

WELCOME

2023 SOLAR KICK-OFF PRESENTATION

Christopher Cook - Sr. Program Manager & Terry Manning - Inspections Manager

January 24, 2023



AGENDA

2022 Program Year Overview

2023 Program Budget & Dates

Program Requirements & Qualifications

Battery Storage

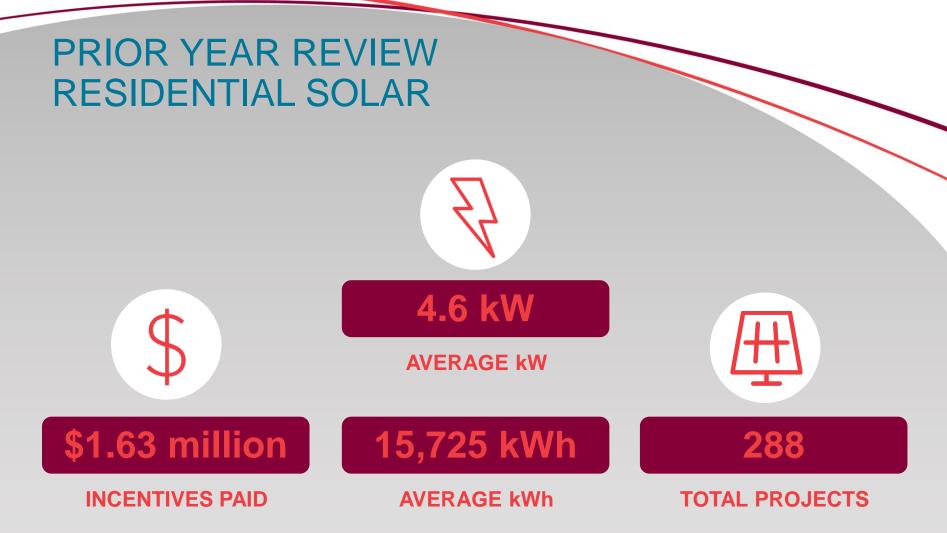
Inspections

Distributed Generation - Interconnection

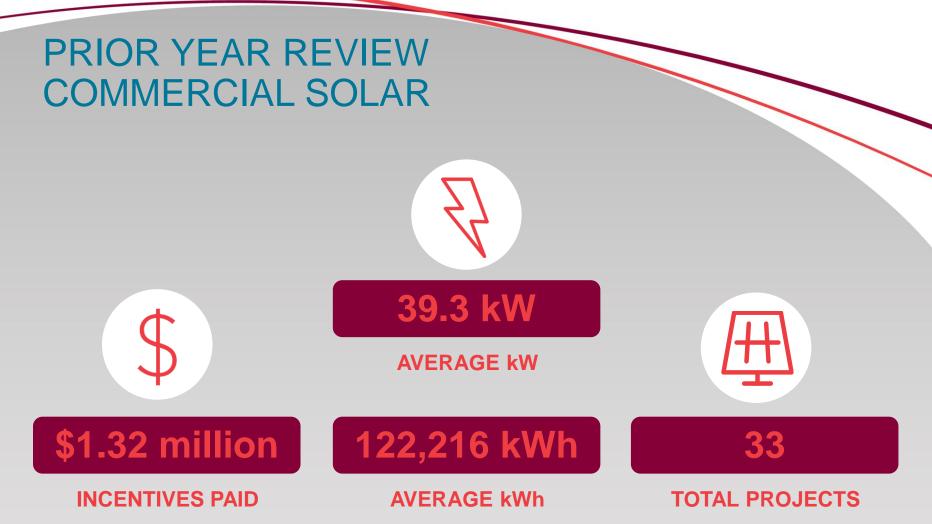


2022 SOLAR PROGRAM OVERVIEW











PROGRAM BUDGET & DATES

2023 Budget and Incentives

2023 Budget

- Residential Budget approximately \$1.35 million
- Commercial Budget approximately \$2.04 million

2023 Incentives

- Commercial and Residential
- The incentives will vary from project to project based on site data, and all projects will use PVWatts. A project incentive calculator is available to assist with estimating projects. Final incentive amount is set when project is approved and released to begin installation when the Reservation of Funds is approved.

Program Budget Caps

- A Service Provider including any Affiliate will be limited to no more than 15% of the budget.
- Residential cap: approximately \$200,000
- Commercial cap: approximately \$300,000
- This means that no one Service Provider including any Affiliate can receive more than 15% of the budget for that option.
- The cap can be raised as needed and will increase if additional funds are added to budget



Program Opening and Closing



- Residential and Commercial Program opens for application and new projects that have not started or completed installation on February 6th at 10 AM CST
- Program closes November 30th, 2023. All projects must be submitted for inspection by the close of business
- Any project on the waitlist at the end of 2022 have to be resubmitted anew under the 2023 program requirements.

