

#230 400

OCALA ELECTRIC UTILITY
OCALA, FLORIDAFIRST REVISED SHEET NO. 19.0
CANCELS ORIGINAL SHEET NO. 19.0**APPLICATION FOR INTERCONNECTION OF
CUSTOMER-OWNED RENEWABLE
GENERATION SYSTEMS**

TIER 1 - Ten (10) kW or Less

TIER 2 - Greater than 10 kW and Less Than or Equal to 100 kW

TIER 3 - Greater than 100 kW and Less Than or Equal to Two (2) MW

Note: These customer-owned renewable generation system size limits may be subject to a cumulative enrollment limit on net-metering customers located in the area served by the City of Ocala Electric Utility. Please refer to the Ocala Electric Utility Net-Metering Rate Schedule.

Ocala Electric Utility customers who install customer-owned renewable generation systems (RGS) and desire to interconnect those facilities with the Ocala Electric Utility system are required to complete this application. When the completed application and fees are returned to Ocala Electric Utility, the process of completing the appropriate Tier 1, Tier 2 or Tier 3 Interconnection Agreement can begin. This application and copies of the Interconnection Agreements may be obtained at Ocala Electric Utility, located at 201 SE 3rd Street, Ocala, Florida 34471, or may be requested by email from OEU@ocalafl.org.

1. Customer InformationName: Viviane Irizarry GonzalezMailing Address: 4558 Northwest 31 StreetCity: Ocala State: FL Zip Code: 34482Phone Number: (352) 581-9094 Alternate Phone Number: _____Email Address: jmrios1279@gmail.com Fax Number: _____Ocala Electric Utility Customer Account Number: 554732-208006**2. RGS Facility Information**Facility Location: 4558 Northwest 31 Street Ocala FL 34482Ocala Electric Utility Customer Account Number: 554732-208006RGS Manufacturer: Hanwha Q.CellsManufacturer's Address: 400 Spectrum Center Dr. Suite 1400
Irvine, CA 92618Reference or Model Number: Hanwha Q. Peak Duo BLK ML-G10+ 400WSerial Number: 20322457557503956

(Continued on Sheet No.19.1)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continue from Sheet No. 19.0)

FIRST REVISED SHEET NO. 19.1
CANCELS ORIGINAL SHEET NO. 19.1

3. Facility Rating Information

Gross Power Rating: 5.44 ("Gross power rating" means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with Ocala Electric Utility's distribution facilities. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.)

Fuel or Energy Source: Solar Photovoltaic

Anticipated In- Service Date: 11/22/2022

4. Application Fee

The application fee is based on the Gross Power Rating and must be submitted with this application. The non-refundable application fee is \$375 for Tier 2 and \$750 for Tier 3 installations. There is no application fee for Tier 1 installations.

5. Interconnection Study Fee

For Tier 3 installations, a deposit in the amount of the estimated costs of the study (to be determined at time of application) must be paid along with this application in addition to the application fee referenced in Article 4 above. This deposit will be applied toward the cost of an interconnection study. The customer will be responsible for the actual costs of the study. Should the actual cost of the study be less than the deposit, the difference will be refunded to the customer. Customer agrees to comply with all interconnection requirements identified in the interconnection study report.

6. Required Documentation

Prior to completion of the Interconnection Agreement, the following information must be provided to the Ocala Electric Utility by the customer.

- A. Documentation demonstrating that the installation complies with (or most current version at time of inspection approval):
1. IEEE 1547 (2018) Standard for Interconnecting Distributed Resources with Electric Power Systems.
 2. IEEE 1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
 3. UL 1741 (2010) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.

(Continued on Sheet No. 19.2)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 19.1)

FIRST REVISED SHEET NO. 19.2
CANCELS ORIGINAL SHEET NO. 19.2

B. Documentation that the customer-owned renewable generation has been inspected and approved by local code officials prior to its operation in parallel with the Ocala Electric Utility system to ensure compliance with applicable local codes. OEU will also require proof of commission testing by a qualified 3rd party testing company (not affiliated in any way with the manufacturer, vendor or installation contractor), for compliance with all required and applicable codes, standards, and interconnection study requirements, prior to setting of OEU metering equipment.

C. Proof of insurance in the amount of:

Tier 1 - \$100,000.00
Tier 2 - \$1,000,000.00
Tier 3 - \$2,000,000.00

Customer

By: Viviane Irizarry Gonzalez Date: 12/6/22
(Print Name)

Viviane R. Irizarry Gonzalez
(Signature)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

Evidence of Insurance for Mortgagee/Other Interests



This form is not the contract of insurance. It is a memorandum of coverage limited to mortgagee/other interests, provided at their request and applicable to the dwelling or building at the location below. The provisions of the policy will prevail in all respects. This certificate of insurance does not affirmatively or negatively amend, extend, or alter the coverage afforded by the insurance policy. Should the insurance policy be cancelled by the company before the expiration date thereof, notice will be given in accordance with the policy provisions.

Policy Number: 76196-38-48
Policy Type: Farmers Florida Homeowners
Policy Status: In Force
Term Effective: 9/21/2022 12:01 AM
Renewal Date: 9/21/2023 12:01 AM
Insured: Viviane Irizarry
 Jose Rios
 4558 NW 31st St
 Ocala, FL 34482-8380

Underwritten By: Truck Insurance Exchange
 6301 Owensmouth Ave.
 Woodland Hills, CA 91367
Your Farmers Agent: Michael Lucent
 12041 Bch Blvd Ste 22
 Jacksonville, FL 32246-6702
 (904) 236-5011
 FAX: (000) 000-0000
 mlucent@farmersagent.com

Your Insured Property

Property Address

4558 NW 31st St, Ocala, FL 34482-8380

Coverages

Coverage	Limit	Coverage	Limit
Coverage A - Dwelling	\$208,000	Coverage B - Separate Structures	\$4,160
Coverage C - Personal Property	\$104,000	Coverage D - Loss of Use	\$20,800
Personal Property Replacement Cost	Covered	Coverage E - Personal Liability	\$300,000
Building Ordinance or Law Coverage	25%	Personal Injury	Covered
Coverage F - Guest Medical	\$1,000	Increase of Loss Assessment	\$3,500
Identity Fraud	\$30,000		

Deductible

Type of Loss	Deductible
Applicable to each covered loss except Hurricane loss	\$1,000
Calendar Year Hurricane Deductible (2% of Cov. A Limit)	\$4,160

Percent Deductibles adjust with changes to Cov. A Limit



SCOPE OF WORK:
TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 4558 NORTHWEST 31 STREET, OCALA, FL 34482.

SYSTEM DC RATING: 6.40 KWDC
SYSTEM AC RATING: 4.85 KWAC

GENERAL NOTES:

- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
- CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
- THE EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE INSTALLED ONLY BY QUALIFIED PEOPLE. A QUALIFIED PERSON IS ONE WHO HAS SKILLS AND KNOWLEDGE RELATED TO THE CONSTRUCTION AND OPERATION OF THE ELECTRICAL EQUIPMENT AND INSTALLATIONS AND HAS RECEIVED SAFETY TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED. (NEC 690.4(C), NEC 2017).
- NEW CONDUIT ROUTING SHOWN IS ESSENTIALLY SCHEMATIC. CONTRACTOR SHALL LAY OUT RUNS TO SUIT FIELD CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.
- ARRAY WIRING SHOULD NOT BE READILY ACCESSIBLE EXCEPT TO QUALIFIED PERSONNEL.
- THE AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH.

SHEET INDEX

CS-0	COVER SHEET & BOM
E-1	STRING LAYOUT & SIGNAGE
E-2	ELECTRICAL DIAGRAM & CALCS
E-3+	EQUIPMENT SPECIFICATIONS

GOVERNING CODES

2018 NFPA 1 (FIRE CODE)
2017 NATIONAL ELECTRICAL CODE
2020 FLORIDA BUILDING CODE (7TH EDITION)
AUTHORITY HAVING JURISDICTION (AHJ): MARION COUNTY

BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	16	Q PEAK DUO BLK XL-G10+ 400W
MICROINVERTER	16	ENPHASE IQPLUS-72-2-US
JUNCTION BOX	1	JUNCTION BOX, NEMA 3R, UL LISTED
COMBINER BOX	1	ENPHASE IQ COMBINER 40C W/ IQ EMVOY (X-IQ-AM-240-4)
AC DISCONNECT	1	FUSED AC DISCONNECT, 240V, NEMA 3R, UL LISTED
PERFECT POWER BOX	1	(ESPIN), 120V/240V, NEMA 3X
IQ SYSTEM CONTROLLER 2	1	EP200G101-4240L501
ENERGY STORAGE	1	ENPHASE ENCHARGE 10, ENCHARGE-10-1P-VA



