STEP-IN

Improving **quality of life**

Improving **energy efficiency**

Improving **comfort levels**

PURPOSE

STEP-IN develops an innovative global methodology for the effective analysis and tackling of energy poverty. The project deploys tailor-made actions to support vulnerable consumers in tackling energy poverty by setting up a network of Living Labs across Europe. STEP-IN lays emphasis on improving people's quality of life through maintaining or improving comfort levels while at the same time encouraging more efficient energy usage. Furthermore, through engagement with local, national and EU stakeholder groups and experts, STEP-IN will define future policies for the reduction of energy poverty.

METHODOLOGY

- STEP-IN rolls out three Living Labs in Manchester (UK), Metsovo (Greece) and Nyírbátor (Hungary), each one in a location with a specific set of features, i.e urban (UK), mountainous (GR) and rural (HU) environments.

- The reflexive nature of the Living Labs approach allows stakeholders, including citizens, to shape how the labs are implemented, leading thus to a situation where the chosen solutions fit the needs of those involved. This approach will result in an overall methodology adoptable for further exploitation by any interested parties.

- Further to directly assisting those in need, STEP-IN will encourage the uptake of new policies and solutions at local, national and European level. This will be achieved through the engagement of a motivated Network of Interest and through organisation of summer schools, Working Groups, and participation in external events and policy forums.

THE URBAN LIVING LAB MANCHESTER, UNITED KINGDOM

"We help people understand their energy bills, how to switch their energy supplier, and how to save energy by using efficient technologies and changing energy usage behaviour."

Energy poverty has increased in most Greater Manchester districts in recent years. In 2014 14.5% of households in Greater Manchester were classed as fuel poor – above the national average of 10.6%. Many parts of the urban conglomeration contain ageing and poorly insulated housing, whilst average incomes are low and poverty rates high compared to national averages, leaving residents particularly vulnerable to energy poverty. Energy poverty has also been linked to 'excess winter mortality', as living in cold homes can exasperate existing health issues.

Recently published excess winter mortality figures show many of Greater Manchester areas having higher than national average rates. The Living Lab is operated jointly by the Greater Manchester Combined Authority (GMCA) and the University of Manchester. It adds to existing energy poverty actions being undertaken by GMCA. The University of Manchester assesses and evaluates the techniques being used.

ACTIONS TAKEN AND LESSONS LEARNT

VULNERABLE HOUSEHOLDS VISITED BY HOME ENERGY ADVISORS

154

HOUSEHOLDS THAT PREVIOUSLY HAD CUT BACK ON HEATING TO AFFORD THEIR ENERGY BILLS

66,7%

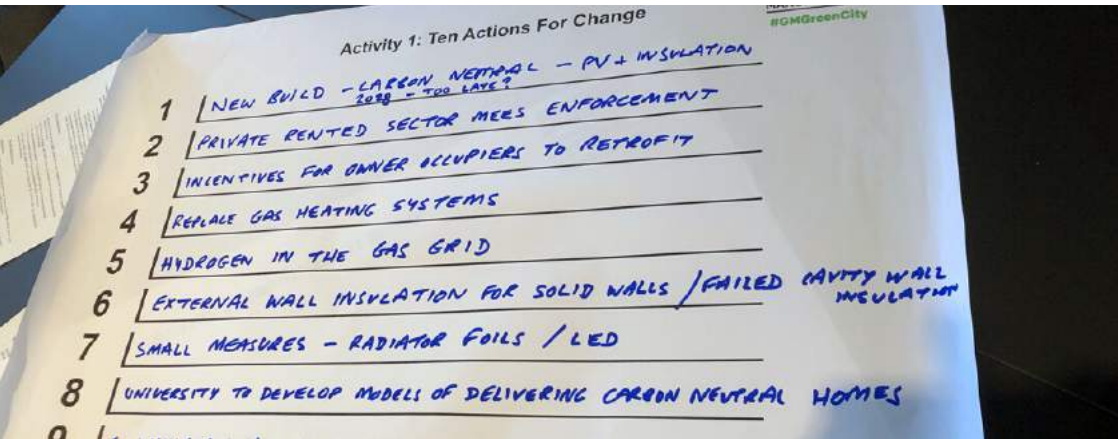
ESTIMATED REDUCTION IN HOME ENERGY BILLS

8,6%

There is strong evidence to suggest that the assistance provided within the energy advice visits had a positive impact on how residents heated and powered their homes.

