of appropriate signage and testing of Anti-Islanding, Reverse Flow and Export Limiting protection and compliance with section 6 VSIRs.

5.3 – NEM Meter reconfiguration to Bi-Directional / GenR13 tariff applied.

6. Future notification of any changes to the EG capacity or connection to Tenancies via step 4 above, via E-Connect and lodgement of an updated EGN- Part A form.

## E-Connect Processes

### 1. Solar Pre-Approval Applications

ENO / REC to lodge Solar Pre-Approval E-Connect applications, for each proposed tenancy, based on apportioned "Proposed Inverter Capacity".

E-Connect will provide an SPA Number for each application, if the proposed capacity exceeds the available capacity, one or more tenancies will not be approved, and the proposed total capacity, and hence apportioned capacity will need to be reduced until all participating tenancies have achieved pre-approval.

The details are to be completed in the spreadsheet contained in section 2 of the EDN-A documentation.

To be completed by ENO									
Embedded Generator Network Participating NMI Data Sheet									
1. SOLAR PRE-APPROVAL APPLICATION VIA E-CONNECT (Proposed Inverter Capacity apportioned per Tenancy)									
Total Proposed Inverter Capacity	Total Proposed Panel Capacity	Allocated Proposed Inverter Capacity	E-Connect Pre-Qual Reference (SPA Number)	Tenancy No.	Street No	Street Name	Suburb	Postcode	Existing Meter No
Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Optional

### 2. Solar Installation Applications

Once the system has been installed, (but prior to commissioning into service) the ENO / REC is to lodge Solar installation E-Connect applications, for each participating tenancy, based on the apportioned "Installed Inverter Capacity" (cannot exceed the "Proposed Inverter Capacity")

E-Connect will provide a CR Number for each application.

The details are to be completed in the spreadsheet contained in section 2 of the EDN-A documentation.

2. SOLAR INSTALLATION APPLICATION VIA E-CONNECT (Installed Inverter Capacity apportioned per Tenancy)												
Total Installed Inverter Capacity	Total Installed Panel Capacity	Allocated Installed Inverter Capacity	E-Connect Solar Install Reference (CR Number)	Certificate of Electrical Safety (CES Number)	Tenancy No.	Street No	Street Name	Suburb	Postcode	Existing Meter No	NMI	FRMP
Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Optional	Optional

*Embedded Network Connection Services will place notes on each participating NMI  
"Part of a shared Embedded Generation Network"*

## DER REGISTER INFORMATION

The National Electricity Market is developing requirements to record all Distributed Energy connected to the NEM via a DER Register.

DER generation information is provided in a 3-level database structure, and includes information that is:

- Aggregated at the NMI level to provide total capacity and export capacity for the site
- Aggregated at the AC Connection level, where devices are linked together to form a DER Installation, and can provide separation of device types and technologies
- At a device level, where technical details and capacities of individual devices are recorded.

The ENO will be responsible for providing the following information when required by the DNSP.

Category of data	Sub-category of data	Applies to category	Description	Field type/ validation	Other comments
NMI	N/A	N/A	Unique identifier for each connection point where DER installation is.	Alpha-numeric	
Approved capacity	N/A	N/A	Approved small generating unit capacity as agreed with NSP in the connection agreement, expressed in kVA.	Numeric	Can be distinct or equal to an export limitation.
Installer identification	N/A	N/A	Unique identifier for the DER installer accountable for the installation, modification or removal of the small generating unit in accordance with this NMI and Connection Agreement 'Job number'.	Alpha-numeric	This identifier should be the installer's unique qualification number (e.g. electrical tradespersons licence or similar accreditation number).
Connection Agreement 'Job number'	N/A	N/A	Unique identifier associated with the NSP's connection offer/agreement for the approved DER works.	Alpha-numeric	This identifier is specified by the NSP as per its connection process.
Number of phases available	N/A	N/A	The number of phases available for the installation of DER.	Pick list (1, 2, 3)	

