2024 SOLAR KICKOFF PRESENTATION – AMENDED 2/2/2024

Chris Cook, Terry Manning & DG Team | 01-17-2024

Welcome & Introduction

What's New?

Program Budget, Dates & Overview

Program Qualifications & Requirements

Project Process

Battery / Energy Storage

Inspections

DG Interconnection Process

agenda.

2024 SOLAR KICKOFF PRESENTATION

2023 Program Overview

2024 SOLAR KICKOFF PRESENTATION

average kW

11

incentives paid

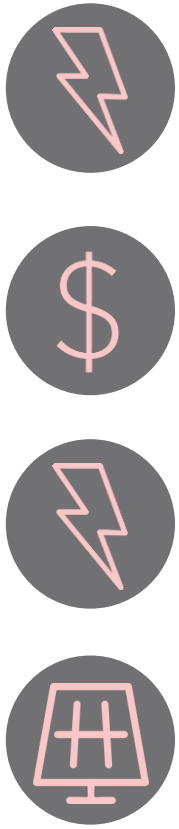
$3,467,414

average kWh

35,202

total projects

278



prior year review

What’s New

2024 SOLAR KICKOFF PRESENTATION

What's New?

What is the same from 2023:

- Battery storage requirement remains in effect for residential solar
- Residential solar incentive maximum is now $9000
- Funding levels similar for residential solar: approximately $1.35 million

What's new in 2024:

- The commercial solar program is no longer a separate program– it is now an option in the Commercial Standard Offer Program.
- Commercial solar funding decreased to $500,000.
- Commercial solar project eligibility criteria have changed.
- No exceptions to policy will be granted for systems larger than the established limits– these projects will be ineligible for incentive.
- All projects must be submitted as completed construction and inspection-ready by 5 PM central standard time on November 30, 2024. Projects not complying with this will be ineligible for incentive. No extensions beyond this deadline will be given.
- All projects must be approved for incentive or "SR Approved" status in EEPM by 5 PM central standard time on December 7, 2024. Projects not complying with this will be ineligible for incentive. No extensions beyond this deadline will be given.

2024 Commercial Solar Option – Eligibility Criteria

Commercial solar projects submitted for incentive must qualify under one or more of the following criteria:

- Customer is a government entity (educational, municipal, county, special district, state, reservation, or federal).
- Customer is registered as a not-for-profit entity excepting section 527 political organizations.
- Project qualifies for an incentive under both solar and another energy efficiency measure incentivized by Oncor and files for both in the same project and the same metered load.
- Other commercial solar projects may be evaluated on a case-by-case basis and allowed at the sole discretion of Oncor.

Program Budget, Dates & Overview

2024 SOLAR KICKOFF PRESENTATION

2024 Budget and Incentives

2024 Budget and Incentives (cont'd)

Incentives

Commercial and Residential

- The incentives will vary from project to project based on on-site data, and all projects will use PV Watts. A project incentive calculator is available to assist with estimating projects. The final incentive amount is set when the 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: currently no cap
- This means that no one Service Provider, including any Affiliate, can receive more than 15% of the budget for residential solar.
- The cap can be raised as needed and will increase if additional funds are added to the budget.

2024 Minimum and Maximum

Residential (per ESI ID)

- Minimum 3 kW DC
  - Projects cannot be submitted under the minimum
- Maximum 15 kW DC
  - Projects found over 15 kW DC will be canceled 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 canceled and not eligible for an incentive.
- Maximum incentive amount is $120,000.

Commercial and Residential

- A site with a solar array installed is not eligible for any future incentive, whether or not it participated in the program.
- **Note:** System size in this program considers only the solar PV system size and not a combination of solar PV and energy storage.
- No exceptions to policy will be approved to construct systems outside of these limits.

Program Deadlines

- Both the residential and commercial solar options are now open for both applications and project submittals.
- All projects must be submitted as construction-complete and be inspection-ready by November 30, 2024, to be eligible for incentive.
- All projects must be approved for an incentive (SR Approved) by December 7, 2024, to be eligible for the incentive.

Program Guidelines

New Construction

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

New Service Providers

- Complete one project, residential and commercial, successfully. Additional projects will be approved when the Inspection is passed.

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– a maximum of a 45-day extension

Program Qualifications & Requirements

2024 SOLAR KICKOFF PRESENTATION

Service Provider Qualifications

Service Provider

- A service provider is a Solar PV installer or a Retail Electric Provider.
- The entity that signs up in EEPM can only receive the incentive

Requirements

- Electrical Contractors License or have a licensed master electrician as an employee
  - You may alternatively subcontract out licensee work to licensed electrical contractors
- Identify if affiliated with other service providers
- Update Profile and sign/submit a 2024 Program Application for each option
- Demonstrates the ability to meet program requirements and deadlines successfully
- Currently eligible to participate in Oncor Energy Efficiency programs

Subcontractors

- Subcontractors have to be listed in EEPM.
- Providers that do not keep the 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 a sub for them; if not listed, it could cause you to be locked out.
  - Providers are responsible for verifying with the PM that subcontractors are eligible to work in Oncor's programs.
  - An approved service provider can only serve as a sub for one other service provider for projects submitted to the program.
- Failure to identify subcontractors – will be locked out until the Profile is updated
  - What are subs? – any other company doing work for you on projects in EEPM
- The inspection team will spot-check project sites to verify the Companies installing.
- Service Providers are responsible for all work at the customer's site, including communicating with the customer and managing any issues caused by subs.

Insurance

TYPE	MINIMUM COVERAGE LIMITS
Bodily Injury and Property Damage	
Each Occurrence	$1,000,000
General Aggregate	$1,000,000
Product Comp/Op Aggregate	$1,000,000
Automobile	$500,000
Workers Compensation	
Each Accident	$500,000
Disease Policy	$500,000
Disease Employee Limit	$500,000

Quick Tip: See "2024 Insurance Guidelines" for specific requirements.

Insurance Acord **should be completed and emailed** to eepminsurance@oncor.com by the **insurance agent**. Insurance certificates cannot be accepted directly from the Service Provider.

Expired insurance will result in lock-out. All service provider companies must keep insurance current and active.

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

ELECTRONIC SIGNATURE

Cybersecurity

- Ensure that all employees asking for information are listed in the employee's 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 wet-signed 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 that it can take several weeks to update direct deposit information.
- 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 on a stringent basis by PM:

- W-9 information is current and up to date
- Submittals in FA Open status reserve funds in a timely manner or will be canceled
- 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

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

The Retail Electric Provider (REP) Role:

- http://www.powertochoose.org/

Affiliate Rules Review

- Any Service Provider that is affiliated with another Service Provider must be listed in the 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 appear to make the Service Providers connected
- Affiliate Service Providers fall under the same caps for project open and budget.

