Batteries in social housing

= green power

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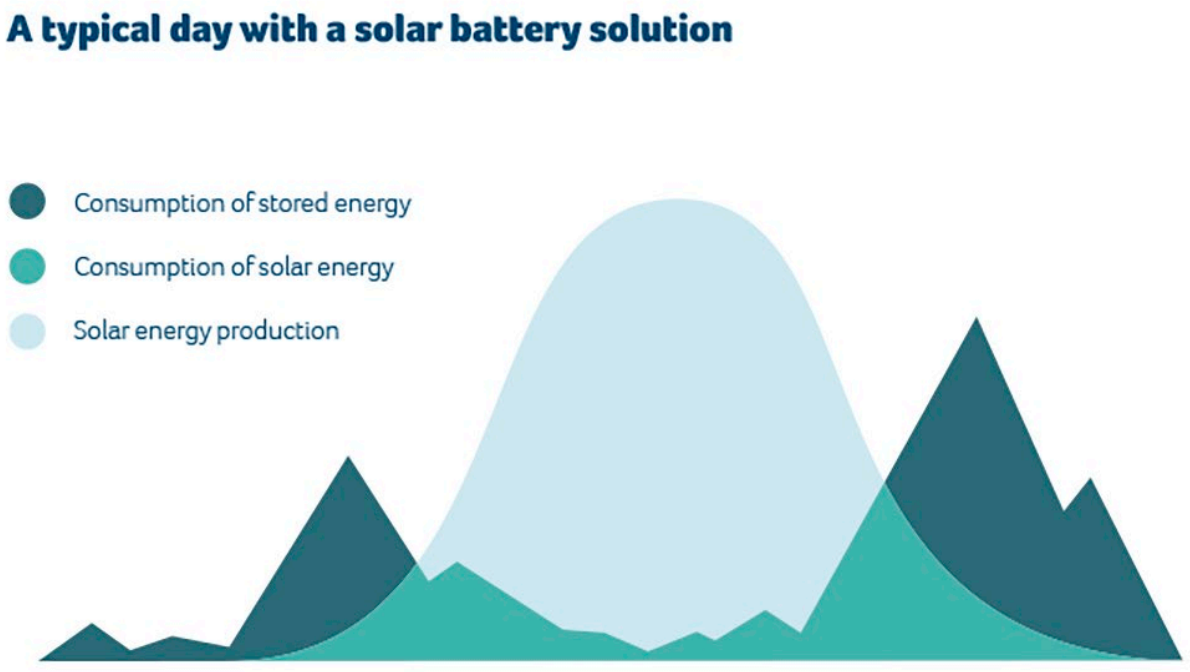
Batteries provide social housing with cheaper and sustainable electricity

A typical housing association spends money on electricity to supply each of their apartments, along with common areas, washer and dryer, AC, car parks, common houses, and possibly administrative offices. These expenses can be lowered with the installation of solar panels; however, this introduces a new problem for housing associations, namely that the consumption of solar energy does not align with the time frame of solar energy production.

This problem can be solved by installing a battery, that stores surplus solar energy for later use. The housing association will be able to monitor the generated solar panel energy, which shows when it makes the most sense financially e.g., to do the washing. Furthermore, when monitoring housing associations will be able to see if they should invest in a larger battery and/or more solar panels.



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Why should social housing invest in energy storage?

Our energy and electricity needs are changing constantly, which makes us increasingly dependent on energy storage in our daily lives. What we need is a power supply, that provides secure and reliable electricity 24/7, and here batteries are ever more sought after than ever to meet this demand.

Moreover, we need to make better use of renewable energy sources and reduce our dependence on non-renewable fossil fuels, such as oil and gas. Solar and wind power, however, are not always available when needed, as clouds block the sun, and the wind blows irregularly. Nevertheless, when using batteries for storage of solar and wind power, we are provided with reliable electricity 24/7, without negatively impacting the environment.

Now more often than ever, housing associations are investing in solar panels. However, changes in tariffs have resulted in solar panels being less profitable for owners, as the generated electricity is fed into the grid for a very little, if any, return. This problem can be solved by installing an energy storage solution. Such a solution will better utilise the power generated from the solar panels, which will lead to larger savings on electrical bills.

Why should social housing invest in a redox flow battery?

Scalability

It is possible to scale the battery to fit specific energy needs, due to a separation of the power (kW) and the capacity (kWh) in the battery, which makes it easy to meet the needs of the specific housing association.

Safety

The battery is safe and cannot catch on fire or explode, as the energy is stored in a liquid electrolyte that mainly consists of water.

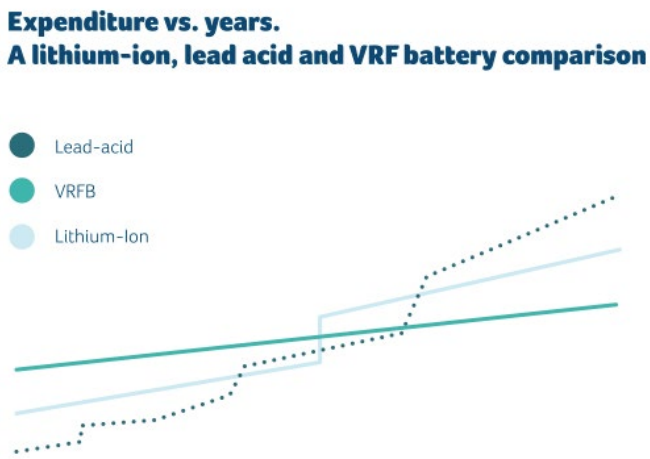
Eco-friendly

The battery is environmentally friendly and 100% recyclable because it has separated major operating components (tanks, electrolyte, pumps, electrode stack etc.), that are either recyclable or reusable in different ways.