ATLANTIC KEY ENERGY LLC
7008 STAPONT CT
STE B
WINTER PARK, FL 32782
+1 (407) 988-0273

PROJECT NAME & ADDRESS

JOSE RIOS
RESIDENCE
4558 NORTHWEST 31 STREET
OCALA, FL 34482

SIGNATURE WITH SEAL

REVISIONS

DESCRIPTION	DATE	REV

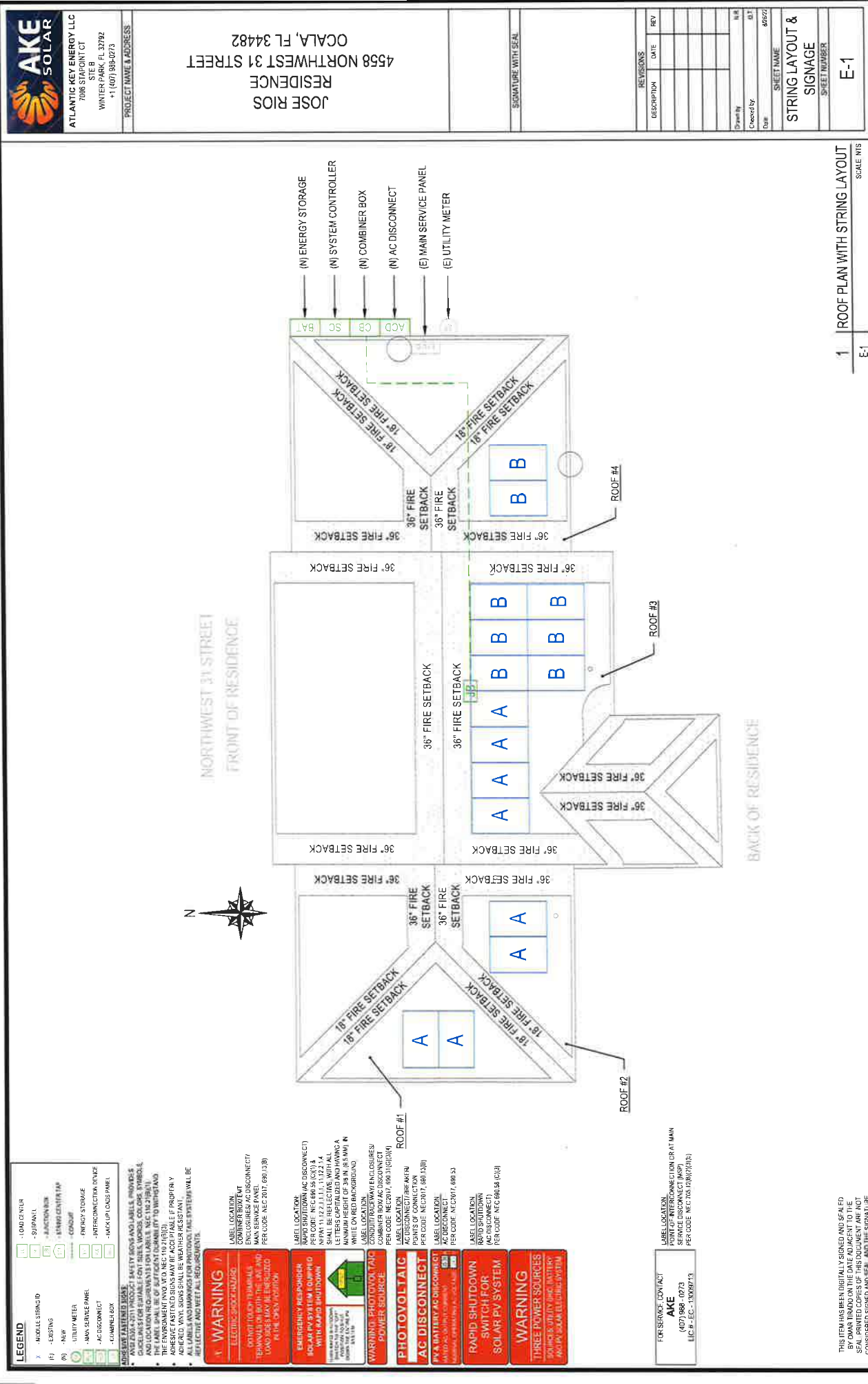
Drawn by	N/A
Created by	DT
Date	08/23/2024

COVER SHEET & BOM

SHEET NUMBER

CS-0

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY OMAR TRACIO ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT VALID. COPIES OF THIS DOCUMENT MUST BE KEPT ON FILE AND MUST BE KEPT ON ANY ELECTRONIC COPIES.



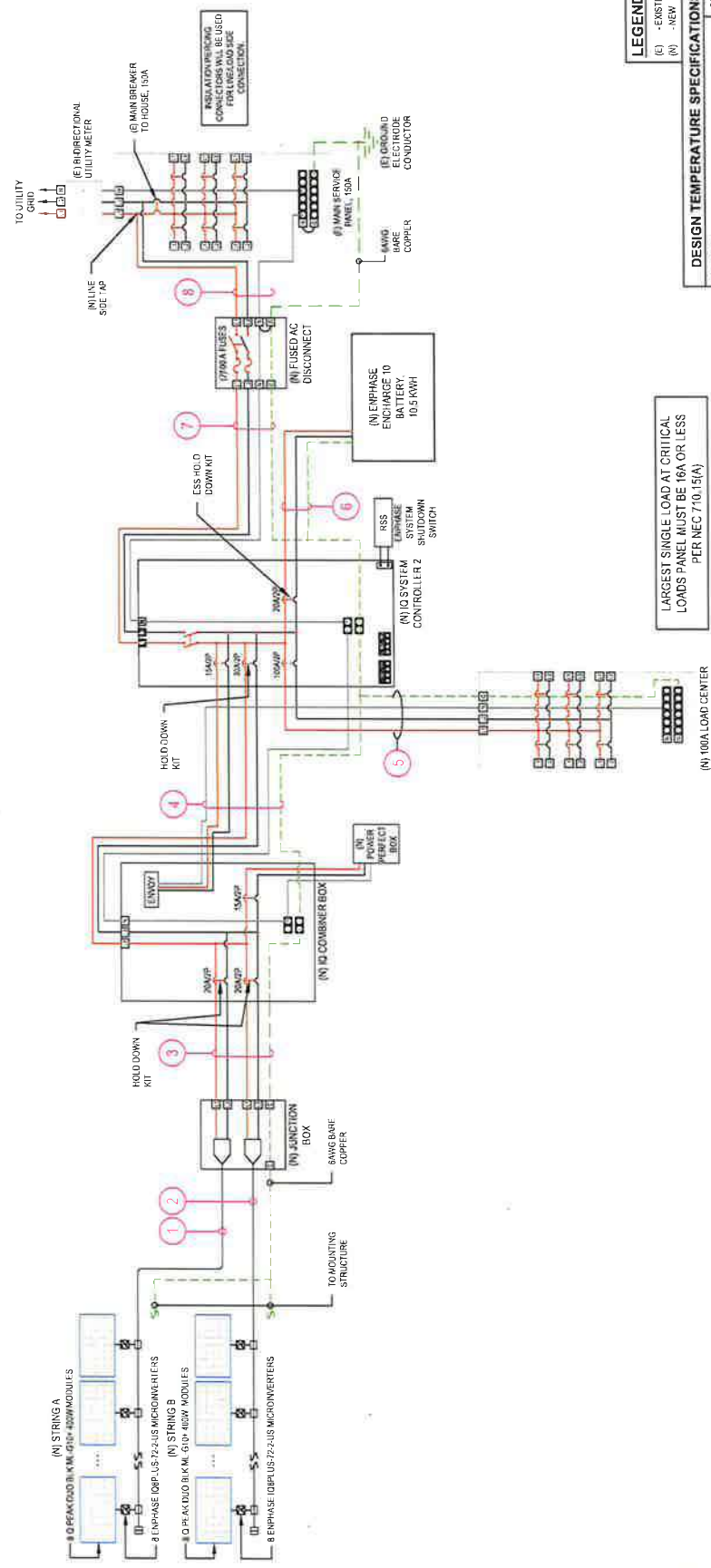
ATLANTIC KEY ENERGY LLC
7008 STAPPOINT CT
STE B
WINTER PARK, FL 32782
+1 (407) 868-9272

PROJECT NAME & ADDRESS

JOSE RIOS
RESIDENCE
4558 NORTHWEST 31 STREET
OCALA, FL 34482

ID	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	MIN. CONDUCTOR SIZE (AWG)	MIN. DIA. CONDUIT SIZE (IN.)	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	ODD (A)	MIN. EGZ SIZE (AWG)	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONV. CURRENT (A)	MAX. CURRENT (A)	BASE AMP (A)	DERATED AMP (A)	TERM. AMP. RATING (A)	LENGTH (FT)	VOLTAGE DROP (%)
1	STRING A	JUNCTION BOX	12	0.75 L1NM	1	2	N/A	6	0.76	55°C	9.68	12.10	39	N/A	N/A	45.00	0.72
2	STRING B	JUNCTION BOX	12	0.75 L1NM	1	2	N/A	6	0.76	55°C	9.68	12.10	39	N/A	N/A	45.00	0.72
3	JUNCTION BOX	IQ COMBINER	10	0.75 L1NM	2	4	20	10	0.76	55°C	9.68	12.10	40	24.3	35	55.00	0.55
4	IQ COMBINER	IQ SYSTEM CONTROLLER	10	0.75 L1NM	2	6	30	10	0.66	34°C	19.36	24.20	40	30.7	35	5.00	0.10
5	LOAD CENTER	IQ SYSTEM CONTROLLER	14	0.75 L1NM	2	6	15	10	0.66	34°C	19.36	24.20	40	30.7	35	5.00	0.10
6	ENPHASE ENCHARGE	IQ SYSTEM CONTROLLER	3	1.25 L1NM	1	3	100	8	0.56	34°C	80	100.00	115	110.4	100	5.00	0.04
7	ENPHASE ENCHARGE	IQ SYSTEM CONTROLLER	10	0.75 L1NM	1	3	20	10	0.56	34°C	15	20.00	40	38.4	35	5.00	0.06
8	AC DISCONNECT	AC DISCONNECT	3	1.25 L1NM	1	3	100	8	0.56	34°C	35.36	44.20	115	110.4	100	5.00	0.04
9	AC DISCONNECT	MSF	3	1.25 L1NM	1	3	N/A	-	0.56	34°C	35.36	44.20	115	110.4	100	5.00	0.04

NOTE: L1NM OR EQUIVALENT TYPE CONDUIT



LEGEND

(E)	- EASTING
(N)	- NEW

DESIGN TEMPERATURE SPECIFICATIONS

RECORD LOW TEMP	-8°C
AMBIENT TEMP (HIGH TEMP 2%)	34°C
CONDUIT HEIGHT	1.0'
CONDUCTOR TEMPERATURE RATE (ROOF)	55°C

LARGEST SINGLE LOAD AT CRITICAL LOADS MUST BE 16A OR LESS PER NEC 710.15(A)

1 ELECTRICAL LINE DIAGRAM
E2

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY OMAR TIRADO ON THE DATE ADJACENT TO THE SIGNATURE. ANY ATTEMPT TO REPRODUCE OR ALTER THE SIGNATURE WITHOUT THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

REVISIONS

DESCRIPTION	DATE	REV

DESIGNED BY: N.R.

CHECKED BY: D.T.

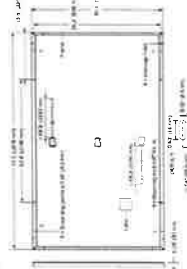
DATE: 8/2/2022

SHEET NAME: ELECTRICAL LINE DIAGRAM & CALCS.