Project Process

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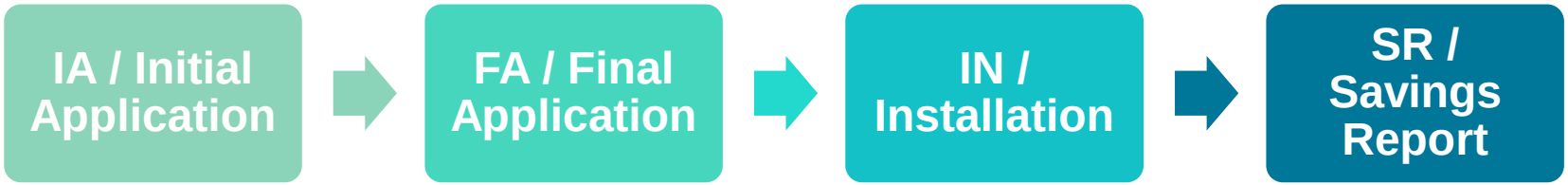
Project Phases



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 screenshots or Excel files will not be accepted.
- An updated shading study may have to be submitted as part of the installation submittal.

Common Reasons for Project Submittals Being Returned

- Tilt angle and azimuth angles do not match on the 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 the shading study or EEPM measures tab data
- Dispatch letter from a customer showing battery discharge hours is not submitted
- Proof of signed interconnection agreement upload shows a screenshot of DG Portal but does not show proof of signed interconnection agreement. Safe harbor: 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, and license name.
- Employee data does not list name, title, and phone number of 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: the application shows information that is years out of date. Safe harbor: Provide one sentence stating, “2023 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 Reminders

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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
- Providing false expectations or false information to customers
- Not addressing customer complaints
- Beginning construction on a solar project before reserving funds
- Beginning construction on a solar project when the project is still waitlisted
- Submitting a project for incentive where solar is already existing
- Constructing a system outside of the established eligibility criteria

Incentives– Not Rebates

- Incentives move the customer to install the measure.
- Rebates are done after the product is purchased with proof of purchase.
- Oncor does not give rebates– please contact your installer or manufacturer for these.
- Oncor does pay incentives.

Battery / Energy Storage

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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 a permit to operate from Oncor Distributed Generation
- Must not be placed in the interior living area
  - Garage is ok
  - Attic is not ok

Battery Dispatch Plan Information

Oncor's Energy Efficiency group continues to evolve by adding a variety of 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.

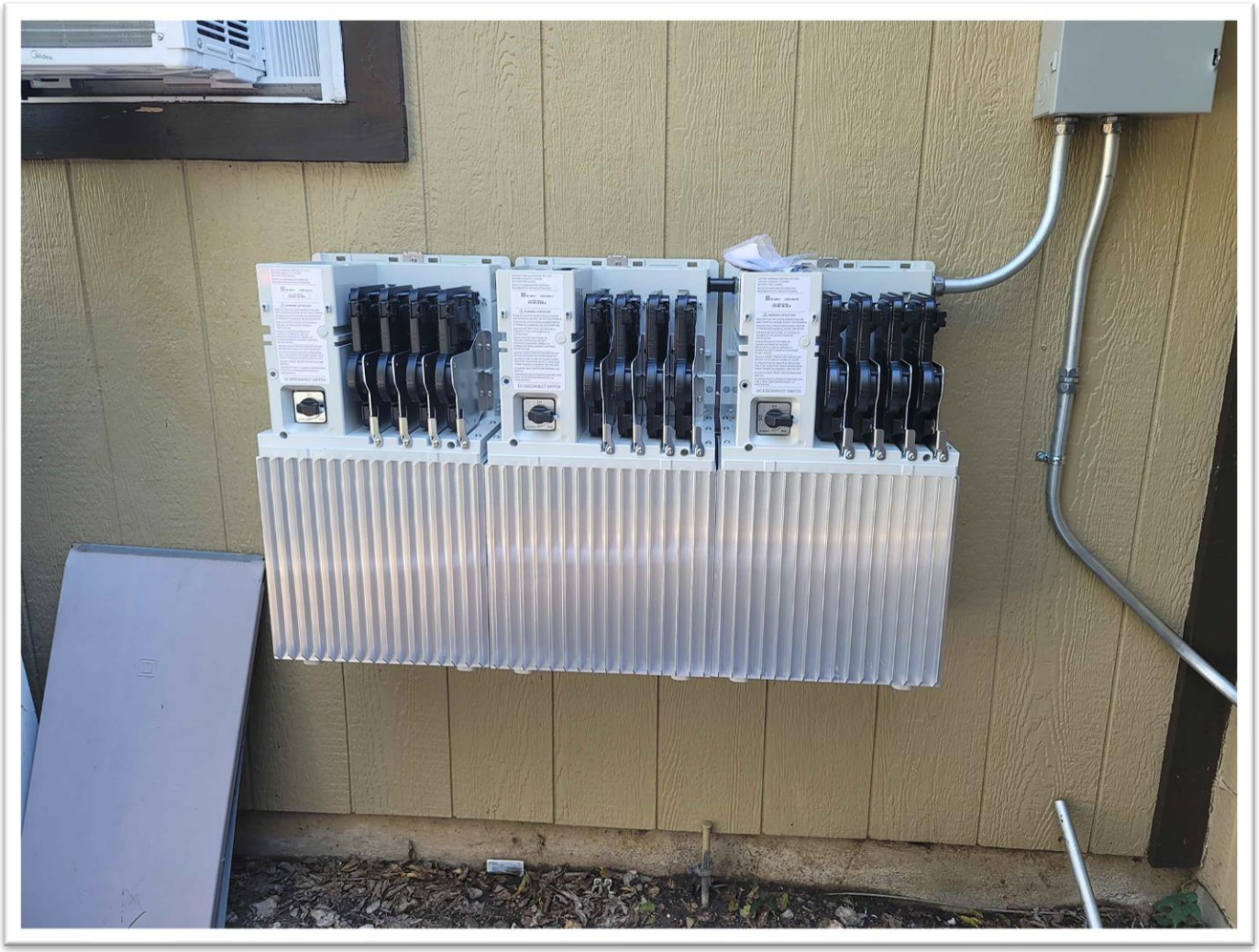
Oncor's primary reason for adding Energy Storage to the portfolio is to understand how the technology can potentially aid in peak reduction and provide grid reliability. Grid reliability is one of Oncor's Energy Efficiency goals, and Oncor is continuing to find the best solution to battle grid exertion. 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 at an hour interval between 5 and 9 pm. 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 the battery has been programmed to dispatch at the default of 5 pm to 9 pm or otherwise.