2023 Minimum and Maximum



Residential (per ESI ID)

- Minimum 3 kW DC
 - Projects cannot be submitted under the minimum
 - Battery storage requirement remains in effect for residential solar
- Maximum 15 kW DC
 - Projects found over 15 kW DC will be cancelled and not eligible for an incentive
 - Maximum incentive amount is \$9,000

Commercial (per ESI ID)

- Eligible systems must be a minimum of 10 kW 450 kW DC (updated) or 75% of Peak Demand, whichever is less.
- Projects found over 450 kW DC of installed capacity will be cancelled and not eligible for an incentive
- Maximum incentive amount is \$120,000

Commercial and Residential

- A site that has a solar array installed, it is not eligible for any future incentive whether or not it participated in the incentive program
- Note: System size in this program considers only the solar pV system size and not a combination of solar pV and energy storage.



PROGRAM REQUIREMENTS & QUALIFICATIONS

Service Provider Qualifications



Service Provider

- A service provider is a Solar PV installer, a Self Sponsor or a Retail Electric Provider. A Self Sponsor, only in available in commercial, must demonstrate that they have the ability and personnel to manage a solar installation
- The entity that signs up in EEPM can only receive the incentive

Requirements

- Electrical Contractors License or Master Electrician License
- Identify if affiliated with other service providers
- Update Profile and sign/submit a 2023 Program Application for each option
- Demonstrates the ability to successfully meet program requirements and meet deadlines
- Currently eligible to participate in Oncor Energy Efficiency programs

Service Provider Qualifications



Requirements

- Insurance
 - Workers' Compensation
 - General Liability
 - Automobile Insurance
- 2023 Application cannot be approved until insurance is approved/current
- Know your expiration dates!
- Check your EEPM dashboard for the insurance status
- Allow at least 1 week for renewals
- Only the insurance agent should email the renewal to eepminsurance@oncor.com
- Have your agent copy you on the email if you want updates

Affiliate Rules Review



Affiliate Rules

- Any Service Provider that is affiliated with another Service Provider must be listed in EEPM profile
- An Affiliate as defined by the Texas PUC rule 25.181 (c) (1) :
- A person or corporation who owns at least 5% of the Service Provider
- A person who exercises substantial influence and/or control over the Service Provider
- A person who is related by ownership, blood or by action and has substantial influence over the Service Provider
- The complete rule is not listed above. Refer to the statue provided for a complete definition
- Also a company that shares office space, staff, marketing, phone numbers, resources, equipment or any other resources that appears to make the Service Providers connected
- Affiliate Service Providers fall under the same caps for project open and budget.

Timelines and Program Guidelines



New Construction

- Not allowed in either option
- Once permanent meter is set, project can be submitted if installation has not started

New Service Providers

 Successfully complete one project successfully, residential and commercial. Additional projects will be approved when Inspection is passed.

New Service Providers

- Residential
 - A project must be completed 90 days from the day it is submitted
- Commercial
 - A project must be completed 120 days from the day it is submitted
- Extensions
 - Must be applied for- maximum of 45 day extension

Signatures and Incentive Calculations

Signatures and Documents

- Electronic signatures preferred
- Customer must sign both the host agreement and the installation notice

Incentive Calculations

- All Projects will use PVWatts, resulting in incentive amounts being unique for each install
- EEPM will calculate savings and incentive
- Updates need to be done before inspection. Make sure that the EEPM data matches photos and match what was installed





Communication with Customers



Customer Education

- Clear up confusion
- Reason for Battery Dispatch Time settings
- False guarantees to customers
- Assist with and explain the Interconnection process
- Oncor reads the meter and passes the readings to the Retailer, who then bills the customer based on the plan they are enrolled in
- Oncor does not guarantee incentives
- If you have third party sales representatives, keep track of what they tell the customer
- Customers want to know who will receive the incentive and the incentive amount

The Retail Electric Provider (REP) Role:

<u>http://www.powertochoose.org/</u>

Customer Education

- Panel type, inverter type info biggest error; check before submitting
- Errors and customer complaints can impact continued and future participation