Category of data	Sub-category of data	Applies to category	Description	Field type/ validation	Other comments
Number of phases with DER installed	N/A	N/A	The number of phases that DER is installed on.	Pick list (1, 2, 3)	
Central protection and control	N/A	N/A	For DER installations where NSPs specify the need for additional forms of protection above those inbuilt in an inverter.	Pick list (yes/no)	Used to describe the type(s) of central protection to be applied to the DER system.
Islandable Installation	N/A	N/A	For identification of small generating units designed with the ability to operate in an islanded mode.	Pick list (yes/no)	
Protection and control modes		If 'Central Protection and Control' = yes	Protection settings		These fields are expected to capture all forms of central protection in use for all forms of DER. Only relevant fields should be filled.
	Export limitation		Export limit (kVA)	Numeric	Maximum amount of power (kVA) that may be exported from a connection point to the grid, as monitored by a control / relay function. A null value indicates no limit.
	Under-frequency protection (F-<)		Protective function limit	Frequency (Hz)	Default values AS4777-2: 2015 section 7.4.
	Under-frequency protection delay (F-<)		Trip delay time	Time (s)	
	Over-frequency protection (F->)		Protective function limit	Numeric	
	Undervoltage protection (V-<)		Protective function limit	Numeric	
	Undervoltage protection delay (V-<)		Trip delay time	Time (s)	
	Overvoltage protection 1 (V->)		Protective function limit	Numeric	

Category of data	Sub-category of data	Applies to category	Description	Field type/ validation	Other comments
AC Connection ID		All	Unique identifier for each AC Connection or Group in a DER installation.	15 digit numeric	System generated.
Number of AC Connections			Number of AC Connections in the group. For the suite of AC Connections to be considered as a group, all of the AC Connections included must have the same attributes.	Numeric	
AC equipment type		All	Indicates whether the DER device is connected via an inverter (and what category of inverter it is) or not (e.g. rotating machine).	Pick list (Inverter, other)	
Inverter/ small generating unit Manufacturer		If AC equipment type = inverter	The name of the inverter manufacturer.	Codified or pick-list	Data field aligned to available product data sets.
Inverter Series		If AC equipment type = inverter	The inverter series.	Codified or pick-list	Data field aligned to available product data sets.
Inverter Model Number		If AC equipment type = inverter	The model number of the inverter.	Codified or pick-list	Definitions align to the accredited inverters list.
Inverter serial number		If AC equipment type = inverter	The serial number of the device(s).	Alpha-numeric	Primary generation device serial number(s).
Commissioning date			The date that the DER installation is commissioned.	Date	Needed to monitor / manage obligation on timeframe to complete submission of record.

## Notice of Embedded Generation Network (EGN Part-A)

### **Section 1 - To be completed by ENO/EENSP**

LNSP: CitiPower ☐ Powercor ☐  
(Lodge this form to: EmbeddedNetworks@powercor.com.au)

#### **Embedded Generation Network Owner name (ENO / EENSP) :**

Contact Person:  
Contact Phone Number:  
Contact Email:  
Postal Address:

#### **Embedded Generation / Solar Capacity Pre-Qualification**

Has Solar Prequalification been lodged in Econnect?

Yes ☐ No ☐

Econnect Ref Numbers documented in Section 2 Spread sheet:

Yes ☐ No ☐

Total Capacity Pre-Approved?:

#### **Proposed Embedded Generation Network Start Date:**

AER exemption to establish Embedded Network has been obtained:

Yes ☐ No ☐

AER Exemption Number:

#### **Embedded Generation Network Site Address**

Site Name:  
Street Number:  
Street Name:  
Suburb:  
Postcode:

**Existing Brown Field Site:** Yes ☐ No ☐

*Complete and submit Part A Sections 1, 2, 3 & 4*

Total Number of Tenancy Connection Points

List of existing Tenancies/ NMIs being incorporated into Embedded Generation Network attached:

Yes ☐ No ☐

Is there existing NMIs on site that are not incorporated into the EGN? Yes ☐ No ☐

Details:

*End of Part A, Section 1. Section 2, 3 and 4 follow.*

## Notice of Embedded Generation Network (EGN Part-A)

### **Section 2 - To be completed by ENO / EENSP for Existing Brown Field**

Existing LNSP Connection Points being connected to the Embedded Generation Network – add more rows as necessary  
*Refer to Excel spreadsheet “Embedded Generation Network Procedure Part A Section 2”*



Embedded Network  
Procedure Part A Sec

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### **Table 1. Solar Pre-Approval Applications**

ENO / REC to lodge Solar Pre-Approval E-Connect applications, for each proposed tenancy, based on apportioned “Proposed Inverter Capacity”. E-Connect will provide an SPA Number for each application.

