NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Inverter Group

GADS Solar Training - Module 4

May 2024

RELIABILITY | RESILIENCE | SECURITY




Inverter Group

- Concepts
- Add Inverter Group
- Update
- Validations
- Export, and reimport
- Subgroup Import (Excel)
  - Append, Update, Full Replace

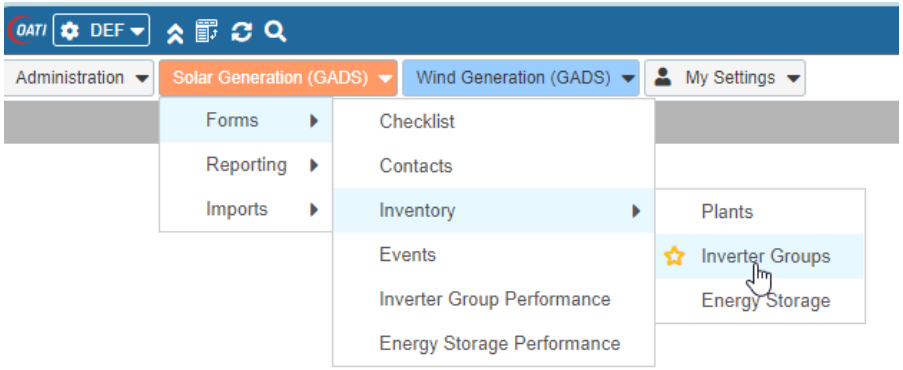
Acknowledgement

- All graphics (screen shots) in this presentation are courtesy of Open Access Technology International (OATI), Inc.

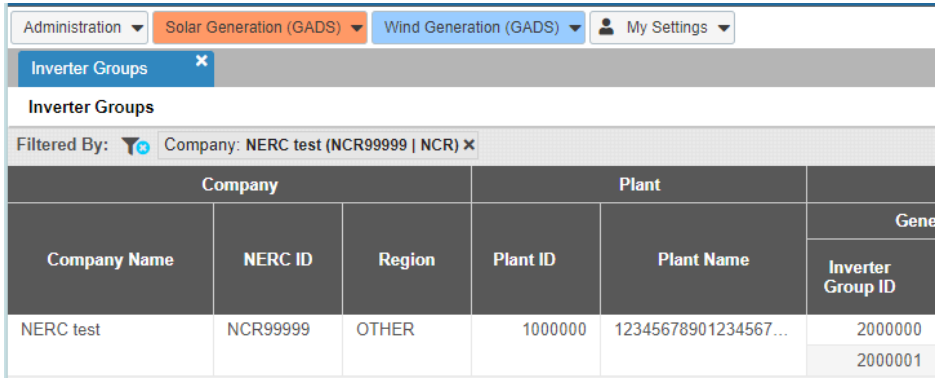
Inverter Group – User Interface

Adding a New Inverter Group

- Login to the NERC GADS OATI Wind and Solar Portal
- Click on Solar Generation (GADS)
- Hover over Forms and Inventory, then click on Inverter Groups

