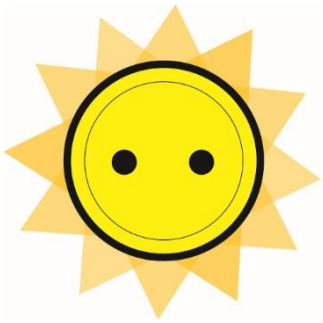

Tackling the Challenges of a Solar Community Concept in High Latitudes

The building sector, which consumes close to half of all energy in the EU, forms a great opportunity to increase the share of renewables, particularly solar heat and PV. A community approach has proven to be efficient in implementation of solar energy in the building sector.

The main objective of this research is to find scientifically based methodologies and solutions for the major challenges and obstacles in the implementation of a solar community concept in the Finnish environment, where the weather is cold, the building practices are established and conservative, the business concepts related to renewables are undeveloped and the consumers are not used to rely on solar energy.

The work is divided into four Work Packages: i) WP1 Concept development and adaptation to local conditions; ii) WP2 Solutions for long-term energy storage; iii) WP3 Business models for new type construction projects; iv) WP4 Customers' economic and environmental demands and preferences. The research methodology is chosen according to the work content and varies from technical simulations to empirical measurements and interviews.

The research partners are: Partner 1: Aalto University, School of Engineering, Department of Energy Technology and Department of Civil and Environmental Engineering; Partner 2: Hanken Swedish School of Economics, Department of Marketing; Partner 3: University of Helsinki, Faculty of Social Sciences, Department of Social Research.

The expected main results of the project are following: i) The choice and best construction of the seasonal energy storage under Finnish conditions; ii) The optimal system architectures, best performing components and most important parameters affecting the energy performance; iii) which kind of business models involving customers, companies, investors, and other stakeholders are likely to be most effective in commercializing solar community technologies on a large scale; iv) provide specific observations concerning the impact of solar technology on society and the mechanisms that solar energy research transfers to society.

Contact:
Prof. Kai Siren
Aalto University
Kai.siren@aalto.fi