

Energex

Register of Completed Embedded Generator
Projects

1 July 2019 – 30 June 2024



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1 Introduction

This register of completed embedded generation projects has been developed to improve the level of technical information available, on projects that have been successfully connected to Energex's distribution network.

2 Purpose of this Register

Under Chapters 5 and 5A of the National Electricity Rules, Energex is required to publish a register of completed embedded generation projects. This register:

- includes details of all embedded generation projects (i.e. for systems with a generation capacity of 200 kW or greater) completed within the preceding five year period; and
- Update annually for all completed projects in the 5 year period preceding the review date.

3 Details included in the Register

A register of the plant of completed embedded generation projects includes, but is not limited to:

- technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc) and it's make and model;
- maximum power generation capacity of all embedded generating units comprised in the relevant generating system;
- contribution to fault levels;
- the size and rating of the relevant transformer;
- a single line diagram of the connection arrangement;
- protection systems and communication systems;
- voltage control and reactive power capability; and
- details specific to the location of a facility connected to the network that are relevant to any of the details in the bullet points above.

4 More Information

For more information about the embedded generation projects, please contact us:

Email - Major Customers (EnergyQ) majorcustomers@energyq.com.au

5 Project Register

Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2019/20	Milton	Solar photovoltaic array	11	8 x SolarEdge SE82.8K, 1 x SE27.6K	0.4	690	0.04	N/A	Type 4	Level 2	Volt-var as per STNW1174	Non-Export
2019/20	Gympie	Solar Photovoltaic Array	0.415	9xSolarEdge SE82.8K	0.4	618	745	1.29	Type 4	Level 1	Volt-var as per STNW1174	Partial export
2019/20	Burleigh Waters	Solar photovoltaic array	0.4	13 x SolarEdge SE27.6K	0.4	358	0.62	1500kVA 11/0.415kV	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Burleigh Waters	Solar photovoltaic array	0.4	12 x SolarEdge SE27.6K	0.4	331	0.57	1500kVA 11/0.415kV	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Burleigh Waters	Solar Photovoltaic Array	0.4	11 x SolarEdge SE27.6K	0.4	303	0.52	1500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Taigum	Solar Photovoltaic Array	0.4	11 x SolarEdge 82.8kW	0.400	910	1.58	1500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Pinjarra Hills	Solar Photovoltaic Array	0.4	4 x SMA STP60-10	0.4	467	0.81	750	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Chermside	Solar Photovoltaic Array	0.4	4 x SMA STP60-10	0.4	240	0.42	750	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Willowbank	Synchronous generating unit	33	3x 1.1MW existing Marelli Generators 989kVA (MJB 400 LC 4) and 1x 1.2MW New Marelli Motori 1487kVA (MJB500MB4)	0.415	4500	0.56	33/0.415kV 3000kVA	Type 1	Level 2	Voltage Control	Full Export
2019/20	Burleigh Waters	Solar photovoltaic array	0.4	12 x SolarEdge SE27.6K	0.4	331	0.57	11/0.415kV 1500kVA	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Northgate	Solar Photovoltaic Array	0.415	8 x multiple inverters : 7 x Solar Edge SE82.8K + 1 x Solar Edge SE50K	0.415	629	1.09	1000	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Aspley	Solar Photovoltaic Array	0.4	9 x ABB TRIO-50.0-TL-OUTD	0.4	450	0.78	1000	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Brisbane Airport	Solar Photovoltaic Array	11	63 x multiple inverters x ABB TRIO-TM-50.0-TL-OUTD	0.415	3150	5.46	Not applicable	Type 5	Level 2	Volt-var	Non-Export
2019/20	Brisbane Airport	Solar Photovoltaic Array	11	32 x multiple inverters x ABB TRIO -50.0-TL-OUTD	0.415	1600	2.77	Not applicable - 11kV connection	Type 5	Level 2	Volt-var	Non-Export
2019/20	Brisbane Airport	Solar Photovoltaic Array	11	8 x multiple inverters ABB TRIO-50.0-TL-OUTD-400	0.415	400	0.69	Not applicable	Type 5	Level 2	Volt-var	Non-Export
2019/20	Heathwood	Solar Photovoltaic Array	0.415	6 x multiple inverters - 5 x ABB PVS-100-TL and 1 x ABB TRIO-TM-50-400	0.415	550	0.95	1000	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Underwood	Solar Photovoltaic Array	0.4	16 x SMA STP25000TL	0.4	400	0.69	500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Mt Gravatt	Solar photovoltaic array	0.4	4 x SolarEdge SE82.8K	0.4	331	0.57	11/0.415kV 1000kVA	Type 4	Level 1	Volt-watt as per STNW1174	Full Export
2019/20	Sumner	Solar Photovoltaic Array	0.415	8 x ABB TRIO -50.0-TL-OUTD	0.415	400	0.693	1000kVA	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Baringa	Solar Photovoltaic Array	0.4	4 x SolarEdge SE 82.8K	0.4	331	0.57	1000	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Currimundi	Solar Photovoltaic Array	0.4	6 x ABB TRIO-TM50.0-400	0.4	300	0.517	1500	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2019/20	Manly West	Solar Photovoltaic Array	0.4	9 x SMA Solat STP50-40	0.4	450	0.775	1000	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Birkdale	Solar Photovoltaic Array	0.4	6 x SMA STP50-40	0.4	300	0.52	1000	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Staplyton	Solar Photovoltaic Array	0.4	17 x SMA SHP75-10TL	0.4	1275	2.196	1500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Bethania	Solar Photovoltaic Array	0.4	8 x SMA Solar STP50-40	0.4	400	0.689	1000	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Acacia Ridge	Synchronous generating unit	0.4	1 x Perkins P900E1	0.4	900	1.550	1500	Type 3	Level 1	Between at least 0.80 lagging to 0.80 leading	Non-Export
2019/20	Acacia Ridge	Solar Photovoltaic Array	0.4	4 x Fronius Eco 27.0-3-5	0.4	550	0.186	1000	Type 4	Level 1	Between at least 0.80 lagging to 0.80 leading	Non-Export
2019/20	Springfield Central	Solar Photovoltaic Array	0.4	16 x SMA STP 25000 TL	0.4	400	0.689	1000	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	OXENFORD	Solar Photovoltaic Array	0.4	9 x SUNNY TRIPOWER STP 50-40	0.4	450	0.689	1500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export

Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2019/20	Bundamba	Solar Photovoltaic Array	0.4	14 x SMA STP2500TL	0.4	350	0.603	1500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Sheldon	Solar Photovoltaic Array	0.4	10 x Fronius ECO2 27.0-3-S	0.4	270	0.465	1000	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Coomera	Solar Photovoltaic Array	0.4	10 x Solax X3-30-T (new) + 5 x 25kW existing inverters	0.4	425	0.74	1000	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2019/20	Calamvale	Solar Photovoltaic Array	0.4	9 x SolarEdge SE 82.8K	0.4	745	1.29	1500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Ashmore	Solar Photovoltaic Array	0.4	4 x SMA STP 60-10	0.4	240	0.413	300	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Kelvin Grove	Solar Photovoltaic Array	0.415	Multiple Inverters	0.415	308	.228	1500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Carole Park	Solar Photovoltaic Array	0.4	4 x SolarEdge SE82.8K	0.4	331	0.57	1500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	South Brisbane	Solar Photovoltaic Array	0.4	8 x Fronius ECO 27.0-3-S + 2 x Fronius Symo 12.5-3-M + 1 x Symo 5.0-3-M	0.4	246	0.423	2x1500	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2019/20	Logan Central	Synchronous generating unit	0.4	888kW diesel generator	0.4	888	8.97	1500	Type 3	Not required	Between at least 0.80 lagging to 0.80 leading	Non-Export
2019/20	Maroochydore	Solar Photovoltaic Array	0.4	2 x Fronius Symo 20.0-3-M, 30 x Fronius Eco 27.0-3-S	0.4	850	1.47	2 x 1000kVA, 2 x 1500kVA	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Enoggera	Solar Photovoltaic Array	0.4	9 x SMA STP2500TL-30 + 1xSMA STP50-40	0.4	265	0.456	1000	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2019/20	Brisbane	Synchronous generating unit	0.4	2 x 1100 kW + 1 x 2250 kW diesel generator	0.4	4450	0	11/0.415kV 1500kVA	Type 3	Not required	Bumpless transfer	Nil Export
2019/20	Cannon Hill	Solar Photovoltaic Array	0.4	8 x SMA STP50-40	0.4	400	0.69	1000	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Gatton	Solar photovoltaic array	33	5 x SMA 720CP XT	0.4	3300	0.085	N/A	Type 1	Level 2	Volt-var as per STNW1174	Full Export
2019/20	Bongaree	Solar Photovoltaic Array	0.4	5 x ABB TRIO-TM-50.0	0.4	250	0.433	1500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Eagleby	Solar Photovoltaic Array	0.4	3 x SMA STP2500TL-30	0.4	250	0.13	1000	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	West Ipswich	Solar Photovoltaic Array	0.4	10 x SMA STP50-40	0.4	500	0.866	1500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Maroochydore	Solar Photovoltaic Array	0.4	10 x SMA STP50-40	0.4	500	0.866	750	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Carseldine	Solar Photovoltaic Array	0.4	1 x SMA STP2000TL, 2 x SMA STP25000, 4 x SMA STP50-40	0.4	270	0.47	2 x 500kVA	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2019/20	Wacol	Solar Photovoltaic Array	0.4	Inverters 97 x Fronius Eco 27.0-3-S	0.4	2700	4.5	9 x 11/0.415kV 1500kVA	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2019/20	Goodna	Synchronous generating unit	0.4	4 x PR1650C-SAE Diesel Generators	0.4	3960	9.095	3x1500kVA	Type 3	Level 1	Between at least 0.80 lagging to 0.80 leading	Non-Export
2019/20	Goodna	Solar Photovoltaic Array	0.4	11 x SMA Sunny Trip 1 SHP75-10	0.4	825	1.42	1500kVA	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2020/21	Murarie	Steam	11	AMG 0560BM04 DAP 3.5MVA	11	3500	1.07	33/11kV 15MVA	Type 1	Level 2	Power factor	Non-Export
2020/21	Berrinba	Solar Photovoltaic Array	0.4	5 x Huawei SUN2000-50KTL-MO inverters	0.4	275	0.475	1000	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2020/21	Bellbowrie	Solar Photovoltaic Array	0.4	3 X SMA SHP 75-10	0.4	225	0.388	1500	Type 4	Level 1	Volt-var as per STNW1174	Non-Export
2020/21	Beenleigh	Solar Photovoltaic Array	0.4	11 x SMA STP 50-40 + 1 x SMA STO2500TL-30 Inverters	0.4	575	0.994	1500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2020/21	Dakabin	Solar Photovoltaic Array	0.4	3 x Sunny Highpower PEAK1 Inverters	0.4	225	0.387	1000kVA	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2020/21	Buderim	Solar Photovoltaic Array	0.4	2 x Sungrow SG110CX inverters	0.4	220	0.379	1000kVA	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2020/21	Nerang	Solar Photovoltaic Array	0.4	6 x SolarEdge SE82.8K inverters	0.4	496	0.858	500	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2020/21	Pinkenba	Solar Photovoltaic Array	0.4	7xABB PVS 100 Inverters	0.4	700	1.2098	1000kVA	Type 4	Level 1	Volt-var as per STNW1174	Partial Export
2020/21	Capalaba	Solar Photovoltaic Array	0.4	2 x Sungrow SG110CX Inverters	0.4	220	0.379	1000kVA	Type 4	Level 1	Volt-var as per STNW1174	Full Export
2020/21	Darra	Synchronous generating unit	0.4	715kVA standby diesel generator	0.4	572	5.78	1500	Type 3	Level 1	Between at least 0.80 lagging to 0.80 leading	Partial Export

Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2020/21	Ashgrove	Solar Photovoltaic Array	0.4	3 x SMA STP25000TL-30 + 1 x SMA STP10000TL-20	0.400	235	0.146	750	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Little Mountain	Solar Photovoltaic Array	0.4	14xSMA STP25000TL inverters	0.4	350	0.603	500kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Non-Export
2020/21	Sheldon	Solar Photovoltaic Array	0.4	10 x Fronius ECO2 27.0-3-S	0.4	560	0.465	1000	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Partial Export
2020/21	Buderim	Solar Photovoltaic Array	0.4	2xSungrow SG110CX inverters	0.4	220	0.378	750kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Deception Bay	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverter	0.4	220	0.379	750kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Beerwah	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.379	1000kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Cooroy	Solar Photovoltaic Array	0.4	7xFronius Eco 27.0-3-S + 2xSunny Tripower 20000TL	0.4	178	0.394	500kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Partial Export
2020/21	Robina	Solar Photovoltaic Array	0.4	4xSolarEdge SE82.8K + 1xSolarEdge SE50K Inverters	0.4	381.1	0.659	1500kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Arana Hills	Solar Photovoltaic Array	0.4	1 x SolarEdge SE82.8K	0.4	82.8	0.143	1000kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Brendale	Solar Photovoltaic Array	0.4	15xABB TRIO 50.0-TL Inverters	0.4	750	1.291	1500kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2020/21	Caloundra	Solar photovoltaic array	0.415	4 x Sunny Highpower Peak 1 (SHP75-10)	0.415	300	0.500	1500kVA	Type 4	Level 1	Volt-var and volt-watt as per STNW1174	Full Export
2021/22	Narangba	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K+2xSolarEdge SE50K+ 1xSolarEdge SE30K Inverters	0.4	212	0.369	11/0.433kV 750kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	North Lakes	Solar Photovoltaic Array	0.4	4xSMA Sunnytrip STP110-60 Inverters	0.4	440	0.762	1x1500kVA 11/0.433 kV	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Mango Hill	Solar Photovoltaic Array	0.4	8xFronius ECO 27.0-3-S Inverters	0.4	216	0.372	1500kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Brassall	Solar Photovoltaic Array	0.4	7xFronius ECO 27.0-3-S + 4xFronius SYMO 20.0-3-M Inverters	0.4	269	0.463	11/0.433kV 750kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Loganlea	Solar Photovoltaic Array	0.4	3xSolarEdge SE82.8K Inverters	0.4	248	0.430	11/0.433kV 500kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Mermaid Waters	Solar Photovoltaic Array	0.4	2xSolarEdge SE82.8K + 1xSolarEge SE50K Inverters	0.4	215	0.373	11/0.433kV 1000kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Narangba	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K + 1xSolarEdge SE33.3K + 6xSolarEdge 27.6K + 4xSMA STP25000TL-30 Inverters	0.4	381	0.658	1x1500kVA + 1x1000kVA	Type 4	Level 1	volt-var and volt-watt	Non-Export
2021/22	Kelvin Grove	Solar Photovoltaic Array	0.4	Multiple Inverters	0.415	383	.228	1500	Type 4	Level 1	volt-var and volt-watt	Non-Export
2021/22	Bracken Ridge	Solar Photovoltaic Array	0.4	8xFronius ECO 27.0-3-S inverters	0.4	216	0.372	1000kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Pinkenba	Solar Photovoltaic Array	0.4	7xABB PVS 100 Inverters	0.4	700	1.2098	1000kVA	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Northgate	Solar Photovoltaic Array	0.4	2xSungrow Power SG110CX Inverters	0.4	220	0.381	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Coomababah	Synchronous generating unit	11	Leroy-Somer LSA	0.4	556	0.962	HV Customer	Type 2	Level 1	Between at least 0.80 lagging to 0.80 leading	Non-Export
2021/22	Brisbane	Synchronous generating unit	0.4	2x Caterpillar 3512B	0.4	3700	37.4	6x1500kVA 33/11kV	Type 3	Level 2	Power factor control	Non-Export
2021/22	Darra	Solar Photovoltaic Array	0.4	8xSolarEdge SE82.8K + 1xSolarEdge SE25K inverters	0.4	687	1.184	1000kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	North Lakes	Solar Photovoltaic Array	0.4	9xSMA STP25000TL-30 Inverters	0.4	225	0.390	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Logan Central	Synchronous generating unit	0.4	888kW diesel generator	0.4	1100	8.97	11/0.433 kV 1500kVA	Type 3	Not required	Between at least 0.80 lagging to 0.80 leading	Non-Export
2021/22	The Gap	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K+3xSolarEdge SE50K Inverters	0.4	232	0.403	11/0.433kV 750kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Victory Heights	Solar Photovoltaic Array	0.4	S + 2xFronius SYMO 17.5-3-M Inverters	0.4	251	0.435	11/0.433kV 1000kVA	Type 4	Level 1	volt-var and volt-watt	Full Export

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2021/22	Calamvale	Solar Photovoltaic Array	0.4	6 x SolarEdge SE25K & 1 x SolarEdge SE82.8K	0.4	232	0.403	11/0.4kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Acacia Ridge	Solar Photovoltaic Array	0.4	3xSolarEdge SE82.8K Inverters	0.4	248	0.430	11/0.433kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Aspley	Solar Photovoltaic Array	0.4	2 x SolarEdge SE82.8K	0.4	216	0.287	11kV/433V 750kVA PMT	Type 4	Level 1	Between at least 0.80 lagging to 0.80 leading	Full Export
2021/22	Hemmant	Solar Photovoltaic Array	0.4	9xSolarEdge SE27.6 Inverters	0.4	248	0.430	11/0.433kV 500kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Bannockburn	Solar Photovoltaic Array	0.4	2xSunny Tripower STP110-60 Inverters	0.4	220	0.381	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Brassall	Solar Photovoltaic Array	0.4	3xSolarEdge SE82.8K Inverters	0.4	248	0.430	11/0.433kV 1000kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Kenmore	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K + 1xSolarEdge SE50K + 2xSolarEdge SE30K + 2xSolarEdge SE17K Inverters	0.4	226	0.393	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Loganholme	Solar Photovoltaic Array	0.4	10xSunGrow SG110CX Inverters	0.4	1100	1.905	11/0.433kV 2x1500kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Redbank Plains	Solar Photovoltaic Array	0.4	3xSolarEdge SE82.8K Inverters	0.4	248	0.430	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Wavell Heights	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K + 1xSolarEdge SE50K + 3xSolarEdge SE30K Inverters	0.4	222	0.386	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Springfield Central	Solar Photovoltaic Array	0.4	2xSolarEdge SE82.8K + 1xSolarEdge SE30K + 2xSolarEdge SE25K Inverters	0.4	245	0.425	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Corinda	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K + 4xSolarEdge SE30K Inverters	0.4	202	0.351	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Miami	Solar Photovoltaic Array	0.4	3xSolarEdge SE82.8K Inverters	0.4	248	0.430	11/0.433kV 1000kVA	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Loganholme	Solar Photovoltaic Array	0.4	6xSolarEdge SE82.8K Inverters	0.4	496	0.86	11/0.433kV 750kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Helensvale	Solar Photovoltaic Array	0.4	22 x Delta M30A , 30 kVA Solar Inverters 2 x Delta M10A, 10 kVA Solar Inverters	0.4	680	1.178	11/0.433kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Karawatha	Solar Photovoltaic Array	0.4	8xSolarEdge SE82.8K Inverters	0.4	662	1.1472	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Enoggera	Solar Photovoltaic Array	0.4	9 x SMA STP2500TL-30 + 1xSMA STP50-40	0.4	400	0.456	11/0.433kV 1000kVA	Type 4	Level 1	volt-var and volt-watt	Full export
2021/22	Underwood	Solar Photovoltaic Array	0.4	3 x SolarEdge SE27.6K	0.4	459	0.143	11/0.433kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Bald Hills	Solar Photovoltaic Array	0.4	10xSolarEdge SE27.6K Inverters	0.4	276	0.478	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Mango Hill	Solar Photovoltaic Array	0.4	9xSolarEdge SE33.3K Inverters	0.4	299	0.519	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Staplyton	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	330	0.571	11/0.433kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Staplyton	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.381	11/0.433kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Jimboomba	Solar Photovoltaic Array	0.4	3 x Fronius ECO 25.0-3-S, 1 x Fronius SYMO 20.0-3-M	0.4	325	0.165	500kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Fortitude Valley	Synchronous generating unit + Solar Photovoltaic Array	0.4	Fronius ECO 27.0-3-S x 2, Sterling Generator SGV350	0.4	404	0.26	1x1500kVA 11/0.433 kV	Type 1	Level 1	volt-var and volt-watt	Non-Export, Synchronous Machine Bumpless
2021/22	Forest Lake	Solar Photovoltaic Array	0.4	3xSunny Tripower SMA STP 110-60 Inverters	0.4	330	0.572	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Shailer Park	Solar Photovoltaic Array	0.4	14xSolarEdge SE82.8K + SolarEdge SE50K + SolarEdge SE27.6K Inverters	0.4	1236	2.0	11/0.433kV 6x1500kVA	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Zillmere	Solar Photovoltaic Array	0.4	50xSMA SMC 6kW + 1xSMA Tripower 110kW Inverters	0.4	410	0.710	11/0.433kV 500kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Cooroy	Solar Photovoltaic Array	0.4	2 x Sungrow Power Supply SG50CX	0.4	200	0.173	11/0.4kV 315kVA PT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Shailer Park	Solar Photovoltaic Array	0.4	28xSolarEdge SE82.8K + 2xSolarEdge SE50K +2xSolarEdge SE27.6K Inverters	0.4	2473	4.28	11/0.433kV 6x1500kVA	Type 4	Level 1	volt-var and volt-watt	Full Export

Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2021/22	Redcliffe	Solar Photovoltaic Array	0.4	1xSolarEdge SE55K inverter	0.4	330	0.095	1000kVA	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Deception Bay	Solar Photovoltaic Array	0.4	9xHuawei Sun2000-50KTL-Mo + 1xHuawei Sun2000-29.9KTL-M3 Inverters	0.4	524	0.909	2x11/0.433kV 1500kVA GTs	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Sheldon	Solar Photovoltaic Array	0.4	10 x Fronius ECO2 27.0-3-S	0.4	884	0.465	1000	Type 4	Level 1	volt-var and volt-watt	Partial Export
2021/22	Brisbane	Solar Photovoltaic Array	0.4	ABB Trio 27.6-TL-OUTD x 3 + Trio 20.0-TL-OUTD x 2 + PVI 10-OUTD x 7 + PVI-6000-OUTD x 2 + PVI-3.6-OUTD x 1 + PVS-100-TL-S x 2, SMA SB3800 x 6, Sungrow SG5K-D x 1 + SG10RT x 5	0.4	486	0.772	3x1500kVA 11/0.433kV, 2x1500kVA 11/0.433kV	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Rocklea	Solar Photovoltaic Array	0.4	10xSunny Tripower STP25000TL-30 Inverters	0.4	250	0.433	11/0.433kV 1000kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Narangba	Solar Photovoltaic Array	0.4	1xSolarEdge SE82.8K + 1xSolarEdge SE33.3K + 6xSolarEdge 27.6K + 4xSMA STP25000TL-30 Inverters	0.4	581	0.658	1x1500kVA + 1x1000kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Bongaree	Solar Photovoltaic Array	0.4	366 x Enphase S230 Microinverters + 17xSunGrow SG2KTL-S + 171xSunGrow SG3KTL-D inverters	0.4	815	1.084	1000	Type 4	Level 1	volt-var and volt-watt	Nil Export
2021/22	Noosa Heads	Solar Photovoltaic Array	0.4	14xSungrow SH5K-20+5xSungrow SH5K-30+2xSungrow SG5K-D+14xSungrow SH5.0RT+8xSungrow SH10RT+1xSungrow SG15RT Inverters	0.4	229	0.467	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2021/22	Redbank	Synchronous Unit	11	4x Marelli MTU 16V4000G74F FO 2.5MVA	11	10000	1.05	33/11kV 15MVA, 2x10MVA	Type 2	Level 2	Voltage Control	Non-Export
2022/23	Rochedale	Solar Photovoltaic Array	0.4	3xSungrow SG110CX + 1xSungrow SG30CX	0.4	359	0.623	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Redbank	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.3464	11/0.433kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Bongaree	Solar Photovoltaic Array	0.4	27 x SunGrow SG2KTL-S + 127 x SunGrow SG3KTL-D + 1 x SunGrow SG5KTL-D Inverters	0.4	442	0.760	500	Type 4	Level 1	Between at least 0.80 lagging to 0.80 leading	Nil Export
2022/23	Rochedale	Solar Photovoltaic Array	0.4	3xSungrow SG110CX + 1xSungrow SG50CX Inverters	0.4	380	0.658	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Bowen Hills	Solar Photovoltaic Array	0.4	Sungrow SG110CX x 4, SG50CX	0.5	490	0.642	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Kuluin	Solar Photovoltaic Array	0.4	11xSungrow SG3K-D+108xJiangsu GW3000D-NS+1xFronius Symo 8.2-3-M+1xSolarEdge SE8000H Inverters	0.4	303	0.641	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Arundel	Solar Photovoltaic Array	0.4	3 x Delta M30A	0.4	290	0.156	1000	Type 4	Level 1	Between at least 0.80 lagging to 0.80 leading	Partial Export
2022/23	Acacia Ridge	Solar Photovoltaic Array	0.4	3xSungrow SG110CX Inverters	0.4	330	0.571	11/0.4kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Carrara	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.381	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Redland Bay	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.381	11/0.4kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Carina	Solar Photovoltaic Array	0.4	4xSungrow SG110Cx Inverters	0.4	440	0.762	11/0.4kV 1000kVA GT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Redcliffe	Solar Photovoltaic Array	0.4	3xSMA STP20000TL-30 + 1xSungrow SG110Cx + 1xSungrow SG50CX Inverters	0.4	220	0.381	11/0.4kV - 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Cannon Hill	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.381	11/0.433kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Redbank Plains	Solar Photovoltaic Array	0.4	3xSungrow SG110CX Inverters	0.4	330	0.572	11/0.4kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Wacol	Solar Photovoltaic Array	0.4	Sungrow SG30CX, SG50CX, SG110CXx3	0.4	409	0.537	11/0.4kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Virginia	Solar Photovoltaic Array	0.4	3x SG110CX Inverters, 720x TSM0500DD18M(II) 0.5VA PV Panels	0.4	330	0.57156	11kV/0.4kV - 1000kVA padmount	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Luscombe	Solar Photovoltaic Array	0.4	5xSolarEdge SE30K + 3xSolarEdge SE33.3K Inverters	0.4	250	0.433	11/0.4kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Banyo	Synchronous Generating Unit	0.4	5xSunny Tripower TL20000E Inverters + 616kW/770kVA Vikings Generator	0.4	770	1.333	11/0.433kV 1500kVA	Type 1	Level 1	Between at least 0.80 lagging to 0.80 leading	Non-Export

Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2022/23	Banyo	Synchronous Generating Unit	0.4	Vikings Diesel	0.4	1500	2.598	11/0.433kV 1500kVA	Type 1	Level 1	Between at least 0.80 lagging to 0.80 leading	Non-Export
2022/23	Darra	Solar Photovoltaic Array	0.4	Sungrow SG110CX x2	0.4	220	0.3810	11/0.433kV 7500kVA	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Nambour	Solar Photovoltaic Array	0.4	2xSungrow SG110CX Inverters	0.4	220	0.3810	11/0.4kV 1000kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	South Brisbane	Solar Photovoltaic Array	0.4	2xSungrow SG110CX + 1xSungrow SG50CX Inverters	0.4	270	0.468	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Willawong	Solar Photovoltaic Array	0.4	3xSMA STP60-10	0.4	630	0.311	1000kVA	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Upper Mt Gravatt	Solar Photovoltaic Array	0.4	3xSungrow SG110CX Inverters	0.4	330	0.571	11/0.4kV 1000kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Narangba	Solar Photovoltaic Array	0.4	653xJAM72S20-460/MR/1500V + 3xSG110CX Inverters	0.4	330	0.57156	11/0.4kV - 750kVA padmount	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Darra	Solar Photovoltaic Array	0.4	2 x SMA STP50-40	0.4	430	0.173	11/0.4kV 1000	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Springwood	Solar Photovoltaic Array	0.4	3xSungrow SG110CX Inverters	0.4	330	0.572	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Tallebudgera Valley	Solar Photovoltaic Array	0.4	10kVA Aurora +Fronius 27kVA +Fronius 25kVA +Fronius 15kVA + 4 x SMA STP50-41 Inverters	0.4	277	0.479	11/0.433 KV 500kVA PT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	REDBANK	Solar Photovoltaic Array	0.4	5xSungrow SG110CX Inverters	0.4	550	0.9526	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Nerang	Solar Photovoltaic Array	0.4	4xSungrow SG110CX Inverters	0.4	440	0.762	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Yatala	Solar Photovoltaic Array	0.4	15xSolarEdge SE30k + 3xSolarEdge SE33.3K Inverters	0.4	549	0.952	11/0.4kV - 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Eagle Farm	Solar Photovoltaic Array	11	Numerous	0.4	1575	0.075	15MVA 33/11kV	Type 1	Level 2	volt-var and volt-watt	Non-Export
2022/23	Virginia	Solar Photovoltaic Array	0.4	6xSungrow SG110CX inverters	0.4	660	1.143	2x11/0.4kV 1500kVA GTs	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Caboolture	Solar Photovoltaic Array	0.4	2xSungrow SG110CX + 1xSungrow SG30CX Inverters	0.4	249	0.433	11/0.4kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Ascot	Solar Photovoltaic Array	0.4	13xFronius Eco 27.0-3-S	0.400	351	0.607	1000	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Brisbane	Solar Photovoltaic Array	0.4	Various Sungrow, SMA, ABB	0.4	536	0.703	11/0.4kV - 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Virginia	Solar Photovoltaic Array	0.4	5x Sungrow SG110CX Inverters + 1520x Trina Solar Co TSM-450DE17M	0.4	550	0.9526	11/0.4kV - 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Kuluin	Solar Photovoltaic Array	0.4	133xJiangsu GW300OD-NS (3kVA) + 1xFronius Symo 15.0-3-M + 2xFronius Symo 17.5-3-M + 1xFronius Symo 20.0-3-M Inverters	0.4	469	0.812	11/0.433kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	REDBANK	Solar Photovoltaic Array	0.4	7xSungrow SG110CX Inverters	0.4	770	1.33364	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Wacol	Solar Photovoltaic Array	0.4	2xSungrow SG110CX + 1xSungrow SG30CX inverters	0.4	250	0.433	11/0.4kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Carole Park	Solar Photovoltaic Array	0.4	2xSolarEdge SE100K + 1xSolarEdge SE82.8K Inverters	0.4	282	0.489	11/0.4kV 1000kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	MURARRIE	Solar Photovoltaic Array	0.4	8 x 110kW Sungrow inverter (SG110CX) 2222 x Risen 450W panels	0.4	880	1.52416	11/0.4kV - 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Carole Park	Solar Photovoltaic Array	0.4	1xSungrow SG110CX + 2xSungrow SG50CX Inverters	0.4	210	0.364	11/0.4kV 1500kVA GT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Eagleby	Solar Photovoltaic Array	0.4	3 x SMA STP25000TL-30	0.4	555	0.13	1000	Type 4	Level 1	volt-var and volt-watt	Partial Export
2022/23	Rochedale	Solar Photovoltaic Array	0.4	3xSungrow SG110CX Inverters	0.4	330	0.571	11/0.4kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Keperra	Solar Photovoltaic Array	0.4	2xSungrow SG110CX + 1xSungrow SG29.9CX Inverters	0.4	249	0.432	11/0.4kV 750kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2022/23	Toowong	Solar Photovoltaic Array	0.4	Eco 27.0-3-S x 8	0.4	216	0.283	11/0.4kV 1500kVA PMT	Type 4	Level 1	volt-var and volt-watt	Full Export
2023/24	Brendale	Solar Photovoltaic Array	0.4	2xSungrow SG110CX	0.4	220	0.318	11/0.4kV 1500kVA	Type 4	Level 1	volt-var and volt-watt	Full export
2023/24	STRATHPINE	Solar Photovoltaic Array	11	Solaredge Technology SE100K	0.4	800	1.155	11/0.4kV 1500kVA	Type 2	Level 2	volt-var and volt-watt	Nil Export