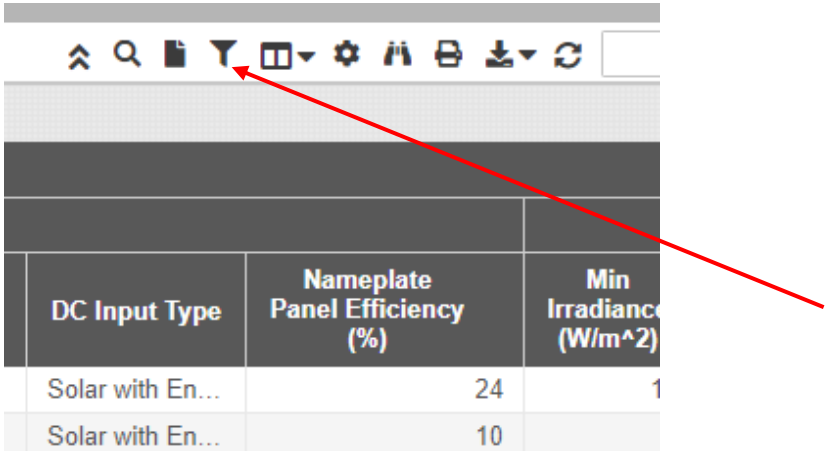


- A list of inverter groups (if any) will appear



Adding a New Inverter Group

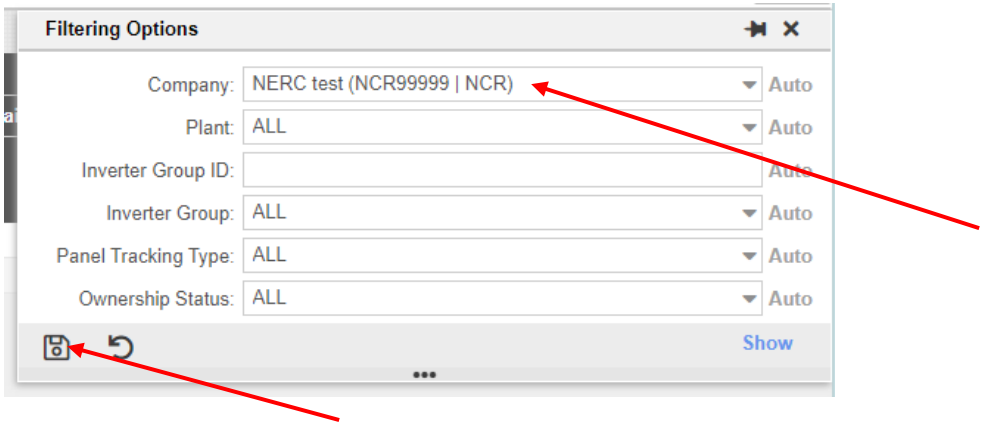
- You can edit the inverter group information by clicking on an inverter group or you can create a new inverter group
- You may need to filter (top right of screen) for a certain company before adding an inverter group



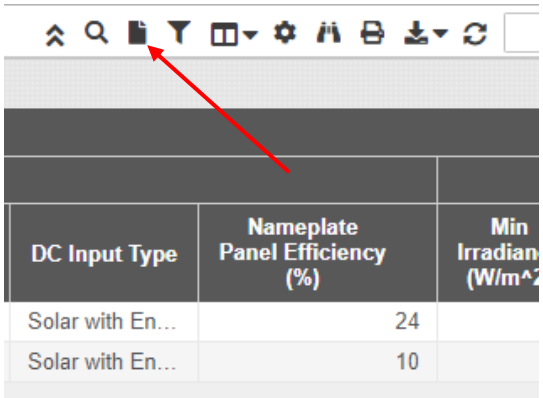
- Click the filter icon to select a company