Subcontractors



Subcontractors

- Subcontractors have to be listed in EEPM
- Providers that do not keep list up to date are subject to lock-out and possible termination as warranted; this includes outside sales companies
- If you install for another Provider you must be registered as sub for them; if not listed it could cause you be both be locked out
- Responsibility of Providers to verify with PM that subcontractors are eligible to work in Oncor's programs
- An approved Service Provider for 2023 can only serve as a sub for one other Service Provider for projects submitted in the program
- Failure to identify subcontractors will be locked out until Profile is updated
- What are subs? any other company doing work for you on projects in EEPM
- Inspection team will spot-check project sites to verify companies installing
- Service Providers responsible for all work at customer's site, including communicating with customer and managing any issues caused by subs

Cybersecurity

- Ensure that all employees asking for information are listed in the employees section of EEPM
- Ensure that each employee with access has his / her own login to EEPM
- Please notify EEPM support when an employee no longer needs EEPM access
- Photos of installed equipment should not have passwords showing
- Prefer use of tax ID number instead of social security number whenever possible
- Program manager may enforce electronic signatures only for documents rather than wetsigned copies







Banking

- Ensure that all information in the "vendor information" tab in EEPM is correct
- Ensure that all banking information is up to date
- Two options: mailed check and direct deposit
 - If you have checks mailed to you: ensure that the address in the vendor information tab in EEPM is correct
 - If you are registered for direct deposit, please notify Oncor promptly of any banking changes. Please note it can take several weeks to update direct deposit information so you may wish to switch to mailed checks.
- Ensure W-9 is current and up to date
- Notify the solar program manager if there are any changes to your W-9





The Following Items Will Be Checked Strictly:



- W-9 information is current and up to date
- Submittals in FA Open status reserve funds in a timely manner or will be cancelled
- Submittals in IN Open status complete in a timely manner
- Shading report, EEPM "measure" tab information, and photo submittals match
- End of year cutoff date will be strictly enforced
- Communications from service providers are from registered and known e-mails

Common Reasons for Project Submittals Being Returned ONCOR.

- Tilt angle and azimuth angles do not match on shading study, photo measurements, and EEPM measures tab data
- Shading study data does not match EEPM measures tab data
- Panel counts in photos do not match shading study or EEPM measures tab data
- Dispatch letter from customer showing battery discharge hours is not submitted
- Proof of signed interconnection agreement upload shows screen shot of DG Portal but does not show proof of signed interconnection agreement.
 <u>Safe harbor</u>: submit the signed interconnection agreement or permit to operate letter.

Common Reasons for Applications Being Returned



- Appropriate licenses are not listed. Show license type, license number, license name.
- Employee data does not list name, title, and phone number for employees who will have access to EEPM or communicate with the solar program manager
- Proof of two complete projects with other required information: This tab is often not filled out completely or only lists one project.
- For evidence of financial strength: application shows information that is years out of date. <u>Safe harbor</u>: Provide one sentence stating, "2022 revenues were in excess of \$xxx,xxx." If the firm is new and has no past year revenues, provide one sentence stating, "Firm XYZ has been capitalized in excess of \$xxx,xxx."

Program Phases



- IA / Initial Application
- FA / Final Application
- IN / Installation
- SR / Savings Report
- Notes:
 - Funds are not reserved in the IA or FA phase. The phase must be at least "IN Open" to have funds reserved.
 - If the phase says "open" or "rejected," this means that you have to submit something to keep the ball rolling
 - □ If the phase says "submitted," then the Oncor takes the next step
 - □ Your project is not complete until the phase is "SR Approved"

Shading Study



- Must clearly show at least:
- Number of panels in each array
- Tilt angle
- Azimuth angle
- Solar access percentage
- The information must match the data in the EEPM measures tab and the photo submittals
- For the shading percentage in EEPM, subtract the solar access percentage from the shading study from 100. For example, if the solar access percentage is 95% in the shading study, the shading percentage in EEPM is 5%.
- Use the solar access percentage not the TOF or TSRF.
- Shading study output must be direct output from the shading study software– photos of screen shots or excel files will not be accepted.
- An updated shading study may have to be submitted as part of the installation submittal.