SHEET NUMBER: E-2

SIGNATURE WITH SEAL

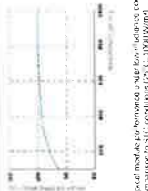
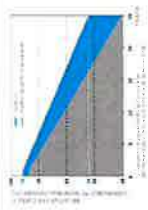
MECHANICAL SPECIFICATION

[illegible]

ELECTRICAL CHARACTERISTICS

POWER GLASS		385	390	395	400	405
Application: Power windows and doors, 100% UVB/UVB-A radiation, 100% protection against infrared A and B rays						
Property at 20°C						
Thickness	mm	3.0	3.0	3.0	3.0	3.0
Weight at 20°C	g/cm ²	1.85	1.85	1.85	1.85	1.85
Optical Density at 380 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 390 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 400 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 405 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 410 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 415 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 420 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 425 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 430 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 435 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 440 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 445 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 450 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 455 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 460 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 465 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 470 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 475 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 480 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 485 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 490 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 495 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 500 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 505 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 510 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 515 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 520 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 525 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 530 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 535 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 540 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 545 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 550 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 555 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 560 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 565 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 570 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 575 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 580 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 585 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 590 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 595 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 600 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 605 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 610 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 615 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 620 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 625 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 630 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 635 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 640 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 645 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 650 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 655 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 660 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 665 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 670 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 675 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 680 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 685 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 690 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 695 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 700 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 705 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 710 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 715 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 720 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 725 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 730 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 735 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 740 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 745 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 750 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 755 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 760 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 765 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 770 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 775 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 780 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 785 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 790 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 795 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 800 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 805 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 810 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 815 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 820 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 825 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 830 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 835 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 840 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 845 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 850 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 855 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 860 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 865 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 870 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 875 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 880 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 885 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 890 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 895 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 900 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 905 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 910 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 915 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 920 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 925 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 930 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 935 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 940 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 945 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 950 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 955 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 960 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 965 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 970 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 975 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 980 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 985 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 990 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 995 nm	OD	0.15	0.15	0.15	0.15	0.15
Optical Density at 1000 nm	OD	0.15	0.15	0.15	0.15	0.15

Notes: 1. All values are based on a 3mm thick glass. 2. All values are based on a 3mm thick glass. 3. All values are based on a 3mm thick glass. 4. All values are based on a 3mm thick glass. 5. All values are based on a 3mm thick glass. 6. All values are based on a 3mm thick glass. 7. All values are based on a 3mm thick glass. 8. All values are based on a 3mm thick glass. 9. All values are based on a 3mm thick glass. 10. All values are based on a 3mm thick glass. 11. All values are based on a 3mm thick glass. 12. All values are based on a 3mm thick glass. 13. All values are based on a 3mm thick glass. 14. All values are based on a 3mm thick glass. 15. All values are based on a 3mm thick glass. 16. All values are based on a 3mm thick glass. 17. All values are based on a 3mm thick glass. 18. All values are based on a 3mm thick glass. 19. All values are based on a 3mm thick glass. 20. All values are based on a 3mm thick glass. 21. All values are based on a 3mm thick glass. 22. All values are based on a 3mm thick glass. 23. All values are based on a 3mm thick glass. 24. All values are based on a 3mm thick glass. 25. All values are based on a 3mm thick glass. 26. All values are based on a 3mm thick glass. 27. All values are based on a 3mm thick glass. 28. All values are based on a 3mm thick glass. 29. All values are based on a 3mm thick glass. 30. All values are based on a 3mm thick glass. 31. All values are based on a 3mm thick glass. 32. All values are based on a 3mm thick glass. 33. All values are based on a 3mm thick glass. 34. All values are based on a 3mm thick glass. 35. All values are based on a 3mm thick glass. 36. All values are based on a 3mm thick glass. 37. All values are based on a 3mm thick glass. 38. All values are based on a 3mm thick glass. 39. All values are based on a 3mm thick glass. 40. All values are based on a 3mm thick glass. 41. All values are based on a 3mm thick glass. 42. All values are based on a 3mm thick glass. 43. All values are based on a 3mm thick glass. 44. All values are based on a 3mm thick glass. 45. All values are based on a 3mm thick glass. 46. All values are based on a 3mm thick glass. 47. All values are based on a 3mm thick glass. 48. All values are based on a 3mm thick glass. 49. All values are based on a 3mm thick glass. 50. All values are based on a 3mm thick glass. 51. All values are based on a 3mm thick glass. 52. All values are based on a 3mm thick glass. 53. All values are based on a 3mm thick glass. 54. All values are based on a 3mm thick glass. 55. All values are based on a 3mm thick glass. 56. All values are based on a 3mm thick glass. 57. All values are based on a 3mm thick glass. 58. All values are based on a 3mm thick glass. 59. All values are based on a 3mm thick glass. 60. All values are based on a 3mm thick glass. 61. All values are based on a 3mm thick glass. 62. All values are based on a 3mm thick glass. 63. All values are based on a 3mm thick glass. 64. All values are based on a 3mm thick glass. 65. All values are based on a 3mm thick glass. 66. All values are based on a 3mm thick glass. 67. All values are based on a 3mm thick glass. 68. All values are based on a 3mm thick glass. 69. All values are based on a 3mm thick glass. 70. All values are based on a 3mm thick glass. 71. All values are based on a 3mm thick glass. 72. All values are based on a 3mm thick glass. 73. All values are based on a 3mm thick glass. 74. All values are based on a 3mm thick glass. 75. All values are based on a 3mm thick glass. 76. All values are based on a 3mm thick glass. 77. All values are based on a 3mm thick glass. 78. All values are based on a 3mm thick glass. 79. All values are based on a 3mm thick glass. 80. All values are based on a 3mm thick glass. 81. All values are based on a 3mm thick glass. 82. All values are based on a 3mm thick glass. 83. All values are based on a 3mm thick glass. 84. All values are based on a 3mm thick glass. 85. All values are based on a 3mm thick glass. 86. All values are based on a 3mm thick glass. 87. All values are based on a 3mm thick glass. 88. All values are based on a 3mm thick glass. 89. All values are based on a 3mm thick glass. 90. All values are based on a 3mm thick glass. 91. All values are based on a 3mm thick glass. 92. All values are based on a 3mm thick glass. 93. All values are based on a 3mm thick glass. 94. All values are based on a 3mm thick glass. 95. All values are based on a 3mm thick glass. 96. All values are based on a 3mm thick glass. 97. All values are based on a 3mm thick glass. 98. All values are based on a 3mm thick glass. 99. All values are based on a 3mm thick glass. 100. All values are based on a 3mm thick glass. 101. All values are based on a 3mm thick glass. 102. All values are based on a 3mm thick glass. 103. All values are based on a 3mm thick glass. 104. All values are based on a 3mm thick glass. 105. All values are based on a 3mm thick glass. 106. All values are based on a 3mm thick glass. 107. All values are based on a 3mm thick glass. 108. All values are based on a 3mm thick glass. 109. All values are based on a 3mm thick glass. 110. All values are based on a 3mm thick glass. 111. All values are based on a 3mm thick glass. 112. All values are based on a 3mm thick glass. 113. All values are based on a 3mm thick glass. 114. All values are based on a 3mm thick glass. 115. All values are based on a 3mm thick glass. 116. All values are based on a 3mm thick glass. 117. All values are based on a 3mm thick glass. 118. All values are based on a 3mm thick glass. 119. All values are based on a 3mm thick glass. 120. All values are based on a 3mm thick glass. 121. All values are based on a 3mm thick glass. 122. All values are based on a 3mm thick glass. 123. All values are based on a 3mm thick glass. 124. All values are based on a 3mm thick glass. 125. All values are based on a 3mm thick glass. 126. All values are based on a 3mm thick glass. 127. All values are based on a 3mm thick glass. 128. All values are based on a 3mm thick glass. 129. All values are based on a 3mm thick glass. 130. All values are based on a 3mm thick glass. 131. All values are based on a 3mm thick glass. 132. All values are based on a 3mm thick glass. 133. All values are based on a 3mm thick glass. 134. All values are based on a 3mm thick glass. 135. All values are based on a 3mm thick glass. 136. All values are based on a 3mm thick glass. 137. All values are based on a 3mm thick glass. 138. All values are based on a 3mm thick glass. 139. All values are based on a 3mm thick glass. 140. All values are based on a 3mm thick glass. 141. All values are based on a 3mm thick glass. 142. All values are based on a 3mm thick glass. 143. All values are based on a 3mm thick glass. 144. All values are based on a 3mm thick glass. 145. All values are based on a 3mm thick glass. 146. All values are based on a 3mm thick glass. 147. All values are based on a 3mm thick glass. 148. All values are based on a 3mm thick glass. 149. All values are based on a 3mm thick glass. 150. All values are based on a 3mm thick glass. 151. All values are based on a 3mm thick glass. 152. All values are based on a 3mm thick glass. 153. All values are based on a 3mm thick glass. 154. All values are based on a 3mm thick glass. 155. All values are based on a 3mm thick glass. 156. All values are based on a 3mm thick glass. 157. All values are based on a 3mm thick glass. 158. All values are based on a 3mm thick glass. 159. All values are based on a 3mm thick glass. 160. All values are based on a 3mm thick glass. 161. All values are based on a 3mm thick glass. 162. All values are based on a 3mm thick glass. 163. All values are based on a 3mm thick glass. 164. All values are based on a 3mm thick glass. 165. All values are based on a 3mm thick glass. 166. All values are based on a 3mm thick glass. 167. All values are based on a 3mm thick glass. 168. All values are based on a 3mm thick glass. 169. All values are based on a 3mm thick glass. 170. All values are based on a 3mm thick glass. 171. All values are based on a 3mm thick glass. 172. All values are based on a 3mm thick glass. 173. All values are based on a 3mm thick glass. 174. All values are based on a 3mm thick glass. 175. All values are based on a 3mm thick glass. 176. All values are based on a 3mm thick glass. 177. All values are based on a 3mm thick glass. 178. All values are based on a 3mm thick glass. 179. All values are based on a 3mm thick glass. 180. All values are based on a 3mm thick glass. 181. All values are based on a 3mm thick glass. 182. All values are based on a 3mm thick glass. 183. All values are based on a 3mm thick glass. 184. All values are based on a 3mm thick glass. 185. All values are based on a 3mm thick glass. 186. All values are based on a 3mm thick glass. 187. All values are based on a 3mm thick glass. 188. All values are based on a 3mm thick glass. 189. All values are based on a 3mm thick glass. 190. All values are based on a 3mm thick glass. 191. All values are based on a 3mm thick glass. 192. All values are based on a 3mm thick glass. 193. All values are based on a 3mm thick glass. 194. All values are based on a 3mm thick glass. 195. All values are based on a 3mm thick glass. 196. All values are based on a 3mm thick glass. 197. All values are based on a 3mm thick glass. 198. All values are based on a 3mm thick glass. 199. All values are based on a 3mm thick glass. 200. All values are based on a 3mm thick glass. 201. All values are based on a 3mm thick glass. 202. All values are based on a 3mm thick glass. 203. All values are based on a 3mm thick glass. 204. All values are based on a 3mm thick glass. 205. All values are based on a 3mm thick glass. 206. All values are based on a 3mm thick glass. 207. All values are based on a 3mm thick glass. 208. All values are based on a 3mm thick glass. 209. All values are based on a 3mm thick glass. 210. All values are based on a 3mm thick glass. 211. All values are based on a 3mm thick glass. 212. All values are based on a 3mm thick glass. 213. All values are based on a 3mm thick glass. 214. All values are based on a 3mm thick glass. 215. All values are based on a 3mm thick glass. 216. All values are based on a 3mm thick glass. 217. All values are based on a 3mm thick glass. 218. All values are based on a 3mm thick glass. 219. All values are based on a 3mm thick glass. 220. All values are based on a 3mm thick glass. 221. All values are based on



typical model are for formation of a polymer (e.g., cellulose) in comparison to SiO_2 condensation [eq. (1), Table II].

