

Inverter task

In this task you select **the inverter** and **batteries** you'd like to use and **how many panels to allocate to each MPPT**. You can also choose whether you want to include **optimisers**.

Choosing an inverter

The screenshot shows the 'Inverters' selection screen. On the left, a list of manufacturers is sorted by type and manufacturer. The main area displays 'Recommended for this project' with three categories: String inverters, Hybrid inverters, and Optimised inverters. A vertical line indicates the 'Optimum inverter size 4234W' based on a 'Peak panel output 5280W'. Annotations with orange arrows point to the manufacturer list, the peak panel output and optimum inverter size, and the recommended inverters.

Inverter library sorted by type and manufacturer

Peak panel output and optimum inverter size

Recommended inverters

Peak panel output 5280W
Optimum inverter size 4234W

Recommended for this project

String inverters

- Fronius Primo 1ph 3.68kW WLAN
- SolaX X1-BOOST G4 3.68kW 1ph string
- GivEnergy G3 3.6kW String

Optimised

- SolarEdge
- SolarEdge Home Hub - 3ph

Microinverters

- Atmoce
- Enphase

Hybrid Inverters

- EcoFlow Power Ocean
- Eleven Energy
- Fox ESS (Hybrid)
- Fox ESS EVO All in One series
- GivEnergy (Hybrid)
- GivEnergy 3ph
- GivEnergy All in One 2
- Growatt 1ph HV
- Growatt 3ph HV
- Growatt LV
- InstaGen
- MvEnergi Libbi

String inverters

- Fox ESS F Series (G3) 3600W 1ph 2MPPT String

Hybrid inverters

- SolaX X1 G4 3.7D hybrid
- Libbi 3.68kW 1ph

Optimised inverters

- SolarEdge 3500 HD Wave - Screenless SETAPP

Easy PV uses solar data to choose inverters for this system. It aims for 1% yearly clipping losses.

go

Can't find what you're looking for? See how to add custom [inverters](#).

When you open the inverter task, a menu will pop up with the following information:

- **Inverter recommendations:** Recommended based on array size, number of inputs and cost. Choose from string, hybrid, optimised inverters.
- **Peak panel output and optimum inverter size:** The installed capacity of the system and optimum inverter size based on solar data for project location.
- **List of inverter manufacturers:** List of all inverter manufacturers stocked by Midsummer, sorted by type.

If you select a manufacturer from the list on the left, you can then:

- Choose between **single phase** and **three phase** inverters for that manufacturer.

- View the **output loss percentage** for each inverter, which you can use to choose an appropriately sized inverter.

Once selected, you'll see the **specs for the inverter** and **Midsummer stock and price information** on the left. Click on the Midsummer box to view the full listing with datasheets, warranty and more.

Click *Go* in the bottom right once you've chosen your inverter to add it to the project.

[Connect your Midsummer Wholesale account](#) for accurate pricing. Not registered? [Sign up here.](#)

Panel allocation

Once you've chosen your inverter, the next step is to **select how many panels you want for each MPPT**. If the inverter was from the recommended section, this step will be completed for you.

In the top right you can see **how many panels you need to allocate**. On each inverter you will see the **different combinations** that can be allocated to each string. Once the right number of panels have been allocated, a green tick will appear.

Multiple string arrangements are typically possible. Below shows an example with 12 panels, selecting 1x6 (1 string of 6 panels) to each input and then 1x4 and 1x8:

The screenshot displays a software interface for configuring an inverter system. The main content area is titled "Eleven Energy North Sea EL3600 3.6kW hybrid". It features two MPPT input sections, each for "Trina Vertex S+ 440W Dual Glass N-Type Bifacial with Clear Backsheet solar panels".

Each input section includes a grid of panel allocation options:

- Input 1:**
 - 1 string: 1x6 (green), 2x3 (green), 3x2 (green), 1x8 (red), 2x5 (red), 3x4 (red), 1x7 (red), 2x4 (red), 3x3 (red), 1x9 (red), 2x6 (red), 3x5 (red)
 - 2 strings: 2x2 (red), 2x3 (red), 2x4 (red), 2x5 (red), 2x6 (red), 2x7 (red), 2x8 (red), 2x9 (red), 2x10 (red), 2x11 (red)
 - 3 strings: 3x1 (red), 3x2 (red), 3x3 (red), 3x4 (red), 3x5 (red), 3x6 (red), 3x7 (red), 3x8 (red), 3x9 (red), 3x10 (red), 3x11 (red)
- Input 2:** (Identical grid to Input 1)

Below each grid are four status indicators: Power (3600W), Current (18A), Max voltage (550V), and Operating range (80V to 550V).

A "Batteries" section at the bottom shows two options:

- Eleven Energy Galvani 4.5 kWh Stackable Sodium Ion Battery: 1 (green), 2 (green), 3 (green), 4 (green), 5 (red), 6 (red), 7 (red), 8 (red), 9 (red), 10 (red)
- Eleven Energy Volta 4.5kWh Na-ion: 1 (green), 2 (green), 3 (green), 4 (green), 5 (green), 6 (green), 7 (green), 8 (green), 9 (green), 10 (red)

The right-hand sidebar, titled "Inverters", shows "Electrical components" with a warning icon and text: "0 out of 12 Trina Vertex S+ 440W Dual Glass N-Type Bifacial with Clear Backsheet are allocated" and "Please add some batteries to your Eleven Energy North Sea EL3600 3.6kW hybrid".

