

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

Summary case study report

Energiecoöperatie Zuiderlicht

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 Energiecoöperatie Zuiderlicht, an energy cooperative in Amsterdam. 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 Energiecoöperatie Zuiderlicht, 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 Energiecoöperatie Zuiderlicht 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:

Hansen, P. Barnes, J. Darby, S. van der Grijp, N. and Petrovics, D (2022) NEWCOMERS summary case study report: Energiecoöperatie Zuiderlicht. NEWCOMERS Project, grant agreement No 837752, 8 February 2022

Date: 8 February 2022

Contact: Paula.hansen@ouce.ox.ac.uk



This work is licensed under a [Creative Commons Attribution – Non Commercial - No Derivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Users are welcome to copy, distribute, display, translate or perform this work without written permission subject to the conditions set out in the Creative Commons licence. For any reuse or distribution, you must make clear to others the licence terms of this work.

Energiecoöperatie Zuiderlicht

Energiecoöperatie Zuiderlicht, henceforth Zuiderlicht, is an energy cooperative based in Amsterdam, the Netherlands. The cooperative is premised on matching empty roof space with households wanting to invest in solar PV. It enables people unable to install solar PV panels on their own homes to participate in a renewable energy transition through two different project forms. Under the first type of project, members co-finance, own and manage solar energy installations. These projects have been supported by the Dutch premium feed-in tariff scheme (the Renewable Energy Production Incentive Scheme or SDE +). In the second type of project alongside co-financing, owning and managing solar energy installations members can enjoy more favorable tariffs for the they consume through signing up to a special tariff. These projects are enabled by the Dutch “postcoderoos” regulation, which rewards owners of renewable energy generation assets with a reduction in tax on their electricity bill. Zuiderlicht currently has 1000 private members, 370 of which are investor members.

Emergence

Zuiderlicht was founded in 2013 by a group of citizens wanting to contribute to and accelerate the energy transition by taking matters into their own hands. Many of the founding members had a professional and/or educational background in renewable energy. Some of the founding members were neighbours living on houseboats. Living on houseboats meant they could install solar PV panels: Unlike most people living in Amsterdam, houseboat residents had access to flat roofs, which they owned (rather than rented).

Motivated by a general sense at the time that the energy transition was not going well, the group began developing concepts around using the roofs of larger, non-residential facilities to install solar PV systems. A local football club with a newly built flat-roof clubhouse was amongst the first buildings/ organisations that were approached. After about two and a half years and a lot of learning by doing, the group eventually installed panels on the roofs of the football club stadium and clubhouse.

Zuiderlicht have been supported by the Municipality of Amsterdam from the outset. The municipality owns many of the roofs Zuiderlicht now has PV installations installed on. It granted permission for the installation of the first PV array at the football stadium. It also provided financial support via a sustainability fund, in the form of low interest loans. Other actors important in the development of Zuiderlicht have been the users of buildings where PV is installed (the municipally generally owns the building) and community members, and the Dutch energy supply company Greenchoice. Rabobank (one of the biggest Dutch-based multinational banks) provided support for publicity and communications.

The existence of Dutch subsidy schemes for the production of renewable energy, both the SDE + scheme¹ and the postcoderoos scheme², have been vital to the development of Zuiderlicht’s energy projects, providing the steady revenue projections and creating a business model that local people had confidence investing in.

Operation

The community has developed two forms of renewable electricity generation project that create and deliver value to members. The first and most common form (17 projects to date) is collective generation via roof-mounted solar PV arrays, backed by the Dutch feed-in premium scheme, the SDE + which operated between 2011 and 2021 since being replaced by the SDE ++ (Figure 1). To develop these projects, Zuiderlicht locates suitable sites to host rooftop solar arrays and negotiates long-term leases with rooftop owners. In most

¹ The SDE is a form of premium feed-in tariff scheme that supports the generation of electricity from renewable assets.

² Dutch reduced-rate regulations, commonly referred to as the ‘postcoderoos’ scheme, offer a partial tax exception for owners of distributed renewable generation technologies who live in the postcode area of a project (the central postcode), or in postcode areas adjacent to it (the ‘rose petals’).

