

The Beginning of a Beautiful Relationship?

Community Solar as a Business Model for Building-Integrated Photovoltaics

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Project Description

The adoption of new technologies, such as building-integrated photovoltaics (BIPV), but also new and innovative business models such as community solar, have both been identified as relevant drivers for the further growth of solar PV. However, the adoption of BIPV is still encountering numerous barriers that hinder its more widespread deployment within the solar PV market. **The goal of this research project was to assess whether community solar as a successful business model for the adoption of conventional solar PV could be equally promising in relation to the further adoption of BIPV.**

Research Methodology – Experimental Survey with 2 Groups

Sample Data

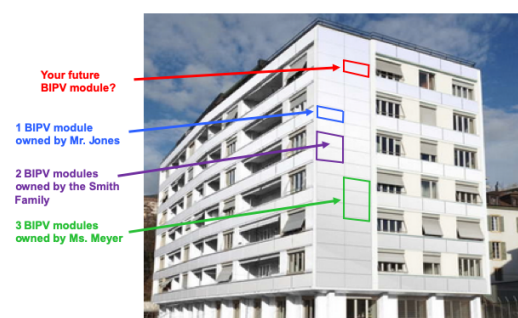
Representative for the Swiss Population

	BIPV Offer (n=210)	Conventional Offer (n=203)	Total Sample (n=413)	Swiss Population
Age 18-29	16.7%	16.3%	16.5%	16%
Age 30-44	24.3%	22.7%	23.5%	26%
Age 45-59	27.6%	28.6%	28%	28%
Age 60+	31.4%	32.5%	32%	30%
Men/Women	50% / 50%	46% / 54%	48% / 52%	49% / 51%
Political Attitude: Conservative	47.1%	52.2%	49.6%	50.5%
Political Attitude: Centrist	27.6%	32%	29.8%	22%
Political Attitude: Left-wing	14.8%	11.8%	13.3%	27.5%
Income: Low	9%	10.3%	9.7%	16.1%
Income: Mid	41.4%	42.9%	42.1%	49.4%
Income: High	36.7%	30.5%	33.7%	34.5%

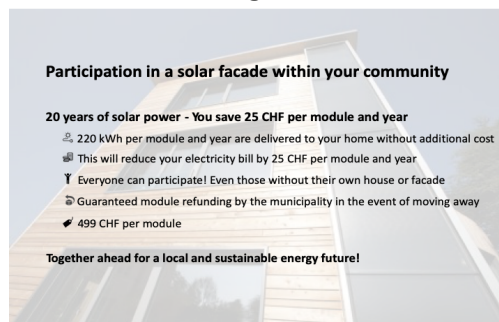
Group 1

BIPV solar modules for community solar

Treatment Part 1: Offer illustration



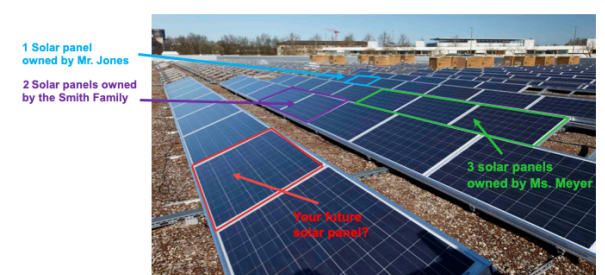
Part 2 - Offer configuration



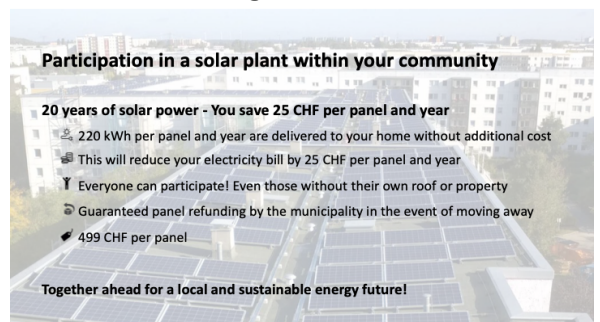
Group 2

Conventional solar panels for community solar

Treatment Part 1: Offer illustration



Part 2 - Offer configuration



Results – High Potential for Community Investments into BIPV

 No significant differences ($p = 0.365$) between the means of people's willingness to invest: **BIPV and conventional solar panels are similarly attractive!**

 Private **investors are indifferent** concerning the technology

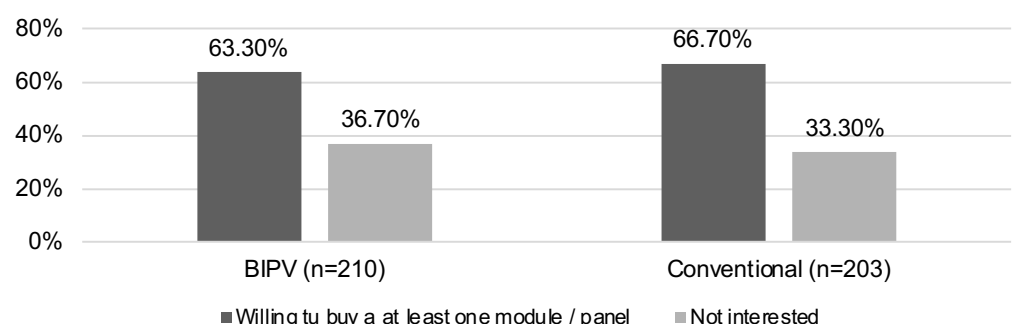
 Generally: Potential of **community investments in PV and BIPV is very high**

 In both groups, over **60% indicated they would at least invest 500 CHF**

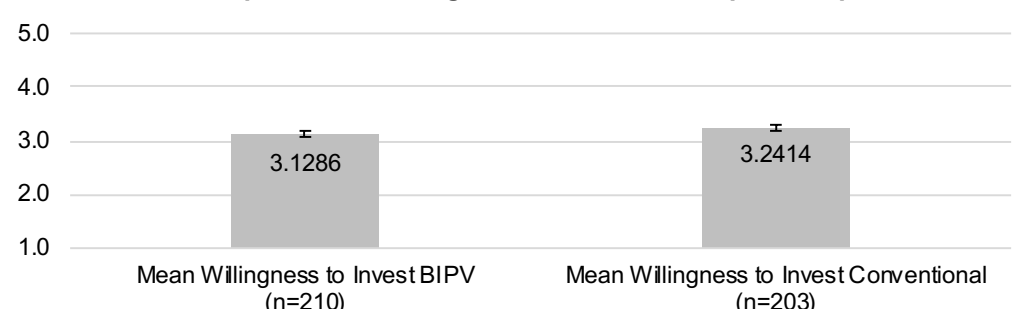
 Covariates such as **environmental consumer behavior** (positive, $p = 0.000$), **age** (negative, $p = 0.001$), **income** (positive, $p = 0.057$) and **political attitude** (positive, $p = 0.002$) revealed **significant effects** on people's willingness to invest

 Community Solar as an **important driver for PV and BIPV growth**

Willingness to Invest in at least one Module / Panel (500 CHF) from Community Solar



Comparison of Willingness to Invest Means per Group



Recommendations

- Authorities at the state as well as local level would be well advised to draft guidelines (as it was successfully implemented in Uppsala, Sweden) that include **community solar based on BIPV as part of the planning process for public buildings.**
- By promoting community solar BIPV, utilities can further meet increasing customer demand for renewable energy and also **increase customer loyalty and satisfaction.**