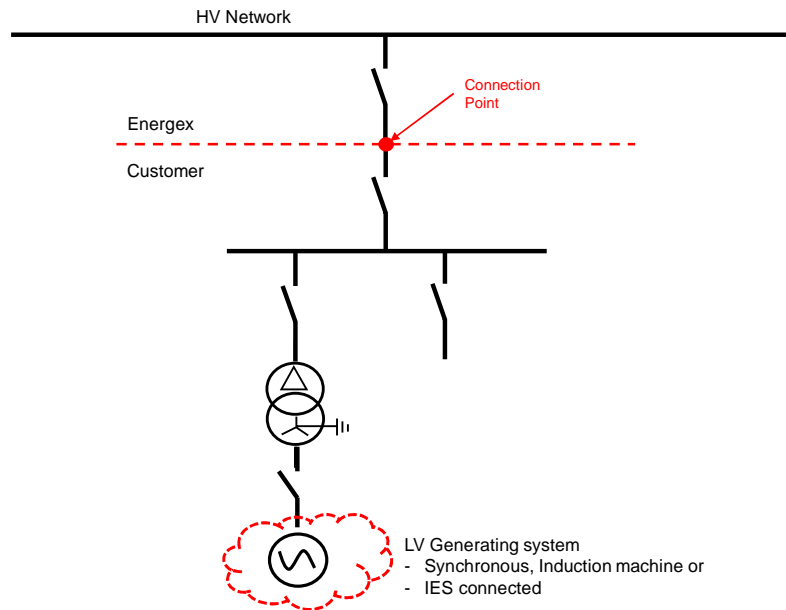
Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2023/24	ROCHEDALE	Solar Photovoltaic Array	0.4	Fronius ECO 25.0-3-S	0.4	100	0.144	11/0.4kV 1500kVA	Type 4	Level1	Volt-var and volt-watt	Full Export
2023/24	GOODNA	Solar Photovoltaic Array	0.4	Fronius Eco 25.0-3-S, 27.0-3-S, 5.0-3-M, 20.0-0-M	0.4	199	0.287	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Petrie Terrace	Solar Photovoltaic Array	0.4	SungrowSG50CX, SG110CX	0.4	260	0.375	3 x 11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Bundall	Solar Photovoltaic Array	0.4	Sungrow SC110CX	0.4	110	0.159	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Calamvale	Solar Photovoltaic Array	0.4	Solaredge Technology SE100K	0.4	400	0.577	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Non Export
2023/24	Yamanto	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG50CX	0.4	380	0.548	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full export
2023/24	YAMANTO	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	440	0.635	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full export
2023/24	Lytton	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG50CX	0.4	270	0.390	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full export
2023/24	Rochedale	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full export
2023/24	SUNNYBANK HILLS	Solar Photovoltaic Array	0.4	Solaredge Technology SE100K	0.4	800	1.155	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full export
2023/24	WACOL	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Full export
2023/24	Sandgate	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Noosaville	Solar Photovoltaic Array	0.4	SMA Australia STP25000TL-30, STP110-60, CORE1 STP50-41	0.4	260	0.375	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Pinjarra Hills	Solar Photovoltaic Array	0.4	Solaredge Technology SE82.8K	0.4	248	0.358	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Northgate	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Boronia Heights	Solar Photovoltaic Array	0.4	Fronius ECO 25.0-3-S, 25.0-3-M, 15.0-3-M	0.4	220	0.318	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	FOREST LAKE	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	880	1.270	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Coopers Plains	Solar Photovoltaic Array	0.4	Fronius Australia Tauro ECO 100-3-D	0.4	400	0.577	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Reedy Creek	Solar Photovoltaic Array	0.4	Fronius Australia Tauro ECO 100-3-D, Symo 20-0-3-M	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Ormeau	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Port of Brisbane	Solar Photovoltaic Array	11	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 2	Level 2	Volt-var and volt-watt	Full Export
2023/24	Acacia Ridge	Solar Photovoltaic Array	0.4	Fronius Australia Tauro ECO 100-3-D	0.4	450	0.650	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Redbank	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG50CX	0.4	1480	2.136	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Robina	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	WAKERLEY	Solar Photovoltaic Array	0.4	Solaredge Technologies SE82.8	0.4	216	0.312	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Wakerley	Solar Photovoltaic Array	0.4	Solaredge Technologies SE82.9	0.4	331	0.478	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Robina	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Yatala	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG50CX	0.4	270	0.390	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Bundamba	Synchronous Unit	0.4	Caterpilla C18/LC7224H	0.4	660	0.953	11/0.4kV 750kVA	Type 1	Level 1	Fixed Power Factor	Nil Export
2023/24	Stafford	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG30CX	0.4	249	0.359	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	South Ripley	Synchronous Unit	0.4	Cummins Diesel SCD 350ST	0.4	350	0.505	11/0.4kV 1000kVA	Type 1	Level 1	Fixed Power Factor	Nil Export
2023/24	Yamanto	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	North Mackay	Solar Photovoltaic Array	0.4	Fronius Australia Symo 10.0-3-M, 15.0-3-M, 20.0-3-M, Sungrow SG20CX, SG50CX, SG110CX	0.4	280	0.404	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	LYTTON	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG50CX	0.4	710	1.025	11/0.4kV 1500kVA	Type 4	Level	Volt-var and volt-watt	Full Export

Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2023/24	Murarrie	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Macgregor	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	440	0.635	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Crestmead	Solar Photovoltaic Array	0.4	Shenzhen Growatt New Energy MAX 80ATL3-X	0.4	480	0.693	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	North Mackay	Solar Photovoltaic Array	0.4	Fronius Symo 15.3-0-M, Sungrow SG110CX, SC50HV-20	0.4	330	0.476	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	REDBANK	Solar Photovoltaic Array	11	Sungrow SG110CX	0.4	990	1.429	11/0.4kV 1500kVA	Type 2	Level 2	Volt-var and volt-watt	Full Export
2023/24	WACOL	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 2	Volt-var and volt-watt	Full Export
2023/24	Bellmere	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Kallangur	Synchronous Unit	0.4	Cummins 6M16G350/5	0.4	310	0.447	11/0.4kV 1000kVA	Type 1	Level 1	Fixed Power Factor	Nil Export
2023/24	Thornlands	Solar Photovoltaic Array	0.4	Solar Edge SE33.3K, SE30K	0.4	213	0.307	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Eastern Heights	Solar Photovoltaic Array	0.4	Solar Edge SE30K	0.4	210	0.303	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Buderim	Solar Photovoltaic Array	0.4	Schneider CL25000	0.4	245	0.354	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	MORNINGSIDE	Solar Photovoltaic Array	0.4	Sungrow SG30CX, SG50CX, SG110CXx	0.4	1479	2.135	11/0.4kV 1500kVA x 2	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Murarrie	Solar Photovoltaic Array	0.4	Sungrow SG30CX, SG110CX	0.4	249	0.359	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Murarrie	Solar Photovoltaic Array	0.4	Sungrow SG30CX, SG110CX	0.4	820	1.184	11/0.4kV 1000kVA x2	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Helensvale	Solar Photovoltaic Array	0.4	Solar Edge SE82.8, Delta Electronics PCS100HV	0.4	248	0.358	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Oxenford	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Port Of Brisbane	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Luscombe	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	440	0.635	11/04.kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Park Avenue	Solar Photovoltaic Array	0.4	Fronius Symo 15.3-0-M, 20.15.3-0-M, Tesla Powerpac 2.0	0.4	312.5	0.451	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	IPSWICH	Solar Photovoltaic Array	0.4	Sungrow SG50CX, SG110CX	0.4	210	0.303	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Albany Creek	Solar Photovoltaic Array	0.4	Sungrow SG30CX, SG50CX, SG110CX	0.4	299	0.432	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Arana Hills	Battery, Synchronous Unit	11	Tesla Megapack 1, Jenbacher J312	0.4	1315	1.898	11/0.4kV 1500kVA	Type 2	Level 2	Power factor control	Partial Export
2023/24	Warner	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	770	1.111	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Southport	Solar Photovoltaic Array	0.4	Solar Edge SE16K, SE17L, SE25.K, SE27.6K	0.4	326	0.471	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	KUNDA PARK	Solar Photovoltaic Array	0.4	Sungrow SG110CX x 2	0.4	220	0.318	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Fernvale	Solar Photovoltaic Array	0.4	Sungrow SG110CX x 2	0.4	220	0.318	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Marsden	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Hemmant	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG30CX	0.4	359	0.518	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Yatala	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG30CX	0.4	359	0.518	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	VIRGINIA	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	1490	2.151	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Narangba	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	660	0.953	11/0.4kV 1500kVA x 2	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Richlands	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG20RT	0.4	240	0.346	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	ACACIA RIDGE	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 1500kVA x 2	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	STRATHPINE	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export