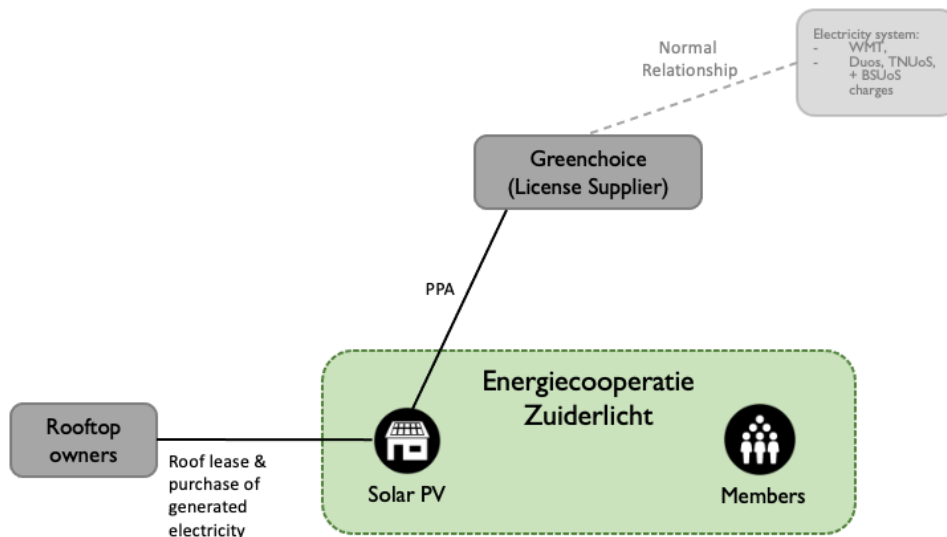


Figure 1: Central actors and relationships within Zuiderlicht's SDE++ backed projects

instances it is the municipality who partner with Zuiderlicht as rooftop owners. Zuiderlicht members invest in the generation equipment. Tenants of the building, such as sports clubs or schools sign contracts to purchase the power generated at a lower than market price, whilst excess generation is sold to a supplier (Greenchoice) under a power purchase agreement (PPA). Members receive a return on investment. Collective financial benefits accrue to Zuiderlicht and the rooftop owners

The second form of collective generation project (three projects to date) uses the Dutch postcoderoos regulations (PCR) to 'sell' generated electricity back to members (Figure 2). Unlike the SDE-backed projects, generated electricity is sold to Zuiderlicht members via a supplier (Greenchoice), which administers a modified supply contract with members. Net metering is used to calculate the proportion of members' electricity imports that can be matched to their share of electricity generated by the Cooperative installation and any top-up power required. Members receive a tax reduction for the proportion of electricity supplied from the cooperative installation.

To participate, members must be part of the cooperative and reside within the postcode of the project or a neighbouring postcode. The supplier manages most regulatory compliance issues and delivers a range of back-office services including wholesale trading, billing, metering, and customer services. Zuiderlicht manages annual membership statements and 'Guarantees of Origin' certifications. Primary electricity and financial flows are illustrated in Figure 3.

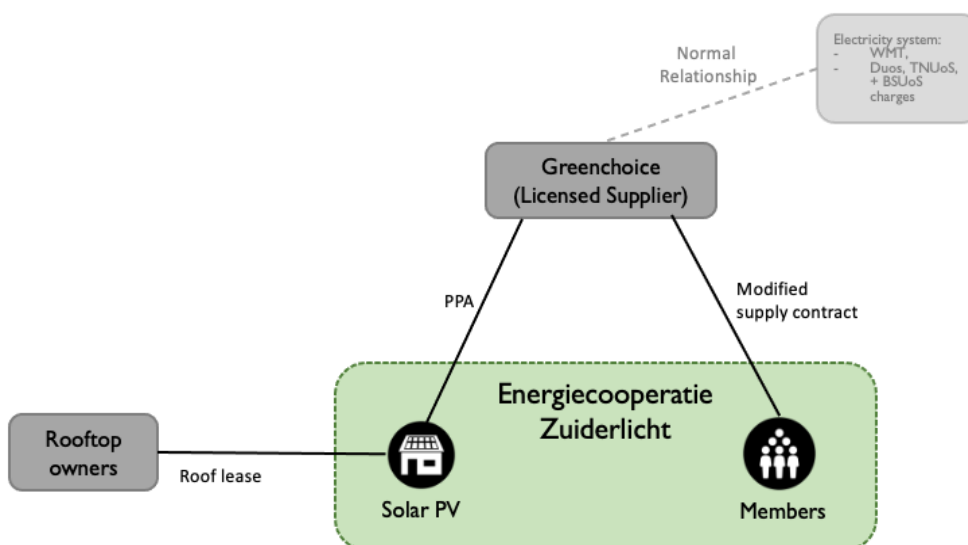


Figure 2: Central actors and relationships within Zuiderlicht's PCR-backed projects