Electrical compatibility information for the selected arrangement is shown below the stringing options. This indicates which limiting factors for that input are met or exceeded. For each input, some options will show in **red**, indicating the arrangement does not pass the electrical checks, and others in **green**, indicating the arrangement does pass all the electrical checks Easy PV is doing. The number of viable inputs will vary depending on the size of the inverter and the panels chosen.

Not electrically viable



Electrically viable



Input 1: Trina Vertex S+ 440W Dual Glass N-Type Bifacial with Clear Backsheet solar panels clear

1 string	1 x 1	1 x 2	1 x 3	1 x 4	1 x 5	1 x 6	1 x 7	1 x 8	1 x 9	1 x 10	1 x 11
2 strings	2 x 1	2 x 2	2 x 3	2 x 4	2 x 5	2 x 6	2 x 7	2 x 8	2 x 9	2 x 10	2 x 11
3 strings	3 x 1	3 x 2	3 x 3	3 x 4	3 x 5	3 x 6	3 x 7	3 x 8	3 x 9	3 x 10	3 x 11

1 x 10 is highlighted in red.

Power ✔ **Current** ✔ **Max voltage** ✘ **Operating range** ✔

The rated AC output power of the inverter is 3600W.
The maximum DC input power is 4400W.

The maximum DC input current of the inverter input is 18A.
The highest input current expected for this array at 40°C is 10A.

The maximum input voltage of the inverter input is 550V.
The open circuit voltage for a string of 10 panels at -10°C is 588V.

The MPPT voltage range of the inverter input is 80V to 550V.
The MPPT voltage of the array will be approximately 424V at 40°C and 479V at -10°C.

Input 1: Trina Vertex S+ 440W Dual Glass N-Type Bifacial with Clear Backsheet solar panels clear

1 string	1 x 1	1 x 2	1 x 3	1 x 4	1 x 5	1 x 6	1 x 7	1 x 8	1 x 9	1 x 10	1 x 11
2 strings	2 x 1	2 x 2	2 x 3	2 x 4	2 x 5	2 x 6	2 x 7	2 x 8	2 x 9	2 x 10	2 x 11
3 strings	3 x 1	3 x 2	3 x 3	3 x 4	3 x 5	3 x 6	3 x 7	3 x 8	3 x 9	3 x 10	3 x 11

1 x 6 is highlighted in green.

Power ✔ **Current** ✔ **Max voltage** ✔ **Operating range** ✔

The rated AC output power of the inverter is 3600W.
The maximum DC input power is 2640W.

The maximum DC input current of the inverter input is 18A.
The highest input current expected for this array at 40°C is 10A.

The maximum input voltage of the inverter input is 550V.
The open circuit voltage for a string of 6 panels at -10°C is 341V.

The MPPT voltage range of the inverter input is 80V to 550V.
The MPPT voltage of the array will be approximately 255V at 40°C and 287V at -10°C.

Panel allocation is then completed in the [Performance task](#).

Adding battery storage

You can add battery storage to **hybrid** or **AC-coupled inverters**. In each case, you will see a list of compatible batteries for that inverter, with the options most suitable for the system shown in green. Darker green options are compatible but may not be optimal.

When you make a selection, warnings about the battery capacity and maximum battery charge rate will display below to help in choosing an appropriate size.

Batteries clear

	Eleven Energy Galvani 4.5 kWh Stackable Sodium Ion Battery	1	2	3	4	5	6	7	8	9	10
	Eleven Energy Volta 4.5kWh Na-ion	1	2	3	4	5	6	7	8	9	10

Battery Capacity ✔ **Power** ✔

This inverter can be linked to up to 36.00 kWh of battery capacity and should have a minimum of 4.50 kWh of battery.
Please select a battery for this inverter

The maximum battery charging rate of this inverter is 5000W
The inverter charging power is small compared to the capacity of the battery array. It is unlikely to be fully utilised except in perfect weather.

On every project, you will need either a string or hybrid inverter (battery only projects aren't yet supported). If you have an AC inverter, you will also need a string inverter.

You can skip adding a battery to a hybrid inverter if the plan is to install one at a later date. Simply add the inverter and don't select a battery. A warning will appear when going to the [Electrical task](#), just click *OK* to continue.

Additional options



Delete inverter

This is in the top right of each inverter.



Clone inverter

This is in the top right of each inverter. Cloning will also copy stringing arrangements.

ADD OPTIMISERS



Add optimisers

This is to the top right of the first input on compatible inverters. After adding, select from the drop-down which optimiser you want to use. This will add **one optimiser per panel**.

ADD PV INVERTER OR BATTERY STORAGE SYSTEM



Add a different inverter

This is to the bottom right of the last inverter. This will re-open the inverter selection menu.

Using optimisers or microinverters will also mean you need to [manually allocate panels](#) in the [Performance task](#).

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