

New Clean Energy Communities in a Changing European Energy System (NEWCOMERS)

Summary case study report

Dalby Solby

Funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No 837752.



About NEWCOMERS

NEWCOMERS is an international research project that aims to deliver practical recommendations about how the European Union as well as national and local governments can support the development and growth of energy communities across Europe. The project involves a consortium of eight partners across Six European Countries: Sweden, UK, The Netherlands, Germany, Slovenia and Italy. For more information, please visit our website: <https://www.newcomersh2020.eu/>

About this document

This case study report provides a short summary of a full case study report on Dalby Solby, a cooperative housing association located 20km northeast of Malmo, Sweden. The full case study was guided by 14 research questions, across four themes. The themes and questions are presented in the following table.

Theme	Research questions
Actors	Who is involved in the EC and what are their roles? What knowledge and skills are needed to develop and operate ECs?
Technologies	What technologies are employed in ECs? What are the advantages and disadvantages of certain novel technologies, including smart applications? What implications do they have for the viability of different EC BMs? What influences the choice of technologies employed in ECs?
Values	What forms of value do case study communities currently generate and for whom? What values do ECs provide to the energy systems they are connected to?
Business models	How are actors and technologies connected to deliver products or services? How do ECs emerge? How do they operate? How replicable and/or scalable are ECs likely to be? How might scaling/replication occur?

This summary document focuses on the emergence and operation of Dalby Solby, showing how it creates and delivers different types of value to citizens, consumers, and energy systems, as a business model. It concludes with a brief discussion of the potential for Dalby Solby to grow or to be copied in new contexts. It presents – in a highly reduced format – the interpretation of the researchers. It does not necessarily reflect the opinion of those involved in its development and operation. Any factual errors remain the responsibility of the authors.

Suggested Citation:

Barnes, J. Hansen, P. Darby, S. Palm, J and Reindl, K (2022) NEWCOMERS summary case study report: Dalby Solby. NEWCOMERS Project, grant agreement No 837752, 3 February 2022

Date: 9 February 2022

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Dalby Solby

Solbyn i Dalby, or the more commonly used Dalby Solby, is a cooperative housing association based in Dalby, 20km northeast of Malmö, Sweden. Dalby Solby was initiated in the late 1970s to promote sustainable living. To improve the community's carbon footprint, several energy projects have been implemented. In 1992 the community bought 30 shares in a local wind turbine association that is used to supply electricity consumed in communal areas. In 2014-15 onsite solar thermal collectors were installed and in 2019 the community installed onsite solar PV generation, providing heat and power to communal areas. Additional energy projects have included installation of LED lighting to improve the community's energy efficiency. New projects currently under way include the installation of additional solar cells on carports, and the development of a charging infrastructure for EVs using solar PV and battery storage.

Emergence

Dalby Solar is a cooperative housing association initiated in the late 1970s by a group of engaged people in the city of Lund. At the heart of the endeavour was a desire to live in a more communal manner, and as sustainably as possible. Over the following decade, the group located a site (then on the edge of Dalby), secured financial support from the Swedish housing development organization HSB and constructed 50 apartments as well as a communal garage, laundry, kindergarten and storehouse. The first housing association members moved to the new development in 1987/88.

Although the group initially had ambitions to generate and use solar energy as a collective (inspiring the community's name), these were found to be financially unviable at the time. Dalby Solby began integrating renewable sources of energy in 1992, when the community purchased shares in a nearby wind turbine. In the 2010s, the community's energy group – an interest-based group of 4-5 volunteers – began looking into other possibilities. Solar thermal systems were subsequently installed in 2014/5, followed by a solar PV system in 2019. Since 2018, several energy efficiency measures were also implemented.

Operation

To date the Solby has undertaken several collective energy projects. The operation of these projects takes two forms (Figure 1):

1. Participation in the activities of others: Purchasing 30 shares in a local wind turbine association, the Solby has a right to buy 1000kWh of electricity per year, per share, at favourable rates for use in communal areas.
2. Collective investment decisions: Since 2010 the Solby has invested in onsite solar thermal and solar PV systems. These decisions were taken together and benefit the collective.