If the proposed capacity exceeds the available capacity, one or more tenancies will not be approved, and the proposed total capacity, and hence apportioned capacity will need to be reduced until all participating tenancies have achieved pre-approval.  
(Complete table 1 in attached spreadsheet.)

### **Table 2. Solar Installation Applications**

Once the system has been installed, (but prior to commissioning into service) the ENO / REC is to lodge Solar installation E-Connect applications, for each participating tenancy, based on the apportioned “Installed Inverter Capacity” (cannot exceed the “Proposed Inverter Capacity”) E-Connect will provide a CR Number for each application.  
(Complete table 2 in attached spreadsheet.)

*End of Part A, Section 2. Section 3 follows.*

## Notice of Embedded Generation Network (EGN Part-A)

### **Section 3 - To be Completed by ENO / EENSP - New Brown-Field Embedded Network Compliance**

Evidence the requirements in section 4.9 of the AER guideline have been completed.

**4.9.1 – 1** Notice by letter to all existing tenants of plan to establish an Embedded Network.

Date sent:

**4.9.2 – 2** The ENO has provided written notice of:

Tenants right to choose own NEM retailer:

Yes: ☐ No: ☐

Tenants right to enter into an energy contract with an authorised electricity retailer:

Yes: ☐ No: ☐

Obligations regarding electricity offer matching:

Yes: ☐ No: ☐

Obligations regarding duplication of network fees:

Yes: ☐ No: ☐

A copy of the sales agreement to be offered by the exempt person:

Yes: ☐ No: ☐

Contact details of a representative of the EENSP:

Yes: ☐ No: ☐

#### **4.9.6 Metering Arrangements**

The EENSP acknowledges they are responsible for the costs of any changes to metering and other network alterations, (including removal/replacement of all existing CitiPower/Powercor metering and payment of any Exit Fees applicable):

Yes: ☐ No: ☐

#### **4.9.7 Approval by the AER**

The EENSP confirms an AER notice of acceptance has been issued:

Yes: ☐ No: ☐

AER Notice of Acceptance Number:

and specifies an effective date of:

The EENSP confirms they will liaise with the FRMP's of the Tenants.

Signed by:

on behalf of ENO / EENSP

Date:

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*End of Part A, Section 3*

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## Notice of Embedded Generation Network (EGN Part-A)

### **Section 4 - To be completed by ENO / Embedded Generation Installer**

#### **Establishment of the Embedded Generation and Tenancy wiring**

Site Works Contact Person:

Site Works Contact Phone Number:

Site Works Contact Email:

Has a Schematic Diagram of the site that indicates the location of the Embedded Generation and Tenancy wiring, and DC and AC isolators etc been provided?

Yes: ☐ No: ☐

What is the total Capacity in kVA (by Panels and Inverter rating) that has been installed in the Embedded Generation Network?

Total Embedded Generator Capacity: Panels: Inverter:

What is the apportioned Generator Capacity per Tenancy?

Panels: Inverter:

Have these works been lodged in E-connect for each of the NMI's listed in Section 2?

Yes: ☐ No: ☐ Date Lodged:

#### **Tenancy Retailer notifications?**

Have these works been notified to the Retailer/FRMP's in Section 2?

Yes: ☐ No: ☐ Date Lodged:

#### **Anti-Islanding, Reverse Flow and Export Limiting protection?**

Has the functionality of Anti-Islanding, Reverse Flow, Export Limiting protection been tested for each of the tenancy / NMI's listed in Section 2?

Anti-Islanding Yes: ☐ No: ☐ Date Tested:

Reverse Flow Yes: ☐ No: ☐ Date Tested:

Export Limiting Yes: ☐ No: ☐ Date Tested:

#### **Alternative Source of Supply compliance to VSIR?**

Has warning signage and instructions on isolating the embedded generation been installed for each of the NMI's listed in Section 2?

Yes: ☐ No: ☐

#### **Certificate of Electrical Safety?**

Have these works been issued with a CES for each of the NMI's listed in Section 2?

Yes: ☐ No: ☐ Date Lodged: Where?

*Embedded Network Connection Services place notes on each participating NMI* ☐

*End of Part A, Section 4.*