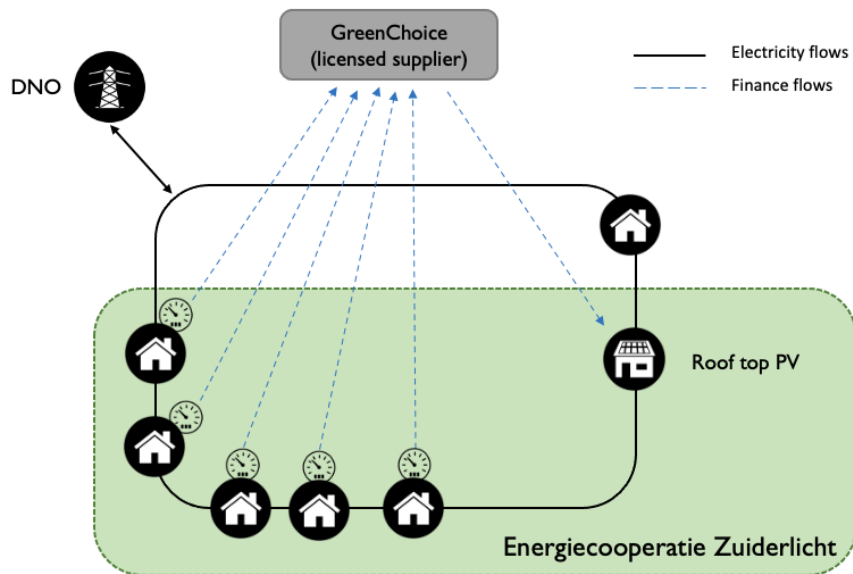


Figure 3: Primary electricity and financial flows in Zuiderlicht's PCR-backed projects

Business model

Zuiderlicht's business activities differ slightly between projects undertaken. Both project forms are developed entirely by the cooperative. For SDE-backed projects rooftop owners are the primary external actor the cooperative negotiates with. The role of a supplier is primarily administrative, deducting generation from collective assets from the rooftop owner's electricity bill (using net metering arrangements). For PCR-backed projects, the cooperative partners with a supplier, which subsequently sells generated electricity to members under the postcoderoos regulations. The supplier divides the tax discount granted under the postcoderoos regulations between investors and electricity consumers of the project.

Zuiderlicht's primary value proposition to members is 'energy generation for everyone'. With a strong focus on enabling participation of Amsterdam residents in financing, owning and managing renewable generation assets. Zuiderlicht creates space for all, regardless of wealth to participate in the energy transition. Under the postcoderoos-back projects Zuiderlicht also offers lower energy bills to members (depending on current service contracts) and knowledge that a proportion of their household consumption can be linked to locally generated renewable power.

Zuiderlicht also delivers value beyond its members to the wider community. Through its generation projects and connections to local buildings the cooperative regularly undertakes outreach activities to engage and educate residents in renewable generation and the energy transition.

Although Zuiderlicht is the focal actor managing its business activities it also relies on the activities of Greenchoice to supply power generated at three sites to its members. Zuiderlicht's principal benefit to the energy system is increased distributed generation.

Prospects

Theoretically, Zuiderlicht's postcoderoos-backed projects could be advanced through smart metering and half-hourly settlement of supply and demand. This would facilitate energy literacy amongst members by fostering a connection between how and when renewable electricity is generated and when it is used. It could also result in multiple system benefits if members could be incentivised to shift their demand to times of local supply (a form of demand side management). Subsequent benefits to the energy system might include:

- reducing the need for and costs associated with local network reinforcement (to deal with increased two way flows of electricity on low voltage networks),
- local curtailment (the 'dumping' of excess renewable generation where there is insufficient demand),

- and the need for increased renewable generation capacity elsewhere in the system.

However, to achieve this would require advanced contractual relationships and accounting techniques. The current postcoderoos regulations and the use of net metering specifically, mean there is no incentive for Zuiderlicht to do this.

Knowledge and experience in project development places Zuiderlicht in a strong position to carry on developing renewable energy generation projects providing a supportive policy landscape remains in place. Its broader social network and roots within the city make it favourably positioned to support the creation of new renewable energy generation cooperatives.