



Case Number: 18-0107-EL-REN

A. Generating Facility

Name of Renewable Generating Facility: IKEA-STO511

The name specified will appear on the facility's certificate of eligibility issued by the Public Utilities Commission of Ohio.

Facility Location

Street Address: 1900 IKEA Way

City: Columbus **State:** OH **County:** Franklin **Zip Code:** 43240

Facility Latitude and Longitude

Latitude: 40.150414 **Longitude:** 82.966986

There are internet mapping tools available to determine the latitude and longitude, if you do not have this information.

If applicable, U.S. Department of Energy, Energy Information Administration Form EIA-860 Plant Name and Plant Code.

EIA-860 Plant Name:

EIA Plant Code:

B. Legal Name of the Facility Owner

Please note that the facility owner name listed will be the name that appears on the certificate.

The address provided in this section is where the certificate will be sent.

If the facility has multiple owners, please provide the following information for each on additional sheets.

Legal Name of the Facility Owner: IKEA Property

Legal Name of Facility Owner Representative: Christopher, M, Moore

Title: Energy Specialist

Organization: IKEA Property

Street Address: 420 Alan Wood Rd

City: Conshohocken **State:** PA **Zip Code:** 19428

Phone: 610-834-0180x5674 **Fax:**

Email Address: christopher.moore2@ikea.com

Web Site Address (if applicable):

C. List the name, address, telephone number and web site address under which the Applicant will do business in Ohio

Legal Name of Facility Owner Representative: Christopher, M, Moore

Title: Energy Specialist

Organization: IKEA US RETAIL LLC

Street Address: 1900 IKEA Way

City: Columbus **State:** OH **Zip Code:** 43240

Phone: 610-834-0180x5674 **Fax:**

Email Address: christopher.moore2@ikea.com

Web Site Address (if applicable):

D. Name of Generation Facility Operating Company

Name of Generation Facility Operating Company: IKEA Property

Legal Name of Contact Person: Christopher, M, Moore

Title: Energy Specialist

Organization: IKEA Property

Street Address: 420 Alan Wood Rd

City: Conshohocken **State:** PA **Zip Code:** 19428

Phone: 610-834-0180x5674 **Fax:**

Email Address: christopher.moore2@ikea.com

Web Site Address (if applicable):

E. Regulatory/Emergency Contact

Legal Name of Contact Person: Christopher, M, Moore

Title: Energy Specialist

Organization: IKEA Property

Street Address: 420 Alan Wood Rd

City: Conshohocken **State:** PA **Zip Code:** 19428

Phone: 610-834-0180x5674 **Fax:**

Email Address: christopher.moore2@ikea.com

Web Site Address (if applicable):

F. Certification Criteria 1: Deliverability of the Generation into Ohio

Ohio Revised Code (ORC) Sec. 4928.64(B)(3)

The facility must have an interconnection with an electric utility.

Check which of the following applies to the facility's location:

Yes The facility is located in Ohio.

No The facility is located in a state geographically contiguous to Ohio (IN, KY, MI, PA, WV).

No The facility is located in the following state:

(If the renewable energy resource generation facility is not located in Ohio, Indiana, Kentucky, Michigan, Pennsylvania, or West Virginia, you are required to submit a POWER FLOW study by one of the regional transmission organizations (RTO) operating in Ohio, either PJM or Midwest ISO, demonstrating that the power from the facility is physically deliverable into the state of Ohio. This study must be appended to the application as an exhibit. THE FACILITY MUST BE INTERCONNECTED TO TRANSMISSION LINES. FOR ADDITIONAL INFORMATION ON DELIVERABILITY REQUIREMENTS, PLEASE REFER TO THE COMMISSION FINDING & ORDER of 3/23/11 IN CASE NO. 09-555-EL-REN.)

G. Certification Criteria 2: Qualified Resource or Technology

You should provide information for only one resource or technology on this application; please check and/or fill out only one of the sections below. If you are applying for more than one resource or technology, you will need to complete a separate application for each resource or technology.