Note: The service Provider must inform the 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.

Sample Email/Letter Document for Battery Dispatch

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 to proceed with programming my battery to dispatch at the hour intervals of 5pm to 9pm as a default setting.

Thanks

John Mark

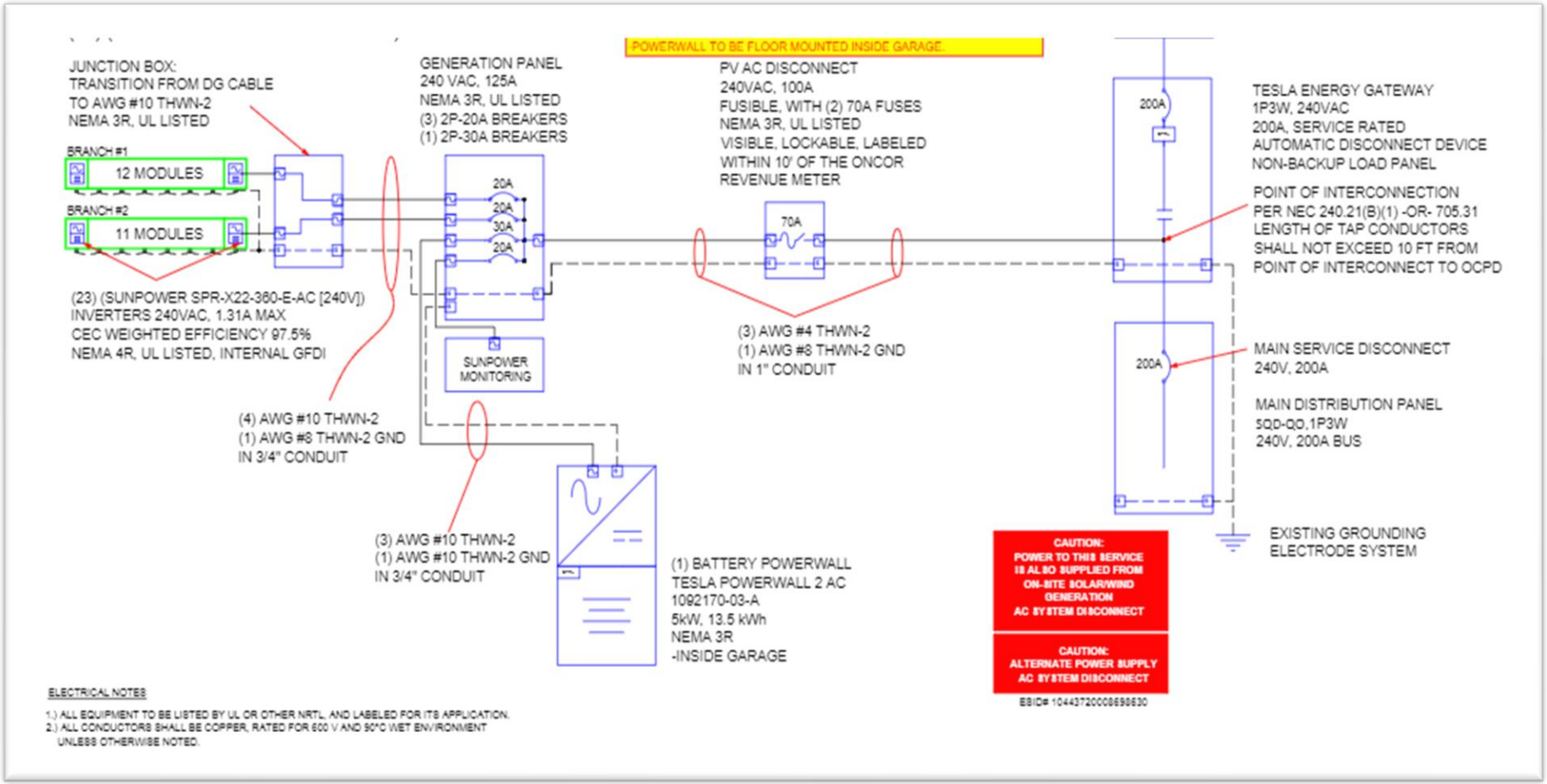
To Oncor's Solar PV Program Manager

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

Powerwall2_AC_Datasheet_en_northamericaTesla.pdf

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.

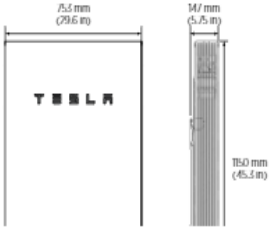
PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-in Type	Split Phase
Grid Frequency	60 Hz
Total Energy	14 kWh
Usable Energy	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10 s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/- 1.0 adjustable

MECHANICAL SPECIFICATIONS

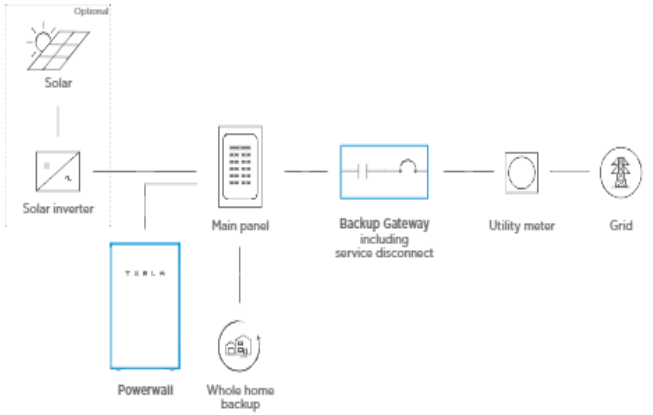
Dimensions[1]	1150 mm x 755 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight[1]	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

[1]Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

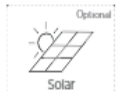


TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



8/15

Inspections

2024 SOLAR KICKOFF PRESENTATION

Inspections 2023

Inspections Checklist

- ✓ Make sure the Customer and Inspection Contact phone numbers are correct before submitting a project for inspections.
- ✓ You must provide both the customer's and provider's contact information within EEPM. The 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. The inspector might perform a desk review inspection on the project if the photos and documents provided are clear.
- ✓ **Photos should be from each site. Do not use stock photos or the same photo for multiple projects.**
- ✓ Please only upload the 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 to verify azimuth reported for all desk review projects.

