

Application Form



Embedded Generator (Non-Registered)

The Embedded Generator Application Form is applicable to all new and upgraded HV and LV embedded generation (i.e. solar, synchronous generators, etc.) connecting to United Energy's (UE) distribution network. This application form only applies to Non-Registered embedded generation as per UE-PR-2008, UE-ST-2008.2 (for LV customers) and UE-ST-2008 (for HV customers). Please submit the completed form with the accompanying documents to embeddedgeneration@ue.com.au.

1. Embedded Generation Owner (Proponent)						
1.1	ABN / ACN					
1.2	ABN / ACN Registered Name					
1.3	ABN / ACN Registered Address					
		Suburb		State		Postcode
1.4	Contact Person					
1.5	Position/Role of Contact Person					
1.6	Telephone Number					
1.7	E-mail Address					
2. Details of Agent Acting on Behalf of Proponent (if applicable)						
2.1	Business Name					
2.2	Business Address					
		Suburb		State		Postcode
2.3	Contact Person					
2.4	Telephone Number					
2.5	E-mail Address					
3. Installation Site Details						
3.1	Site Representative Name					
3.2	Position/Role of Site Representative					
3.3	Telephone Number					
3.4	E-mail Address					
3.5	Installation Address					
		Suburb		State	VIC	Postcode
3.6	National Meter Identifier (NMI) ¹					
3.7	Export of Excess Generated Power?	Yes	No			
3.8	Confirm presence of any disturbing load/system with potential to disrupt the voltage waveform and/or power quality. If Yes, specify the nature of equipment and capacity. If No, leave section blank.	1. Power Factor Correction (PFC)				
		2. Direct On Line (DOL) Motors				
		3. Rectifiers				
		4. Active Filters				
		5. Harmonic Filters				
		6. Other (Please Specify)				
4. HV Customer Additional Details						
4.1	Voltage at connection point to UE network (kV)	66 kV	22 kV	11 kV		
4.2	Is the HV Connection Pack completed and attached? (Request this from hvcustomer@ue.com.au)	Yes	No			
4.3	Site maximum demand as per UE agreement (MVA)					

¹ If this a new site with no NMI please read [Section 8.11](#)

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All new inverters must be AS4777 Compliant. A full list of compliant inverters is provided on the [CEC website](#). Please ensure the **FULL** inverter model number is provided as per the website (e.g. IQ7PLUS-72-B-INT). Existing inverters that are not on the CEC checklist may be allowed.

5. Inverter Based Generating Plant Information (New and Existing)

To be completed for all Inverter Based Generation Only (i.e. solar, wind, etc...)

5.1	Inverter Manufacturer	Inverter DC Source(s)	Model	New or Existing?	Individual Unit Rating (kVA)	Quantity
	1.					
	2.					
	3.					
	4.					
	5.					
	6.					
	7.					
	8.					
5.2	DC Source Manufacturer	DC Source	Model	New or Existing?	Individual Unit Rating (kW for panel, kWh for battery)	Quantity
	1.					
	2.					
	3.					
	4.					
	5.					
	6.					
	7.					
	8.					
5.3	Total Inverter Capacity (kVA)					
5.4	Nominal Voltage of Inverter (V)					

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6. Non-Inverter Based Generating Plant Information

To be completed for all Non-Inverter Based Generation (i.e. synchronous/asynchronous machine)

6.1	Generator Manufacturer	Generator Fuel Source (e.g. Diesel etc.)	Type (Synchronous/Asynchronous)	Model	New or Existing?	Machine Nameplate Rating (kVA)	Power Factor	Quantity
	1.							
	2.							
	3.							
	4.							
	5.							
	6.							
	7.							
	8.							
	9.							
	10.							
6.2	Total Generator Capacity (kVA)							
6.3	Generator Output Voltage (V)							

7. Declaration

<p>Given the diversity of United Energy's distribution network and the constraints connecting embedded generation impose upon it, United Energy may require restrictions to be imposed on the proposed embedded generation. As such, it is prudent for the proponent to not acquire equipment or engage in construction works until the Embedded Generation Connection Agreement has been issued and executed.</p> <p><u>We acknowledge that United Energy accepts no responsibility for costs incurred if we acquire equipment or engage in construction works prior to the execution of the Embedded Generation Connection Agreement.</u></p>	Please initial below

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Checklist – Items to be sent to UE with the completed form.

UE will not accept incomplete applications. All items in the checklist must be provided.

Inverter Based Generating Plant		File Name	Refer to
1	Single Line Diagram (SLD)		Section 8.1
2	Aerial View of Site Layout		Section 8.2
3	Protection Schematic		Section 8.3
4	Comprehensive Protection Study (where requested by UE)		Section 8.4
5	Voltage Rise Calculation		Section 8.5
6	Letter of Authority		Section 8.6
7	Generation System Functional Statement (where applicable)		Section 8.8
8	Inverter Datasheet		-
9	DC Source (e.g. solar panel, battery) Datasheet		-
10	Protection Relay Technical Specification Sheet		-
11	Other (where requested by UE)		Section 8.10

