

SOCIAL ACCEPTANCE FOR ENERGY EFFICIENT SOLUTIONS IN RENOVATION PROCESSES

Przemysław Dana, Dawid Krysiński, Paweł Nowakowski
ASM – Market Research and Analysis Centre



Introduction: EE solutions and social acceptance (I)

- The transition to a **low-carbon energy system is a societal, not just a technical, problem**
- Challenges according to EC: research community fragmentation, "social scientists" vs "technologists"
- The paradox: **most investments are spent on engineering problems whereas real challenges belong to the realm of Social Sciences and Humanities (SSH)**
- **Behavioural approaches** are instrumental for better understanding energy choices made by individuals and groups
- Social science can **facilitate social learning** process aimed at **co-development of new technologies**

Introduction: EE solutions and social acceptance (II)

Evaluation on the base of three approaches:

- Technical viability
- Economic viability
- Social viability

Market failures

*Governance and
regulatory failures*

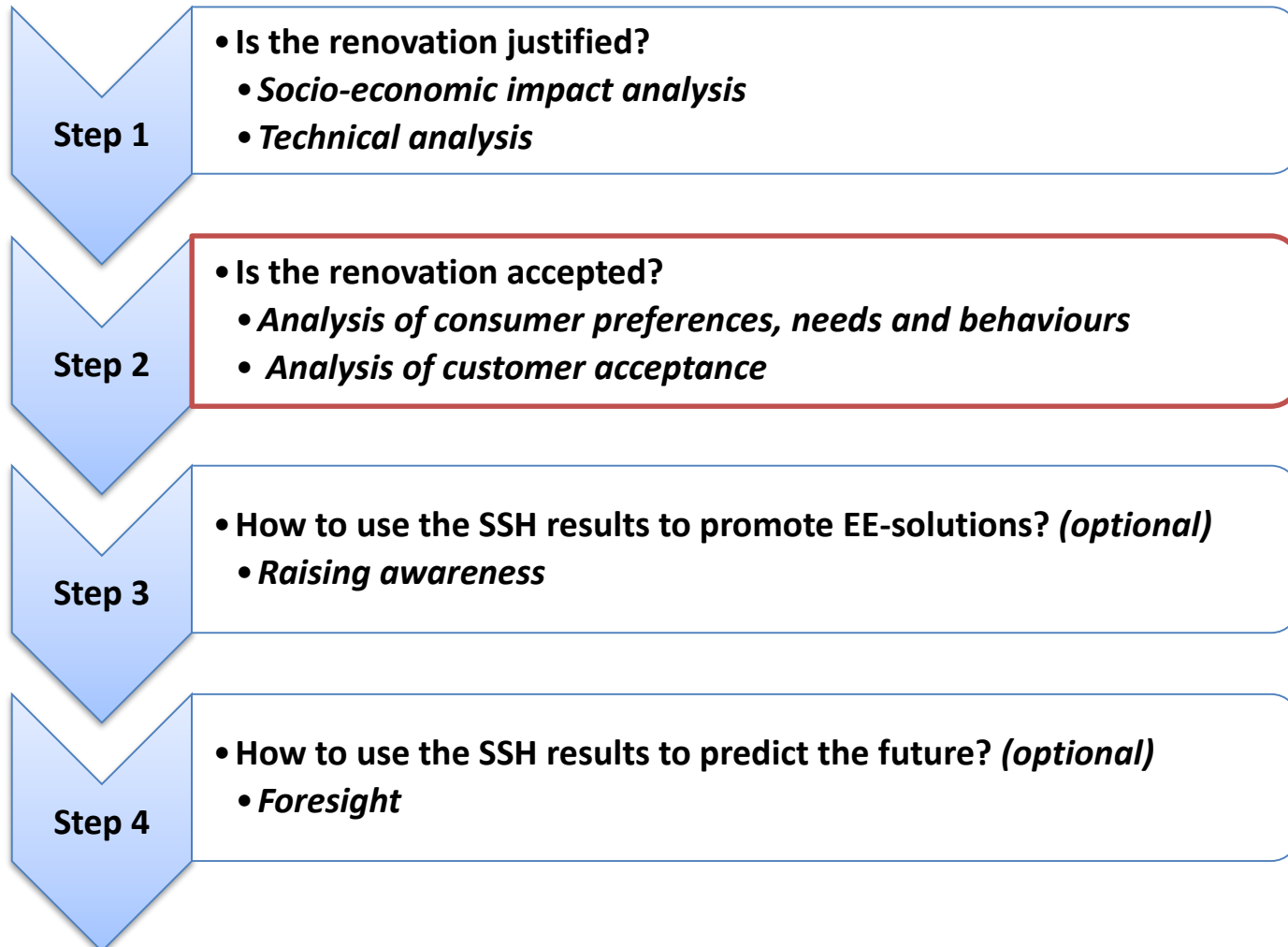
Organizational issues

Social failures

The importance of human factor in deep renovation process in order to better understand customers' expectations, needs, habits and preferences

Comprehensive and holistic SSH analysis is needed

Integrative four-step methodological approach



How to analyze social acceptance for renovations? (I)

- When the methodology can be used?