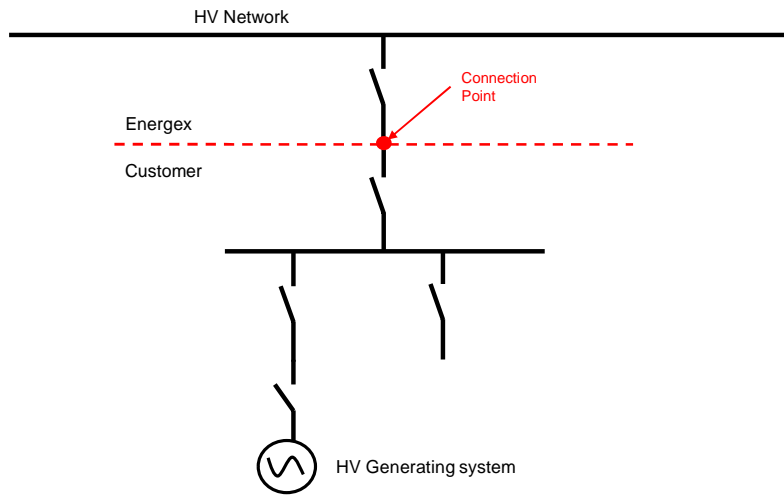
Year Completed = Connected	Location	Technology of generating unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc)	Network Connection Voltage (kV)	Generator Unit details (Make and Model)	Generator Voltage Level (kV)	Maximum power generation capacity of all embedded generating units comprised in the relevant generating system (kw)	Contribution to fault levels (kA) at connection point	The size and rating of the relevant transformer (Voltages & kVA)	A single line diagram of the connection arrangement	Protection systems and communication systems	Voltage control, power factor control and/or reactive power capability	Details specific to the location of a facility connected to the network, that are relevant to any of the details.
2023/24	SUNNYBANK	Solar Photovoltaic Array	0.4	Solar Edge SE100K	0.4	600	0.866	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Banyo	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	220	0.318	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Pinkenba	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Berrinba	Solar Photovoltaic Array	0.4	Sungrow SG30CX, SG110CX	0.4	459	0.663	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Ashmore	Solar Photovoltaic Array	0.4	Sungrow SG50CX, SG110CX	0.4	380	0.548	11/0.4kV 1500kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Bongaree	Solar Photovoltaic Array	0.4	Sungrow, Goodwee, Enphase, SGK3TL-D, SG3KTL-s, GW3000D	0.4	731	1.055	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Nil Export
2023/24	Bongaree	Battery	0.4	Delta Electronics PCS100HV	0.4	300	0.433	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Nil Export
2023/24	Lytton	Solar Photovoltaic Array	0.4	Sungrow SG50CX, SG110CX	0.4	270	0.390	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	MUDGEERABA	Solar Photovoltaic Array	0.4	SG110CX x3	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	BUNDAMBA	Solar Photovoltaic Array	0.4	Sungrow SG50CX, SG110CX	0.4	930	1.342	11/0.4kV 1000kVA x 2	Type 4	Level 1	Volt-var and volt-watt	Nil Export
2023/24	Wynnum West	Solar Photovoltaic Array	0.4	Sungrow SG110CX, SG20RT	0.4	460	0.664	11/0.4kV 750kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	SOUTHPORT	Solar Photovoltaic Array	0.4	Sungrow SG110CX	0.4	330	0.476	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	Rocklea	Solar Photovoltaic Array	0.4	SMA Australia STP110-60	0.4	220	0.318	11/0.4kV 500kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	IPSWICH	Solar Photovoltaic Array	0.4	Huawei Technology SUN200 40KLT-M3	0.4	329	0.475	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Partial Export
2023/24	Crestmead	Solar Photovoltaic Array	0.4	Fronius Tauro ECO 100-3-D x 2, Symo 5-0-3M	0.4	205	0.296	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export
2023/24	MUDGEERABA	Solar Photovoltaic Array	0.4	Risen Energy RSM726-320P	0.4	100	0.144	11/0.4kV 1000kVA	Type 4	Level 1	Volt-var and volt-watt	Full Export

6 Single Line Diagram Types

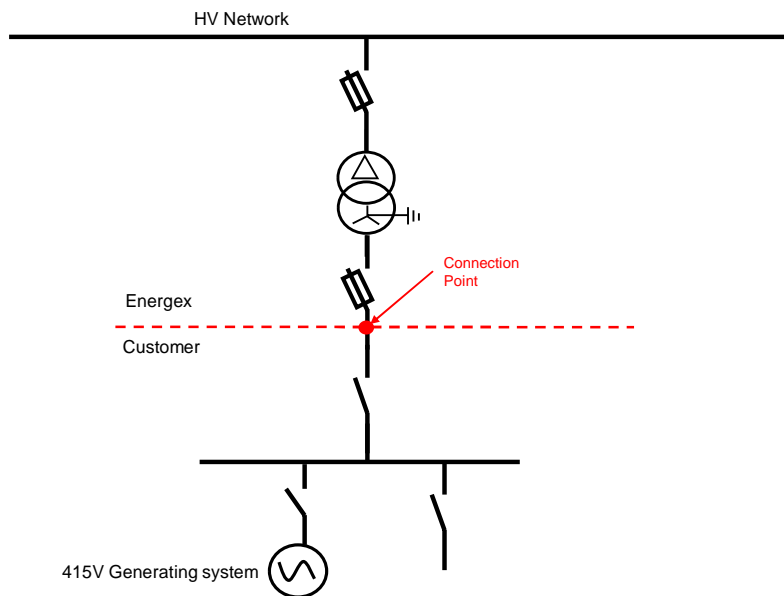
Type 1 – High Voltage Connection with Low Voltage Generating System (Synchronous or Induction Machine, or IES)



