Solar export percentage findings

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Introduction

Following the roll out of smart export to our Feed-in-Tariff customers, Good Energy now has a substantial number of customers who are providing export meter data in addition generation readings. It is therefore possible to provide some analysis on the proportion of solar generation being exported.

Datasets & methodology

The datasets used in this analysis are:

- **Solar generation meter readings** provided by customers, generally on a quarterly basis.
- **Solar export meter readings** provided by smart meters, generally on a daily basis.
- We also utilise data we hold on the installed capacity of the PV system.

The analysis focuses on B2C customers (where the relationship is between Good Energy and an individual generation site), the vast majority of sites considered are therefore domestic scale.

Data processing

The data used for this analysis is held on Good Energy's database system, analysis begins with the full dataset of generators in all case.

In order to calculate total generation and total export over a corresponding period the algorithm first looks for matching pairs of generation and export readings by date recorded. It then selects the first and last matching pairs to cover the longest possible period. Percentage exported is taken as the total kWh exported divided by total kWh generated.

Minimal data cleaning is carried out. Sites with 0kWh generation and 0kWh export are excluded along with sites that do not meet the minimum days of reading coverage as indicated on the graphs.

There are ~900 sites with a full year's coverage, as this covers all of the seasons, this dataset provides a fairly robust estimate of export in recent weather conditions.

Results

The following graphs illustrate the portion of the year covered by the data, the distribution of % exported for the subsample that met the minimum data coverage threshold, a breakdown of the system sizes and a box plot of the percentage exported for each of these size ranges.
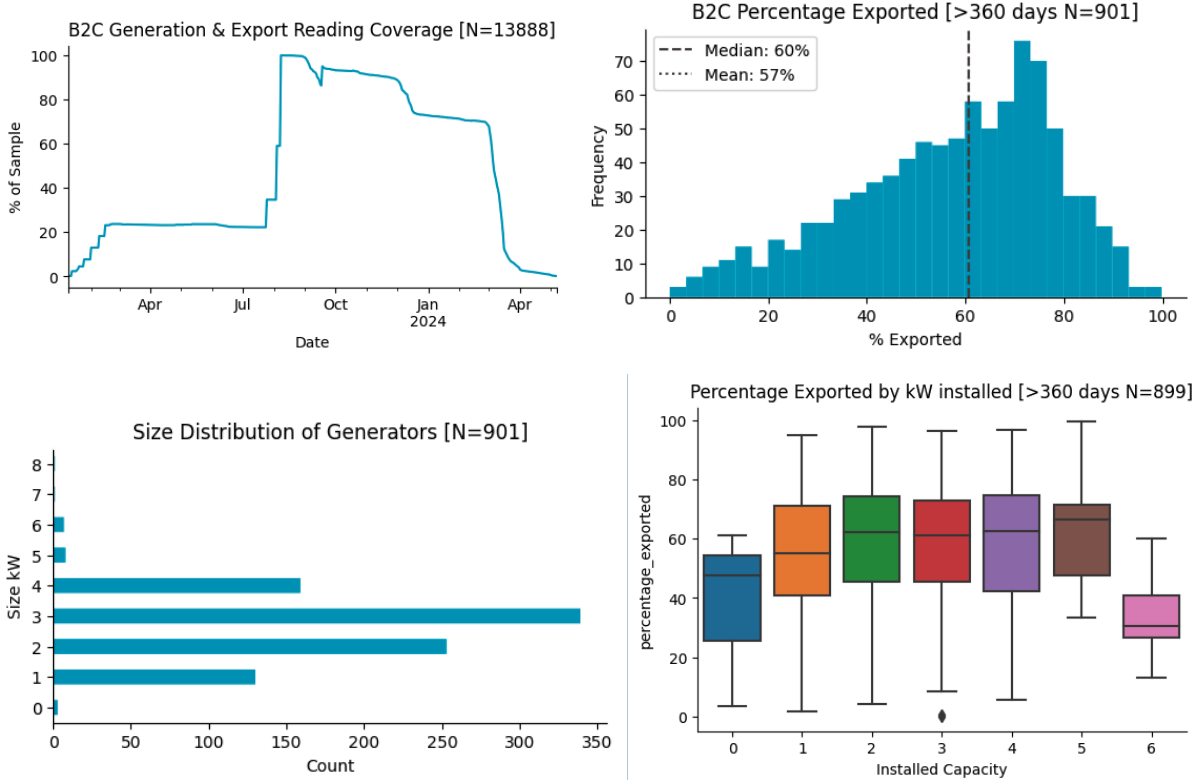
Conclusions and limitations

The median values for percentage exported is **60%** suggesting that most of these generators would benefit from being paid based on actual export rather than deemed export. In both cases there is a similar pattern of smaller systems in the 0 to 1 kW and 1 to 2 kW exporting a smaller proportion of generation as one might expect. It appears that larger systems >5kW also export a smaller proportion but the sample size is small here and this may be the effect of battery storage being used for example.