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STEP-IN

Interim Report on V1 Rural Living Lab

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Abstract: The deliverable contains the results of the first round of the rural Living Lab in Nyírbátor area, Hungary

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Dissemination Level

PU Public

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Glossary

Abbreviation / acronym	Description
LL	Living Lab
HEA	Home Energy Advisor
EE	Energy Efficient
PEAS	Personal Advice Sheet
NGO	Non-governmental organisation

1. Executive Summary

This document aims to present the methodology used and the results derived by the V1 operation of the rural Living Lab (LL) in Nyírbátor area, Hungary.

The Hungarian Living Lab is operated by three partners. **Maltai** organizes the home visits and provides 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 plays an active part in the Energy Cafes.

The methodology we use has a lot of similarities with the other 2 LL's, but we also have to deal with unique challenges. Local aspects of energy vulnerability are important, and there are no general solutions. We even have to shape our own advice framework per target group in order to create answers for all their needs. The next figure summarises the key stages of the first LL cycle.

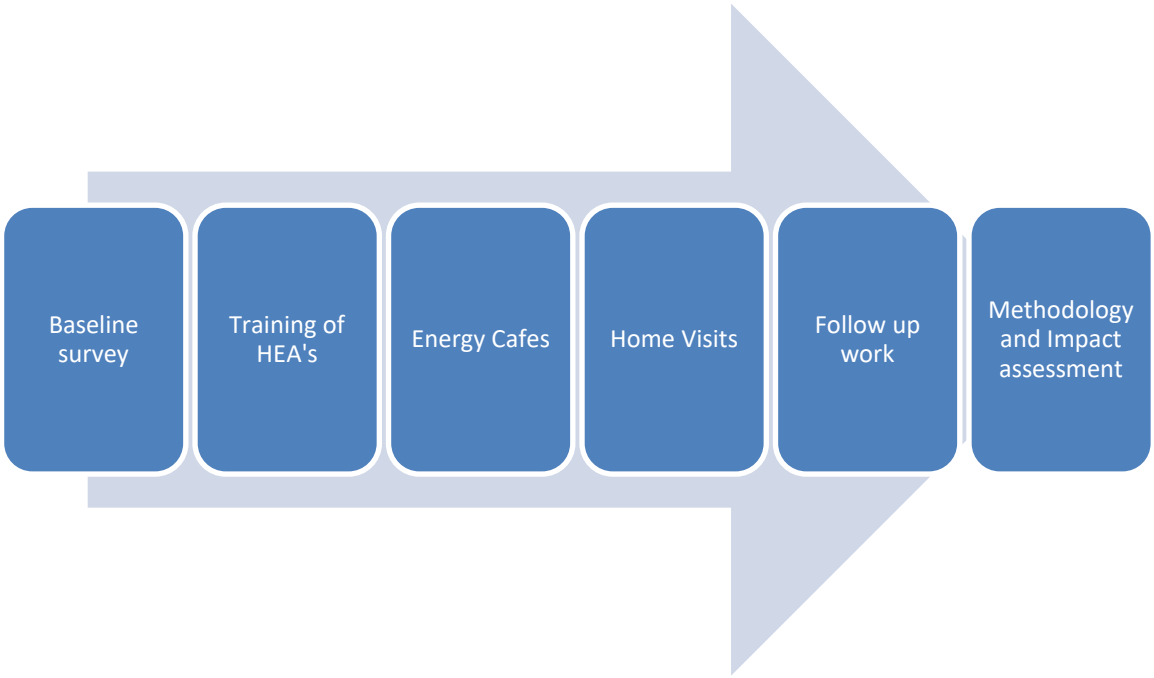


Figure 1: Overview of the LL timeline

Two energy cafes were held during the first Living Lab cycle. The two Energy Cafes helped us to increase the local visibility of the project and also helped us to understand better the needs of the citizens.

Local STEP-IN service was built on home visits mainly, so home visits are the core part of the project. The counselling work starts with an establishment survey. Based on the survey, the advisors get a general picture of the conditions in the household, and they can identify possible action points, and a Personal Advice Sheet (PEAS) is also generated. The PEAS contains information on the general energy consumption of the household, the comparison of the electricity consumption of the household with similar households, and a disaggregated appliance level consumption statistic.

The Hungarian rural pilot site has to face several unique challenges. Some of them are country specific, some of them are local area specific.