Reporting Tilt & Arrays

Provider should report:

- 30 panels at azimuth 206 and one tilt measurement (if shading % and is the same)
- 10 panels at azimuth 116 and one tilt measurement (if shading % is the same)
- 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

Reporting Azimuth

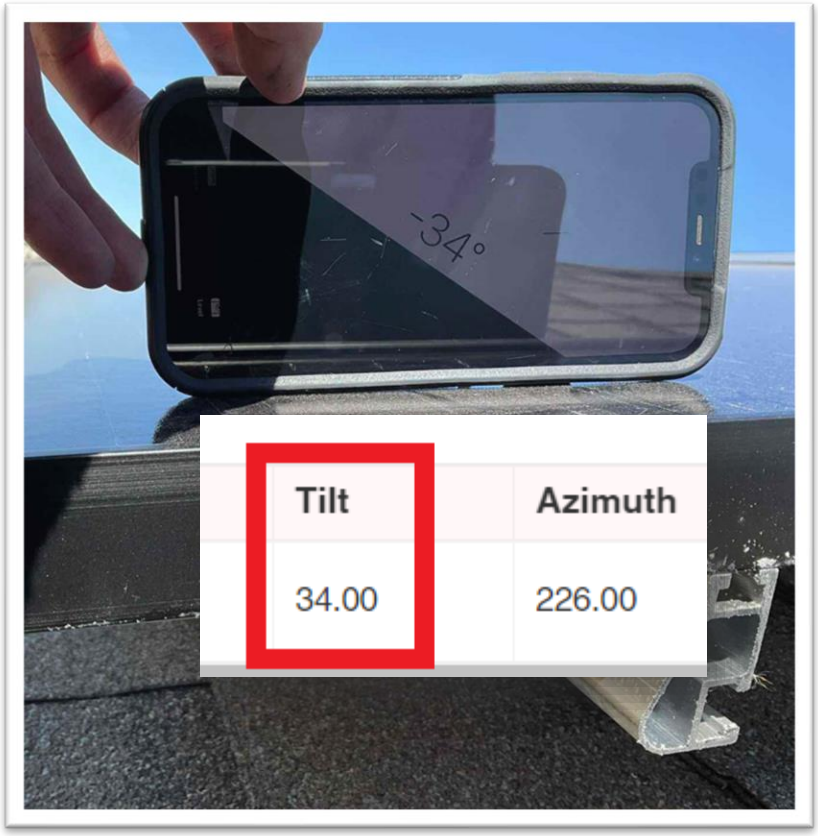
In most cases, the azimuth should be 90 degrees from one side of the home to the other. In this example, we will not accept 115, 116, and 203. The azimuth should be 113 and 203, 115 and 205, or 116 and 206.

Report the azimuth in whole numbers.

Model	Tilt	Azimuth	Tracking
Q.PEAK DUO BLK ML-G10+ 405	17.85	116.00	Fixed (Roof Mount)
Q.PEAK DUO BLK ML-G10+ 405	33.6	203	Fixed (Roof Mount)
Q.PEAK DUO BLK ML-G10+ 405	33.90	115.00	Fixed (Roof Mount)

Reporting Tilt

Please make sure the tilt measurement reported within EEPM matches the photo provided. Please do not use the shade report as a reference should it differ from the photo.



Direction facing unknown

Direction facing unknown

Direction facing is easily determined

Array Photos – take one from a distance

Array Photos – take one from a distance

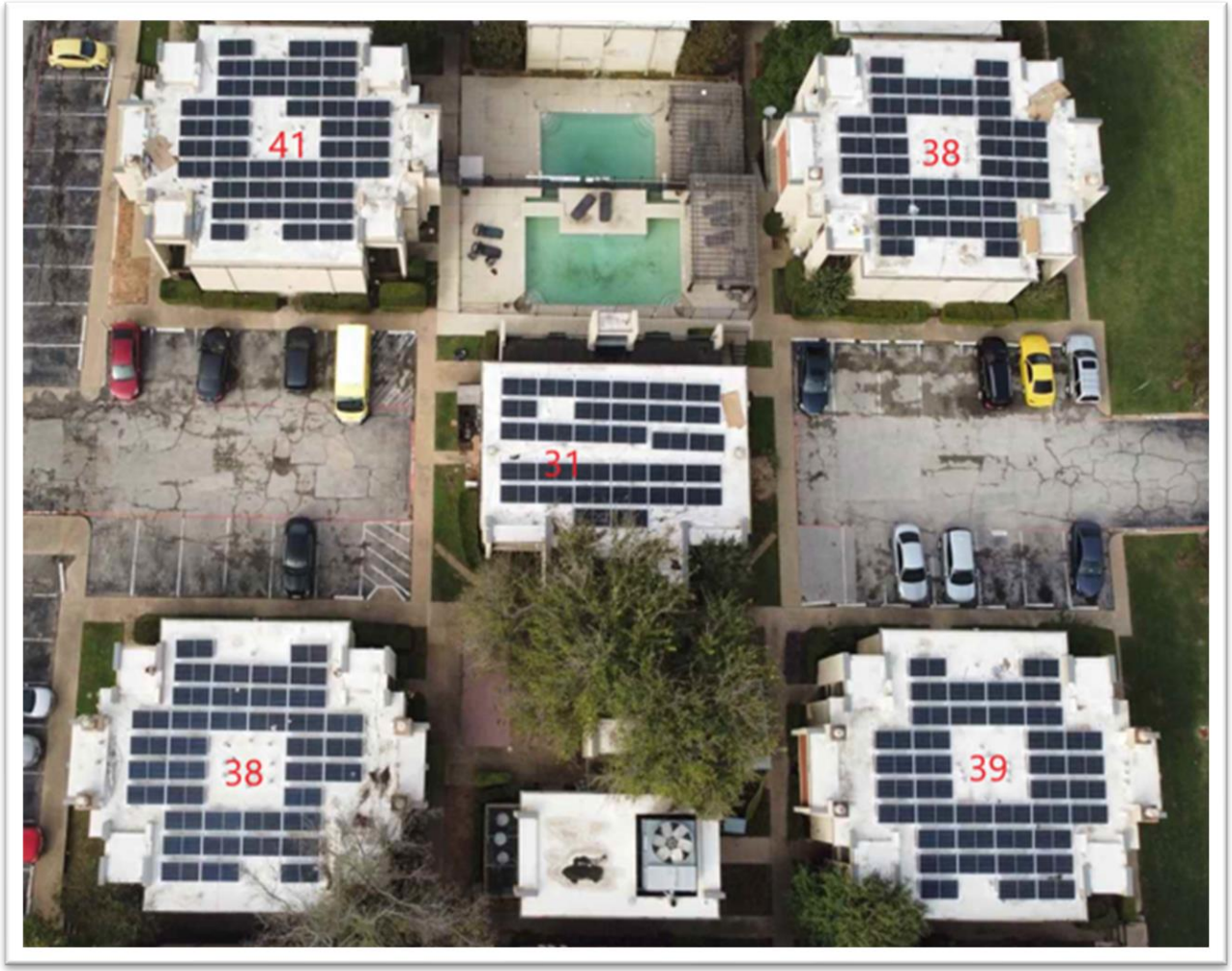
Array Photos – take one from a distance

Facing which direction?