G.1. For the resource or technology you identify in Sections G.4 - G.13 below, please provide a written description of the system.

This system is a roof-mount solar photovoltaic array consisting of 3,546 Solar World 340 watt modules. The total nameplate capacity is 1,205.64 KW. There are 25 Yaskawa PVI-36TL string inverters.

G.2. Please include a detailed description of how the output of the facility is going to be measured and verified, including the configuration of the meter(s) and the meter type(s).

The overall purpose of this project is a -200kw (adjustable value) export from the IKEA Columbus store. This will be accomplished by reading the Electro Shark 100 Net Meter and curtailing string inverters through Modbus RS485.

1. Power plant controller will read power from RM3, a net meter
2. Power plant controller will read RM3 power and compare that to power set point
3. Based on internal logic power plant controller will write to Solectria inverter Modbus register 1001 to curtail inverters
4. Power plant controller will repeat process from step 1 and make adjustments as needed to keep RM3 power below setpoint

G.3. Please submit digital photographs that depict an accurate characterization of the renewable generating facility. Please indicate the date(s) the photographs were taken. For existing facilities, these photographs must be submitted for your application to be reviewed. For proposed facilities or those under construction, photographs will be required to be filed within 30 days of the on-line date of the facility.

November 15, 2017



November 15, 2017



November 15, 2017



November 15, 2017





November 14, 2017



November 15, 2017



November 15, 2017



The Applicant is applying for certification in Ohio for a facility using one of the following qualified resources or technologies (Sec. 4928.01 ORC):

G.4 SOLAR PHOTOVOLTAIC

G.4a Location of the PV Array: Roof

Description:

G.4b Total number of Modules: 3546

G.4.1 PV Modules

For each PV module, provide the following information:

G.4.1.a Manufacturer: Solar World

G.4.1.b Model and Rating: SW 340 XL MONO

H. Certification Criteria 3: Placed-in-Service Date (Sec. 4928.64. (A)(1) O.R.C.)

The Renewable Energy Facility:

No has a placed-in-service date before January 1, 1998; Date:

Yes has a placed-in-service date on or after January 1, 1998; Date: 8/12/17

No has been modified or retrofitted on or after January 1, 1998; Date:

Please provide a detailed description of the modifications or retrofits made to the facility that rendered it eligible for consideration as a qualified renewable energy resource. In your description, please include the date of initial operation and the date of modification or retrofit to use a qualified renewable resource. Please include this description as an exhibit attached to your application filing and identify the subject matter in the heading of the exhibit.

No Not yet online; projected in-service date:

H.1 Is the renewable energy facility owner a mercantile customer? Yes

ORC Sec. 4928.01 (19) "Mercantile customer" means a commercial or industrial customer if the electricity consumed is for nonresidential use and the customer consumes more than seven hundred thousand kilowatt hours per year or is part of a national account involving multiple facilities in one or more states.

Has the mercantile customer facility owner committed to integrate the resource under the provisions of Rule 4901:1-39-08 O.A.C? No

If yes, please insert/submit a copy of your approved application as an exhibit to this filing.

I. Facility Information

I.a The nameplate capacity of the entire facility kilowatts (kW): 1,210.00 (megawatts (MW): 1.21)

I.b If applicable, what is the expected heat rate of resource used per kWh of net generation:
BTU/kWh

I.1 For each generating unit, provide the following information:

<u>Unit In-Service Date</u>	<u>Unit Nameplate</u>	<u>Projected Gross</u>	<u>Expected Annual</u>	<u>Number of</u>
8/12/17	Capacity (MW)	Annual Generation	Capacity Factor %	Generating Units
	1.21	1,536	14.5	1

$$\text{Capacity Factor \%} = \frac{\text{Projected Annual Generation}}{\text{Nameplate Capacity} \times 8,760} \times 100$$

J. Regional Transmission Organization Information

In which Regional Transmission Organization area is your facility located:

Yes Within Geographic Area of PJM Interconnection, L.L.C.