- The government of Hungary first reduced than froze the energy prices in 2012, and in all the bills, the energy utilities have to present how much money the households save as a result. As a consequence, energy prices are lower in Hungary compared with other European countries, especially in the case of electricity. This reduces the effectiveness of any Energy Efficient (EE) intervention.
- In some households, especially in segregated areas, due to arrears there is no access to electricity. In these cases, we have to work together with the utility company (E.ON) in order to provide safe and legal energy access. Arrear handling also has to be applied here with the help of Máltai.
- During the winter period the air pollution level is very high in this area because some households using waste and rubbish to heat. This is a serious problem from an environmental perspective, but it also affects the health condition of the household (and wider area), and it also damages the heating system.
- There are several parts of the area where piped-gas service is not available. These households could use gas tanks to heat water and for cooking, but for heating, they have to use firewood (other heating methods are not used. Fireplace and tile-stove is the most usual heating method in these dwellings, which are much harder to control. Firewood prices are not frozen, and the proper storage of firewood could also be challenging.

Based on the 93 home visits we had, we could present the benchmark situation regarding energy vulnerability. Eleven percent of the households didn't have any problem with the dwelling, but around 35 percent of the households marked 3 or more problems. 16 percent of the households had to cut back on medicines in order to pay the energy bills. Only 26 percent of the households have low energy vulnerability risk. 18 percent of the households have to pay high energy bills compared with their income situation, but the EVI value is not high in their case, which means they could avoid some negative consequences of energy vulnerability like low thermal comfort or arrears. 11 percent of the households have high energy vulnerability indices without the problem of high energy burden. Moreover, there is 9 percent who are at risk for both aspects. These are the most vulnerable households regarding energy vulnerability, alongside with the 33 percent of respondents who had no electricity access.

2. Introduction

This document aims to present the methodology used and the results derived by the V1 operation of the rural Living Lab (LL) in Nyírbátor area, Hungary. Overall the project emphasizes the need for making quality of life improvements through maintaining or improving comfort levels while encouraging more efficient energy use.

The Hungarian Living Lab is operated by three partners. **Maltai** organizes the home visits and provides 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). Besides the three main partners, plenty of local stakeholders joined the efforts we made to tackle energy vulnerability. In this report, we summarize the work done by these partners in the first period of the STEP-IN project.

Before starting the Living Lab, a baseline survey was conducted to assess the current situation in this area regarding energy vulnerability. The fieldwork started in mid-January and finished in mid-February. The sample size was 305. We identified three main target group for our service:

- pensioners living alone;
- households with 3+ children;
- minority people living in segregated districts.

These groups have different needs and also different opportunities. In our tailored energy advice framework, we apply different approaches to reach and engage these target groups.

We also identified unique challenges. Some of them are country-specific; some of them are local area specific.

- Frozen energy prices;
- Poor dwelling conditions;
- Lack of access to piped gas in some area;
- Lack of access to electricity;
- Heating with rubbish.

These challenges also shaped the advice framework we developed.

In the next section, we will give a brief description of the Hungarian rural Living Lab. Then we will present in detail the implementation steps of the lab. In the last part of the report, we will summarize the main results and the lessons learned from the first iteration.

3. Description of the Living Lab Location

3.1 Location

The Hungarian Living Lab located in the eastern part of Hungary close to Nyíregyháza, in the district of Nyírbátor and its neighbourhood. Around 50 000 people live in this area in more than 20 settlements. Most of the settlements are villages; there are only 5 cities. Nyírbátor is the biggest with a population of 12 000 people.