[illegible]

QUALIFICATIONS AND CERTIFICATES



PACKAGING INFORMATION



Private R&D
to protect intellectual property is a major motivation for firms to invest in R&D. **90%**

Vanha Q CELLS America Inc.
100 Stephen Crane Drive, Suite 400
Cary, NC 27513 USA TEL: +1 919 246 23 99 FAX: +1 919 246 23 98 info@qcells.com www.qcells.com

Powered by **Q.ANTUM** **duo** **Z**

Q.PEAK DUO BLK ML-G10+
385-405
ENDURING HIGH
PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER
Q-ANTUM DUO Z Technology with zero gap cell layout
boosts module efficiency up to 20.9%.

THE MOST THOROUGH TESTING PROGRAMME IN THE INDUSTRY
Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry. The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with exceptional light and temperature behavior

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID Technology, Anli PID Technology, Hot-Spot Protect and Traceable Quality Tru Q™

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

Inclusive 25-year product warranty
linear performance warranty*

DOI: 10.1002/for



THE IDEAL SOLUTION FOR:



Engineered in Germany



Data Sheet
Enphase Microinverters
Region: APAC

Enphase IQ 7, IQ 7+, and IQ 7X Microinverters

The high-powered smart grid-ready **Enphase IQ Series Micros™** achieve the highest system efficiency.

Part of the Enphase IQ System, the IQ 7, IQ 7+, and IQ 7X Micro integrate perfectly with the Enphase Envoy-S™, and the Enphase Enlighten™ monitoring and analysis software.

The IQ Series Micros extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty.



Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling

Productive and Reliable

- Optimized for high powered 60-cell, 72-cell* and 96-cell* modules
- More than a million hours of testing
- Class II double-insulated enclosure

Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles

* The IQ 7+ Micro is required to support 72-cell modules, and the IQ 7X is required to support 96-cell modules.

Enphase IQ 7, IQ 7+, and IQ 7X Microinverters

INPUT DATA (DC)	IQ7-60-2-INT	IQ7PLUS-72-2-INT	IQ7X-96-2-INT
Commonly used module pairings	235 W - 350 W + ¹	235 W - 440 W + ^{1,2}	320 W - 460 W + ^{1,2}
Module compatibility	60-cell PV modules only	60-cell & 72-cell PV modules	96-cell PV modules only
Maximum input DC voltage	48 V	60 V	79.5 V
Peak power tracking voltage	27 V - 37 V	27 V - 45 V	53 V - 64 V
Operating range	16 V - 48 V	16 V - 60 V	25 V - 79.5 V
Min/Max start voltage	22 V / 48 V	22 V / 60 V	33 V / 79.5 V
Max DC short circuit current (module Isc)	15 A	15 A	10 A
Overvoltage class DC port	II	II	II
DC port backfeed under single fault	0 A	0 A	0 A
OUTPUT DATA (AC)	IQ 7 Microinverter	IQ 7+ Microinverter	IQ 7X Microinverter
Peak output power	250 VA	295 VA	320 VA
Maximum continuous output power	240 VA	290 VA	315 VA
Nominal (L-N) voltage/range ³	230 V / 184-276 V	230 V / 184-276 V	230 V / 184-276 V
Maximum continuous output current	1.04 A	1.26 A	1.37 A
Nominal frequency	50 Hz	50 Hz	50 Hz
Extended frequency range	45 - 55 Hz	45 - 55 Hz	45 - 55 Hz
Maximum units per 20 A (L-N) branch circuit ⁴	16 (230 VAC)	13 (230 VAC)	12 (230 VAC)
Overvoltage class AC port	III	III	III
AC port backfeed current	0 A	0 A	0 A
Power factor setting	1.0	1.0	1.0
Power factor (adjustable)	0.8 leading ... 0.8 lagging	0.8 leading ... 0.8 lagging	0.8 leading ... 0.8 lagging
EFFICIENCY	@230 V	@230 V	@230 V
EN 50530 (EU) weighted efficiency	96.5 %	96.5 %	96.5 %
MECHANICAL DATA			
Ambient temperature range	-40°C to +65°C	-40°C to +65°C	-40°C to +60°C
Relative humidity range	4% to 100% (condensing)		
Connector type	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)		
Dimensions (WxHxD)	212 mm x 175 mm x 30.2 mm (without bracket)		
Weight	1.08 kg		
Cooling	Natural convection - No fans		
Approved for wet locations	Yes		
Pollution degree	PD3		
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure		
Environmental category / UV exposure rating	Outdoor - IP67		
FEATURES			
Communication	Power Line Communication (PLC)		
Monitoring	Enlighten Manager and MyEnlighten monitoring options Compatible with Enphase Envoy-S		
Compliance (pending)	AS 4777.2, RCM, IEC/EN 61000-6-3, IEC/EN 62109-1, IEC/EN 62109-2		

1. No enforced DC/AC ratio in NZ. In Australia, CEO design guidelines state inverter continuous AC power output cannot be less than 75% of the array peak power.

2. Maximum DC input limited to 350 W at 25°C as per AU/NZS 5033:2014 4.3.12(d).

3. Nominal voltage range can be extended beyond nominal if required by the utility.

4. Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

To learn more about Enphase offerings, visit enphase.com/au

© 2018 Enphase Energy. All rights reserved. All trademarks or brands used are the property of Enphase Energy, Inc.
2018-11-28





ATLANTIC KEY ENERGY LLC

10000 HWY 101

WINTER PARK, FL 32782

+1 (407) 998-0773

PROJECT NAME & ADDRESS

JOSE RIOS RESIDENCE

4558 NORTHWEST 31 STREET

OCALA, FL 34482

REVISIONS

DESCRIPTION	DATE	REV

SHEET NAME

EQUIPMENT

SHEET NUMBER

E-3

IQ8 and IQ8+ Microinverters

IQ8 (400-500W)		IQ8+ (500-550W)	
Continuity tested in all package types	W	235 - 350	235 - 440
Module compatibility		60-cell/72-cell half cut	60-cell/72-cell half cut and 72-cell/84-cell half cut
MPPT voltage range	V	27 - 37	20 - 45
Operating range	V	25 - 40	25 - 58
Maximum input voltage	V	50 - 40	50 - 58
Max input DC voltage	V	50	60
Max DC current* (parallel)	A		15
Over-voltage class DC port		II	II
DC port threshold current	A	0	0
PV array configuration			
PV array configuration: No additional DC cable protection required, AC cable protection required, max 20A per branch circuit			
IQ8+ (500-550W)		IQ8+ (550-575W)	
Peak output power	W	245	300
Max continuous output power	W	240	280
Normalized L-V voltage range*	V		240/711 - 264
Max continuous output current	A	10	121
Normal frequency	Hz	60	60
Extended frequency range	Hz	50 - 66	50 - 66
Max output per 20A UL branch circuit*	A	10	15
Total harmonic distortion	%		<5%
Over-voltage class AC port		III	III
AC port back feed current	A	30	30
Power factor rating		1.0	1.0
Grid-tied power factor (adjustable)		0.85 leading - 0.85 lagging	
Peak efficiency	%	97.5	97.6
CEC weighted efficiency	%	97	97
Night time power consumption	mW		60
PERFORMANCE DATA			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	
Relative humidity range		4% to 100% (non-condensing)	
DC Connector type		MC4	
Dimensions (HxWxD)		212 mm (8.37 in) (H) x 151 mm (5.94 in) x 30.2 mm (1.27 in)	
Weight		108 g (3.78 oz)	
Cooling		Natural convection - no fans	
Approved for unit locations		Yes	
Accounts rated at 1m		Yes	
Embodied		Yes	
Emerson catalog # / MPN / equipment rating		Class II modular, continuous, non-polymeric enclosure	
Compliance		UL 1741, IEEE 1547, IEEE 625, IEEE 693, IEEE 904, IEEE 905, IEEE 906, IEEE 907, IEEE 908, IEEE 909, IEEE 910, IEEE 911, IEEE 912, IEEE 913, IEEE 914, IEEE 915, IEEE 916, IEEE 917, IEEE 918, IEEE 919, IEEE 920, IEEE 921, IEEE 922, IEEE 923, IEEE 924, IEEE 925, IEEE 926, IEEE 927, IEEE 928, IEEE 929, IEEE 930, IEEE 931, IEEE 932, IEEE 933, IEEE 934, IEEE 935, IEEE 936, IEEE 937, IEEE 938, IEEE 939, IEEE 940, IEEE 941, IEEE 942, IEEE 943, IEEE 944, IEEE 945, IEEE 946, IEEE 947, IEEE 948, IEEE 949, IEEE 950, IEEE 951, IEEE 952, IEEE 953, IEEE 954, IEEE 955, IEEE 956, IEEE 957, IEEE 958, IEEE 959, IEEE 960, IEEE 961, IEEE 962, IEEE 963, IEEE 964, IEEE 965, IEEE 966, IEEE 967, IEEE 968, IEEE 969, IEEE 970, IEEE 971, IEEE 972, IEEE 973, IEEE 974, IEEE 975, IEEE 976, IEEE 977, IEEE 978, IEEE 979, IEEE 980, IEEE 981, IEEE 982, IEEE 983, IEEE 984, IEEE 985, IEEE 986, IEEE 987, IEEE 988, IEEE 989, IEEE 990, IEEE 991, IEEE 992, IEEE 993, IEEE 994, IEEE 995, IEEE 996, IEEE 997, IEEE 998, IEEE 999	

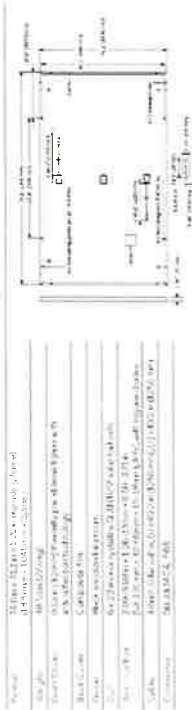
CA 946-21 (CA 174) 3A, UL 1741, IEEE 1547, IEEE 625, IEEE 693, IEEE 904, IEEE 905, IEEE 906, IEEE 907, IEEE 908, IEEE 909, IEEE 910, IEEE 911, IEEE 912, IEEE 913, IEEE 914, IEEE 915, IEEE 916, IEEE 917, IEEE 918, IEEE 919, IEEE 920, IEEE 921, IEEE 922, IEEE 923, IEEE 924, IEEE 925, IEEE 926, IEEE 927, IEEE 928, IEEE 929, IEEE 930, IEEE 931, IEEE 932, IEEE 933, IEEE 934, IEEE 935, IEEE 936, IEEE 937, IEEE 938, IEEE 939, IEEE 940, IEEE 941, IEEE 942, IEEE 943, IEEE 944, IEEE 945, IEEE 946, IEEE 947, IEEE 948, IEEE 949, IEEE 950, IEEE 951, IEEE 952, IEEE 953, IEEE 954, IEEE 955, IEEE 956, IEEE 957, IEEE 958, IEEE 959, IEEE 960, IEEE 961, IEEE 962, IEEE 963, IEEE 964, IEEE 965, IEEE 966, IEEE 967, IEEE 968, IEEE 969, IEEE 970, IEEE 971, IEEE 972, IEEE 973, IEEE 974, IEEE 975, IEEE 976, IEEE 977, IEEE 978, IEEE 979, IEEE 980, IEEE 981, IEEE 982, IEEE 983, IEEE 984, IEEE 985, IEEE 986, IEEE 987, IEEE 988, IEEE 989, IEEE 990, IEEE 991, IEEE 992, IEEE 993, IEEE 994, IEEE 995, IEEE 996, IEEE 997, IEEE 998, IEEE 999

This product is UL Listed as PV Rapid Shutdown Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and 690.13, 2014, 2017, and 2020 edition of the National Electrical Code (NEC) for AC and DC circuits, when installed according to the instructions provided.

