



# CARES Conference 2023

## Community Action on Renewable Energy



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# Community buildings and place-based climate action

Kathleen Painter



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# Examples of the benefits that renewable energy systems can provide.

Modern Community Hub in Perth in Kinross

Well used Monday- Friday daytime typically with some weekend use.

They have installed through support from the CARES program: -

34.5 kWp Solar PV System

2 x Tesla 13.5kWh batteries

The system was installed on the 27<sup>th</sup> of April 2022

We currently have over a years worth of energy system performance data

# Site Installation



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# Cost Savings

Between May 2022 and April 2023 the group used 24304 kWh of electricity.

Their current electricity tariff is £0.32 per kWh

This would account for a total annual electricity bill of **£7,789.42**

Between the energy import offset supported by the PV and Battery system and by taking advantage of the Smart Export Guarantee, their actual energy costs were **£940.19**

That is **12%** of the previous amount

# Energy System Performance

The Solar PV system generated 28690 kWh in the same year

## Energy use

49% PV contribution to energy use

16% Battery Contribution to Energy use (stored PV)

35% Grid import

## Solar PV generation distribution

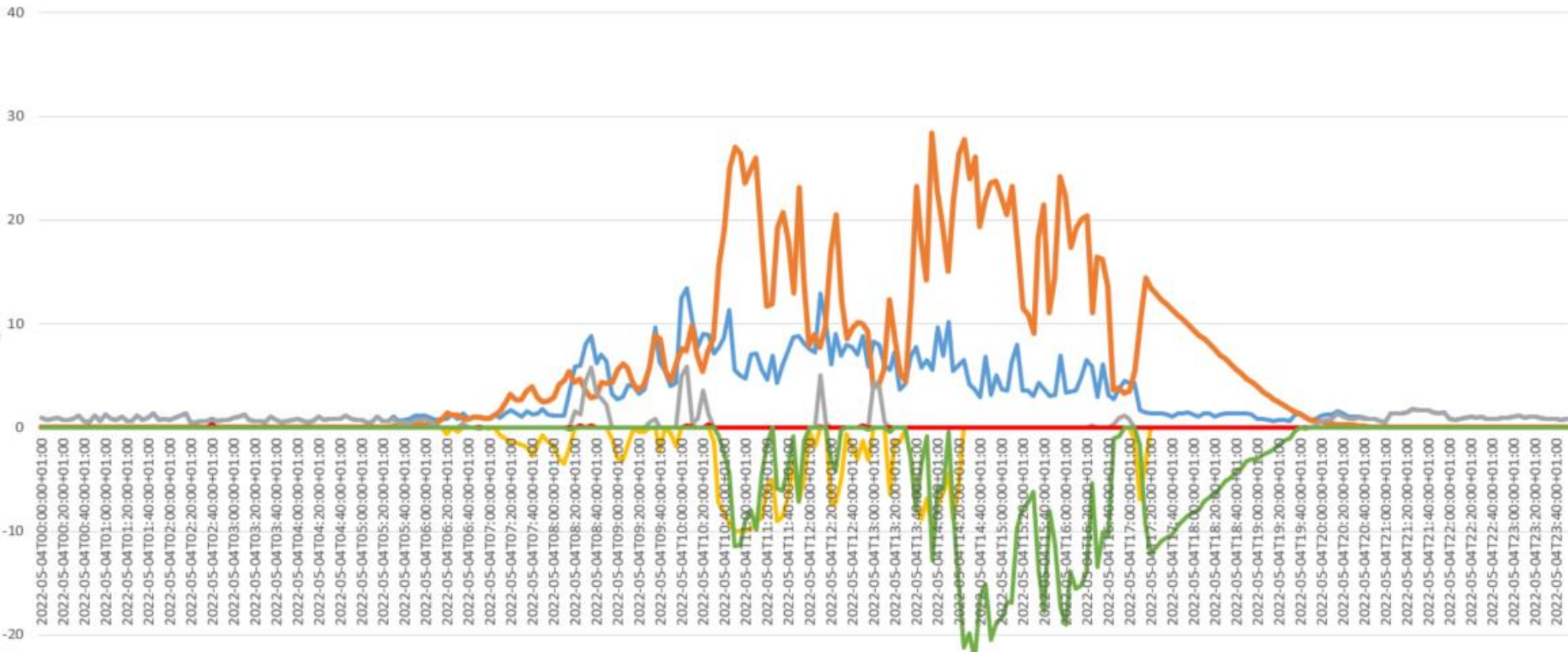
58% of the generation is used on site

42% of the generation is going to grid

# Example Daily Profile



Energy Profile 4th May 2022- data points are in 5 minute intervals



- Values
- Sum of Energy use (kW)
  - Sum of Solar (kW)
  - Sum of battery discharge (kW)
  - Sum of battery charge (kW)
  - Sum of grid use (kW)
  - Sum of to grid (kW)