No Within Geographic Area of Midwest ISO

No Other (specify):

K. Attribute Tracking System Information

Are you currently registered with an attribute tracking system: No

In which attribute tracking system are you currently registered or in which do you intend to register (*the tracking system you identify will be the system the PUCO contacts with your eligibility certification*):

Yes GATS (Generation Attribute Tracking System)

No M-RETS (Midwest Renewable Energy Tracking System)

Other (specify):

K.1 Enter the generation ID number you have been assigned by the tracking system:

(If the generation ID number has not yet been assigned, you will need to file this number in the PUCO Case Docket within 15 days of the facility receiving this number from the tracking system).

K.2 Has any of the generation of the facility been tracked as RECS that have been sold or otherwise consumed? No

L. Other State Certification

Is the facility certified by another state as an eligible generating resource to meet the renewable portfolio standards of that state? No

L.1 If yes, for each state, provide the following information:

<u>Name of State</u>	<u>State Certification Agency</u>	<u>State Certification Number</u>	<u>Certification Date Issued</u>
<hr/>			

M. Type of Generating Facility

Please check all of the following that apply to the facility:

- No Utility Generating Facility:
- No Investor Owned Utility
- No Rural Electric Cooperative
- No Municipal System
- No Electric Services Company (competitive retail electric service provider certified by the PUCO)
- Yes Distributed Generation with a net metering and interconnection agreement with a utility.
Identify the Utility: American Electric Power Ohio
- No Distributed Generation with both on-site use and wholesale sales.
Identify the Utility:
- No Distributed Generation, interconnected without net metering.
Identify the Utility:
-

N. Meter Specifications

Metering Requirements

- 1. If the renewable energy resource generating facility is 6 kW or below, the output may be measured with either an inverter meter or a utility grade meter.*
- 2. All facilities that are larger than 6 kW must measure the output of the facility with a utility grade meter. Facilities that are larger than 6 kW and that are not measuring output with a utility grade meter will not be certified. OAC 4901:1-40-04 (D)(1)*
- 3. Please only report on the meter or the meters used to measure the output from the facility which will be reported to the attribute tracking system.*

N.a The meter(s) that are measuring output from the facility are:

No Inverter Meter(s)

Yes Utility Grade Meter(s) (Must meet ANSI 12.1, or demonstrate an accuracy level of $\pm 2\%$)

N.1 Please provide the following information for each meter used in your system.

N.1.a Manufacturer: Electro Industries

N.1.b Serial Number: KT1317-001

N.1.c Type: Generation Meter

N.1.d Date of Last Certification: November 16, 2016

Attach a photograph of the meter(s) with date image taken. The meter reading(s) must be clearly visible in the photograph.

N.1.e Report the total meter reading number at the time the photograph was taken and specify the appropriate unit of generation (e.g., kWh): 1,091,247 KWH