IQ8 and IQ8+ microinverters are designed for use with 60-cell and 72-cell half-cut monocrystalline silicon solar modules. Compatibility with 21 Maximum Power Point Tracking (MPPT) voltage ranges can be achieved by using the appropriate IQ8 or IQ8+ microinverter. IQ8 and IQ8+ may vary in their local requirements to achieve the maximum of microinverters per branch in your area.

IQ805 05 0002 01 EN US 2021 10 10

MECHANICAL SPECIFICATION



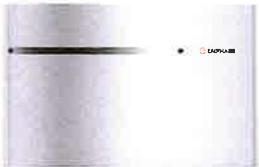
ELECTRICAL CHARACTERISTICS

POWER CLASS	215	315	390	400	405
Efficiency (typical)	97.5%	97.5%	97.5%	97.5%	97.5%
Efficiency (minimum)	97.0%	97.0%	97.0%	97.0%	97.0%
Efficiency (maximum)	98.0%	98.0%	98.0%	98.0%	98.0%
Power factor (typical)	1.0	1.0	1.0	1.0	1.0
Power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.01
Grid-tied power factor (typical)	1.0	1.0	1.0	1.0	1.0
Grid-tied power factor (minimum)	0.99	0.99	0.99	0.99	0.99
Grid-tied power factor (maximum)	1.01	1.01	1.01	1.01	1.



IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Commonly used module pairings¹	W	235 – 350	235 – 440
Module compatibility		60-cell/120 half-cell	60-cell/120 half-cell and 72-cell/144 half-cell
MPPT voltage range	V	27 – 37	29 – 45
Operating range	V	25 – 48	25 – 58
Min/max start voltage	V	30 / 48	30 / 58
Max input DC voltage	V	50	60
Max DC current² [module Isc]	A		15
Overvoltage class DC port			II
DC port backfeed current	mA		0
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	
OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Peak output power	VA	245	300
Max continuous output power	VA	240	290
Nominal (L-L) voltage/range³	V		240 / 211 – 264
Max continuous output current	A	1.0	1.21
Nominal frequency	Hz		60
Extended frequency range	Hz		50 – 68
Max units per 20 A (L-L) branch circuit⁴		16	13
Total harmonic distortion			<5%
Overvoltage class AC port			III
AC port backfeed current	mA		30
Power factor setting			1.0
Grid-tied power factor (adjustable)			0.85 leading – 0.85 lagging
Peak efficiency	%	97.5	97.6
CEC weighted efficiency	%	97	97
Night-time power consumption	mW		60
MECHANICAL DATA			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	
Relative humidity range		4% to 100% (condensing)	
DC Connector type		MC4	
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")	
Weight		1.08 kg (2.38 lbs)	
Cooling		Natural convection – no fans	
Approved for wet locations		Yes	
Acoustic noise at 1 m		<60 dBA	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure	
Environ. category / UV exposure rating		NEMA Type 6 / outdoor	
COMPLIANCE			
		CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01	
Certifications		This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.	

(1) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility> (2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

Enphase Encharge 10

The **Enphase Encharge 10™** all-in-one AC-coupled storage system is **reliable, smart, simple, and safe**. It is comprised of three base Encharge 3™ storage units, has a total usable energy capacity of 10.08 kWh and twelve embedded grid-forming microinverters with 3.84 kW power rating. It provides backup capability and installers can quickly design the right system size to meet the needs of both new and retrofit solar customers.



Reliable

- Proven high reliability IQ Series Microinverters
- Ten-year limited warranty
- Three independent Encharge storage base units
- Twelve embedded IQ 8X-BAT Microinverters
- Passive cooling (no moving parts/fans)

Smart

- Grid-forming capability for backup operation
- Remote software and firmware upgrade
- Mobile app-based monitoring and control
- Support for self consumption
- Utility time of use (TOU) optimization

Simple

- Fully integrated AC battery system
- Quick and easy plug-and-play installation
- Interconnects with standard household AC wiring

Safe

- Cells safety tested
- Lithium iron phosphate (LFP) chemistry for maximum safety and longevity

Enphase Encharge 10

MODEL NUMBER	
ENCHARGE-10-1P-NA	Encharge 10 battery storage system with integrated Enphase Microinverters and battery management unit (BMU). Includes: - Three Encharge 3.36 kWh base units (B03-A01-US00-1-3) - One Encharge 10 cover kit with cover, wall mounting bracket, watertight conduit hubs, and interconnect kit for wiring between batteries (B10-C-1050-O)
ACCESSORIES	
ENCHARGE-HNDL-R1	One set of Encharge base unit installation handles
OUTPUT (AC)	
	@ 240 VAC¹
Rated (continuous) output power	3.84 kVA
Peak output power	5.7 kVA (10 seconds)
Nominal voltage / range	240 / 211 – 264 VAC
Nominal frequency / range	60 / 57 – 61 Hz
Rated output current	16 A
Peak output current	24.6A (10 seconds)
Power factor (adjustable)	0.85 leading ... 0.85 lagging
Maximum units per 20 A branch circuit	1 unit (single phase)
Interconnection	Single-phase
Maximum AC short circuit fault current over 3 cycles	69.6 Arms
Round trip efficiency ²	89%
BATTERY	
Total capacity	10.5 kWh
Usable capacity	10.08 kWh
Round trip efficiency	96%
Nominal DC voltage	67.2 V
Maximum DC voltage	73.5 V
Ambient operating temperature range	-15° C to 55° C (5° F to 131° F) non-condensing
Optimum operating temperature range	0° C to 30° C (32° F to 86° F)
Chemistry	Lithium iron phosphate (LFP)
MECHANICAL DATA	
Dimensions (WxHxD)	1070 mm x 664 mm x 319 mm (42.13 in x 26.14 in x 12.56 in)
Weight	Three individual 44.2 kg (97.4 lbs) base units plus 21.1 kg (48.7 lbs) cover and mounting bracket; total 154.7 kg (341 lbs)
Enclosure	Outdoor – NEMA type 3R
IQ 8X-BAT microinverter enclosure	NEMA type 6
Cooling	Natural convection – No fans
Altitude	Up to 2500 meters (8200 feet)
Mounting	Wall mount
FEATURES AND COMPLIANCE	
Compatibility	Compatible with grid-tied PV systems. Compatible with Enphase M215/M250 and IQ Series Micros, Enphase Enpower, and Enphase IQ Envoy for backup operation.
Communication	Wireless 2.4 GHz
Services	Backup, self-consumption, TOU, Demand Charge, NEM Integrity
Monitoring	Enlighten Manager and MyEnlighten monitoring options; API integration
Compliance	UL 9540, UN 38.3, UL 9540A, UL 1998, UL 991, NEMA Type 3R, AC156 EMI: 47 CFR, Part 15, Class B, ICES 003 Cell Module: UL 1973, UN 38.3 Inverters: UL 62109-1, IEC 62109-2, UL 1741SA, CAN/CSA C22.2 No. 107.1-16, and IEEE 1547
LIMITED WARRANTY	
Limited Warranty ³	>70% capacity, up to 10 years or 4000 cycles

1. Supported in backup/off grid operations
2. AC to Battery to AC at 50% power rating.
3. Whichever occurs first. Restrictions apply.

To learn more about Enphase offerings, visit enphase.com

© 2021 Enphase Energy. All rights reserved. Enphase, the Enphase logo, Encharge 10, and other trademarks or service names are the trademarks of Enphase Energy, Inc. Data subject to change. 2021-03-01



OCALA ELECTRIC UTILITY
OCALA, FLORIDA

FIRST REVISED SHEET NO. 20.0
CANCELS ORIGINAL SHEET NO. 20.0

Tri-Party Net-Metering Power Purchase Agreement

This Tri-Party Net-Metering Power Purchase Agreement (this "Agreement") is entered into this 30th day of November, 20 22, by and between the Florida Municipal Power Agency, a governmental joint action agency created and existing under the laws of the State of Florida (hereinafter "FMPA"), the City of Ocala doing business as Ocala Electric Utility, a body politic (hereinafter "OEU"), and Viviane Irizarry Gonzalez, a retail electric customer of OEU (hereinafter "Customer").

Section 1. Recitals

1.01. OEU and Customer have executed OEU's Standard Interconnection Agreement for a Customer-Owned Renewable Generation System (RGS) pursuant to which OEU has agreed to permit interconnection of Customer's renewable generation to OEU's electric system at Customer's presently-metered location, and Customer has agreed to deliver excess electric energy generated by Customer's Renewable Generation System to OEU's electric distribution system;

1.02. The City of Ocala and FMPA have entered into the All-Requirements Power Supply Contract, dated as of May 1, 1986, (hereinafter the "ARP Contract") pursuant to which the City of Ocala has agreed to purchase and receive, and FMPA has agreed to sell and supply OEU with all energy and capacity necessary to operate the OEU electric system, which limits OEU's ability to directly purchase excess energy from customer-owned renewable generation.

1.03. In order to promote the development of small customer-owned renewable generation by permitting OEU to allow its customers to interconnect with OEU's electric system and to allow OEU's electric customers to offset their electric consumption with customer-owned renewable generation, FMPA, in accordance with the terms and conditions of this agreement, has agreed to purchase excess customer-owned generation from OEU's electric customers interconnected to OEU's electric system.

NOW THEREFORE, for and in consideration of the mutual covenants and agreements set forth herein, the Parties covenant and agree as follows:

Section 2. Interconnection

2.01. Customer shall not begin parallel operations with the OEU electric distribution system until Customer has executed OEU's electric Standard Interconnection Agreement for Small Customer-Owned Renewable Generation and is in compliance with all terms and conditions

OEU requires that the customer install and operate the RGS in accordance with all applicable safety codes and standards. OEU shall establish and enforce terms and conditions of operation and disconnection of all interconnected customer-owned renewable generation as it relates to the effect of the RGS on OEU's electric distribution system.