Crash Landings

- Not communicating in a timely manner with the program manager
- Not following the program manual
- Falsifying documentation
- Not keeping W-9, EEPM vendor information, and banking information updated
- Beginning construction before reserving funds
- Providing false expectations or false information to customers
- Not addressing customer complaints







Incentives- Not Rebates



- Incentives move the customer to install the measure
- Rebates are done after the product is purchased with proof of purchase





SOLAR PROGRAM – BATTERY / ENERGY STORAGE

Battery Backup Information



- Battery backup required for residential solar incentive
- Must be grid-tied
- Lead-acid type not allowed
- No minimum size
- Must be able to be charged from solar panels
- Must receive permit to operate from Oncor Distributed Generation
- Must not be placed in interior living area

Garage is ok

Attic is not ok

Battery Dispatch Plan Information



Oncor's Energy Efficiency group continues to evolve with the addition of different measures to the portfolio. In the fourth quarter of 2021, Oncor launched a pilot utilizing battery storage as a qualifier to participate in the Solar Photovoltaic Standard Offer Program (Solar PV SOP) incentive. The pilot was successful so Oncor will be continuing on with Energy Storage as a requirement for the Solar PV SOP incentives.

Oncor's primary reason for adding Energy Storage to the portfolio is to understand how the technology can potentially aid in peak reduction and provide grid reliability. Grid reliability is one of Oncor's Energy Efficiency goal and Oncor is continuing to find the best solution to battle grid exertion. In order to achieve this with Solar and battery storage, Oncor needs help from the customers.

To help reach our objective of reducing the load on the grid and allow Oncor to understand the potential for the technology, Oncor is recommending setting a daily default dispatch time on the installed battery systems of an hour interval between 5-9pm. This default time is a **recommendation and not a requirement** to qualify for the incentives. This will not impact the receipt of incentives if the customer chooses not to participate in this option. Participating installers have been requested to communicate this recommendation to the customer. On acceptance of this option, the participating installer chosen by the customer will program the battery system to dispatch energy at the hours between 5-9 pm daily. This is an initial recommendation battery system dispatch, at any point afterwards customers are able to choose the dispatch time in accordance with their needs.

Initial Application(IA) Battery Photo Location





Battery Model Number Photo







Profile Photo of Battery Installed





Other Battery Documents



Schematics showing the pV system is charging the Battery

- This could be a screenshot or document from the battery system showing that the solar pV is charging the battery.
- This could be a blue-print/schematic drawing showing the pV system is connected to the battery and charging it

Document showing Dispatch hour of Battery

• This needs to be a letter from the customer stating that battery has been programmed to dispatch at the default of 5pm to 9pm or otherwise.

Note: Service Provider must inform customer of Oncor's energy storage dispatch plan. Service provider's must also prove that customer was informed by having the customer write an email to the SP which will be added as an attachment on EEPM stating that "the customer has been informed and acknowledges Oncor's energy storage dispatch plan and has opted to proceed or not proceed with the option."

As mentioned before, Customers will still qualify for incentives irrespective of what option the customer elects but Oncor would like to ensure the customer is aware of the plan and it is the service provider's responsibility to provide this information to the customer upon installing the battery.



То	Oncor	's Solar	P٧	Program	Manager
----	-------	----------	----	---------	---------

am the home owner at 1234 Dallas Drive, Dallas TX 77777. I have been informed by my solar installer
on Oncor's Energy Storage Dispatch Plan. I have elected to proceed with programming my battery to
dispatch at the hour intervals of 5pm to 9pm as a default setting.

Thanks

John Mark

To Oncor's Solar PV Program Manager

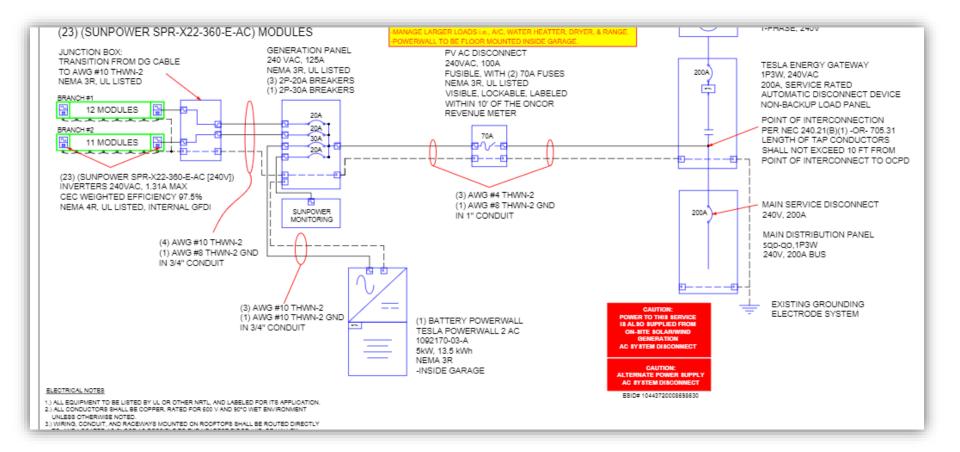
I am the home owner at 1234 Dallas Drive, Dallas TX 77777. I have been informed by my solar installer on Oncor's Energy Storage Dispatch Plan. I have elected not to proceed with this plan. I would rather use my battery as back-up only on as need basis.

