

Compliance Reporting Form

Embedded Generation via IES LV Connection
>30 kVA and ≤1,500 kVA



Certification

CX Ref #:

Energex WR#:

Date: / /

Embedded Generation via Inverter Energy System (IES) > 30 kVA and ≤ 1,500 kVA –

Project Name:

Location:

NMI:

I certify that as a Registered Professional Engineer of Queensland and by virtue of my training and experience, that the submission documentation complies with the requirements of the latest revisions of the following:

- Energex's Technical Study Report provided for the above stated project.
- STNW1174 - Standard for LV Embedded Generating Connections [version]
- AS/NZS 3000 – Electrical Installations
- AS/NZS 4777 series – Grid connection of energy systems via inverters
- IEC 62116 – Utility-interconnected photovoltaic inverters – Test procedure of islanding prevention measures
- Queensland Electricity Connection Manual [version]

In addition to the above, the following attachments have been submitted as part of the application:

- Attachment 1 – PV inverter & Battery Specifications & Checklist
- Attachment 2 – Compliance Checklist
- Attachment 3 – Commissioning Test Results
- Attachment 4 – As Commissioned Drawings

Signature:

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	RPEQ Engineer Name
	Registration Number
	Professional Title
	Company Name
	Company Address
	Contact Details

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All questions in each applicable section must be answered.

Attachment 1 – PV Inverter & Battery Specifications & Checklist

Installation details	Data
Customer Name	
Customer contact details	
Energex contact	
Installation approved capacity (kVA)	
Installation approved export (kW)	
Installed capacity (kVA) (Must not exceed approved limit)	
Installed export power limit (kW) (Must not exceed approved export)	
Authorised demand (kW)/(A) (for premises including batteries and EVSE)	

As installed – PV Rating Data

Parameters	Data
Cell/PV/Turbine type	
Peak Power Pmax	
Rated voltage Vmp	
Rated Current Ipm	
Short circuit current Imc	
Open circuit voltage	
Maximum system voltage	
Module Efficiency	

Manufacturer's specification data sheet/user manual
attached

Yes ☐ No ☐

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As Installed – Inverter Technical Data

Parameters	Data
Type	
Make	
Model	
Part Number / Manufacturer	
Max. Input DC Power	
Max. Input DC Voltage	
Max. Input Current	

Clean Energy Council Approved Inverter Used

Yes ☐

As Installed – Battery Technical Data

Parameters	Data
Capacity	
Planned Operating Mode	
Max Rate of Change	

Output – Data

Description	Data
Nominal Site Output to Grid	
Max. output current	
Nominal AC voltage range	
Max. efficiency	
Power quality mode	

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As installed – Electric Vehicle Supply Equipment [V2G or V2B] N/A ☐

Parameters	Data
Make	
Model	
Capacity	
Planned Operating Mode	
Max Rate of Charge / Discharge	

Clean Energy Council Approved EVSE

Yes ☐

As Installed – Inverter Power Sharing Device N/A ☐

Parameters	Data
Make	
Model	
Rated Capacity	

IPSD Design RPEQ Approved

Yes ☐ No ☐

Comments

(please supply additional information for any non-compliances to this section)

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Single Line Diagram (SLD) attached Yes ☐ No ☐

Existing Onsite Embedded Generating Systems

Existing Installation details*	Data
Types	
Capacity and export	
Changes made to legacy systems	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, add comment	

*Prior to this application

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Attachment 2 – Compliance Checklist

Description	Complies	If No, supply details
Voltage Fluctuation and Flicker	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Export Requirements	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Special Instructions	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Fluctuation and Harmonic Allocations	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Power Factor Limits	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Compliance with Standard for LV EG Connections

Clause	Description	Complies
4.3.1.3	Power limiting (for partial-export and non-export systems only) - Provide setting below	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.3.4	Emergency Backstop Mechanism (GSD)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.4.1	Battery Energy Storage Systems (if applicable) compliance to AS/NZS 5139	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.4.3	Inverter Power Sharing Device (IPSD)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.7.1	Inverter protection settings	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.7.2	Protection device compliance	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.7.2, Table 8	Interface Protection Relay	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.7.3	Interlocking (if applicable)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.7.4.1	Wireless transfer (where used)– complies with delay limits and loss of communications procedure	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.8	Voltage limit for sustained operation set to 258V	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.10.1.1 – 4.10.1.5	Power Quality	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4.10.2	Power Control Mode settings (Region A settings)	Yes <input type="checkbox"/> No <input type="checkbox"/>

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Clause	Description	Complies
6	Commissioning	Yes <input type="checkbox"/> No <input type="checkbox"/>
7	Operation and maintenance	Yes <input type="checkbox"/> No <input type="checkbox"/>

Comments

(please supply additional information for any non-compliances and settings as required)

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All questions in each applicable section must be answered.