(Continued on Sheet No. 20.1)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.0)

FIRST REVISED SHEET NO. 20.1
CANCELS ORIGINAL SHEET NO. 20.1

Section 3. Metering

3.01 In accordance with the OEU's Standard Interconnection Agreement for Customer-Owned Renewable Generation, OEU shall install metering equipment at the point of delivery capable of recording two separate kWh meter readings: (1) the flow of electricity from OEU to the Customer (Delivered), and (2) the flow of excess electricity from the Customer to OEU. OEU shall take meter readings on the same cycle as the otherwise applicable rate schedule.

Section 4. Purchase of Excess Customer-Owned Renewable Generation

4.01. Customer-owned renewable generation shall be first used for Customer's own load and shall offset Customer's demand for OEU's electricity. All electric power and energy delivered by OEU to Customer shall be received and paid for by Customer to OEU (Received) pursuant to the terms, conditions and rates of the OEU otherwise applicable rate schedule.

4.02. Excess customer-owned renewable generation shall be delivered to the OEU Electric distribution system. For purposes of this Agreement, the term "excess customer-owned renewable generation" means any kWh of electrical energy produced by the customer-owned renewable generation system that is not consumed by Customer and is delivered to the OEU electric distribution system. FMPA agrees to purchase and receive, and Customer agrees to sell and deliver, all excess customer-owned renewable generation at the energy rate established by FMPA, which shall be calculated in accordance with Schedule A. Excess customer-owned renewable generation shall be purchased in the form of a credit on Customer's monthly energy consumption bill from OEU.

4.03. In the event that a given monthly credit for excess customer-owned renewable generation exceeds the total billed amount for Customer's consumption in any corresponding month, then the excess credit shall be applied to the subsequent month's bill. Excess energy credits produced pursuant to the preceding sentence shall accumulate and be used to offset Customer's energy consumption bill for a period of not more than twelve (12) months. At the end of each calendar year, any unused excess energy credits shall be paid by OEU to the Customer in accordance with the OEU Electric Net-Metering Service Rate Schedule.

(Continued on Sheet No. 20.2)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.1)

FIRST REVISED SHEET NO. 20.2
CANCELS ORIGINAL SHEET NO. 20.2

4.04. FMPA and OEU shall not be required to purchase or receive excess customer-owned renewable generation, and may require Customer to interrupt or reduce production of customer-owned renewable generation, (a) when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any OEU equipment or part of OEU's system; or (b) if either FMPA or OEU determine, in their sole judgment, that curtailment, interruption, or reduction is necessary because of emergencies, forced outages, force majeure, or compliance with any applicable electric code or standard.

4.05. Customer acknowledges that its provision of electricity to OEU hereunder is on a first-offered, first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to OEU pursuant to the Net-Metering Service Rate Schedule (as filed with the Florida Public Service Commission), from all participating OEU customers, exceeds two and one-half percent (2.5%) of the aggregate customer peak demand on the OEU electric system.

Section 5. Renewable Energy Credits

5.01. Customer shall offer FMPA a first right of refusal before selling or granting to any third party the right to the Green Attributes associated with its customer-owned renewable generation that is interconnected to OEU electric distribution system. The term "Green Attributes" shall include any and all credits, certificates, benefits, environmental attributes, emissions reductions, offsets, and allowances, however entitled, attributable to the generation of electricity from the customer-owned-renewable generation and its displacement of conventional energy generation.

5.02. Any additional meter(s) installed to measure total renewable electricity generated by the Customer for the purposes of measuring Green Attributes, including and renewable energy certificates (or similarly titled credits for renewable energy generated), shall be installed at the expense of the Customer, unless determined otherwise during negotiations for the sale of the Customer's credits to FMPA.

Section 6. Term and Termination

6.01. This Agreement shall become effective upon execution by all Parties, and shall remain in effect thereafter on a month-to-month basis until terminated by any Party upon thirty (30) days written notice to all other Parties.

6.02. This Agreement shall terminate immediately and without notice upon: (a) termination of the electric distribution service by OEU or (b) failure by Customer to comply with any of the terms and conditions of this Agreement or OEU's Standard Interconnection Agreement for Customer-Owned Renewable Generation.

(Continued on Sheet No. 20.3)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.2)

FIRST REVISED SHEET NO. 20.3
CANCELS ORIGINAL SHEET NO. 20.3

Section 7. Miscellaneous Provisions

7.01. **Assignment**. It is understood and agreed that no party may transfer, sell, mortgage, pledge, hypothecate, convey, designate, or otherwise assign this Agreement, or any interest herein or any rights or obligations hereunder, in whole or in part, either voluntarily or by operation of law, (including, without limitation, by merger, consolidation, or otherwise), without the express written consent of the other parties (and any such attempt shall be void), which consent shall not be unreasonably withheld. Subject to the foregoing, this Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.

7.02. **Amendment**. It is understood and agreed that FMPA and OEU reserve the right, on no less than an annual basis, to change any of the terms and conditions, including pricing, in this Agreement on sixty (60) days advance written notice. FMPA and OEU may make such changes on an immediate basis in the event any applicable law, rule, regulation or court order requires them. In such event, FMPA and OEU will give Customer as much notice as reasonably possible under the circumstances.

7.03. **Indemnification**. To the fullest extent permitted by laws and regulations, and in return for adequate, separate consideration, Customer shall defend, indemnify, and hold harmless FMPA and OEU, their officers, directors, agents, guests, invitees, and employees from and against all claims, damages, losses to persons or property, whether direct, indirect, or consequential (including but not limited to fees and charges of attorneys, and other professionals and court and arbitration costs) arising out of, resulting from, occasioned by, or otherwise caused by the operation or misoperation of the customer-owned renewable generation, or the acts or omissions of any other person or organization directly or indirectly employed by the Customer to install, furnish, repair, replace or maintain the customer-owned renewable generation system, or anyone for whose acts any of them may be liable.

7.04. **Governing Law**. The validity and interpretation of this Agreement and the rights and obligations of the parties shall be governed and construed in accordance with the laws of the State of Florida without regard for any conflicts of law provisions that might cause the law of other jurisdictions to apply. All controversies, claims, or disputes arising out of or related to this Agreement or any agreement, instrument, or document contemplated hereby, shall be brought exclusively in the County or Circuit Court for Marion County, Florida, or the United States District Court sitting in Marion County, Florida, as appropriate.

(Continued on Sheet No. 20.4)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.3)

FIRST REVISED SHEET NO. 20.4
CANCELS ORIGINAL SHEET NO. 20.4

7.05. Enforcement of Agreement. In the event that either party is required to enforce this Agreement by court proceedings or otherwise, the prevailing party shall be entitled to recover all fees and costs incurred, including reasonable attorney's fees and costs for trial, alternative dispute resolution, and/or appellate proceedings.

7.06. Severability. To the extent any provision of this Agreement is prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

7.07. Third Party Beneficiaries and Sovereign Immunity. This Agreement is solely for the benefit of FMPA, OEU, and Customer and no right nor shall any cause of action accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than FMPA, OEU, or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon FMPA, OEU, and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by either FMPA or OEU of the sovereign immunity applicable to either or both of them as established by Florida Statutes, 768.28.

(Continued on Sheet No. 20.5)

Issued by: Michael Poucher, P.E.
Electric Utility Director


Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.4)


FIRST REVISED SHEET NO. 20.5
CANCELS ORIGINAL SHEET NO. 20.5

IN WITNESS WHEREOF, Customer and OEU have executed this Agreement the day and year first above written.

City of Ocala Electric Utility

By:  Ken Whithead
Title: Assistant City Manager
Date: 4/11/2023

Florida Municipal Power Agency

By: 
Title: VP of IT/OT and System Ops
Date: 4/11/2023

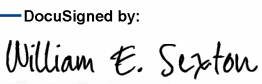
Customer

By: Viviane Irizarry Gonzalez Date: 12/6/2022
(Print Name)

(Signature)

Customer's City of Ocala Electric Utility Account Number: 554732-208006

Approved as to form and legality:

 William E. Sexton
B07DCFC4E88E429...
William E. Sexton
City Attorney

(Continued on Sheet No. 20.6)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.5)

FIRST REVISED SHEET NO. 20.6
CANCELS ORIGINAL SHEET NO. 20.6

**Tri-Party Net-Metering Power Purchase Agreement
Schedule A**

I. All-Requirements Project Calculation of Excess Customer-Owned Renewable Generation Credit

- a) FMPA shall pay OEU for the excess kWh energy delivered by customer-owned renewable generation to OEU's electric system. Every month, OEU shall determine the total kWh of customer-owned renewable generation that is delivered to OEU's electric system, and shall send the information to FMPA as soon as it becomes available, but no later than the second working day of every month. FMPA will then provide a monthly payment to OEU in the form of a credit on the ARP power bill for the excess energy delivered to the distribution grid. The ARP Renewable Generation Credit will be calculated as follows:

ARP Renewable Generation Credit = Quarterly Energy Rate * Monthly kWh of excess customer-owned renewable generation

Quarterly Energy Rate = 3 month average of ARP energy rate. FMPA will update the Quarterly Energy Rate every April 1, July 1, October 1 and January 1.

- b) As part of the monthly bill adjustment, FMPA will also increase OEU's kWh billing amount by the same kWh amount as the customer-owned renewable generation purchased by FMPA. This adjustment is necessary because excess customer generation that flows onto OEU's electric system has been purchased by FMPA, but will remain on OEU's electric system and be used by OEU to meet its other customers' electric needs. As a result, OEU's monthly ARP bill will be adjusted accordingly to reflect FMPA's subsequent sale of this energy to OEU.

II. Payment for Unused Excess Energy Credits

- a) Monthly excess energy credits shall accumulate and be used to offset the Customer's following month energy consumption bill for a period of not more than twelve (12) months.
- b) At the end of each calendar year, OEU shall pay the Customer for any unused excess energy credits in accordance with the OEU Electric Net-Metering Service Rate Schedule.

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA

FIRST REVISED SHEET NO. 21.0
CANCELS ORIGINAL SHEET NO. 21.0

Tier 1 – Standard Interconnection Agreement Customer-Owned Renewable Generation System

This **Agreement** is made and entered into this 30th day of November, 2022, by and between Viviane Irizarry Gonzalez, (hereinafter called "**Customer**"), located at 4558 Northwest 31 Street in Ocala, Florida, and the City of Ocala doing business as Ocala Electric Utility (hereinafter called OEU), a body politic. Customer and OEU shall collectively be called the "**Parties**". The physical location/premise where the interconnection is taking place: 4558 Northwest 31 Street Ocala FL 34482.