Adding a New Inverter Group

- Select a company from the filter and click the floppy disk icon to filter

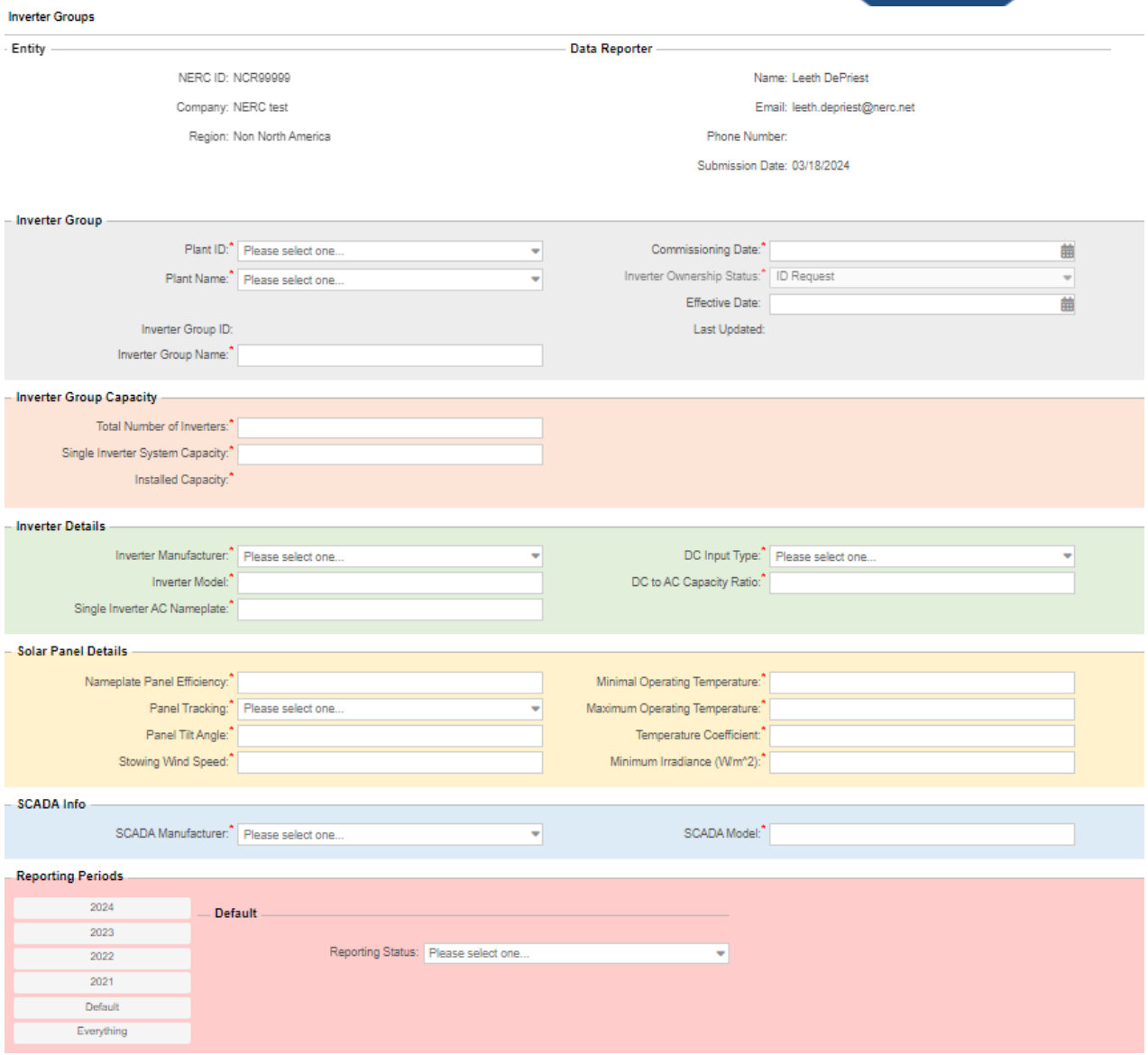


- Select the new icon to create a new inverter group



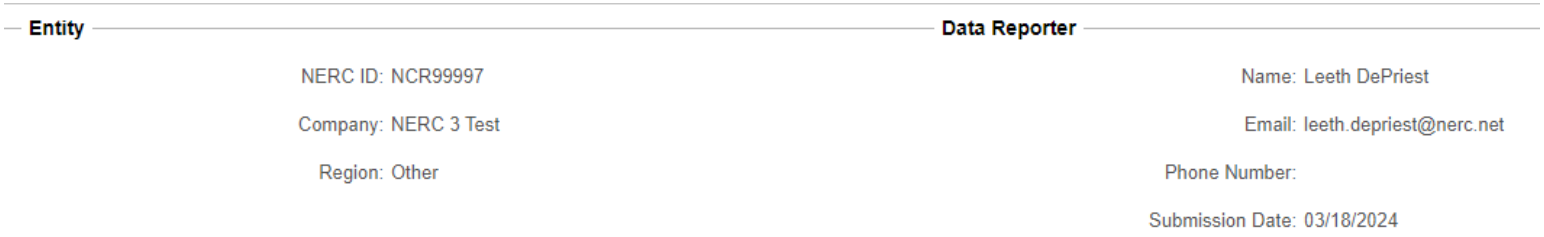
Adding a New Inverter Group

- The following screen will appear
- Let's look closer at each section



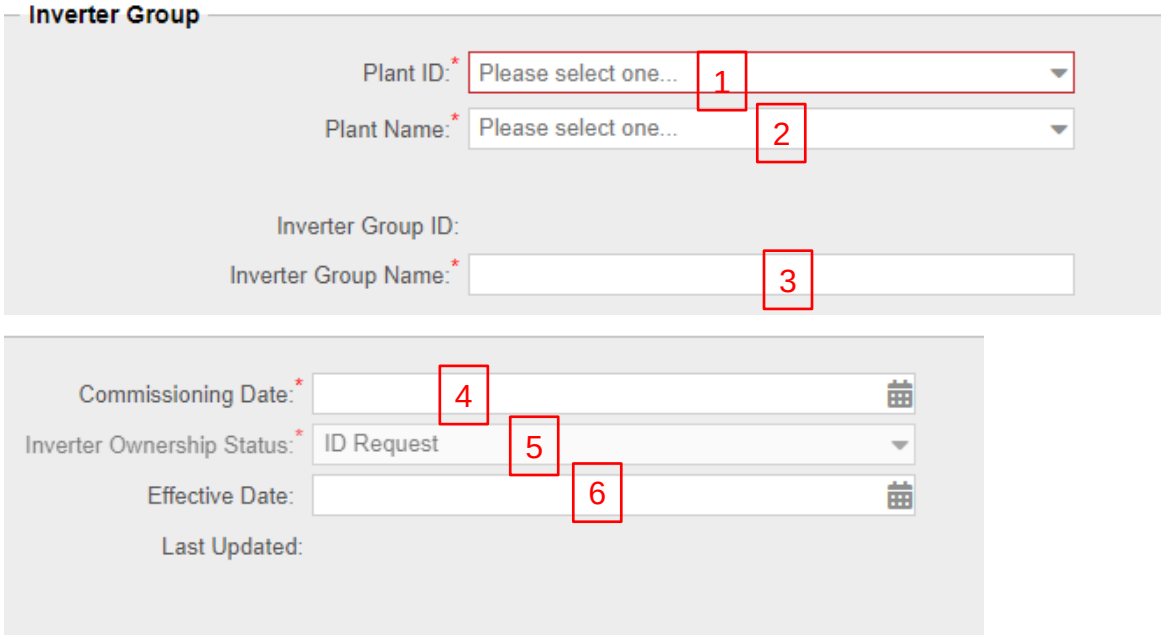
Adding a New Inverter Group

- The entity (company) data is filled in because the company has already been created



Adding a New Inverter Group

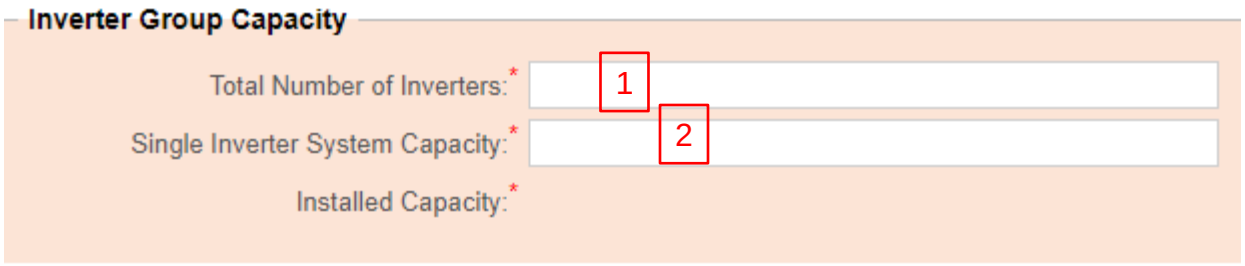
- This part of the screen is for inverter group information entry