Cost

The cost of the battery over its lifetime is low, which makes it a profitable investment. Housing associations can profit from a battery by storing the surplus, generated energy for later use, when the

sun is not shining and/or at night. The graph below shows the accumulated cost of the lifetime of a Redox Flow battery, in comparison to other types of battery solutions.



Make money from day 1

A battery solution from VisBlue enables you to use more of the energy that your solar panels produce. This investment can be carried out in the two following ways:

1. either from your own savings, e.g., deposits,
2. or financing through loans.

If you invest in a battery using your own savings, you are free from borrowing money, and in cases of negative interest your funds are placed in an investment with a positive return.

If you borrow money to cover the investment of the battery, you will be able cover both interest expenses and make money on the investment with the saving that the battery provides on your electrical bill.

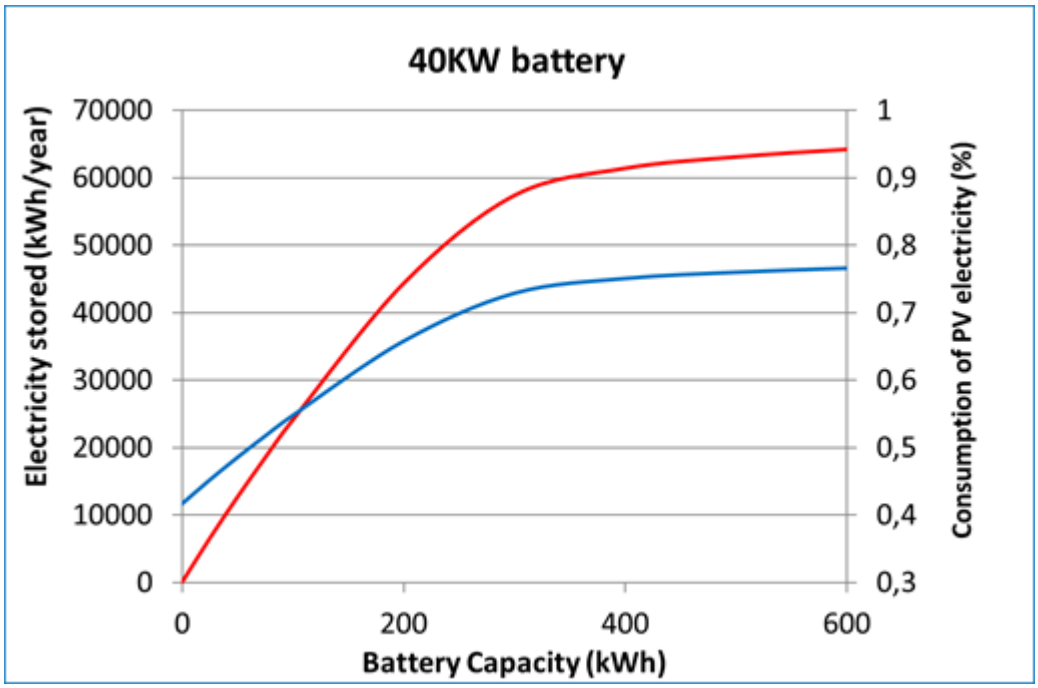
Both options are good financing possibilities and will enable the housing association to make money from day 1.

The graph below exemplifies how many percent a housing association utilises it production from solar panels, which is illustrated in the right side of the graph, where the development is shown with the help of the blue line.

The left side of the graph shows how much electricity a given battery can store in kWh/year, where this is illustrated with the help of the red line.

The housing association in the graph below has a consumption of roughly 260.000 kWh/year and a solar panel production of roughly 184.000 kWh/year (these numbers are not shown in the graph). Without a

battery, the housing association will on average only use 42% of the energy that its solar panels produce. If a battery of 40 kW is installed the utilisation rate of the solar panels are increased, which means that the housing association now uses an average of 77% of the generated energy from its solar panels.



NB: this is an estimate of both private and shared consumption. It is possible for a housing association to differentiate between private and shared electricity consumption and, therefore, move the electricity from both solar panels and battery to only cover shared expenses, such as community laundry rooms, etc. However, solar panels and batteries connected with both private and shared consumption has the best and most meaningful effect in regard to contributing to the green transition.

Why should social housing choose a redox flow battery from VisBlue?

Customisable and upgradable

The VisBlue Battery Solution is scalable and built using our own standard modules, which makes the solution easily customisable. This customisation is also visible as it is possible to install a battery from VisBlue both indoors and outdoors, as well as in container solutions. Furthermore, the battery is easy to upgrade, if the housing association's electricity pattern or energy needs change, as it is built for disassembly.

Recyclable and safe

A battery solution from VisBlue is recyclable, as our redox flow technology is based on vanadium, which is completely recyclable. Moreover, the aspect of safety is visible in our choice to use vanadium, as this element is safe and has no hazardous leaks or gasses.

Research

The founders of VisBlue are still a part of the university society, which keeps VisBlue updated regarding research in the area and allows VisBlue to participate in the project all over the world.

Optimised control strategy

VisBlue has developed an optimised control strategy to ensure an optimal efficiency. Every installation is simulated to fit the specific housing association, to make sure the optimal size is provided.