WITNESSETH

Whereas, a Tier 1 Renewable Generation System (RGS) is an electric generating system that uses one or more of the following fuels or energy sources: hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, or hydroelectric power as defined in Section 377.803, Florida Statutes, rated at no more than ten (10) kilowatts (10 kW) alternating current (AC) power output and is primarily intended to offset part or all of the Customer's current electric requirements; and

Whereas, OEU operates an electric system serving the City of Ocala; and

Whereas, Customer has made a written Application to OEU, a copy being attached hereto, to interconnect its RGS with OEU's electrical supply grid at the location identified above; and

Whereas, the City of Ocala and the Florida Municipal Power Agency (hereinafter called "FMPPA") have entered into the All-Requirements Power Supply Contract pursuant to which the City of Ocala has agreed to purchase and receive, and FMPPA has agreed to sell and supply OEU with all energy and capacity necessary to operate the OEU electric system, which limits OEU's ability to directly purchase excess energy from customer-owned renewable generation; and

Whereas, in order to promote the development of small customer-owned renewable generation by permitting OEU to allow its customers to interconnect with OEU's electric system and to allow OEU customers to offset their electric consumption with customer-owned renewable generation, FMPPA, in accordance with the terms and conditions of this agreement, has agreed to purchase excess customer-owned generation from OEU customers interconnected to OEU's electric system; and

Whereas, the OEU desires to provide interconnection of a RGS under conditions which will insure the safety of OEU customers and employees, reliability and integrity of its distribution system;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements herein set forth, the parties hereto covenant and agree as follows:

(Continued on Sheet No. 21.1)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
 OCALA, FLORIDA
 (Continued from Sheet No. 21.0)

FIRST REVISED SHEET NO. 21.1
 CANCELS ORIGINAL SHEET NO. 21.1

1. The Customer shall be required to enter into a Tri-Party Net-Metering Purchase Power Agreement with FMPA and the City of Ocala Electric Utility (OEU).
2. "Gross power rating" (GPR) means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with OEU's distribution facilities. For inverter-based systems, the GPR shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.
3. This agreement is strictly limited to cover a Tier 1 RGS as defined above. It is the Customer's responsibility to notify OEU of any change to the GPR of the RGS by submitting a new application for interconnection specifying the modifications at least 30 days prior to making the modifications. Increase in GPR above the ten kilowatt (10 kW) limit would necessitate entering into a new agreement at either Tier 2 or Tier 3 which may impose additional requirements on the Customer. In no case does the Tier 1, Tier 2 or Tier 3 agreement cover increases in GPR above two megawatts (2MW).
4. The RGS GPR must not exceed 90 percent (90%) of the Customer's OEU calculated distribution service rating at the Customer's location (including shared electric facilities). If the GPR does exceed the 90 percent (90%) limit, the Customer shall be responsible to pay the cost of upgrades to the distribution facilities required to accommodate the GPR capacity and ensure the 90 percent (90%) threshold is not breached. OEU will not allow a RGS GPR greater than required to offset the customer's annual kWh energy consumption (based on customer's historical consumption data or by means of estimated usage of similar type of service as determined by OEU).
5. The Customer shall not be required to pay any special fees due solely to the installation of the RGS.
6. The Customer shall fully comply with OEU's Design Standards following NEC standards as those documents may be amended or revised by OUS from time to time.
7. The Customer certifies that its installation, its operation and its maintenance shall be in compliance with the following standards (or most current version at time of inspection approval):
 - a. IEEE-1547 (2018) Standard for Interconnecting Distributed Resources with Electric Power System;
 - b. IEEE-1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnection Distributed Resources with Electric Power Systems;
 - c. UL-1741 (2010) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed *Energy Resources*.
 - d. The National Electric Code, state and/or local building codes, mechanical codes and/or electrical codes;
 - e. The manufacturer's installation, operation and maintenance instructions.

(Continued to Sheet No. 21.2)

Issued by: Michael Poucher, P.E.
 Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 21.1)

FIRST REVISED SHEET NO. 21.2
CANCELS ORIGINAL SHEET NO. 21.2

8. The Customer is not precluded from contracting for the lease, operation or maintenance of the RGS with a third party. Such lease may not provide terms or conditions that provide for any payments under the agreement to any way indicate or reflect the purchase of energy produced by the RGS. Customer shall not enter into any lease agreement that results in the retail purchase of electricity; or the retail sale of electricity from the customer-owned renewable generation. Notwithstanding this restriction, in the event that Customer is determined to have engaged in the retail purchase of electricity from a party other than OEU, then Customer shall be in breach of this Agreement and may be subject to the jurisdiction of the Florida Public Service Commission and to fines/penalties.

9. The Customer shall provide a copy of the manufacturer's installation, operation and maintenance instructions to OEU. If the RGS is leased to the Customer by a third party, or if the operation or maintenance of the RGS is to be performed by a third party, the lease and/or maintenance agreements and any pertinent documents related to these agreements shall be provided to OEU.

10. Prior to commencing parallel operation with OEU's electric system, Customer shall have the RGS inspected and approved by the appropriate code authorities having jurisdiction. Customer shall provide a copy of this inspection and approval to OEU.

11. The Customer agrees to permit OEU, if it should so choose, to inspect the RGS and its component equipment and the documents necessary to ensure compliance with this Agreement both before and after the RGS goes into service and to witness the initial testing of the RGS equipment and protective apparatus. OEU will provide Customer with as much notice as reasonably possible, either in writing, email, facsimile or by phone as to when OEU may conduct inspections and or document review. Upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, Customer agrees to provide OEU access to the Customer's premises for any purpose in connection with the performance of the obligations required by this Agreement or, if necessary, to meet OEU's legal obligation to provide service to its customers. At least ten (10) business days prior to initially placing the customer-owned renewable generation system in service, Customer shall provide written notification to OEU advising of the date and time at which Customer intends to place the system in service, and OEU shall have the right to have personnel present on the in-service date in order to ensure compliance with the requirements of this Agreement.

(Continued on Sheet No. 21.3)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 21.2)

FIRST REVISED SHEET NO. 21.3
CANCELS ORIGINAL SHEET NO. 21.3

12. The Customer's RGS must have an appropriately sized grid-tie inverter system that includes applicable protective systems. Customer certifies that the RGS equipment includes an OEU interactive inverter or interconnection system equipment that ceases to interconnect with the OEU system upon a loss of OEU's electric power. The inverter shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing laboratory (NRTL) to comply with UL 1741. The NRTL shall be approved by the Occupational Safety & Health Administration (OSHA).

13. If Customer adds another RGS that (i) utilizes the same OEU interactive inverter for both systems, or (ii) utilizes a separate OEU interactive inverter for each system, Customer shall provide OEU with sixty (60) days advance written notice of the addition.

14. The Customer shall not energize the OEU system when OEU's system is deenergized. The Customer shall cease to energize the OEU system during a faulted condition on the OEU system and/or upon any notice from OEU that the deenergizing of Customer's RGS equipment is necessary. The Customer shall cease to energize the OEU system prior to automatic or non-automatic reclosing of OEU's protective devices. There shall be no intentional islanding, as described in IEEE 1547, between the Customer's and OEU' systems.

15. The Customer is responsible for the protection of its generation equipment, inverters, protection devices, and other system components from damage from the normal and abnormal operations that occur on OEU system in delivering and restoring system power. Customer agrees that any damage to any of its property, including, without limitation, all components and related accessories of its RGS system, due to the normal or abnormal operation of OEU system, is at Customer's sole risk and expense. Customer is also responsible for ensuring that the customer-owned renewable generation equipment is inspected, maintained, and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.

16. The Customer must install, at their expense, a manual disconnect switch of the visible load break type to provide a separation point between the AC power output of the customer-owned renewable generation system and any Customer wiring connected to OEU's system, such that back feed from the customer-owned renewable generation system to OEU's system cannot occur when the switch is in the open position. The manual disconnect switch shall be mounted separate from the meter socket on an exterior surface adjacent to the meter. The switch shall be readily accessible to OEU and capable of being locked in the open position with an OEU padlock. When locked and tagged in the open position by OEU, this switch will be under the control of OEU.

(Continued on Sheet No. 21.4)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 21.3)

FIRST REVISED SHEET NO. 21.4
CANCELS ORIGINAL SHEET NO. 21.4

17. Subject to an approved inspection, including installation of acceptable disconnect switch, this Agreement shall be executed by OEU within thirty (30) calendar days of receipt of a completed application. Customer must execute this Agreement and return it to OEU at least thirty (30) calendar days prior to beginning parallel operations with OEU's electric system, subject to the requirements of Section 18, below, and within one (1) year after OEU executes this Agreement.

18. Once OEU has received Customer's written documentation that the requirements of this Agreement have been met, all agreements and documentation have been received and the correct operation of the manual switch has been demonstrated to an OEU representative, OEU will, within fifteen (15) business days, send written notice that parallel operation of the RGS may commence.

19. OEU requires the Customer to maintain general liability insurance for personal injury and property damage in the amount of not less than one hundred thousand dollars (\$100,000.00).

20. OEU will furnish, install, own and maintain metering equipment capable of measuring the flow of kilowatt-hours (kWh) of energy. The Customer's service associated with the RGS will be metered to measure the energy delivered by OEU to Customer, and measure the energy delivered by Customer to OEU. Customer agrees to provide safe and reasonable access to the premises for installation, maintenance and reading of the metering and related equipment. The Customer shall not be responsible for the cost of the installation and maintenance of the metering equipment necessary to measure the energy delivered by the Customer to OEU.

21. The Customer shall be solely responsible for all legal and financial obligations arising from the design, construction, installation, operation, maintenance and ownership of the RGS.

22. The Customer must obtain all permits, inspections and approvals required by applicable jurisdictions with respect to the generating system and must use a licensed, bonded and insured contractor to design and install the generating system. The Customer agrees to provide OEU with a copy of the local building code official inspection and certification of installation. The certification shall reflect that the local code official has inspected and certified that the installation was permitted, has been approved, and has met all electrical and mechanical qualifications.

(Continued on Sheet No. 21.5)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
 OCALA, FLORIDA
 (Continued from Sheet No. 21.4)

FIRST REVISED SHEET NO. 21.5
 CANCELS ORIGINAL SHEET NO. 21.5

23. In no event shall any statement, representation, or lack thereof, either express or implied, by OEU, relieve the Customer of exclusive responsibility for the Customer's system. Specifically, any OEU inspection of the RGS shall not be construed as confirming or endorsing the system design or its operating or maintenance procedures or as a warranty or guarantee as to the safety, reliability, or durability of the RGS. OEU's inspection, acceptance, or its failure to inspect shall not be deemed an endorsement of any RGS equipment or procedure. Further, as set forth in Sections 15 and 26 of this Agreement, Customer shall remain solely responsible for any and all losses, claims, damages and/or expenses related in any way to the operation or misoperation of its RGS equipment.