- **during the tests at pilot sites** → how the end users can exploit the new products or services?
- **without tests conducted in very specific local contexts** → how can we encourage people to be more energy efficient by means of project innovations?

Different levels of analysis. It depends on the type of planned activities, i.e. modernisation of selected installations, renovation of a single building, renovation of residential districts, regional or national implementation of new support instruments for different renovations etc

- How the methodology can be used?

- The core part of the **SSH** analysis focuses around the consumer **needs, expectations, behaviours and preferences**
- There are several methods that allow us to analyze these factors:

- **status quo bias**
- **endowment effect**
- **satisfaction**
- **loss aversion**
- **risk aversion**
- **normative social influence**
- **perceived trust**
- **choice overload**
- **availability heuristics**

How to analyze social acceptance for renovations? (II)

- **What can be analyzed on the base of the SSH approach?**

- Wide range of phenomenons:



- **Society:** Corporate social responsibility (CSR), selling “safety”, mobility practices, lofts and new design, ICT fashions/fads, urban dynamics



- **Technology:** e-communication, composite window profiles, new production technologies, 3D visualizations, nanotechnologies, open innovation models



- **Environment:** climate change, new trends in insulation and AC, higher energy efficiency standards



- **Economics:** (fertility decline and aging driven) demand for housing, increase in market concentration and high entry barriers, new product differentiation strategies



- **Politics:** EU fragmentation and strategic security, cultural conflicts.

ZenN - example of SSH approach (I)

The ZenN research project aims **to reduce energy use in existing buildings and neighbourhoods**. A number of specific measures has been implemented in **the four residential areas** that are participating in the project. The three main challenges in connection with the near-zero renovation of existing buildings faced by the ZenN project are: technical challenges, financial challenges and property structure challenges.

DEMO SITES



Arlequin, France



Lindängen, Sverige



Mogel, Spain



Økern, Norway

The **project's goals** are to:

- 1) demonstrate the feasibility of **innovative low energy renovation building processes** at the neighbourhood scale,
- 2) identify, optimize and disseminate **the most promising management and funding methods** to facilitate large-scale implementation,
- 3) develop, improve and launch **ambitious replication plans** at several scales (local, regional etc.).

PROJECT PARTNERS



Inspiring
Business



Grenoble.fr



Malmö stad



Swedish Environmental
Research Institute



SINTEF



Debesa



NTNU

Norwegian University of
Science and Technology



Oslo kommune



ZenN - example of SSH approach (II)

- **Insufficient knowledge or interest in the idea of energy-efficient buildings**
- **Cultural values which** are not in line with energy-efficient solutions that have been proposed by different suppliers
- **High investment costs**
- **Dubious returns on investment from this kind of retrofitting**
- **Technical systems are too complicated to be employed individually**, while some owners tend to wish to install them without a professional support in order to reduce the costs

This problem is **hardly vulnerable to incentives** and not much dependent on culture

VS.

Aesthetics and culturally shaped values

One of the most important means to enhance residents' acceptance for advanced energy-efficient renovations is **intensified communication and increased information about the renovations and their results.**

Such education should also encompass **presenting benefits from energy-efficient renovation to owners**, using data on payback periods as well as on reduction of bills

Conclusions

- **Without understanding the SSH phenomena we cannot:**
 - **predict individual responses** to public policy interventions
 - **design more cost-effective and mass-scalable behavioural solutions** to encourage renewable and sustainable energy use among consumers
- **Socio-economic research is essential for:**
 - **planning and shaping the transition** to a low-carbon energy system
 - **developing energy-efficient pathways** to horizon 2030 and beyond taking into account the socio-economic drivers and the updated energy efficiency measures
 - **improved energy modelling** by incorporating social factors so as to reflect the end-user behavior

THANK YOU FOR YOUR ATTENTION

Przemysław Dana, p.dana@asm-poland.com.pl
Dawid Krysiński, d.krysinski@asm-poland.com.pl