1. Select the Plant ID from the picklist or select the plant name from the picklist
2. Enter the inverter group name
3. Enter the commissioning date
4. Select the ownership status from the picklist - Select **ID Request** for a new inverter group
5. Enter the effective date as the commissioning date of the new inverter group
   - For updates to an existing inverter group, enter the date the change became effective

Adding a New Inverter Group

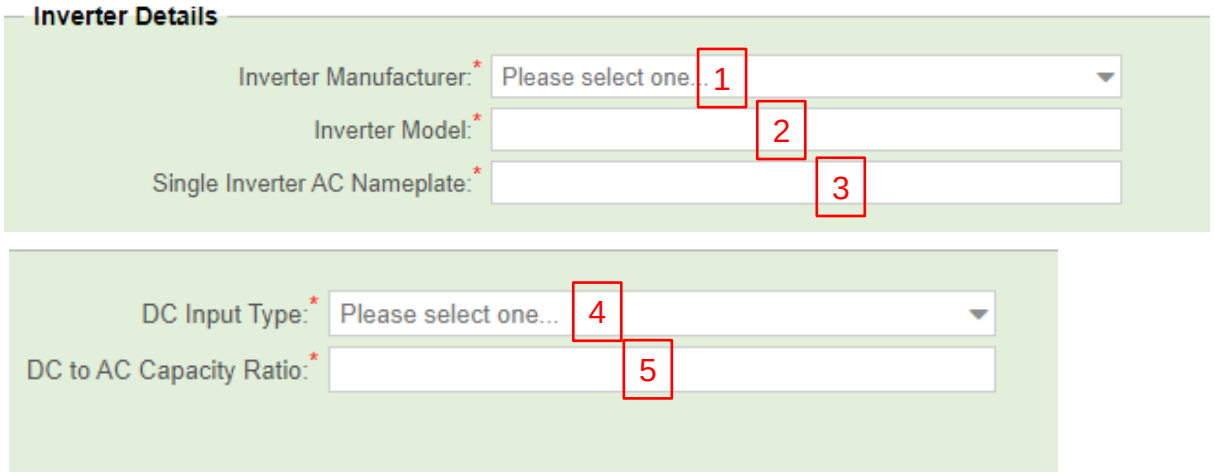
- This part of the screen is for inverter group capacity entry



1. Enter the number of physical inverters in the inverter group
2. Enter the system rating of a single inverter. This includes temperature setpoints and other inverter limits as the site is set up.
   - The installed capacity will be calculated

Adding a New Inverter Group

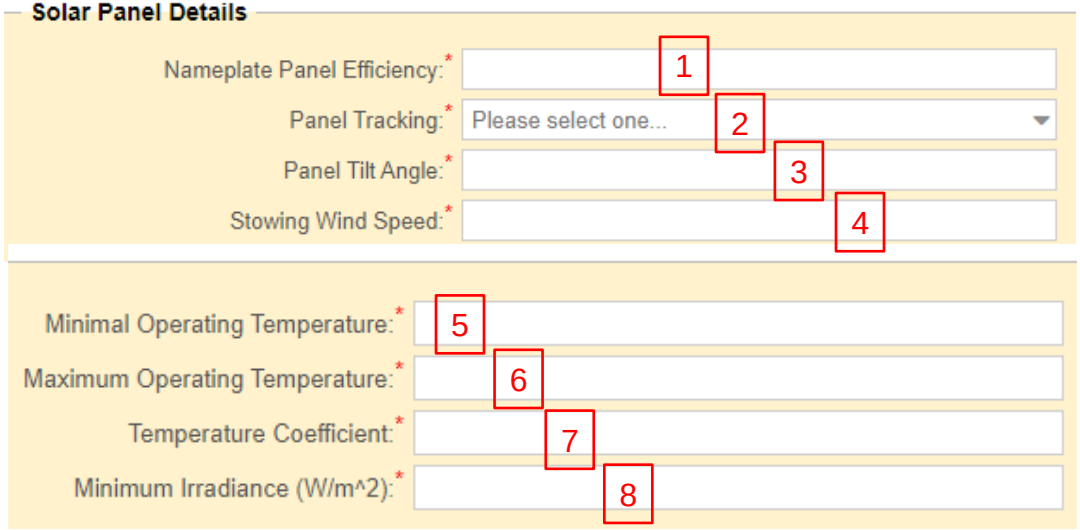
- This part of the screen is for inverter details entry



1. Select the inverter manufacturer from the picklist
2. Enter the inverter model for inverters in this group
3. Enter the AC nameplate capacity assigned to a single inverter in the inverter group by the manufacturer
4. Select the DC Input Type for the inverter group from the picklist
5. Enter the average DC to AC capacity for individual inverters in the group