Thanks

John Mark.

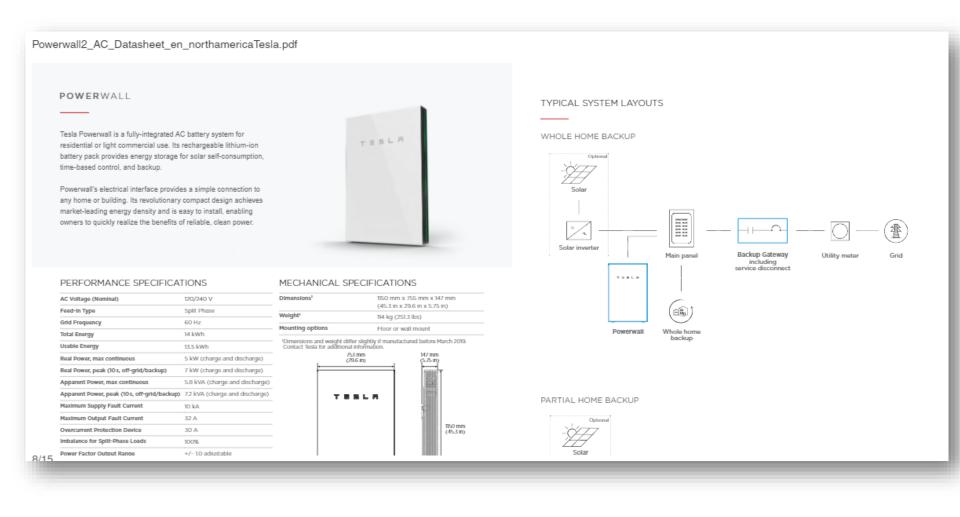
Schematic showing battery is connected to pV





Sample Spec-Sheet for Battery







Quick Links

Interconnection Information:

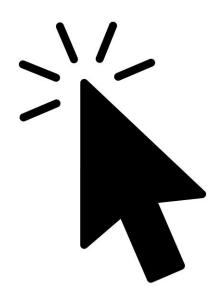
https://www.oncor.com/SitePages/RenewableEnergy.aspx

PUCT Power to Choose:

http://www.powertochoose.org/

PV Watts

http://pvwatts.nrel.gov/index.php





SOLAR PROGRAM - INSPECTIONS

Inspections 2023



Inspections Checklist

- Allow 20 calendar days once the project has been sent for post-inspection
- Make sure the Customer and Inspection Contact phone numbers are correct before submitting project for inspections.
- You must provide both Customer and Provider contact information within EEPM. Project will be rejected should you list the Provider contact info as the inspection contact for the Customer.
- Information reported within EEPM must match the photos provided rather than data within the shading analysis.

Photos

- Good, clear photos allow inspectors to process the projects faster. Inspector might perform deskreview inspection on project if photos and documents provided are clear.
- Photos should be from each site. Do not use stock photos or the same photo from other projects.
- Please only upload pictures requested. Array, panel, inverter, photo of tilt measurement, Battery Profile photo, Battery Model number. ALL uploaded photos MUST be labeled.

Verification Tool

· Google Earth is used for verifying azimuth reported for all desk review projects

Reporting Tilt & Arrays



Provider should report:

- 30 panels at azimuth 206 and one tilt measurement
- 10 panels at azimuth 116 and one tilt measurement
- If panels are installed on the South side of the home we only need one entry within EEPM including the total number of panels facing South and one tilt measurement photo. Same applies for the East and West side of the home.

Quantity	Manufacturer	Model	Tilt	Azimuth	Tracking	Panel Wattage	Module Type
8	Aptos Solar Technology LLC	DNA-120-MF26-370W	16.12	205.00	Fixed (Roof Mount)	370	Premium
10	Aptos Solar Technology LLC	DNA-120-MF26-370W	14.18	206.00	Fixed (Roof Mount)	370	Premium
10	Aptos Solar Technology LLC	DNA-120-MF26-370W	44.22	206.00	Fixed (Roof Mount)	370	Premium
6	Aptos Solar Technology LLC	DNA-120-MF26-370W	44,74	116.00	Fixed (Roof Mount)	370	Premium
4	Aptos Solar Technology LLC	DNA-120-MF26-370W	43.55	116.00	Fixed (Roof Mount)	370	Premium
2	Aptos Solar Technology LLC	DNA-120-MF26-370W	39.82	206.00	Fixed (Roof Mount)	370	Premium

