

Co2mmunity

A Pioneer in Community Solar: The Pszczelna Street Housing Community in Szczecin, Poland



Highlights

- Pszczelna Solar Housing Community is the first community in Szczecin to install a photovoltaic system.
- Current legislation in Poland predominantly supports on-site energy consumption and energy efficiency initiatives.
- In deciding whether to invest in the solar PV system, financial motives of the housing community members dominated the decision-making process.

Background information

The Pszczelna Solar Housing Community, is located in the capital city of the West Pomeranian Province of Poland, Szczecin. Launched in 2016, 'Pszczelna' was one of the first housing communities in Poland which decided to install a photovoltaic system.

The launch of the prosumer renewable energy installations in Polish housing communities could be attributed to the 'Prosument Programme'. The Pszczelna Solar Housing Community in Szczecin was a recipient of the fund from the National Fund for Environmental Protection and Water Management (Narodowy Fundusz Ochrony Środowiska i Gospodarki Wodnej, NFOŚiGW) under the 'Prosument Programme'.

Monopolistic utility companies, supported by the government are still perceived by many Polish citizens as a reliable source of energy. Hence a weak level of public participation in community energy, reflecting general low awareness of renewable energy.

Co2mmunity

Brief description of what was done

The management board of the Pszczelna Housing Community in Szczecin facilitated the investment of a roof photovoltaic installation in the multi-family building. Electricity obtained from the photovoltaic installation is utilized only for the needs of the common part of the building: underground garage, staircase lighting, elevators, outdoor area and power supply for heating, ventilation and air conditioning (HVAC) system.

The project leaders perceived the housing complex as a suitable location when it comes to the needs of this type of installation. It is located on the south-west side and the roof is not obscured by trees or higher blocks. The building consists of 85 apartments and the renewable energy system consists of 96 Viessmann photovoltaic panels, with an output of 255 W each and an ABB inverter, which is responsible for converting the energy obtained to its working condition.

The total capacity of 24 kW covers the demand for electricity of the common units of the housing community. The housing community's annual energy consumption of the building reaches 22 MWh. During the first half of the year after the official launch, the photovoltaic installation produced 13.6 MWh of electricity, of which as much as 10 MWh was fed into the grid. An inverter is connected to the data transmission network, so that the current parameters of the installation can be observed at any time. Thanks to an ABB's Plant Viewer application combined with an electronic information board installed on the building, interested citizens can see: current capacity, daily production, total production and level of CO₂ emission reduction. Information is also available online:

<https://easyview.auroravision.net/easyview/?entityId=11091985>

Project champions and motivations

The main project champions were two ambitious and progressive managers – Mr. Krzysztof Stasiewicz and Mr. Piotr Brzuszkiewicz, who are original members of the housing company's board. Their openness and interest in innovative eco-friendly technologies made them determined to implement the investment that led to the installation of photovoltaic panels. As a result, they were the first housing community in Szczecin that own a PV power plant.

A key motivator included the possibility of obtaining co-financing. Without this, the project would have been difficult to realise. They are happy to share their experiences and advice, because they remember perfectly well how much time and energy it took to acquire and understand this knowledge. Not so much technical, as legal and organizational.

Decision making process

One of the biggest problems of Polish housing communities is their decision-making power. Every financial decision must be approved by at least half of the members of the community. Generally, the Board of the community is obliged to hold a reporting and financial meeting by virtue of the Act at least once a year. At this meeting, all decisions relating to the life of the community are made – both administrative and financial. It is the residents of the housing community who have the final decision.

Ownership model adopted

The housing community owns the multi-family building, while the solar PV system installed on the roof is owned by members of the housing company. Decisions are made by the majority vote (at least 51%). Shares are divided between members of the community. Savings support the building's renovation fund.

Co2mmunity

Financing and economic viability

The community's self-motivated management team, combined with the consent of the residents, competed for project financing. The housing community applied for funding and received it from the Regional Fund for Environmental Protection and Water Management in Szczecin under the 'Prosument Programme'.