Non-Inverter Based Generating Plant		File Name	Refer to
1	Single Line Diagram (SLD)		Section 8.1
2	Aerial View of Site Layout		Section 8.2
3	Protection Schematic		Section 8.3
4	Comprehensive Protection Study		Section 8.4
5	Voltage Rise Calculation		Section 8.5
6	Letter of Authority		Section 8.6
7	Generator Datasheet		Section 8.7
8	Generation System Functional Statement		Section 8.8
9	Commissioning Procedure		Section 8.9
10	Other (where requested by UE)		Section 8.10

Please submit the completed application form with the accompanying documents to embeddedgeneration@ue.com.au

8. Document Submission to UE - Additional Information

8.1	<p>Single Line Diagram (SLD) showing:</p> <ul style="list-style-type: none"> • Generating plant with clear demarcation of new and existing generating plant • DC sources rating and quantity for inverter based generating plant • Generating plant main lockable isolation point • Meter location and details • Main switchboard (MSB) and main circuit breaker with load and fault rating indicated. If fault rating of the main circuit breaker is not available, please provide main switchboard fault rating. • Distribution boards and circuit breakers connected to generating plant with load and fault rating indicated • Protection systems – voltage and current inputs to the protection relay, contactor or circuit breaker that the protection relay operates • Protection and control settings of generating plant – see UE-ST-2008.2 (for LV customers) and UE-ST-2008 (for HV customers) for setting details • Where wireless trip schemes are implemented, the receiver and transmitter to be shown • Automatic Transfer Switch / Manual Transfer Switch where applicable • Earthing details required for non inverter based generators incorporating transfer switches
8.2	<p>Aerial View of Site Layout showing location of:</p> <ul style="list-style-type: none"> • Revenue Meter • Point of Connection • MSB • Other relevant distribution boards • Inverters/Generators • Approximate cable routes
8.3	<p>Protection Schematic</p> <ul style="list-style-type: none"> • Protection functions and settings of secondary/central protection relay as per UE-ST-2008.2 (for LV customers) and UE-ST-2008 (for HV customers) • Relay model • Wiring of protection relay including: <ul style="list-style-type: none"> ○ Relay inputs/outputs ○ Relay watchdog ○ Power supply ○ Trip circuit
8.4	<p>Comprehensive Protection Study</p> <ul style="list-style-type: none"> • Protection co-ordination with upstream UE protection • Description of each fault scenario and the protection that is used to detect and clear the fault • Protection failsafe provision (i.e. system response upon protection failure) • Refer to UE-ST-2008.2 (for LV customers) or UE-ST-2008 (for HV customers) for UE protection requirements
8.5	<p>Voltage Rise Calculation which articulates as a minimum:</p> <ul style="list-style-type: none"> • Must show voltage rise from point of connection to inverter/generator terminals is less than 2% • The calculations must be for the total generation installed on site (including any existing generation) • The cable lengths, sizes and voltage rise must be shown for each segment (i.e. consumer mains, submains, etc) • These segments must align with the Aerial Layout and Single Line Diagram
8.6	<p>Letter of Authority for the agent to act on behalf of the customer for the connection process</p> <p>The letter shall:</p> <ul style="list-style-type: none"> • Contain customer details as per Section 1 • Contain agent details as per Section 2 • be on the customer's letterhead and signed by the customer's representative, or be an email sent directly from the customer's email address with the customer's e-signature

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8.7	<p>Generator Data Sheet indicating the following:</p> <ul style="list-style-type: none"> • Generator impedances • Control Mode • Capability Curve • Generator Inertia • Transient performance • Three Phase Efficiency Curve
8.8	<p>Generation System Functional Statement is required for:</p> <ul style="list-style-type: none"> • <u>Inverter Based Generating Plant</u> (IES) with any of the following: <ul style="list-style-type: none"> ○ Wireless protection schemes ○ ATS schemes ○ Combination of non-IES ○ Or where requested by United Energy • All <u>Non-Inverter Based Generator Plant</u> <p>The statement must articulate as a minimum:</p> <ul style="list-style-type: none"> • Generating plant sequence of operation and scenarios e.g. ATS switching, loss of UE supply etc. • Interaction of IES and non-IES systems (where applicable) • Critical protection/control/generation system remote monitoring • Any implemented control schemes • Any implemented wireless protection schemes • Any implemented interlocks • Any implemented load shedding schemes where overloading of UE connections are expected • Protection/control systems failsafe provision (i.e. system response upon protection/control systems failure)
8.9	<p>Commissioning Procedure</p> <ul style="list-style-type: none"> • Detailed Commissioning Plan or Inspection and Test Plan (ITP) covering all primary and secondary equipment testing. The Commissioning Plan or ITP will need to be written in the sequence the tests are to be carried out. • The Commissioning Plan or ITP does not have to be submitted at the time of application but must be finalised and submitted to UE six weeks prior to energisation.
8.10	<p>Other – these technical studies may be requested by UE as part of the application:</p> <ul style="list-style-type: none"> • Voltage Study • Power Flow Study • Fault Level Contribution Study • Power Quality Impact
8.11	<p>New Sites with no NMI</p> <ul style="list-style-type: none"> • If this is a brand new site with no power supply, please ensure that you contact your retailer of choice to organise power supply to your site • If a new transformer is to be installed for a new site, please provide us with details of the transformer • Please note that an Embedded Generation Connection Agreement can only be executed once the NMI is available