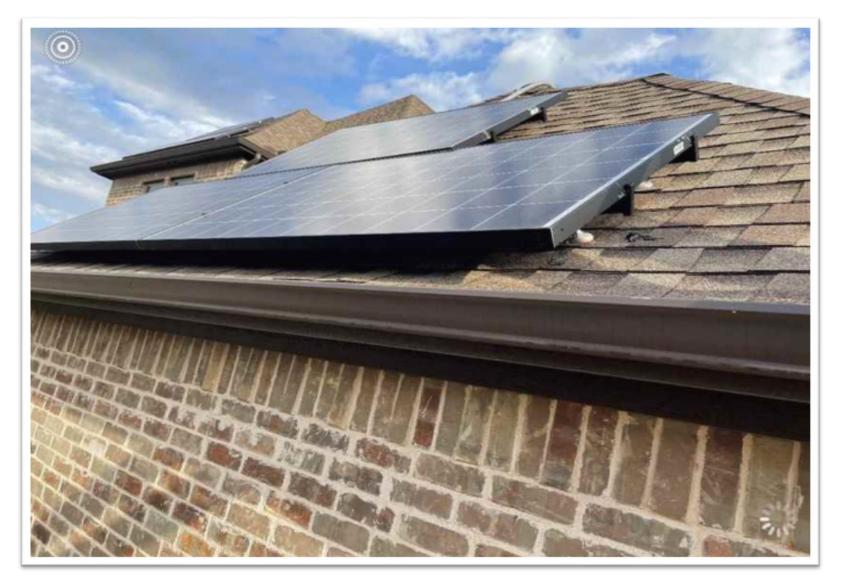
Label Array





Direction facing unknown







Direction facing unknown



Direction facing easily determined





Direction facing easily determined





Array Photo Examples





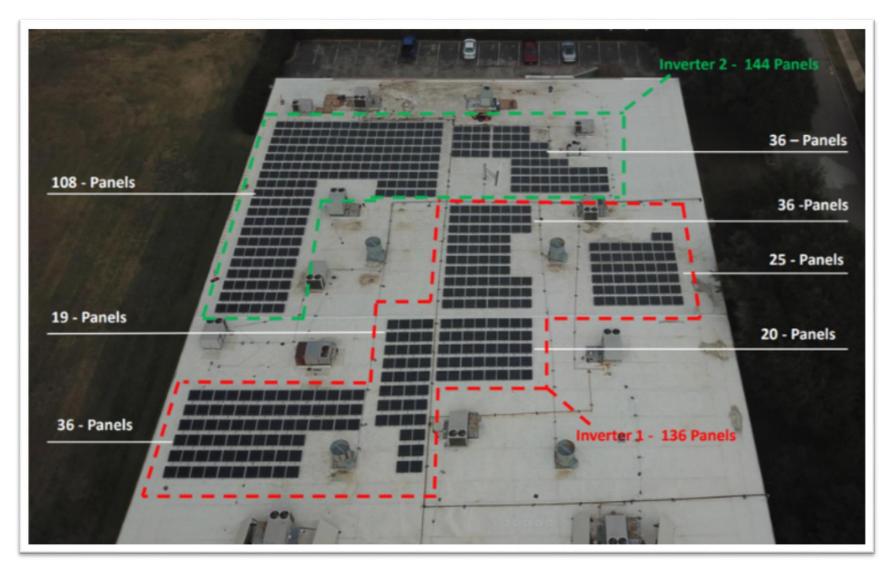
Array Photo Examples





Array Photo Examples





Tilt measurement examples (Not acceptable)





Tilt measurement examples (Not acceptable)





Tilt measurement example





Tilt measurement example

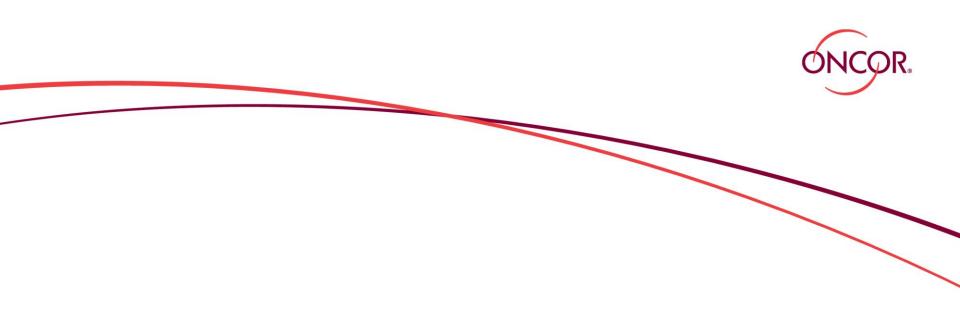




Tilt measurement example







Oncor Asset Planning Distributed Generation Resource Integration ("DG Group")