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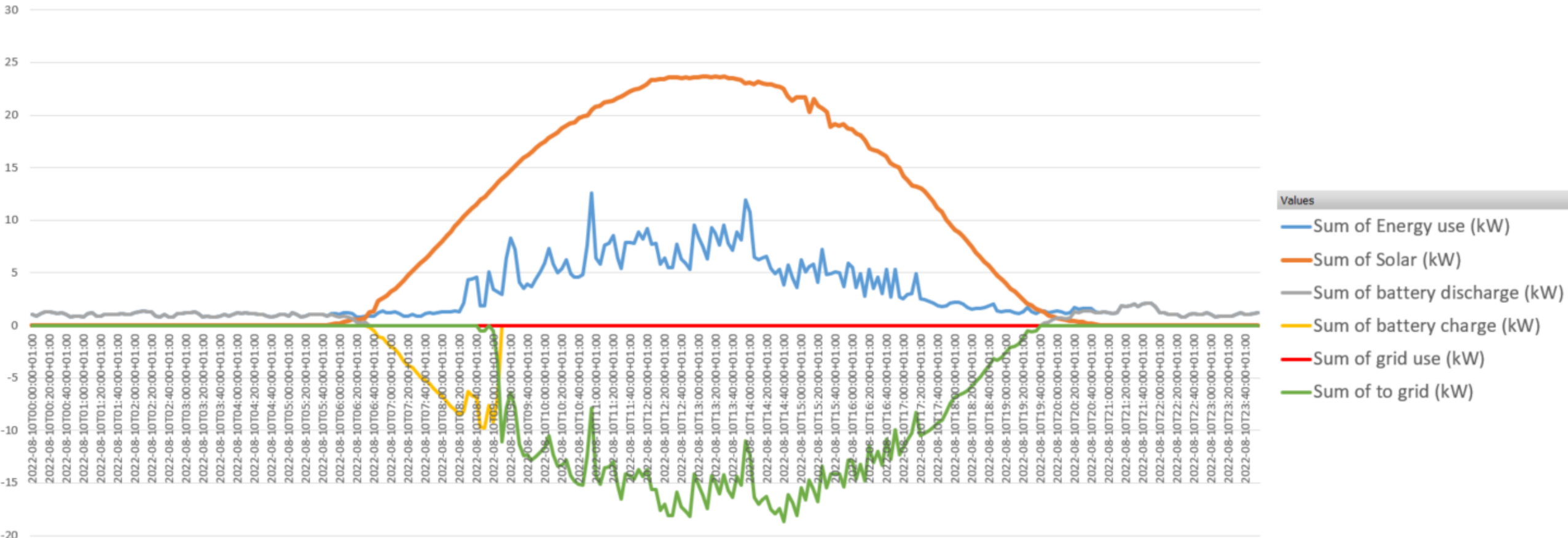
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# Example Daily Profile



Energy Profile 10th August 2022- data points are in 5 minute intervals



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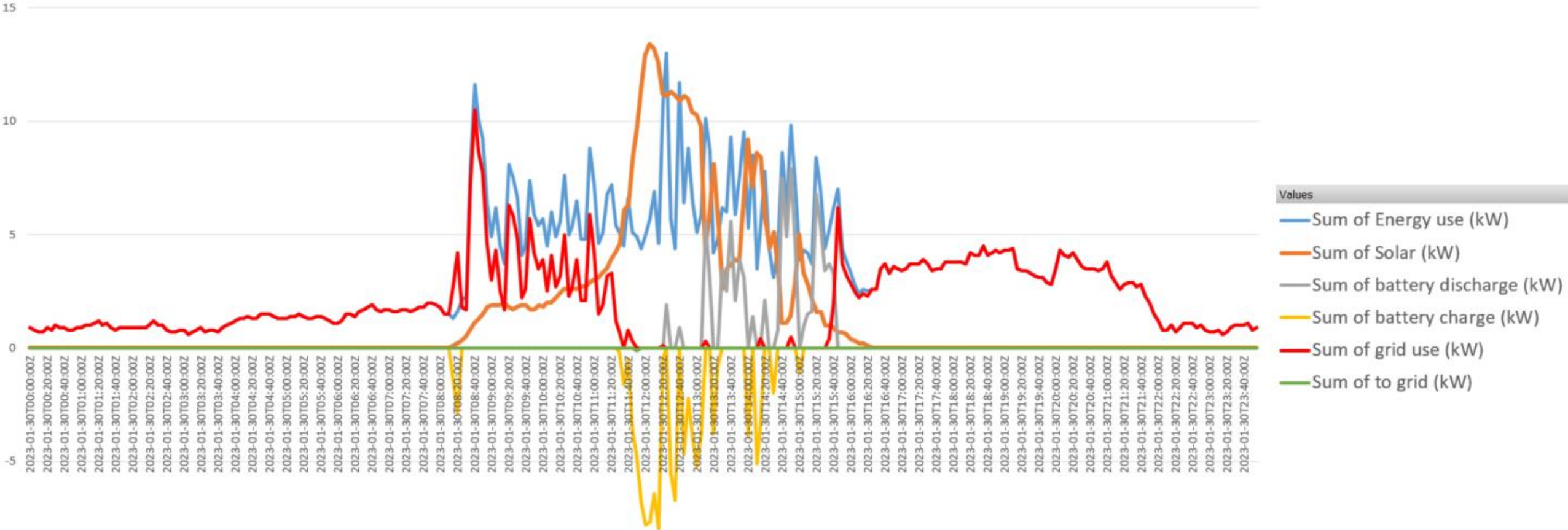
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# Example Daily Profile