A direct energy bill saving of 8.6 per cent per year for the next 10 years was estimated to have been achieved across all households participating in the project.

23% of households felt their financial circumstances had improved following the visit, and there was a dramatic reduction in the number of households who were not heating their home because they felt they could not afford their energy bills.



THE MOUNTAINOUS LIVING LAB METSOVO, GREECE

"We support people towards using fuel and energy systems more efficiently. Explaining energy bills and providing information on alternative energy schemes are also main objectives of our work."

The mountainous Living Lab takes place in the settlement of Metsovo. It is operated mainly by NTUA and its interdisciplinary research center (MIRC) located in Metsovo, in collaboration with the Municipality of Metsovo. The area has encountered increasing rates of energy vulnerability in recent years. Previous surveys conducted by NTUA, which also operates a MSc programme in the town, revealed that certain groups are particularly vulnerable to energy poverty, namely low income households, elderly households, households living in old dwellings, and households using inefficient heating systems, for instance open fireplaces, old wood stoves, and poorly maintained central heating systems. The Living Lab deals with those households in highest need, affected additionally by the cold climatic conditions of the region, the old building stock with low energy performance, the shortage of productive activities and the higher fuel prices, due to isolation and high transportation costs.

ACTIONS TAKEN AND LESSONS LEARNT

PERCENTAGE OF PARTICIPANTS THAT FIND STEP-IN USEFUL

70%

HOUSEHOLDS' AVERAGE ANNUAL ENERGY COST IN EUROS

3,200

POTENTIAL REDUCTION IN ENERGY CONSUMPTION

15%

More than 70% of those participated in the V1 LL actions find STEP-IN useful as it helped them to better understand energy bills (23.5%), to change bad habits (12%), to implement insulation measures (16%), use night electricity tariff (4.5%), to service their heating system (25%), to use more efficiently their heating system (17.5%) and to change their electricity provider (1.5%).

It was calculated that 2,440 €/year is spent for heating and 760 € for electricity, an important burden for the households of Metsovo.

The minimum heating energy savings triggered by the STEP-IN project sum to 33,000 kWh per year. The minimum electricity energy savings are estimated at 2,300 kWh per year. The potential reduction in heating energy consumption exceeds 100,000 kWh per year.

THE RURAL LIVING LAB NYIRBATOR, HUNGARY

"Home visits and individual reports clearly show that participants are different, with different needs, knowledge, and awareness level. We must use targeted approaches when working with various risk groups to address their specific needs."

The Hungarian Living Lab is settled in the eastern part of Hungary close to Nyíregyháza, in the district of Nyírbátor and its neighbourhood. The Hungarian Living Lab is operated by three partners. Maltai organise the home visits and give the infrastructure background of the Living Lab work. Ariosz is responsible for the methodology framework of the project. E.ON, as the main energy utility in this area, developed the training materials for the Home Energy Advisors (HEA) and play an active role in the Energy Cafés.

Different groups have different levels of energy vulnerability risk types. Households with a minority person have a lower risk of suffering from the financial aspect of energy vulnerability. Pensioners who live alone have a higher chance to cut back on different needs in order to pay their bills. This is caused by their need for higher thermal comfort. The results have clear implications regarding the different approaches needed when dealing with groups with distinct characteristics.