Panels on the right side of the home if facing the house.

Array Photo Examples

Array Photo Examples



Tilt measurement examples (Not acceptable)

Tilt measurement examples (Not acceptable)

This type of angle finder is **NOT** acceptable.

Please **ONLY** use a digital device.

Tilt measurement examples (Acceptable)

Tilt measurement examples (Acceptable)

If the measurement indicates 38.96, report 38.96, not 39.

Tilt measurement examples (Acceptable)

Distributed Generation (DG) Interconnection Process

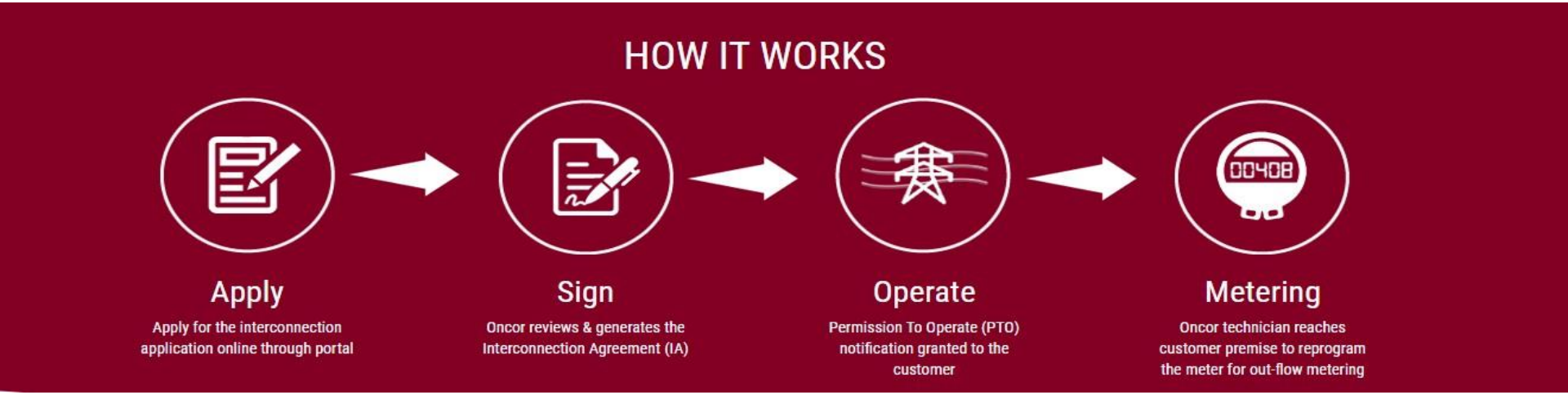
2024 SOLAR KICKOFF PRESENTATION

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.

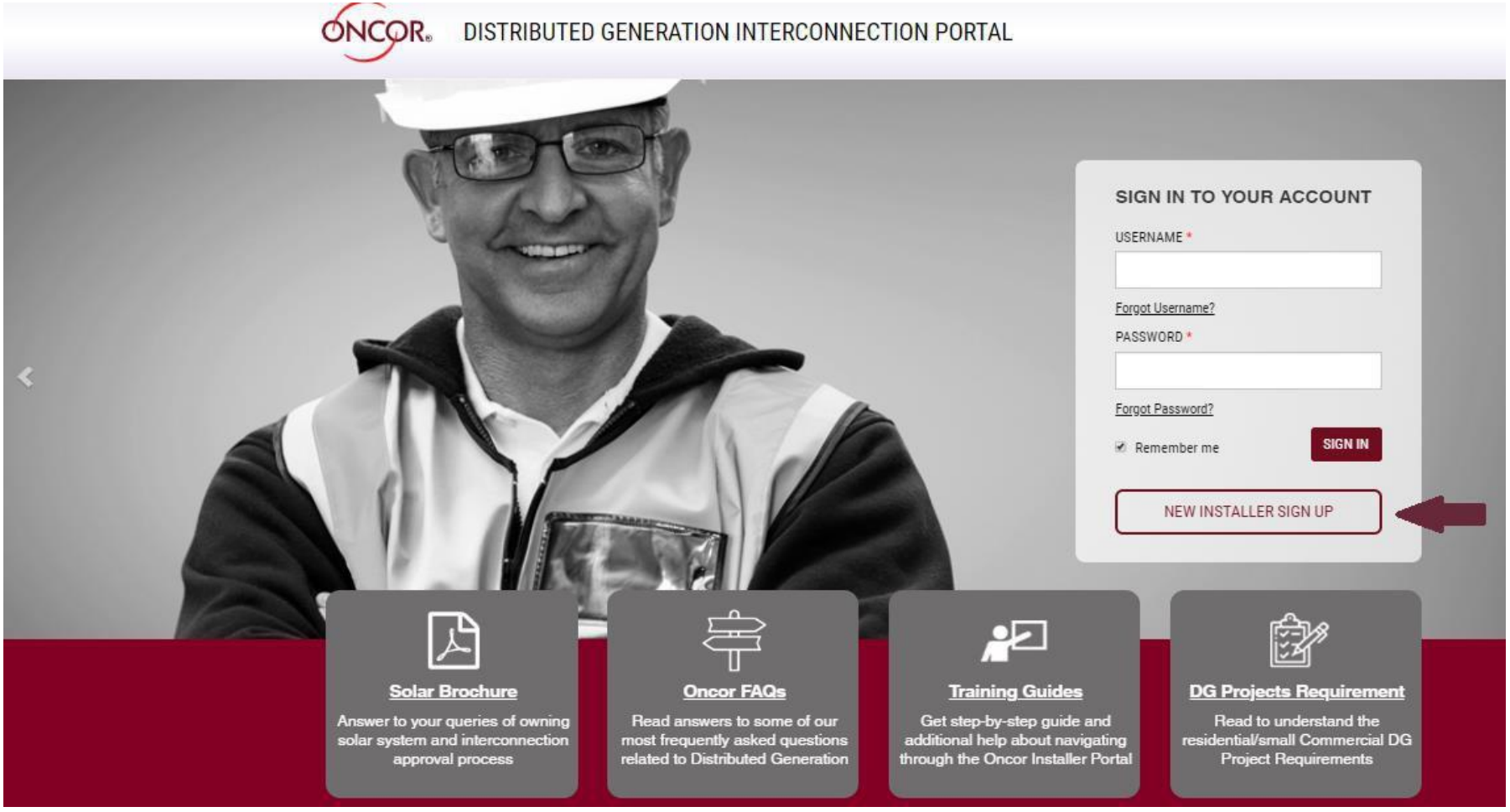
Our Approach

Provide a simple application process with direct access and tracking.