In these activities the Solby, a single legal entity (a housing association) has taken collective decisions to invest expertise, time and capital in renewable generation assets. Investments in collective solar thermal and solar PV assets reduced electricity imports from the grid and alongside the sale of surplus generated electricity, result in reduced annual electricity bills. Wind shares allow it buy locally generated renewable electricity via a supplier.

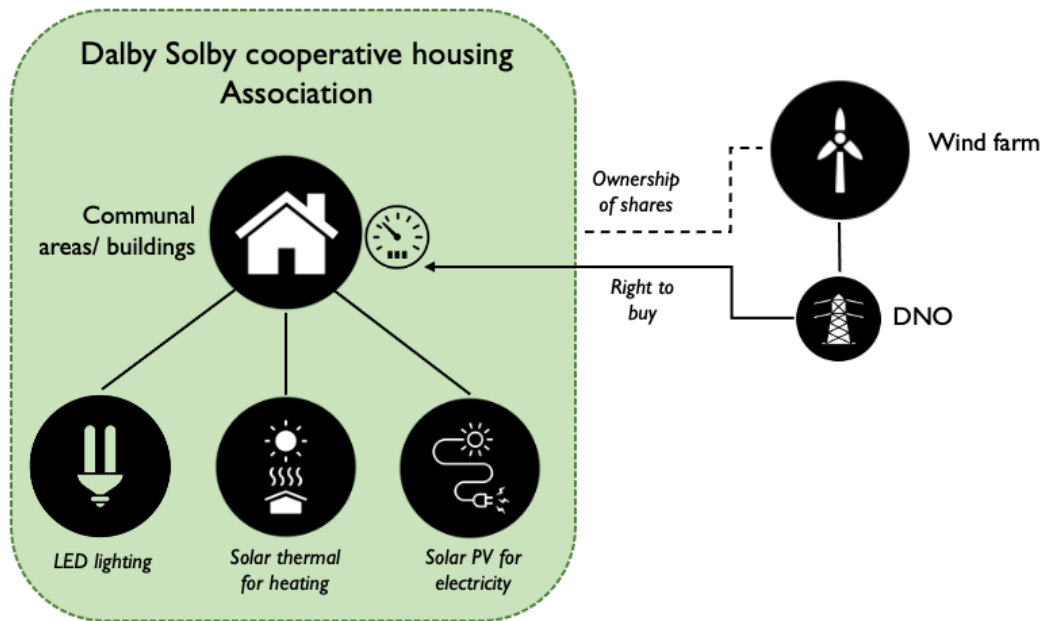


Figure 1: Key actors and relationships in Dalby Solby

Business model

While the Solby does create value for its community, it does not have a business model *per se*. Community members are involved in all stages of project development, with new projects typically being initiated by a small group of members with regular consultation of the wider community. Projects have then gone on to be collectively financed and owned. Decision about new project follows that of the wider cooperative housing association, with collective decision-making by all residents.

These projects provide multiple benefits to members, including providing reductions in communal energy bills and reducing the environmental footprint of the community whilst providing a means to participate in the creation of a sustainable future. With new projects underway, including for instance new solar installations for charging electric vehicles, the community intends to further reduce their environmental impact through linking renewable generation to transportation. For community members these projects also demonstrate the potential for alternative low carbon lifestyles to the wider world.

Prospects

The community's longevity and its strong social capital, evident through delivery of multiple recent projects, suggests the Solby is well positioned to undertake new energy projects over the coming years. The pursuit of new PV generation assets linked to electric vehicles are likely driven by technological advances and reductions in technology costs. Equally important to the Solby's future will be changes to national market rules and regulations. Depending on how the EU's Clean Energy Package is transposed into national law, the Solby may be able to capture greater value from its existing and planned generation assets. This is likely to involve increasing knowledge about collective generation and demand, new accounting relationship to allocate generation to different demand points and new contractual relationships. The potential to replicate the Solby's activities elsewhere depends in large part on how their knowledge and experience can be translated into new contexts, likely through the support of intermediary organisations.