Presenters: Corwin Calloway & Matthias Wilson

DG Interconnection Process

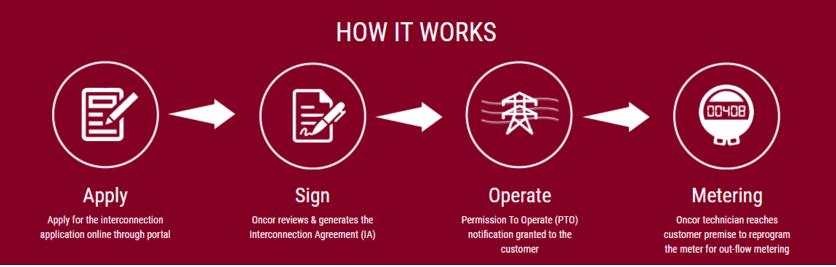


What We Do

The Oncor DG Group partners with Customers and their Installers to track and approve the interconnection of solar and other DG projects in compliance with applicable technical standards and PUCT rules that together help ensure safe and reliable operation with the Oncor distribution system.

Our Approach

Provide a simple application process with direct access and tracking.



DG Tariff Application Requirements



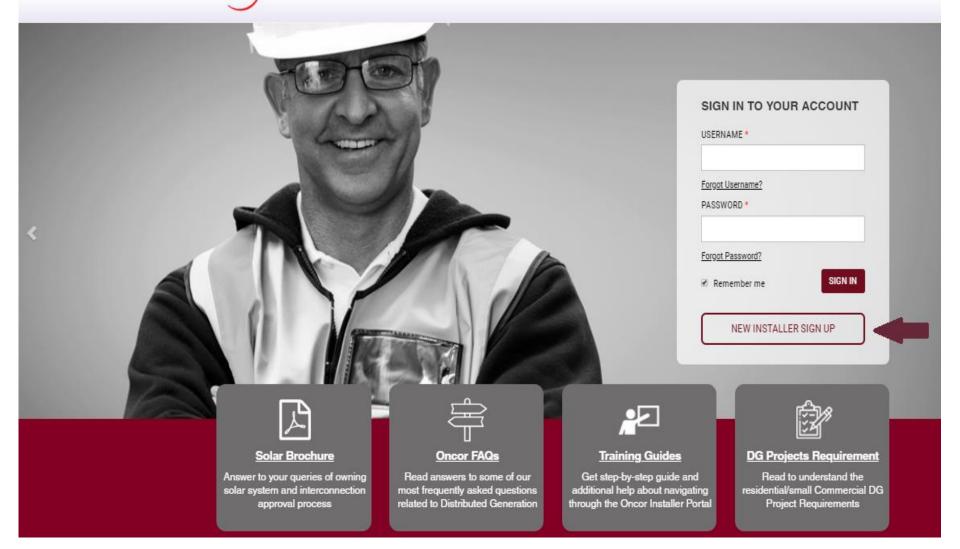
- All solar and other DG projects are required to complete the interconnection process with Oncor before operating the system
- The process starts with submitting a complete Tariff Application that provides details on the location, equipment and configuration
- Pre-certified equipment preferred, other non-certified systems will require additional details and service study
- Safety requirements include the Visible Lockable Labeled Disconnect (VLLD) and Placards



Installer Portal Login Page



ONCOR. DISTRIBUTED GENERATION INTERCONNECTION PORTAL







natellas Desistration			ſ	
nstaller Registration			l	🗙 Close 💾 Sav
Company Information				
Organization Name *	Federal Tax ID *	Email Address *	Work Phone *	
ddress *		City *	State *	
			Select	
lip Code *	Fax			
Contact Information				
irst Name *	Last Name *	Email Address *	Desired User ID *	
hone Number *	Extension	Mobile Number		
(XXX) XXXX-XXXX (XXXX)		XXXX-XXX (XXX)		
Project Participation Interest				
	ian 500 kW			
• Small System - System Capacity less th	er than 500 kW and less than 10 MW			