ACTIONS TAKEN AND LESSONS LEARNT

SURVEY RESPONDENTS

300

PARTICIPANTS IN ENERGY CAFÉS

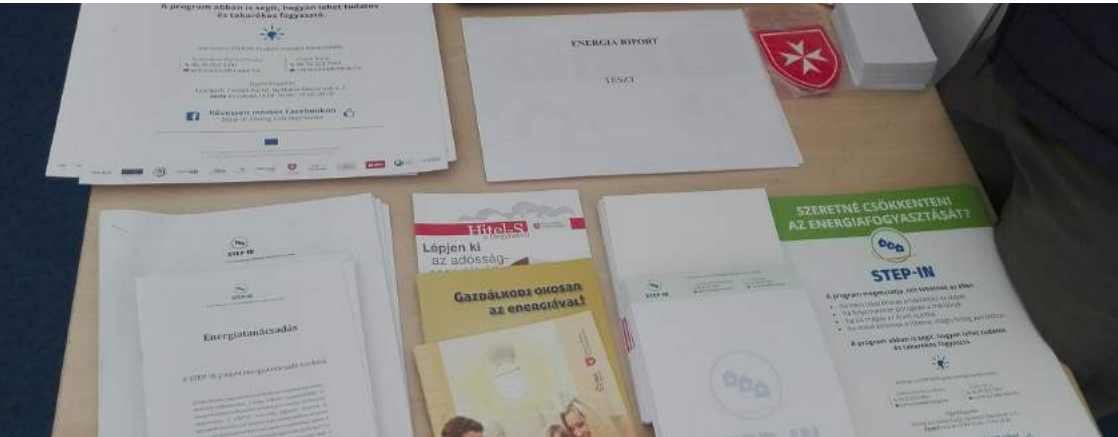
79

HOME VISITS CARRIED OUT BY HOME ENERGY ADVISORS

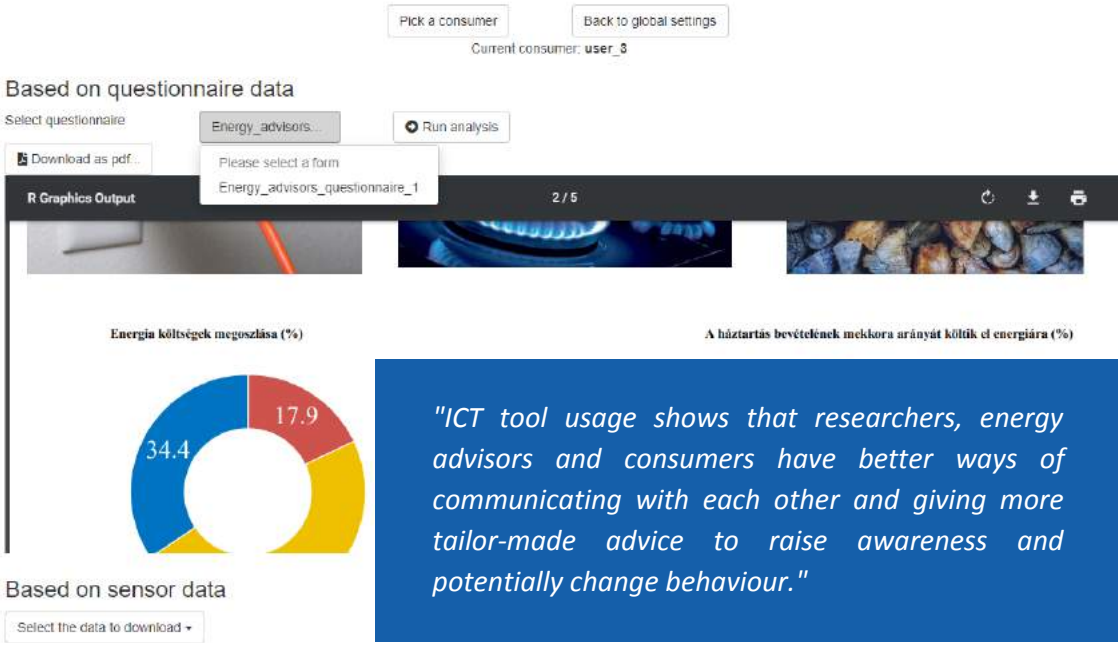
93

Though energy usage reduction is the key objective of STEP-IN, we need to be aware that we are working with vulnerable consumers. 27% of the households had to cut back on heating, and 16% had to cut back on medicines to pay the energy bills. In these households we cannot ask for further energy reduction; we need to focus on reducing energy waste or helping with energy-efficient improvements.