The project managers received a 40% non-returnable grant subsidy. Whilst obtaining a loan granted from the fund, with a preferential interest rate of 1%. Which covered the remaining 60% of the costs, amounting in total to an investment of 143 820.00 PLN (33,500 €). The monthly installment of the loan is PLN 835.00 (200 €) is repaid by the community funds, which are so far dedicated to pay energy bills. Meaning the residents did not incur any additional costs as a result. Without the right co-financing support e.g. grant and preferential loan conditions, the investment would not have been impossible. The repayment period of the loan is 8 years (6 years remaining).

Project implementation

Most of the apartments in the housing community are occupied by young people and they are aware of their co-responsibility of their property. Initially the managers kicked off the project with an information campaign among the co-owners of the community through personal meetings and experts' presentations about renewable energy sources. This required time commitment. Some residents did not hide their fears or reservations.

Already at the first meeting a positive decision was made, especially as the managers found a good source of financing, which did not require the financial involvement of the community members. The economic calculation and ecological benefits appealed to the imagination of the residents. This positive outcome resulted in the adoption of a resolution, which allowed the Board to proceed to the selection of the project, the contractor and the co-financing system.

Project benefits

- Savings by the housing community in the common building related electricity bills.
- Property value increase of the flats of 15-20% per m²
- Community funds – funds which have been obtained so far from the payment on the energy account. This flows into a renovation fund.

Barriers

One of the key barriers is the fact that Polish energy law does not allow surplus electricity production from common RES installations to be directly sold and distributed for use in community's members' homes. Surplus energy is instead 'fed' in the network of the operator, in this case the ENEA Operator, which supplies the housing unit with a bidirectional meter. The margin for net-metering is 30%, which means that for each 1 kW sent to the grid, the power industry returns 0.7 kW to the community in the next billing period (in the case of installations with a capacity above 10kW and less than 50kW). A key barrier is the fact that the Polish energy sector misses appropriate laws and frameworks in defining a viable community energy model. This vagueness, combined with limited funding programs, create an insecure investment environment for potential community energy developers. This is further emphasized through developer's fears of potential complications in administrative and bureaucratic application processes. Although there are several entities which help and support applicants, small developers are put off by the sheer amount of time and effort required for such projects.

Co2mmunity

Main lessons learned

- Self-assertion and determination of the 'Pszczelna' housing management team was key in the preparation of legal documentation, applications and contracts.
- Opportunistic mindset required for finding external co-financing. Governmental institutions are there to serve as beneficiaries, and not vice versa.
- Trustworthiness, between the community members and the housing management team was crucial. Highlighting potential benefits reduced opposition to the project.

Project champions' recommendations to policy makers

- Key to change regulatory barriers, so that housing residents can produce solar energy for their own self-consumption.
- Regional authorities should organize workshops and educational efforts to build capacity for the creation of community energy organizations.
- Support the training of energy advisors for managing and maintaining renewable energy technologies.
- Financial support – such as project development grants or low-interest loans – should be provided to groups who are interested in building community projects to enable them to perform feasibility studies and access consultancy services.

Authors

Aljosa Isakovic

Department of Geography at the University of Kiel, Kiel, Germany

Magdalena Karlikowska

Foundation for Sustainable Energy, Warsaw, Poland

Sources

Osiecka-Brzeska, K. (2018). Conditions for Development of Renewable Energy in Poland, 310–339.

Pyrkosz, D. S. (2015). Cooperation, Culture and Shared Values – Poland and Its Neighbourhood. *Optimum. Studia Ekonomiczne*, 6(6(78)), 47–57.

Woch, F., Hernik, J., Linke, H. J., Sankowski, E., Bęczkowska, M., & Noszczyk, T. (2017). Renewable energy and rural autonomy: A case study with generalizations. *Polish Journal of Environmental Studies*, 26(6), 2823–2832.

Biczowski, M., Jeziarska-Thole, A., & Dubownik, A. (2018). Role of Renewable Energy Sector in Specific European Union States, With Particular Focus on Poland. *Proceedings of International Scientific Conference "RURAL DEVELOPMENT 2017,"*

Chodkowska-Miszczuk, J. (2014). Malo-měřtkové systémy obnovitelné energie v rozvoji rozptýlené výroby v Polsku. *Moravian Geographical Reports*, 22(2), 34–43.

Isakovic, A., Karlikowska M. (2018). Interviews with project leaders and community energy experts