1/26/2018 12:00:00AM



Project Photo
 Not Found

ACTUAL PRODUCTION

103.83 MWh

FORECAST PRODUCTION

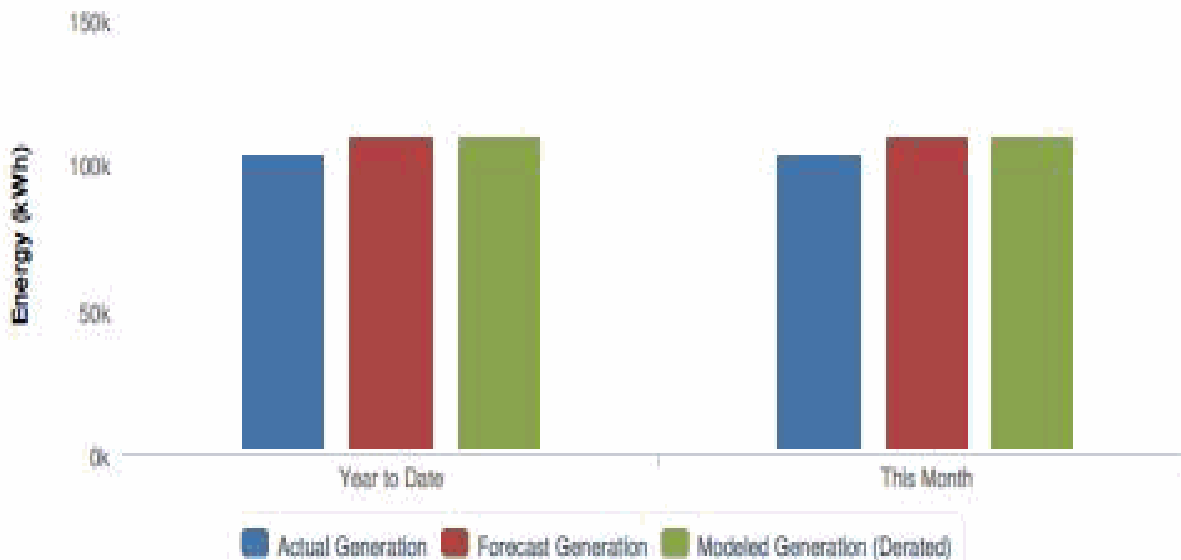
110.54 MWh

FORECAST PERFORMANCE INDEX

93.93 %

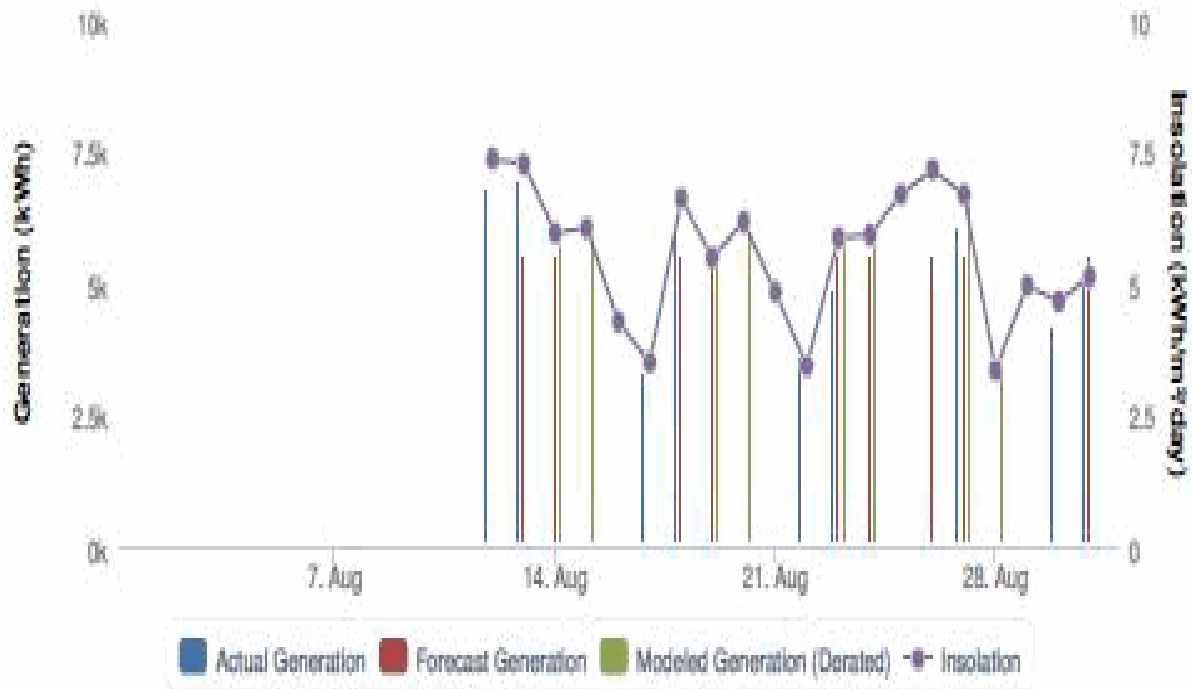
System	DC Size	Production	Energy Yield	Availability	DC Capacity Factor	Performance Ratio
Site	1205.64	103,827 kWh	86kWh/kW	100.00 %	17.94 %	0.77 %
PV System - 01	581.4	49,916 kWh	86kWh/kW	100.00 %	17.89 %	0.77 %
PV System - 02	624.24	53,911 kWh	86kWh/kW	100.00 %	17.99 %	0.78 %