33% of the first-round participant households had no electricity access at the time of the home visits, no legal contract with the utility, or the contract is cancelled because of large arrears. In their cases our HEAs have limited options. To solve this problem the local government must work together with the utilities and the NGOs.



THE STEP-IN ICT TOOL OVERVIEW



"ICT tool usage shows that researchers, energy advisors and consumers have better ways of communicating with each other and giving more tailor-made advice to raise awareness and potentially change behaviour."

STEP-IN has been designing and implementing an ICT platform in close collaboration with the Living Labs and their identified target users (energy advisors, consumers, policymakers, researchers). The STEP-IN ICT platform supports features from the uploading of consumption data via sensors and questionnaires, analysis of data through to visualisations of energy consumption and building floor maps along with supporting details. A web-based platform was chosen to avoid installation and updating of software and to make the platform widely available.

This also allows a modular and open architecture to easily integrate different devices and analysis tools as well as data services. In general, the platform supports features from the uploading of consumption data from sensors and questionnaires, recording home visit reports through analysis of energy consumption and behaviour to visualisation of energy consumption and advice reports for the individual consumer. Detailed home set ups can be recorded as well to monitor the temperature distribution of consumer homes.

ACTIONS TAKEN AND LESSONS LEARNT

ICT TOOL USERS DURING
ENERGY CAFÉS (ALL LIVING LABS)

400

ICT TOOL USERS DURING
HOME VISITS (ALL LIVING LABS)

≈300

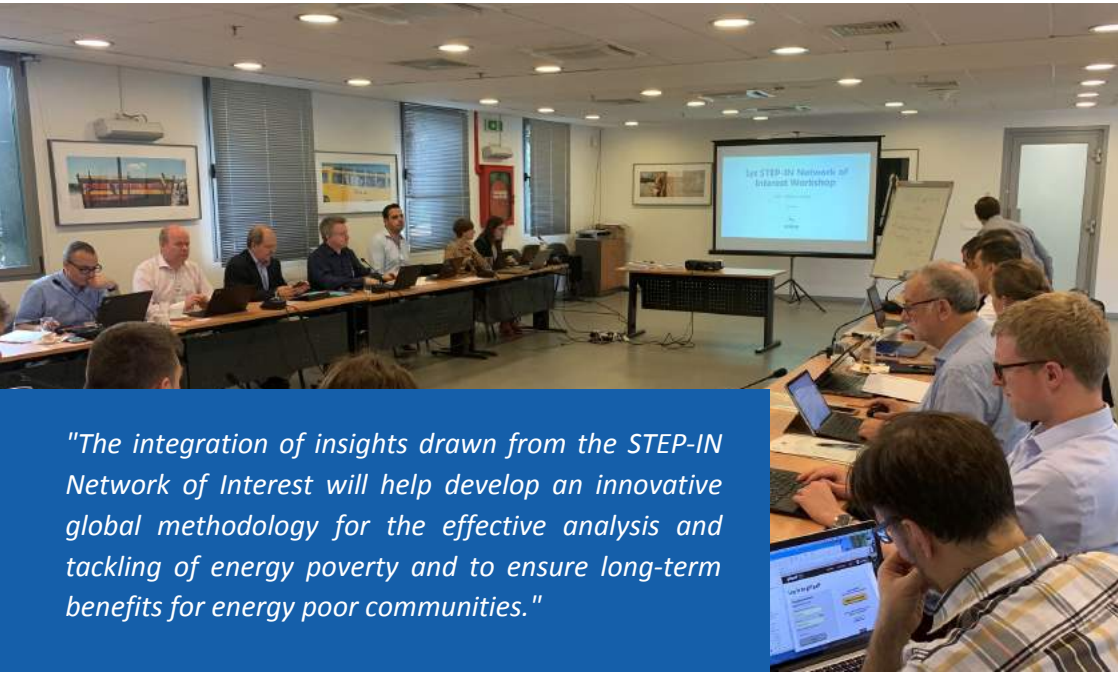
ICT TOOL USERS
VIA DISSEMINATION
WORKSHOPS (GREECE)