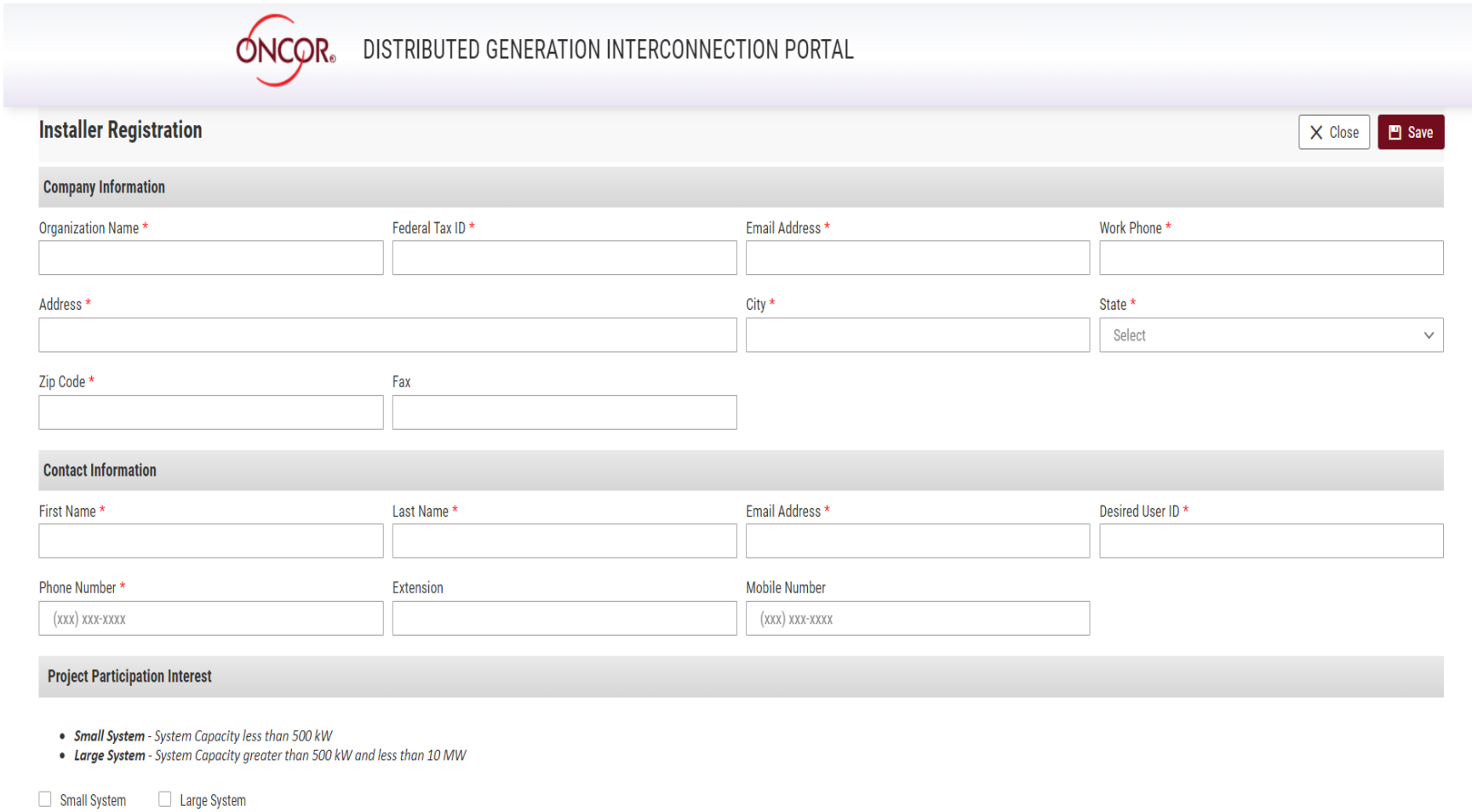


- All solar and other DG projects are required to complete the interconnection process with Oncor **before operating the system.**
- The process starts with submitting a complete **Tariff Application** that provides details on the location, equipment, and configuration.
- **Pre-certified equipment preferred**;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