Production Summary

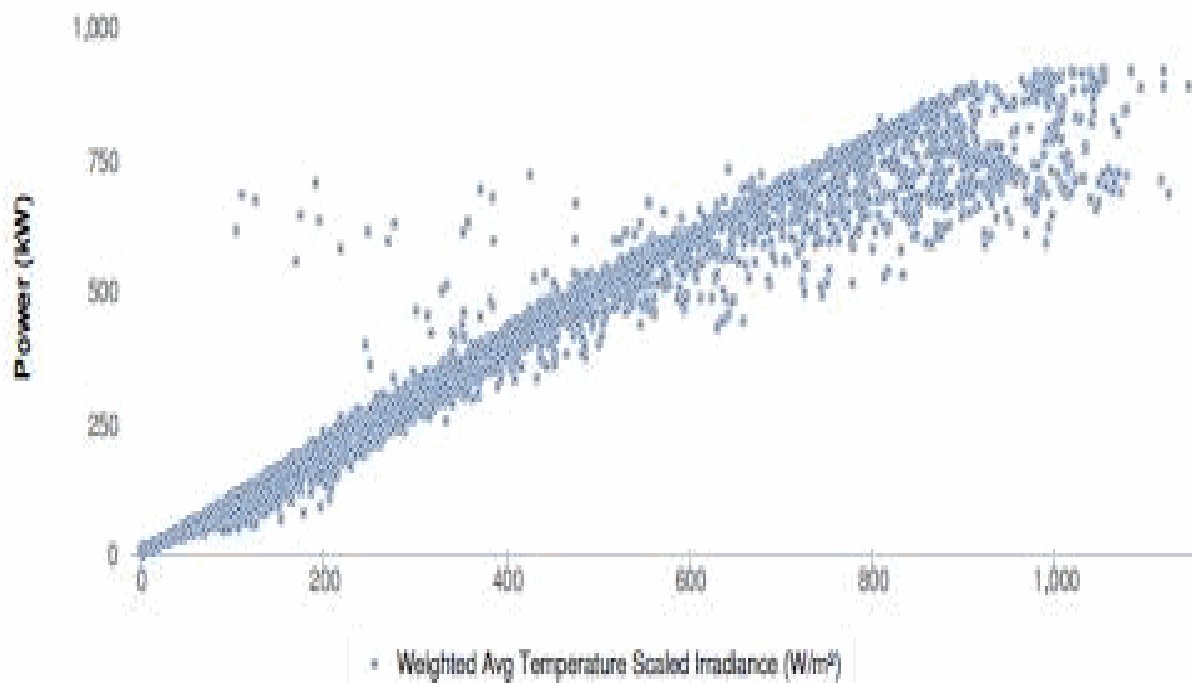


Energy Metric	Year to Date	This Month
Actual Generation	103,827 kWh	103,827 kWh
Forecast Generation	110,540 kWh	110,540 kWh
Modeled Generation (Derated)	109,350 kWh	109,350 kWh

