

# Ecotower Notes

## Calculations

- [Off Grid Calculator](#)

### Battery Bank Sizing Calculator

Let's determine the size of the battery bank for your system.

**STEP 1**  
Your Energy Usage

Watt-Hours/Day

For Watt-Hours/Day, please use our kWh Calculator. For Monthly kWh, check your monthly kilowatt-hour usage printed on your electric bills.

**STEP 2**  
Days Without Sunlight

How many days of backup power do you want in case of cloudy/rainy days (when your solar panels will produce little energy)?

**STEP 3**  
Lowest Temperature

What is the lowest temperature your battery bank will experience?

**STEP 4**  
Battery Voltage

Battery Type

Battery Bank Capacity

**1066 Watt-Hours**

OR

**89 Amp-Hours at 12 Volts**

### Solar Panel Array Sizing Calculator

This calculator helps you size the solar panel array needed for your system.

**STEP 5**  
Enter a Zip Code

Ex: 01719

OR

Enter Sun Hours

If you know this value, you can enter it directly or enter your zip code to automatically determine this value.

Solar Array Size

**0.1 Kilowatts**

OR

**70 Watts**

### Charge Controller Sizing Calculator

This calculator helps you size the charge controller(s) needed for your system.

**STEP 6**  
Watts Per Panel

How many solar panels do you need? That depends on the panel you choose. Select the wattage of the panel you're interested in and we'll give you an estimate.

Charge Controller Size

**6 Amps**

AND

**1 panels for 150 Watts**

- [Load Calculator](#)

### KWh CALCULATOR

Knowing your daily electricity consumption in kilowatt-hours (kWh) is crucial for properly sizing a solar power system, and our kWh Calculator makes it easy.

Appliance/Load Name	On at Same Time*	Quantity	AC Watts	AC Surge*	DC Watts*	Hours On per Day	Watt-Hours / Day
<input type="text" value="RUT955"/>	<input checked="" type="checkbox"/>	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="7"/>	<input type="text" value="24"/>	168
<input type="text" value="LoRaWAN Gateway"/>	<input checked="" type="checkbox"/>	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="12"/>	<input type="text" value="24"/>	288
<input type="text"/>	<input checked="" type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	

**Total Watt-Hours/Day: 456**

- [Site Info 200 Watt System](#)

- Site Info 400 Watt System

- [Daytime Lengths over the year](#)

## Solar-System

- [Laderegler-EPsolar-MPPT-Triron-2210N-20A](#) (ca. 140€)
  - inkl. UCS Schnittstelle
  - inkl. DS2 Display
  - inkl. Temperaturfühler
- [Adapterkabel RS485-USB für EPsolar](#) (20€)
- [160Wp Solarmodul](#) (ca. 140€)
- [120Ah 12V Gelbatterie](#) (ca. 300€)

Alternatives System:

- [Alternative Bausatz](#) (ca. 630€)

Github Repo:

- [Implementation of RS485 Protocol](#)

## Elektro

- [Erdungsblock](#)
- [Sicherungsbox](#) (ca. 40€)

## Gehäuse

- [Rital Gehäuse 50cmx50cm](#)
- [Austrittsfilter](#)
- [Lüfter](#)
- [Filter](#)
- Kühlung notwendig?

## IT Infrastruktur

- [RUT955 - LTE Router](#) (ca. 200€)
- [LoRaWAN Gateway bspw. WisGate Edge Lite 2](#) (ca. 160€)

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