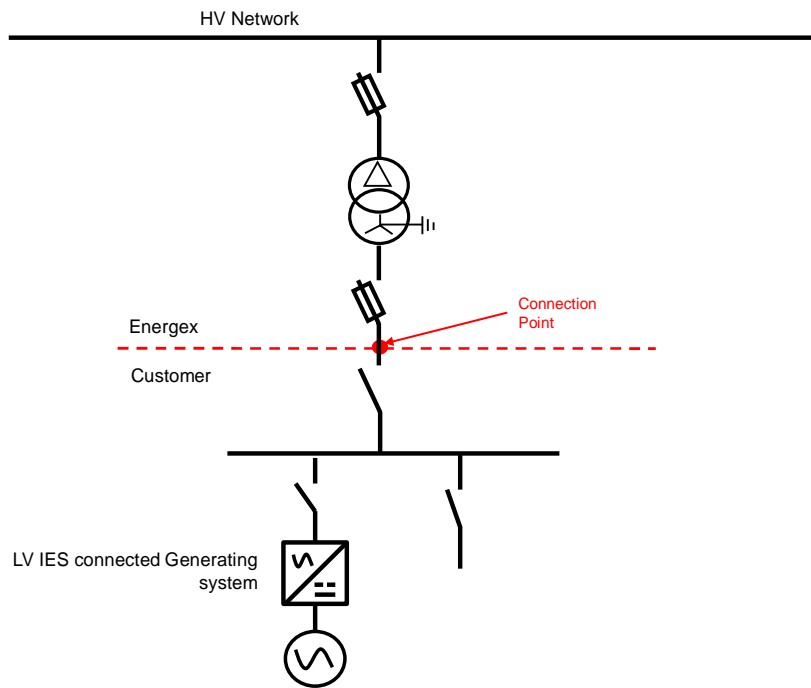
Type 2 – High Voltage Connection with High Voltage Generating System (Synchronous or Induction Machine)



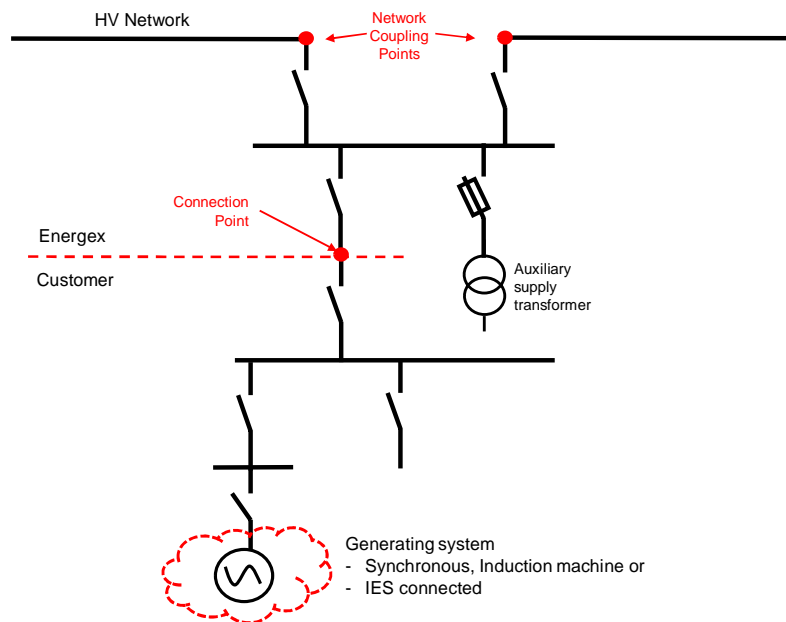
Type 3 – Low Voltage Connection with Low Voltage Generating System (Synchronous or Induction Machine)



Type 4 – Low Voltage Connection with Inverter Energy System (IES) e.g. Solar PV or Battery Energy Storage System



Type 5 – High Voltage Connection with Switching Station e.g. Transmission or sub transmission network



7 Protection Schemes and Requirements

Level 1 Backup Protection

- Over and under voltage
- Over and under frequency
- Voltage vector shift and
- Rate of change of frequency
- Reverse Power

Level 2 Backup Protection

- Neutral voltage detection/unbalance, or
- Direct intertrip from network circuit breaker (for systems above 200kW).

Protection Function	Shared LV Circuit	Dedicated LV Circuit	Dedicated Transformer Up to 200kW		Dedicated Transformer 200<x<1000 kW		Dedicated Transformer(s) Greater than 1000 kW
	Nil-Export	Nil-Export	Nil Export	Export	Nil-Export	Export	Export/Nil export
Over/under voltage	✓	✓	✓	✓	✓	✓	✓
Over/under frequency	✓	✓	✓	✓	✓	✓	✓
Voltage vector shift	✓	✓	✓	✓	✓	✓	✓
Rate of change of frequency	✓	✓	✓	✓	✓	✓	✓
Reverse Power	✓	✓	✓	✓	✓	✓	✓
Neutral voltage displacement ²					✓	✓	✓
Direct Intertrip							✓
SCADA link							✓

8 PQ Voltage and Power Factor Control

Connection standards for generating systems have been published by Energex and apply to all new and upgrading connections. Any new or upgrading connections must adhere to the requirements under the STNW1174, Standard for the Connection of Embedded Generating Systems to a Distributor's LV Network, STNW3511, Dynamic Standard for Low Voltage Embedded Generating Systems, or STNW1175, Standard for the Connection of Embedded Generating Systems to a Distributor's HV Network, as relevant.

For low voltage customers, pursuant to clause 36(2)(d) of the Electricity Regulation, Energex requires the Customer to ensure that the inverter operates in the volt-var and volt-watt requirements of STNW1174 or STNW3511 as relevant. These standards can be found on the Energex website, via Connections > Major Business Connections > Large Generation and Batteries.

For high voltage customers, the power factor is to reflect the agreed voltage or power factor control arrangement. Please note connections must comply with the requirements set out in STNW1175, which can be found on the Energex website, via Connections > Major Business Connections > Large Generation and Batteries.

9 Fault Level Contribution Factor

Indicative fault level contribution from generating systems:

Generator Type	Fault level contribution factor
Synchronous Generator unit	7 X Rating
Solar/Inverter Generator unit	1.2 X Rating

Note: It is assumed that bumpless systems do not contribute to fault levels.