Adding a New Inverter Group

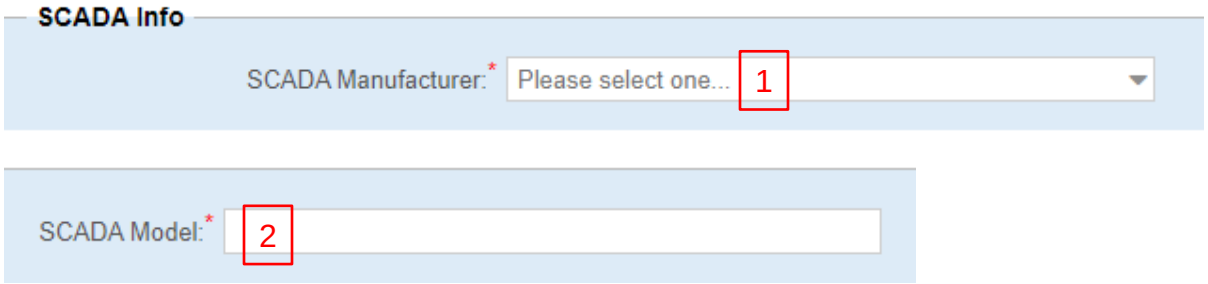
- This part of the screen is for solar panel detail entry



1. Enter the average nameplate efficiency of all the panels in the inverter group
2. Select the panel tracking type from the picklist
3. Enter the panel tilt angle in whole degrees for fixed or single axis panels
4. Enter the wind speed at which the positioning mechanism sets the panel to a safe position. Not required for fixed panels.
5. Enter the manufacturer's minimum operating temperature in degrees Celsius (C)
6. Enter the manufacturer's maximum operating temperature in degrees Celsius (C)
7. Enter the temperature coefficient. This is the percent temperature output adjustment from the manufacturer's standard condition panel output in %/degree C.
8. Enter the minimum irradiance that will cause a single inverter to start producing

Adding a New Inverter Group

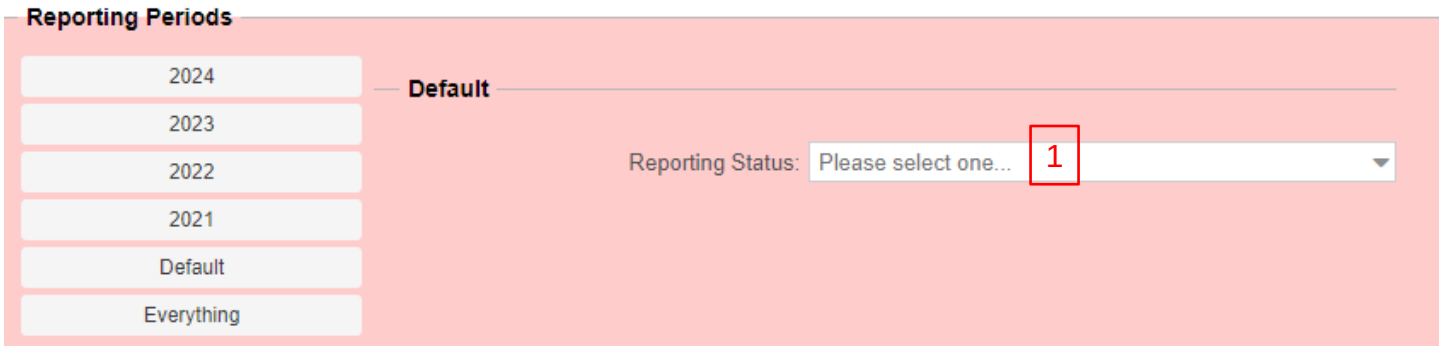
- This part of the screen is for SCADA information entry



1. Select the SCADA manufacturer from the picklist
2. Enter the model of the SCADA system

Adding a New Inverter Group

- This part of the screen is for Reporting Period data entry



1. Select the Reporting Status from the picklist
   - Press the save button (floppy disk icon) on the bottom left of screen when all information has been entered

Inverter Group – Excel Template

Inverter Group Configuration

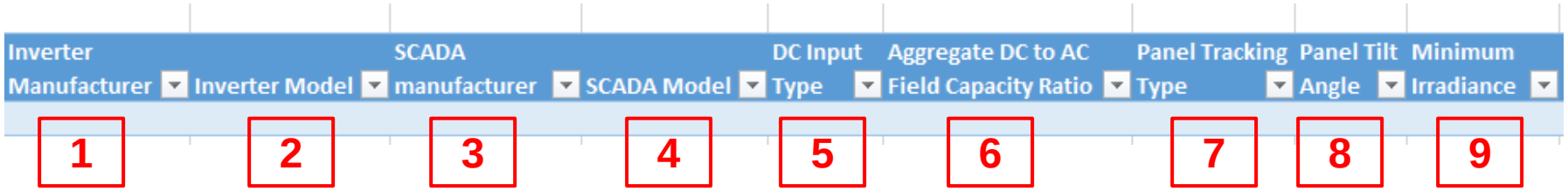
Inverter Group Inventory Design Data

Entity ID	Plant ID	Inverter Group ID	Inverter Group Name	Commercial Date	Number of Inverters for Inverter Group	Single Inverter System Capacity	Single Inverter AC Nameplate
1	2	3	4	5	6	7	8