Project Under Review

IA eSignature

IA Approved

IA Generated

Project Submitted

Project Rejected

Installer Home Page

WELCOME ONCOR DO	G . YOU ARE LOGGED IN A	S INSTALLER MAST	ER						↓0 ≥ 0 ↓
ONCOR.	DISTRIBUTED	SENERATION I	NTERCONNECT	TION PORTAL			DASHBOARI	D PRESCREENING PRO	IECTS TRAINING GUIDES
DASHBOARD									
47641 Total projec	TS			805 APPLICATION AWA	AITING SIGNATURE		218 AGREEMENT A	WAITING SIGNATURE	
Application Sum	imary				MY Q	UEUE		ONCOR QUEUE	
40,000 -				39602	Projec	t Status	Project Count	Project Status	Project Count
30,000 -					Applic	ation Generated	362	Project Submitted	496
20,000 -					Projec	t Rejected	156	Service Study Under Review	v 146
10,000 - 49	6156	162	2	218	Agree	ment Available	1288	Customer Signed Agreeme	nt 9



Project List



WELCOME ONCOR DG. YOU ARE LOGGED IN AS INSTALLER MASTER			A <mark>0</mark> 🖂 Q 🕇
DISTRIBUTED GENERATION INTER	CONNECTION PORTAL		DASHBOARD PRESCREENING PROJECTS TRAINING GUIDES
PROJECT			*
Code V Type here to search	Q Advanced Search		System Type * Small System ~ + Add New
Code $\downarrow\uparrow$ Project Name $\downarrow\uparrow$ Workflow State	s $\downarrow\uparrow$ Status Date $\downarrow\uparrow$ Premise No	↓↑ Customer Name ↓↑ Address	↓↑ City ↓↑ State
			_
· ·			
4			•
Total 47293 10/page V < 1 2 3 4 5 6 4	/30 > 0 . 1		

2023 Solar Program Presentation ©2023 Oncor Electric Delivery Company LLC. All rights reserved.

New Project Intake



WELCOME ON	COR DG. YOU ARE LOGGED I	N AS INSTALLER MASTE	R						1 ⁰ 🛛 0
ONCOR.	DISTRIBUTED GE	NERATION INTER	CONNECTION F	PORTAL	DASHB	OARD PRE	SCREENING	PROJECTS	TRAINING GUIDE
ROJECT <	×			🗣 Comments 🛛 [History X Close	🖿 Save	Generate TA		 ✓ Submit
Code:	Premise No:	Connected Capa	city (kW): DC	Capacity (kW):	Workflow Status:	Status Da	te:		
	-0	E		i		Ē		E	
	Customer	Mandatory I	nfo	General	E	Equipment		Docume	ents
Code DRG-	* Proje	ct Name	* Installer	✓ Date	ested Energization 1/05/2021				
Customer In		Please enter the 9 digit	meter number follov	ved by word 'LG' with	out ony spaces in betweer	n. Expected For	mat: 1234567 8	9LG.	
Premise No (L	ast 7 digits of ESIID)	Customer Nar	ne	Service	e Address		Additional Nam	ie	
* Phone Numb	ber	* Email Addre	SS	* Meter	r Number (Generation)	0			
Mailing Add	ress								
* Same as service point address Yes		Address	Address		City State		Zip Code		
Meter & Loa	d Profile Status								
Meter Status		Load Profile U NO	pdated						
									Continue

Key Considerations

- One-line and Layout must reflect the exact equipment and connectivity installed.
- Document recognition is in use to increase the efficiency of the Oncor review.
- No automatic transfer switches or other devices are permitted within the meter base.
- 4. Permission to Operate is granted to installed systems only.
- 5. Meter accessibility information is provided to Oncor meter techs.
- Meter and Load Profile statuses are available in the project customer tab.
 After PTO, please allow 30 days for the meter reprogramming and a full billing cycle for the load profile update.
- Customer participation in Retail Electric Provider buy-back and credit programs is NOT required.





Oncor DG Solar Brochure





signed by all authorized parties.

DG Group Contacts



Inquiry Type	Contact Details
Interconnection and Process Inquiries	DG@Oncor.com
Portal Functionality Issues	OncorSupport@anbsystems.com
Solar Customer Support	<u>1.866.728.3674</u>

EE Solar Team Contact Information



Sr. Program Manager

Chris Cook 214-486-5562 office <u>christopher.cook@Oncor.com</u>

Solar Inspections Manager

Terry Manning

214-486-4624 office

tmanning@oncor.com

EEPM Help Desk

(866) 258-1874

support@oncoreepm.com

Insurance

eepminsurance@oncor.com



THANK YOU!

2023 SOLAR PROGRAM KICK-OFF PRESENTATION