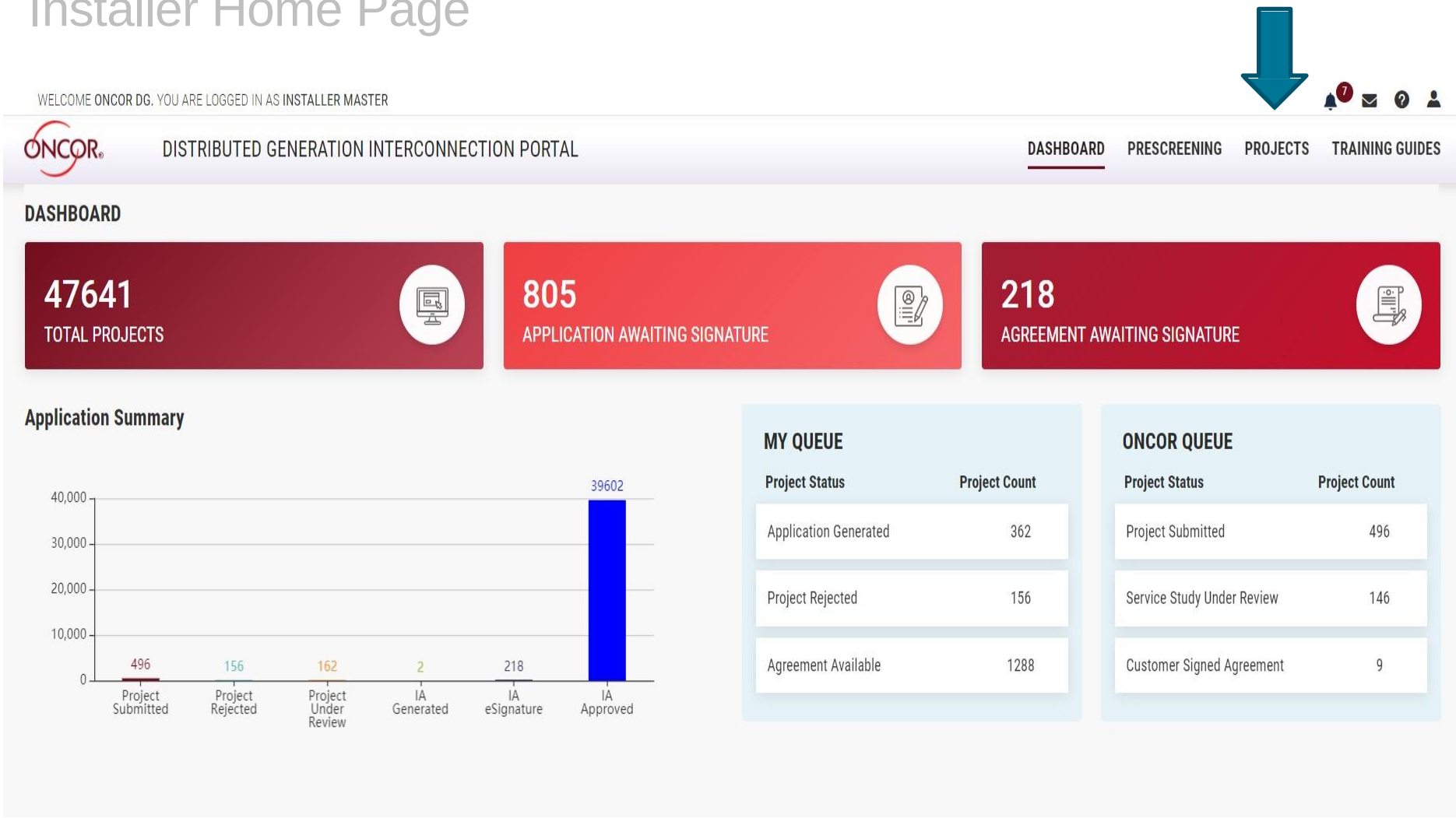
Installer Portal Login Page



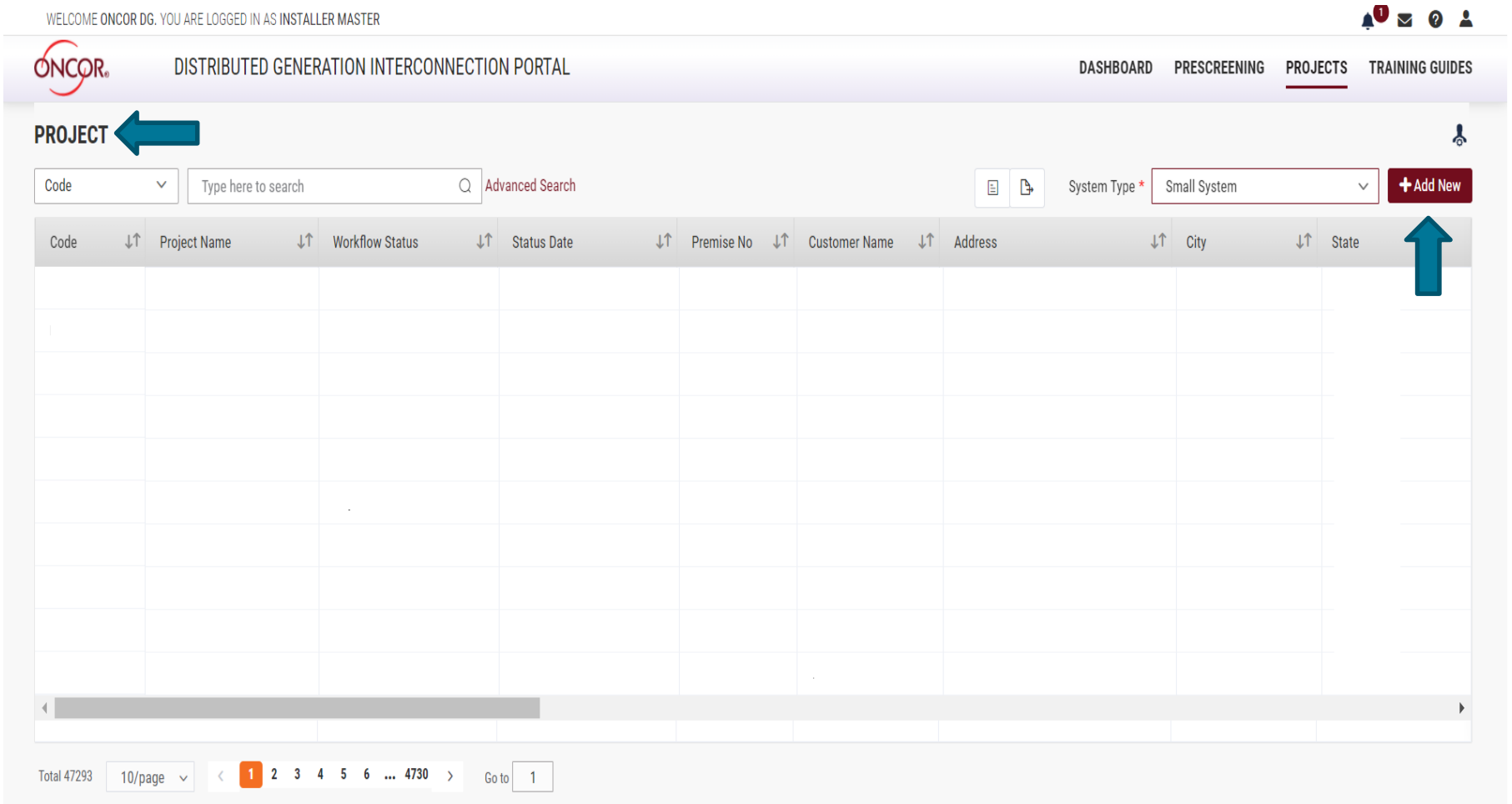
Installer Sign-up



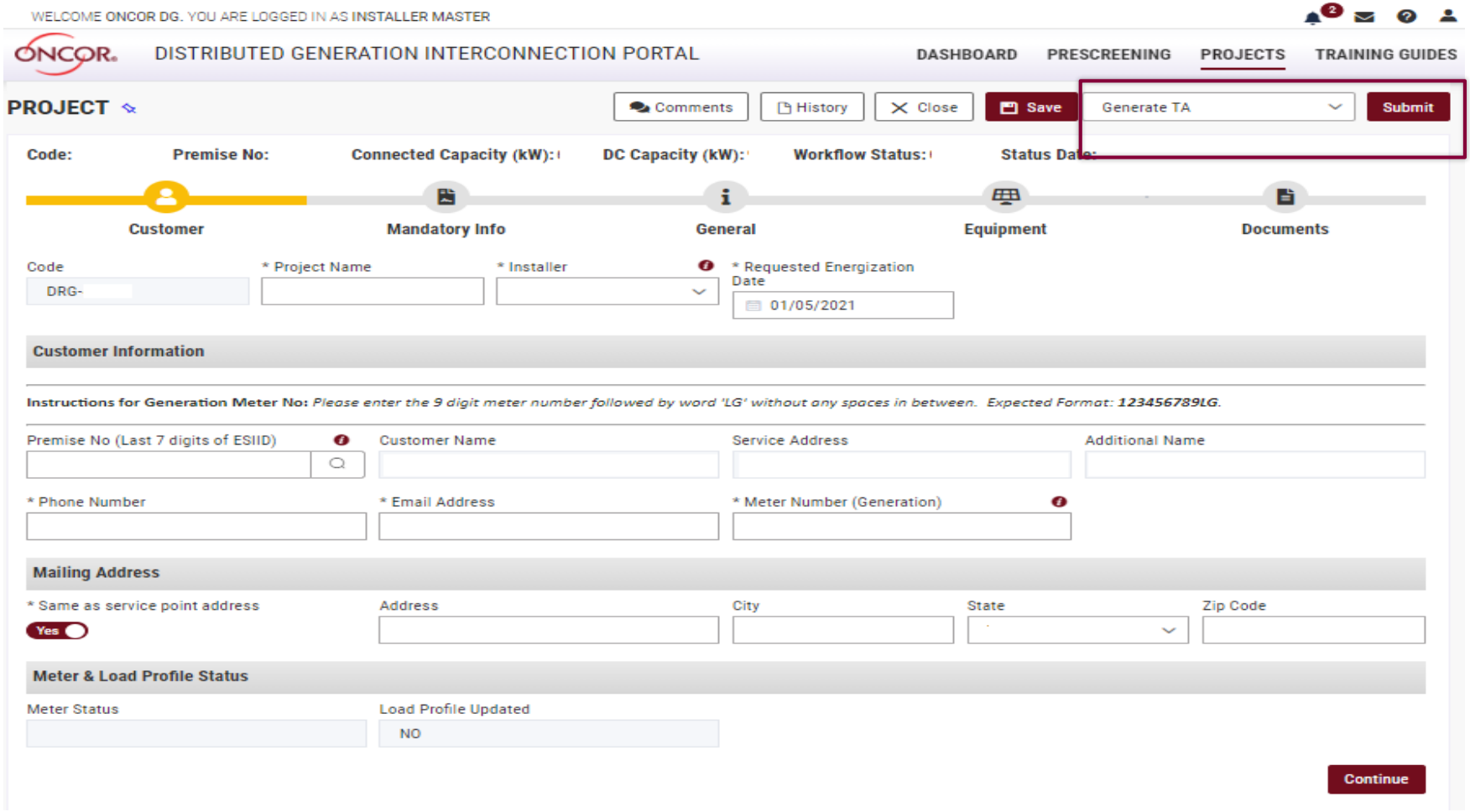
Installer Home Page



Project List



New Project Intake



Key Considerations

1. The one-line and layout must reflect the exact equipment and connectivity installed.

2. Document recognition is used to increase the efficiency of the Oncor review.

3. No automatic transfer switches or other devices are permitted within the meter base. Permission to Operate is granted to installed systems only.

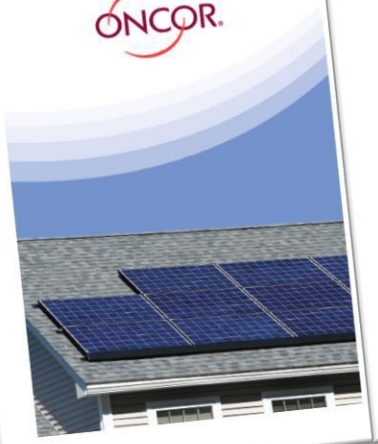
4. Meter accessibility information is provided to Oncor meter techs.

5. 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.

6. Customer participation in Retail Electric Provider buy-back and credit programs is NOT required.

DG Solar Brochure

Thinking of solar power for your home?



Important Information

Who is Oncor?
Oncor is an electric transmission and distribution service provider that serves more than 10 million Texans. Oncor works with customers and their designated installers (contractors) to ensure a safe and reliable interconnection.

What about savings?
Homeowners can benefit from the rooftop solar system producing 'homegrown' electricity. These systems offset a portion of your electric usage.

What is Distributed Generation (DG)?
DG is the interconnection of an electrical generating facility (like solar or wind power) located at a customer's point of delivery (their house). An example of DG is when a homeowner installs a solar system.

What happens when the sun isn't shining?
When the sun isn't shining (nighttime, clouds, shade), a house may require power from the grid.

Do I need to be connected to the grid?
Most homes will still need power from the electric grid, and there will continue to be a delivery charge on customers' monthly bills to pay for the connection to the grid.

1 Thinking of installing a solar system?

