# Sizing tool requirements



GivEnergy Commercial have the ability to support in the sizing and calculation of payback periods for battery systems based on half hour consumption data of a site.

It is important to remember that the sizing and calculation is based on certain assumptions and industry standards methods of calculation and any sizing report should only be used as guidance, GivEnergy can unfortunately not accept any liability where the sizing of payback period are different from what is suggested in the tool.

The tool models a battery on top of half hour usage data and predicted generation, allowing us to choose a battery size suitable and then review the self-consumption, grid usage etc. The cost of the battery, PV and any required margin can then be added to be compared against previous and calculated electrical costs to calculate a payback period.

#### To size a battery for self consumption only

To allow us to size a system we need;

- Half hour data (See appendix 1)
- Generation information (See appendix 2)
  - o Size kWp
  - o Irradiance kWh/kWp
  - o Shading factor

### To size a battery and calculate the payback period / load shifting

- All of the above plus;
- Current electrical tariff
  - On peak £/kWh
  - Off peak £/kWh
  - Timings of tariffs
  - Export rate
  - Standing charge
- New or predicted electrical tariff (if different)
  - On peak £/kWh
  - Off peak £/kWh
  - Timings of tariffs
  - o Export rate
  - o Standing charge
- Pricing
  - Price of PV generation, either £/kWh or overall price
  - What margin % or fixed price you want us to add to the battery system
    - If you need to then add additional battery costs please also give us this figure.



## Sizing tool requirements

### Appendix 1 – Half Hour Data

	00:00	00:30	01:00		22:30	23:00	23:30
01/01/23	10	11	12	13	14	15	16
02/01/23	10	11	12	13	14	15	16
03/01/23	10	11	12	13	14	15	16
•••	10	11	12	13	14	15	16
29/12/23	10	11	12	13	14	15	16
30/12/23	10	11	12	13	14	15	16
31/12/23	10	11	12	13	14	15	16

Half hour consumption data should be formatted as per this example;

**Note 1:** To enable accurate sizing it is recommended to provide 12 months of data, if less than 12 months data is available predictions will be less accurate.

**Note 2:** If the half hour data includes PV that is already fitted to site the half hour data must show negative (-) figures for periods of export. If the data has periods of export as 0kW we will then also require half hour export data.

**Note 3:** We can also process consumption data in hourly interval provided in the same format.

Note 4: It is also possible to receive the data in a single column as below;

01/01/23 00:00	10
01/01/23 00:30	11
•••	12
30/12/23 23:00	13
31/12/23 23:30	14

#### Appendix 2 – Generation

The generation data has a big impact on how much export is available for battery charging, with this in mind we can also accept modelled generation data in the same formats per appendix 1 from sources such as SolarEdge, PV Sol, OpenSol etc.