Energy Profile 30th January 2023 data points are in 5 minute intervals



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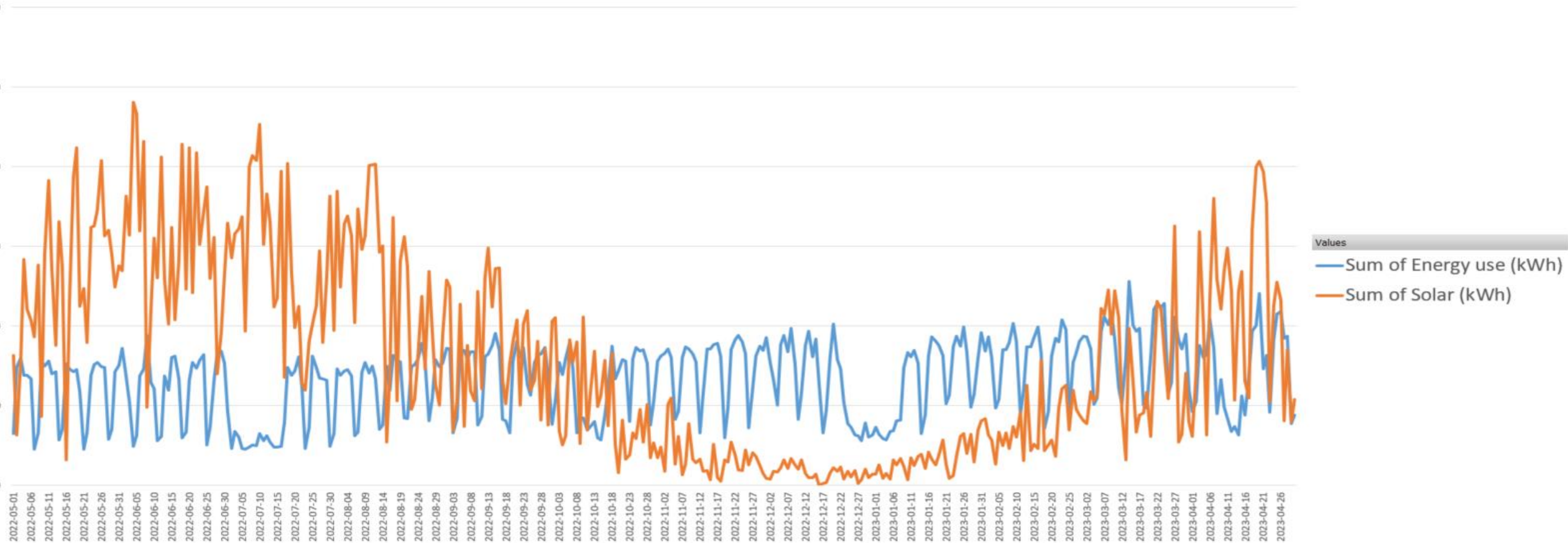
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# Seasonal Profile



Seasonal Profile - Daily Totals (kWh)



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# Concluding remarks

Significant energy, cost and carbon savings for the group after installing the PV and Battery system

## Going forward: -

The group are looking at how decarbonising their heating can be best integrated into the overall energy system

The group are looking at their energy tariffs to see if there are financial benefits to charging their batteries on off-peak tariffs overnight during the winter

# Contact Us



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# **Refreshments in the foyer 14.45 – 15.00**

## **15.00 – 16.00 Workshop 2**

- **Preparing for shared ownership of windfarms – Ellisland suite**
- **Community benefits – from community action plans to net zero – Alloway suite**
- **Heat pumps – heating for net zero – Cambridge suite**