24. Notwithstanding any other provision of this Interconnection Agreement, OEU, at its sole and absolute discretion, may isolate the Customer's system from the distribution grid by whatever means necessary, without prior notice to the Customer. To the extent practical, however, prior notice shall be given. The system will be reconnected as soon as practical once the conditions causing the disconnection cease to exist. OEU shall have no obligation to compensate the Customer for any loss of energy during any and all periods when Customer's RGS is operating at reduced capacity or is disconnected from OEU's electrical distribution system pursuant to this Interconnection Agreement. Typical conditions which may require the disconnection of the Customer's system include, but are not limited to, the following:

- a. OEU system emergencies, forced outages, uncontrollable forces or compliance with prudent electric OEU practice.
- b. When necessary to investigate, inspect, construct, install, maintain, repair, replace or remove any OEU equipment, any part of OEU's electrical distribution system or Customer's generating system.
- c. Hazardous conditions existing on OEU's system due to the operation of the Customer's generation or protective equipment as determined by OEU.
- d. Adverse electrical affects (such as power quality problems) on the electrical equipment of OEU's other electric consumers caused by the Customer's generation as determined by OEU.
- e. When Customer is in breach of any of its obligations under this Interconnection Agreement or any other applicable policies and procedures of OEU.
- f. When the Customer fails to make any payments due to OEU by the due date thereof.

25. Upon termination of services pursuant to this Agreement, OEU shall open and padlock the manual disconnect switch and remove any additional metering equipment related to this Agreement. At the Customer's expense, within thirty (30) working days following the termination, the Customer shall permanently isolate the RGS and any associated equipment from OEU's electric supply system, notify OEU that the isolation is complete, and coordinate with OEU for return of OEU's lock.

(Continued to Sheet No. 21.6)

Issued by: Michael Poucher, P.E.
 Electric Utility Director

Effective: October 1, 2019

Ocala Electric Utility
Ocala, Florida
(Continued from Sheet No. 21.5)

FIRST REVISED SHEET NO. 21.6
CANCELS ORIGINAL SHEET NO. 21.6

26. To the fullest extent permitted by law, and in return for adequate, separate consideration, Customer shall indemnify, defend and hold harmless OEU, any and all of their members of its governing bodies, and its officers, agents, and employees for, from and against any and all claims, demands, suits, costs of defense, attorneys fees, witness fees of any type, losses, damages, expenses, and liabilities, whether direct, indirect or consequential, related to, arising from, or in any way connected with:

- a. Customer's design, construction, installation, inspection, maintenance, testing or operation of Customer's generating system or equipment used in connection with this Interconnection Agreement, irrespective of any fault on the part of OEU.
- b. The interconnection of Customer's generating system with, and delivery of energy from the generating system to, OEU's electrical distribution system, irrespective of any fault on the part of OEU.
- c. The performance or nonperformance of Customer's obligations under this Interconnection Agreement or the obligations of any and all of the members of Customer's governing bodies and its officers, agents, contractors (and any subcontractor or material supplier thereof) and employees.

Customer's obligations under this Section shall survive the termination of this Interconnection Agreement.

27. Customer shall not have the right to assign its benefits or obligations under this Agreement without OEU's prior written consent and such consent shall not be unreasonably withheld. If there is a change in ownership of the RGS, Customer shall provide written notice to OEU at least thirty (30) days prior to the change in ownership. The new owner will be required to assume, in writing, the Customer's rights and duties under this Agreement, or execute a new Standard Interconnection Agreement. The new owner shall not be permitted to net meter or begin parallel operations until the new owner assumes this Agreement or executes a new Agreement.

28. This Agreement supersedes all previous agreements and representations either written or verbal heretofore made between OEU and Customer with respect to matters herein contained. This Agreement, when duly executed, constitutes the only Agreement between parties hereto relative to the matters herein described. This Agreement shall continue in effect from year to year until either party gives sixty (60) days' notice of its intent to terminate this Agreement.

(Continued on Sheet No. 21.7)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 21.6)

FIRST REVISED SHEET NO. 21.7
CANCELS ORIGINAL SHEET NO. 21.7

29. This Agreement shall be governed by and construed and enforced in accordance with the laws, rules and regulations of the State of Florida and OEU's tariff as it may be modified, changed, or amended from time to time, including any amendments modification or changes to OEU's Net-Metering Service Rate Schedule, the schedule applicable to this Agreement. The Customer and OEU agree that any action, suit, or proceeding arising out of or relating to this Interconnection Agreement shall be initiated and prosecuted in the state court of competent jurisdiction located in Marion County, Florida, and OEU and the Customer irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, each Party hereby irrevocably waives any and all rights to a trial by jury and covenants and agrees that it will not request a trial by jury with respect to any legal proceeding arising out of or relating to this Interconnection Agreement.

None of the provisions of this Interconnection Agreement shall be considered waived by either Party except when such waiver is given in writing. No waiver by either Party of any one or more defaults in the performance of the provisions of this Interconnection Agreement shall operate or be construed as a waiver of any other existing or future default or defaults. If any one or more of the provisions of this Interconnection Agreement or the applicability of any provision to a specific situation is held invalid or unenforceable, the provision shall be modified to the minimum extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this Interconnection Agreement and all other applications of such provisions shall not be affected by any such invalidity or unenforceability. This Interconnection Agreement does not govern the terms and conditions for the delivery of power and energy to non-generating retail customers of OEU's electrical distribution system.

30. This Agreement incorporates by reference the terms of the tariff filed with the Florida Public Service Commission by OEU, including OEU's Net-Metering Service Rate Schedule, and associated technical terms and abbreviations, general rules and regulations and standard electric service requirements (as may be applicable) are incorporated by reference, as amended from time to time. To the extent of any conflict between this Agreement and such tariff, the tariff shall control.

31. OEU and Customer recognize that the Florida Statutes and/or the Florida Public Service Commission Rules, including those directly addressing the subject of this Agreement, may be amended from time to time. In the event that such statutes and/or rules are amended that affect the terms and conditions of this Agreement, OEU and Customer agree to supersede and replace this Agreement with a new Interconnection Agreement, which complies with the amended statutes/rules.

(Continued on Sheet No. 21.8)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 21.7)

FIRST REVISED SHEET NO. 21.8
CANCELS ORIGINAL SHEET NO. 21.8

32. Customer acknowledges that its provision of electricity to OEU hereunder is on a first-offered, first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to OEU pursuant to the OEU's Net-Metering Service Rate Schedule, (as filed with the Florida Public Service Commission), from all participating OEU customers, exceeds two and one-half percent (2.5%) of the aggregate customer peak demand on the OEU system.

33. This Agreement is solely for the benefit of OEU and Customer and no right nor any cause of action shall accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than OEU or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon OEU and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by OEU of the sovereign immunity applicable to OEU as established by Florida Statutes, 768.28.

(Continued on Sheet No. 21.9)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

Ocala Electric Utility
Ocala, Florida
(Continued from Sheet No. 21.8)

FIRST REVISED SHEET NO. 21.9
CANCELS ORIGINAL SHEET NO. 21.9

IN WITNESS WHEREOF, Customer and OEU have executed this Agreement the day and year first above written.

City of Ocala Electric Utility:

Customer:

By: 

By: Viviane Irizarry Gonzalez
(Print Name)

Title: Assistant City Manager


(Signature)

Date: 4/11/2023

Date: 12/6/2022

City of Ocala Electric Utility Account Number:

554732-208006

Approved as to form and legality:


William E. Sexton
City Attorney

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

Certificate Of Completion

Envelope Id: 01ABB45A40DA40EEB9CFF0BE3485D706

Status: Completed

Subject: Tri-Party Net Metering Agreement (Viviane Gonzalez) [ELE/230400]

Source Envelope:

Document Pages: 34

Signatures: 5

Certificate Pages: 5

Initials: 0

AutoNav: Enabled

Envelope Stamping: Enabled

Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:

Savannah Lewis

110 SE Watula Avenue

City Hall, Third Floor

Ocala, FL 34471

slewis@ocalafl.org

IP Address: 216.255.240.104

Record Tracking

Status: Original

4/10/2023 1:16:55 PM

Holder: Savannah Lewis

slewis@ocalafl.org

Location: DocuSign

Security Appliance Status: Connected

Pool: StateLocal

Storage Appliance Status: Connected

Pool: City of Ocala - Procurement & Contracting

Location: DocuSign

Signer Events

William E. Sexton

wsexton@ocalafl.org

City Attorney

City of Ocala

Security Level: Email, Account Authentication
(None)**Signature**

DocuSigned by:



B07DCFC4E86E429...

Signature Adoption: Pre-selected Style

Using IP Address: 216.255.240.104

Timestamp

Sent: 4/10/2023 1:19:45 PM

Viewed: 4/11/2023 4:17:12 PM

Signed: 4/11/2023 4:17:40 PM

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Ken Whitehead

kwhitehead@ocalafl.org

Assistant City Manager

City of Ocala

Security Level: Email, Account Authentication
(None)

DocuSigned by:



5677F71E38874F4...

Signature Adoption: Pre-selected Style

Using IP Address: 216.255.240.104

Sent: 4/11/2023 4:17:41 PM

Viewed: 4/11/2023 5:11:57 PM

Signed: 4/11/2023 5:12:59 PM

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

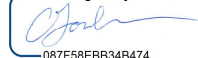
Chris Gowder

chris.gowder@fmpa.com

VP of IT/OT and System Ops

Security Level: Email, Account Authentication
(None)

DocuSigned by:



087F58EBB34B474...

Signature Adoption: Uploaded Signature Image

Using IP Address: 67.233.89.89

Sent: 4/11/2023 5:13:01 PM

Viewed: 4/11/2023 6:57:03 PM

Signed: 4/11/2023 6:57:28 PM

Electronic Record and Signature Disclosure:

Accepted: 4/11/2023 6:57:03 PM

ID: 9bd24d04-b6b3-4a9f-b8fc-fe688ef6d049

In Person Signer Events**Signature****Timestamp****Editor Delivery Events****Status****Timestamp****Agent Delivery Events****Status****Timestamp****Intermediary Delivery Events****Status****Timestamp**

Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	4/10/2023 1:19:45 PM
Certified Delivered	Security Checked	4/11/2023 6:57:03 PM
Signing Complete	Security Checked	4/11/2023 6:57:28 PM
Completed	Security Checked	4/11/2023 6:57:28 PM
Payment Events	Status	Timestamps
Electronic Record and Signature Disclosure		

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, City of Ocala - Procurement & Contracting (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a \$0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact City of Ocala - Procurement & Contracting:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: contracts@ocalafl.org

To advise City of Ocala - Procurement & Contracting of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at contracts@ocalafl.org and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from City of Ocala - Procurement & Contracting

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to contracts@ocalafl.org and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with City of Ocala - Procurement & Contracting

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an email to contracts@ocalafl.org and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: <https://support.docusign.com/guides/signer-guide-signing-system-requirements>.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to ‘I agree to use electronic records and signatures’ before clicking ‘CONTINUE’ within the DocuSign system.

By selecting the check-box next to ‘I agree to use electronic records and signatures’, you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify City of Ocala - Procurement & Contracting as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by City of Ocala - Procurement & Contracting during the course of your relationship with City of Ocala - Procurement & Contracting.