Attachment 3 – Compliance Report – Commissioning

Commissioning shall include the following information and test certificates are recommended for further evidence:

Compliance with Standard for LV EG Connections

System Details	Complies	Data, provide details (attach docs if required)
Installed system meets all criteria outlined in Energex's Technical Study Report issued for project	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Inverters

System Details	Complies	Data, provide details (attach docs if required)
Passive anti-islanding tested for conformance, Vnom_max, V<, V>, V>>, f< and f>.	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Tests to prove anti-islanding operation during network outage	Yes <input type="checkbox"/> No <input type="checkbox"/>	
DC input voltage to inverter on commissioning	Yes <input type="checkbox"/> No <input type="checkbox"/>	
AC Output Voltage from inverter on commissioning	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Input and Output power from inverter on commissioning	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Warning signs fitted as per AS/NZS 4777.1 and AS 5033	Yes <input type="checkbox"/> No <input type="checkbox"/>	

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All questions in each applicable section must be answered.

Emergency Backstop Mechanism

GSD Details	
Is a GSD installed for each inverter?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Model	
Serial Number	
Has a Demand Response Site Controller (DRSC) been installed for this premise?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Make/Model	
Serial Number	
GSD Installation as per QECM	Yes <input type="checkbox"/> No <input type="checkbox"/>
Demand Response Device	Inbuilt in inverter <input type="checkbox"/> External Device <input type="checkbox"/>
Functionality Enabled for demand response mode DRM 0 in compliance with AS/NZS 4777.2.	Yes <input type="checkbox"/> No <input type="checkbox"/>
External device installed (if required)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Verify that response is current: <ul style="list-style-type: none">- Measure and record inverter output (AC current)- Confirm 'DRM 0' response of the inverter commences within 2 seconds- Confirming AC current reduces from recorded output, noting this may take a few minutes	Yes <input type="checkbox"/> No <input type="checkbox"/>
Photos of installation attached: <ul style="list-style-type: none">• Installation arrangement within switchboard or enclosure• Wiring arrangements of the GSD showing compliance with QECM requirements• GSD serial number	Yes <input type="checkbox"/> No <input type="checkbox"/>

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All questions in each applicable section must be answered.

Protection

IPR Details (for IES greater than 200kVA or IPSP>30kVA or where required due to legacy arrangements)	Data
Make	
Model	
Serial Number	
Exemption for bulk metered connection	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

System Details	Complies	Data, provide details (attach docs if required)
Tripping and control scheme logic	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Instrument transformer ratios	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Relay settings as per STNW1174 Table 9	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Relay pickup tests	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Comments

(please supply additional information for any non-compliances and settings as required)

Commissioning results attached

Yes ☐ No ☐

Inverter Power Sharing Device

IPSP Installation N/A <input type="checkbox"/>	Data
Aggregated Inverter Rated Apparent Power	
If Greater than 30kVA, Confirm Interface Protection Installed	Yes <input type="checkbox"/> No <input type="checkbox"/>
Installation Compliant with AS/NZS 4777.1	Yes <input type="checkbox"/> No <input type="checkbox"/>
Anti-islanding testing completed (results attached)	Yes <input type="checkbox"/> No <input type="checkbox"/>

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Power Quality

Power Quality testing completed

Yes ☐ No ☐

Power Quality test results required to be submitted to
DNSP ("PQ Compliance Report")

Yes ☐ No ☐

Where the premises includes more than one connection
point, testing has been conducted for each connection
point

Yes ☐ No ☐ N/A ☐

System Details	Complies	Data, provide details (attach docs if required)
Flicker	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Harmonics emissions levels (e.g. 5,7)	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Voltage Unbalance (%)	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Copy of Test Certificates attached

Yes ☐ No ☐

Power quality raw data provided (.xlsx or.csv format)

Yes ☐ No ☐

Interlocking N/A ☐

System Details	Complies	Data, provide details (attach docs if required)
Manual (Key based) or	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Automated	Yes <input type="checkbox"/> No <input type="checkbox"/>	
If Automated, prior approved automated design attached	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

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Attachment 4 – As Commissioned Drawings

Single Line Diagram, AC Schematics and attachments should include

- 1. RPEQ Signature
- 2. NMI, Site name and address
- 3. IPR settings
- 4. Inverter protection details

Single Line Diagram (SLD) attached	Yes <input type="checkbox"/>	No <input type="checkbox"/>
AC schematics attached	Yes <input type="checkbox"/>	No <input type="checkbox"/>
GSD Installation photos attached	Yes <input type="checkbox"/>	No <input type="checkbox"/>