

# Lighthouse City Sonderborg: Housing associations in front with solar cells and batteries

The Sonderborg area's housing associations are at the forefront and demonstrate integrated solar cells and battery systems. Advice and co-financing from the EU creates security for residents' investments.

The first solar cell battery systems have just been installed at SØBO's department 12 at Grundtvigs Alle and department 21 at Udsigten in Sonderborg.



*Birthe Holm, department chair and Arne Vermehren, member of the department board - photographed in front of the battery cabinet at Søbo's department 12*

## Green DNA in Søbo's department 12

Birthe Holm, chairman of Søbo department 12, is pleased that the department's 72 families now both harvest their own solar energy and can save the electricity for later consumption. The decision is part of the department's conscious climate journey:

"Our buildings are from the 70s, but continuously energy renovated with both more insulation on the outside of the building and 350 mm in the roof in connection with the installation of the solar cells. Windows and doors have been replaced recently and we have individual meters in all the homes. Several years ago, we participated in ProjectZero's ZERO driving license courses and have subsequently changed lamps, refrigerators, white goods, etc. to the best energy class. I wonder if the energy label is now far better than the C label" says Birthe Holm to ZEROnyt's broadcaster with a big smile at the same time as she shows the energy label from 2010.

Department 12's 72 apartments are divided into 3 double apartment blocks on 3 floors. Here, 670 m<sup>2</sup> of roof-integrated solar cells have been installed on the east- and west-facing roof surfaces. These can produce 110,000 kWh of electricity per. year. The solar cell power is primarily used to cover the homes' current electricity consumption.



*Søbo's department 12 with roof-integrated solar cells and battery cabinet*

#### **Lithium-Ion batteries accumulate excess power**

The excess solar power, which can not be used here and now in the homes, is stored in batteries, which are placed in cabinets outside the buildings. The battery capacity here is 23 kWh in each of the 3 plants, a total of 69 kWh of the type Lithium-Ion batteries. On very sunny days, more solar cell power is produced than can be used in the buildings at the same time, and if the batteries are also fully charged, the excess solar cell power is sold to the electricity grid.

Arne Vermehren, a member of the department's board, welcomes the fact that the department's green conscience goes hand in hand with declining energy costs. "But I miss that we can better follow both production and consumption of electricity", says Arne Vermehren and continues, "our next challenge is to make the department's parking spaces ready to be able to charge the residents' upcoming electric cars". Arne Vermehren himself is interested in acquiring an electric car, but only if it can be charged near the home.

#### **Produces 40% of consumption**

Department 12's photovoltaic system with batteries can cover approx. 40% of the homes' total electricity consumption of 200,000 kWh per. year. The total investment in the solar cell and battery plant amounts to DKK 1.7 million. kr.

The payback period is calculated at 12 years without EU funding and 10 years with EU funding from the SmartEnCity project.

Simultaneously with the installation of the solar cells, the roofs were replaced and the ceilings were re-insulated, so that the homes are now in good energy condition. The solar cell plant was commissioned on 10 September 2020.

The work was carried out by the companies Søgård Byg and Better Solar Energy.

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