- *Remember the pop-up windows provide helpful information*

1. Enter the company NCR (NERC Compliance Registry) number or voluntary reporting ID (Entity ID)
2. Enter the plant ID assigned by the GADS Solar application.
3. Enter the inverter group ID assigned by the GADS Solar application. Leave blank for new inverter group.
4. Enter the inverter group name. This will not be assigned by NERC or the GADS Solar application.
5. Enter the date the inverter group was commissioned (mm/dd/yyyy)
6. Enter the number of physical inverters in the inverter group
7. Enter the system rating of a single inverter. This includes temperature setpoints and other inverter limits as the site is set up.
8. Enter the AC nameplate capacity assigned to a single inverter in the inverter group by the manufacturer

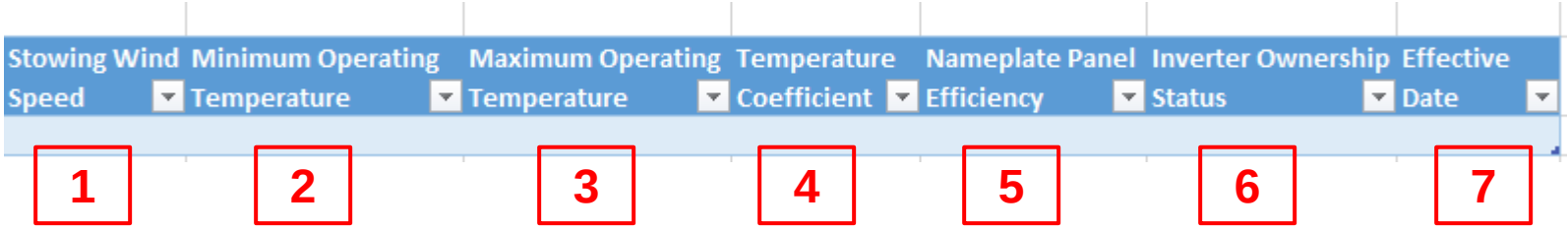
Inverter Group Configuration



- Remember the pop-up windows provide helpful information

1. Select the inverter manufacturer from the picklist. See table D.7 in the GADS Solar Data Reporting Instructions.
2. Enter the inverter model for inverters in this group
3. Select the SCADA manufacturer from the picklist
4. Enter the model of the SCADA system
5. Select the DC Input Type for the inverter group from the picklist
6. Enter the average DC to AC capacity for individual inverters in the group
7. Select the panel tracking type from the picklist
8. Enter the panel tilt angle in whole degrees for fixed or single axis panels
9. Enter the minimum irradiance that will cause a single inverter to start producing

Inverter Group Configuration

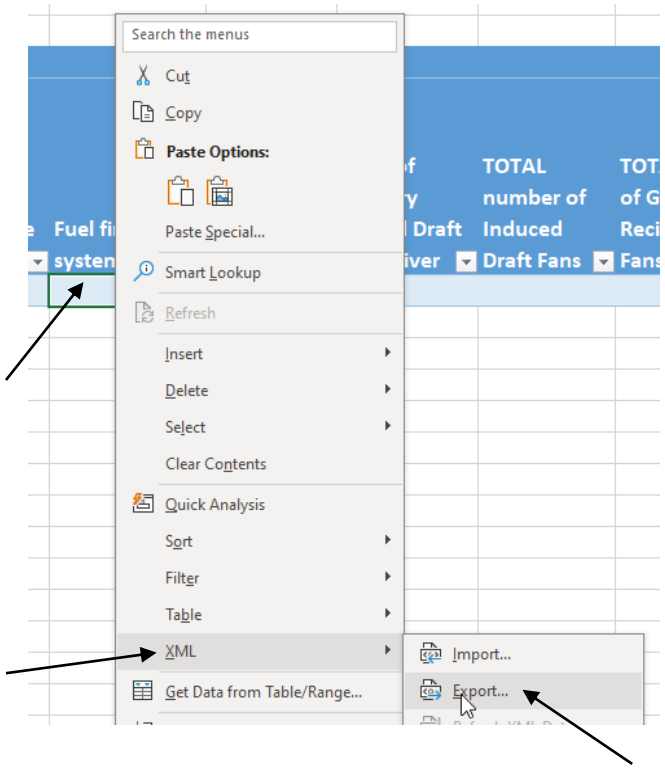


- Remember the pop-up windows provide helpful information

1. Enter the wind speed at which the positioning mechanism sets the panel to a safe position. Not required for fixed panels.
2. Enter the manufacturer's minimum operating temperature in degrees Celsius (C)
3. Enter the manufacturer's maximum operating temperature in degrees Celsius (C)
4. Enter the temperature coefficient. This is the percent temperature output adjustment from the manufacturer's standard condition panel output in %/degree C.
5. Enter the average nameplate efficiency of all the panels in the inverter group
6. Select the inverter ownership status from the picklist
7. Enter the effective date of the inverter ownership status. Leave blank for new inverter groups.