≈100

For the first Living Lab cycle the implementation focussed on primary users such as energy advisors, researchers and consumer feedback. The second version of the software platform, introduced further functionalities with dedicated user access and information to the consumers on the platform and analysis tools. In the latest version of the STEP-IN ICT platform, free-standing advice has been integrated through a knowledge center where consumers can access general information specific to their country, region and city on how to improve quality of life regarding energy vulnerability risks.

The ICT platform further allows dedicated energy advisors to collect data from individual consumers, make an analysis of these gathered data per consumer as well as across all consumers to then provide relevant advice to the individual consumer either through the energy advisor or to the consumer directly.

THE STEP-IN NETWORK OF INTEREST OVERVIEW



"The integration of insights drawn from the STEP-IN Network of Interest will help develop an innovative global methodology for the effective analysis and tackling of energy poverty and to ensure long-term benefits for energy poor communities."

To allow the results of the Living Lab findings to be relevant in the post-project period, the STEP-IN consortium will provide specific policy recommendations. These will include views from stakeholders engaged by STEP-IN throughout the project period. In addition to the local stakeholders involved in the Living Lab areas, interested parties across Europe, including industrial representatives, local and regional authorities, consumer and advocacy groups, practitioners, EU and national policy-makers, regulators, academia and think-tanks shape a motivated wider, pan-European STEP-IN Network of Interest (NoI). The aim is twofold:

- To gain advice and insights from the stakeholders shaping the network, as well as to share immediate experiences and results from the Living Labs during the early stages of the project;
- To disseminate the results to the wider community through events and white papers as the project progresses and reaches completion.

ACTIONS TAKEN AND LESSONS LEARNT

NOI MEMBERS ENGAGED

35

COUNTRIES ACROSS THE EU NOI MEMBERS ARE LOCATED IN

12

NOI ACTIVE WORKING GROUPS

6

So far the STEP-IN NoI has been mobilised to shape collective descriptions of energy poverty in Europe and measures to tackle it. NoI feedback was obtained through a questionnaire on key focus areas, targets, measures, requirements and problem descriptions, as well as on project methodology and actions.

The first STEP-IN NoI workshop, held in Athens on May 29th, brought together more than 35 participants and provided them with the opportunity to get insights from the work done in the STEP-IN project Living Labs, get the broader picture of targeted efforts to reduce energy poverty in Europe, as well as discuss energy poverty definition issues, assessments of the current situation and proposed solutions.

We are starting to see some tangible benefits for the citizens involved, including greater awareness of energy bills, efficiency issues and in some cases they have benefited directly from relatively low-cost maintenance programmes which have lowered their energy consumption and costs.

Roderick Mc Call
Project Coordinator
Luxembourg Institute
of Science and Technology

THE CONSORTIUM

STEP-IN brings together partners with different backgrounds and from different European regions, representing a variety of different forms of energy poverty and approaches to tackle it. A long history of previous collaboration provides the basis for an effective implementation of the project.

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STEP-IN Project

Register to our newsletter in order to stay up-to-date with our project news, as well as for exhange of knowledge and best practice with stakeholders from all around Europe:

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 785125. This document solely reflects the STEP-IN consortium views and the European Commission is not responsible for any use that may be made of the information it contain.