Daily Production Summary

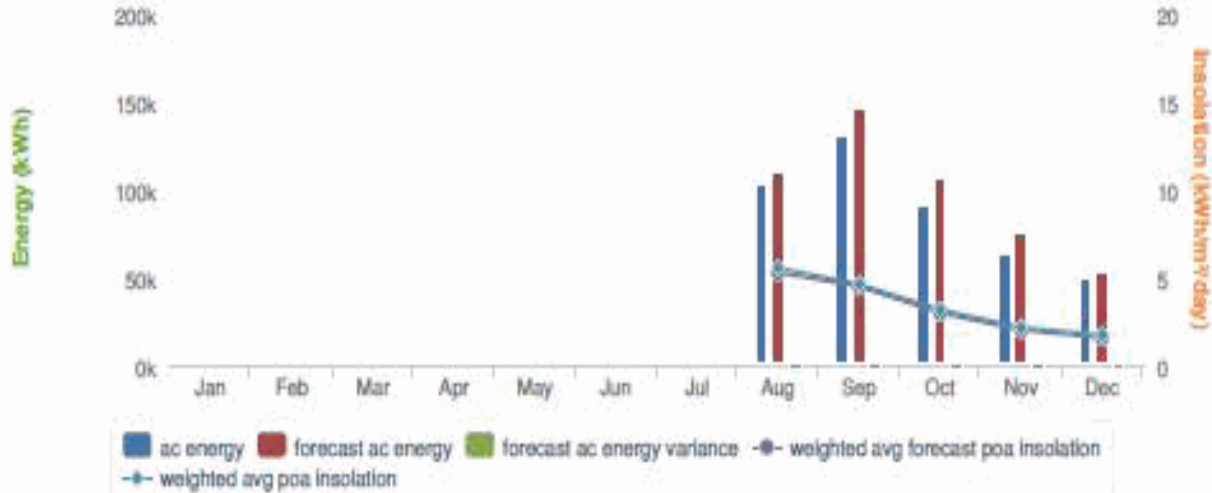


Performance Curve



Yearly Forecast vs Actual

Jan 2017 to Dec 2017



AC ENERGY YTD

438,993 kWh

FORECAST AC ENERGY YTD

492,730 kWh

FORECAST AC ENERGY
VARIANCE YTD

-53,737 kWh

Month	Energy (kWh)		Solar Resource (kWh/m²/day)	
	Measured	Forecast	Measured	Forecast
Jan	0.0	0.0	0.0	0.0
Feb	0.0	0.0	0.0	0.0
Mar	0.0	0.0	0.0	0.0
Apr	0.0	0.0	0.0	0.0
May	0.0	0.0	0.0	0.0
Jun	0.0	0.0	0.0	0.0
Jul	0.0	0.0	0.0	0.0
Aug	103,827.0	110,539.9	5.6	5.3
Sep	130,304.0	146,073.8	4.7	4.5
Oct	91,483.0	107,245.3	3.2	3.0
Nov	63,726.0	74,511.4	2.2	2.0
Dec	49,653.0	54,359.9	1.7	1.6



Public Utilities Commission

Affidavit for Application for Certification as an Eligible Ohio Renewable Energy Resource Generating Facility

Please be advised that all applicant's contact information, including address and telephone number, will be made public and is not subject to confidential treatment. Additionally, any information pertaining to trade secrets contained within the application will be made public unless filed under seal with a motion for protective order, pursuant to Rule 4901-1-24 of the Ohio Administrative Code.

Case Number: 18-0107-EL-REN

Facility Address: 1900 IKEA Way
Columbus, OH 43240

Name of person making this affidavit: Christopher Moore

State of PA

County of Montgomery

The undersigned, being duly sworn according to law, deposes and says that:

1. I am authorized to and do hereby make this affidavit on behalf of the Applicant,
2. All facts and statements made in the application for certification, including all attachments and supplemental information or filings, are true and complete to the best of my knowledge, information, and belief,
3. The facility has obtained or will obtain and will maintain all required local, state, and federal environmental permits,
4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Christopher Moore, Energy Specialist
Signature of Affiant & Title

Sworn and subscribed before me this 31 day of January, 2018 Month/Year

Maya Madison
Notary

My commission expires on AUGUST 6, 2019

Ohio Renewable Energy Resource Generating Facility Certification Application

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Maya Madison, Notary Public
Plymouth Twp., Montgomery County
My Commission Expires Aug. 6, 2019

The Public Utilities Commission of Ohio reserves the right to verify the accuracy of the data reported to the tracking system and to the PUCO.

Version: June 3, 2013

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

1/31/2018 2:43:43 PM

in

Case No(s). 18-0107-EL-REN

Summary: Application Application for Renewable Energy Generating Facility for IKEA
Columbus Store #511 electronically filed by Mr. Christopher Moore on behalf of IKEA Property