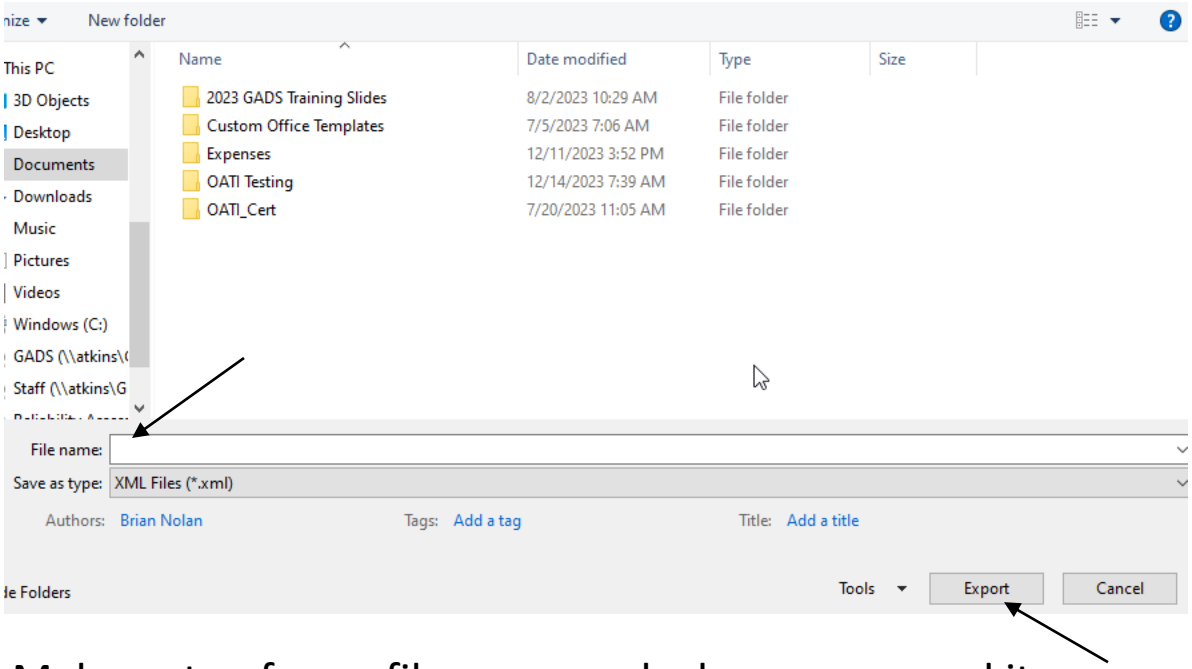
Inverter Group Configuration

- You are now ready to create XML from the Excel file in order to import to the OATI application
- Save your Excel template to a place of your choosing
- Next create the XML file for the Inverter Group configuration data
  - Make sure that you are on the “Group” worksheet tab
  - Right click a cell somewhere on a row of data on the “Group” worksheet
  - Select XML from the popup menu
  - Select export from the popup menu



Inverter Group Configuration

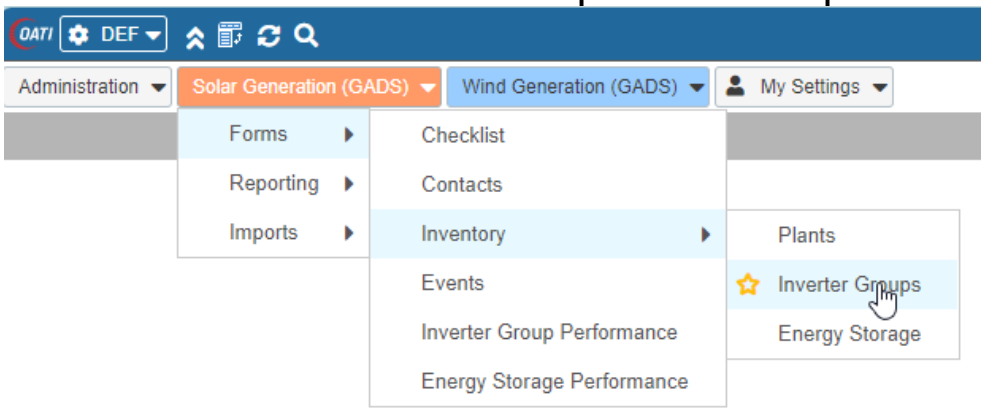
- Name the file, select where you want the file saved, and press the export button