A homeowner must first decide if their home is right for solar. Here are some questions to ask when considering a solar system:

ASK YOUR INSTALLER...

- *Is my roof ready for rooftop solar?*
- *Do I have the right amount of space for installation?*
- *Does my house have the right exposure to maximize solar gain?*

ASK YOUR RETAIL ELECTRIC PROVIDER...

- *Will I be charged to change my current electric plan?*
- *How do "buy back credits" work?*
- *What savings can I expect with solar?*

2 Installer

Deciding on an installer (contractor) is important and may take some time. Once the installer is chosen, they will communicate with Oncor, file the application and begin the interconnection process. The time frame for installation can take a few days to a few months

3 Oncor

Within approximately 30 days, Oncor reviews the application for a certified residential system, performs a study to ensure a safe and reliable interconnection to the grid, and generates an Interconnection Agreement, to be signed by all authorized parties.

4 Retail Electric Provider (REP)

Customers can choose which REP they want to use and can compare plans by going to **www.powertochoose.org.** It is the customer's responsibility to communicate with their REP about buy-back plans or energy credits for excess energy that is produced. Meter information including any excess generation is available to REPs with the first full billing cycle (30-60 days) following permission to operate.

DG Contact Info

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

Contacts

2024 SOLAR KICKOFF PRESENTATION

Contact Information

Solar Program Manager

Christopher Cook, P.E.

682-300-1698

Christopher.cook@Oncor.com

EEPM Help Desk

(866) 258-1874

support@oncoreepm.com

Solar Inspection Manager

Terry Manning

(214) 486-4624 office

tmanning@oncor.com

Insurance

eepminsurance@oncor.com

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thank you.