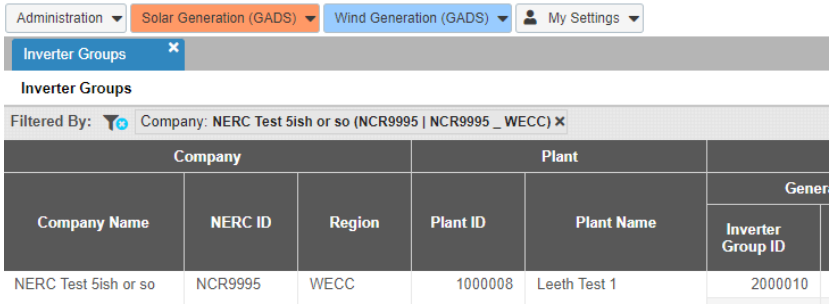


- Make note of your file name and where you saved it

Inverter Group Configuration

- Next import the XML file into the OATI system
  - Log into the OATI Solar GADS system
  - Navigate to the appropriate menu item in the Solar interface
    - Click on SOLAR Generation (GADS) on the top menu ribbon
    - Click Forms and then Inventory in the dropdown menu
    - Click Inverter Groups in the dropdown menu

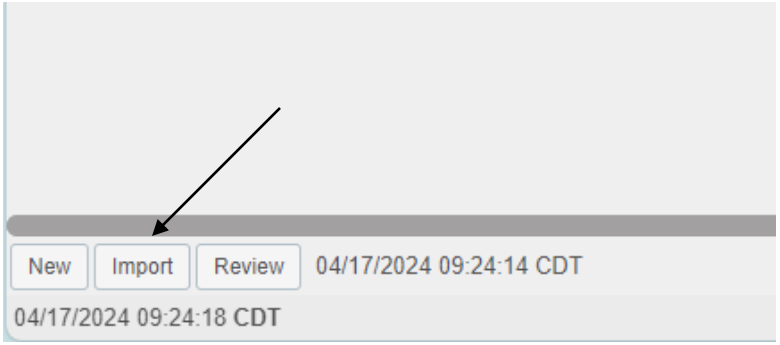




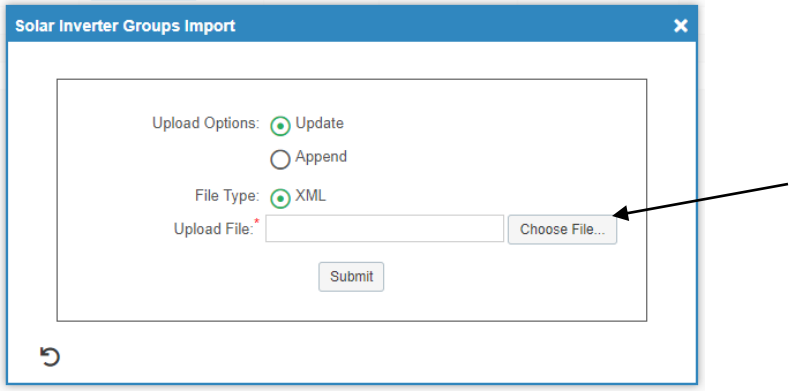
  - A list of previously created inverter groups (if any) will appear

Inverter Group Configuration

- An Import button will appear on the bottom left of the screen



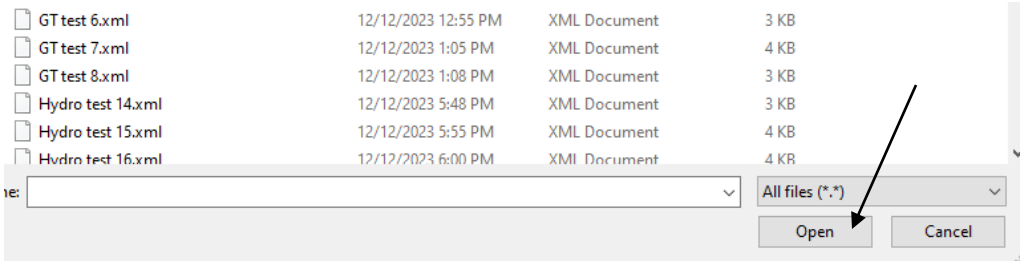
- Press the import button and the popup below will appear



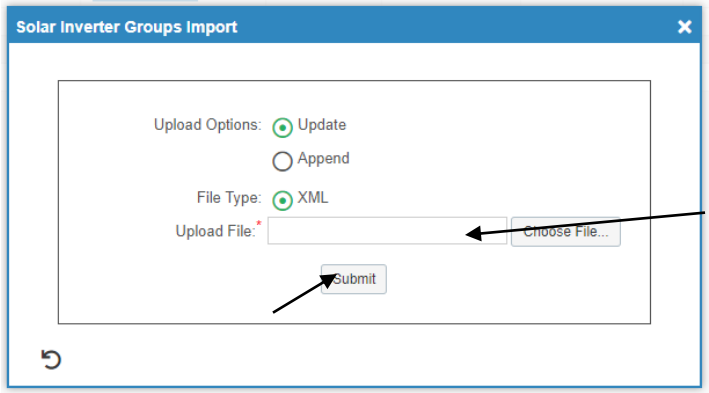
- Click the “Choose File” button on the Solar Inverter Groups Import popup and navigate to where you saved your XML file

Inverter Group Configuration

- Select the file you just created and press the “Open” button



- Click the submit button on the Solar Inverter Groups Import popup shown below



File chosen in previous step will appear here

- If you correctly entered the data in your spreadsheet, your Inverter Group configuration data should load without issue and is complete.

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Questions and Answers