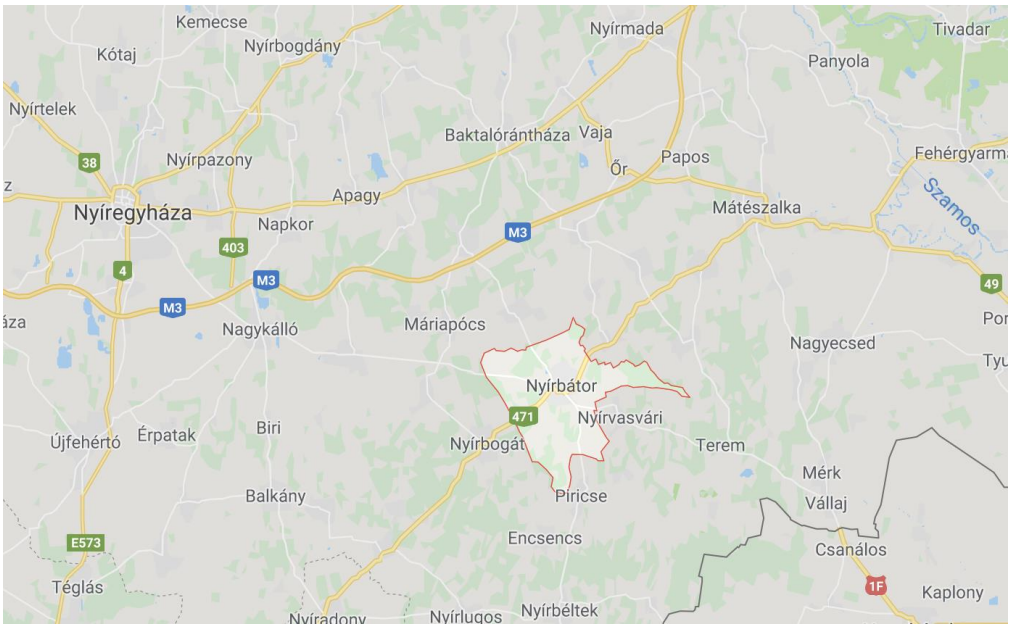


Figure 2: Map of the area (google maps)

The poverty ratio is high in this area. More children live in disadvantageous conditions than the average. The unemployment rate is also higher here (6 percent), and there is also another 11 percent who does state work. In some settlements like Nyírpilis, this ratio is way above 20 percent. The mean monthly net income per household member is 166 euros, which is much lower than the average value in Hungary (238).

Less than 1% of the electricity meters are smart-meters in the area, but there are pole-meters in some settlements (120 in Kemecse and 137 in Nyírbéltek), which can track the energy consumption of the households digitally. The average electricity consumption was around 1100 kWh per year in this area, in 2017.

District	Nyírbátor district	Hungary
Population	50k	9.8M
% 0-18 population	21.%	17%
Children living under disadvantageous circumstances	17.%	5%
% Unemployment	6.%	3%
% Education (low)	46%	36%
% state work	11%	3%
Mean work income (euro) / tax payer	166	238
% Roma	13%	3%

Table 1 Statistics of the LL area 1. (KSH, E.ON)

3.1.1 Baseline Survey Summary

To assess the current situation in this area, we conducted a survey using a detailed questionnaire about energy usage, energy needs, energy literacy, and other aspects of energy vulnerability. The fieldwork started in mid-January and finished in mid-February. The sample size was 305. We used this survey to segment the target group and to explore the needs of local citizens.

Based on the survey, more than half of the citizens suffer from some kind of energy-related problem. More than 80 percent of the average energy expenses is the cost of heating, so if we would like to reduce the energy usage, we have to focus primarily on heating, recognizing that electricity is just a secondary target. The two dominant fuel types are gas and firewood for heating. Based on the expenditures, heating with firewood is more expensive than gas. Because of government subsidies and price policy, the gas price had not increased in the last 6 years. In the case of firewood, the situation is worse. Just in the last year, the price of firewood increased by more than 10 percent. At times, there is a deficit of wood, because large biomass energy powerplants buy up the stock. It is also much harder to control the room temperature and the overall consumption using a fireplace or a tile stove compared with central gas heating.

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

People were very disappointed about policies linked to energy subsidies. 75 percent said that the state should do more to support households who cannot pay for energy, and 11 percent said that existing social support measures were not adequate. 16 percent of the households get some kind of social subsidy from the local authorities in order to cover their energy expenses. However, 60 percent of them still felt that the state should do more to handle this problem. Energy companies were also evaluated negatively. Only 9 percent of the respondents said that low-income consumers were treated fairly by them.

3.1.2 Market Segmentation

The needs of the rural communities in Hungary are massively different from those of the other pilot sites. In addition, within the community also slightly different target groups can be found. Before the project started, we defined 3 main target groups:

- pensioners living alone: The pension in rural areas in Hungary is usually quite low, compared with the upkeep cost of the large dwellings in which they live. The situation is even worse in one-person households. The pensioners also have to cover much higher medical costs than other groups.

- households with 3+ children: These households usually live on a single salary, and especially with small children, females have to be at home all day, which increases the energy upkeep cost of the dwelling.

- minority people living in segregated districts: The income situation is much worse than the average in this group, and the quality of the dwelling and the energy efficiency of the appliances are low. In some cases, there is no access to electricity in these dwellings because of arrears. As gas is not linked to these houses, firewood is the only heating option, which is more expensive than gas.

Using the baseline survey, we created a complex indicator of energy vulnerability, using a mix of economic and consensual indicators. As we expected before the survey, different sub-samples have different levels of risk types. Households with a minority (roma) person have a lower risk of suffering from the financial aspect of energy poverty. Pensioners who live alone have a higher chance to get a higher score on the consensual indicator. This is caused by their need for higher thermal comfort. The results have clear implications. We have to use a different approach when working with different risk groups in order to respond to their needs. In our tailored energy advice framework, we apply different approaches to reach and engage these target groups.

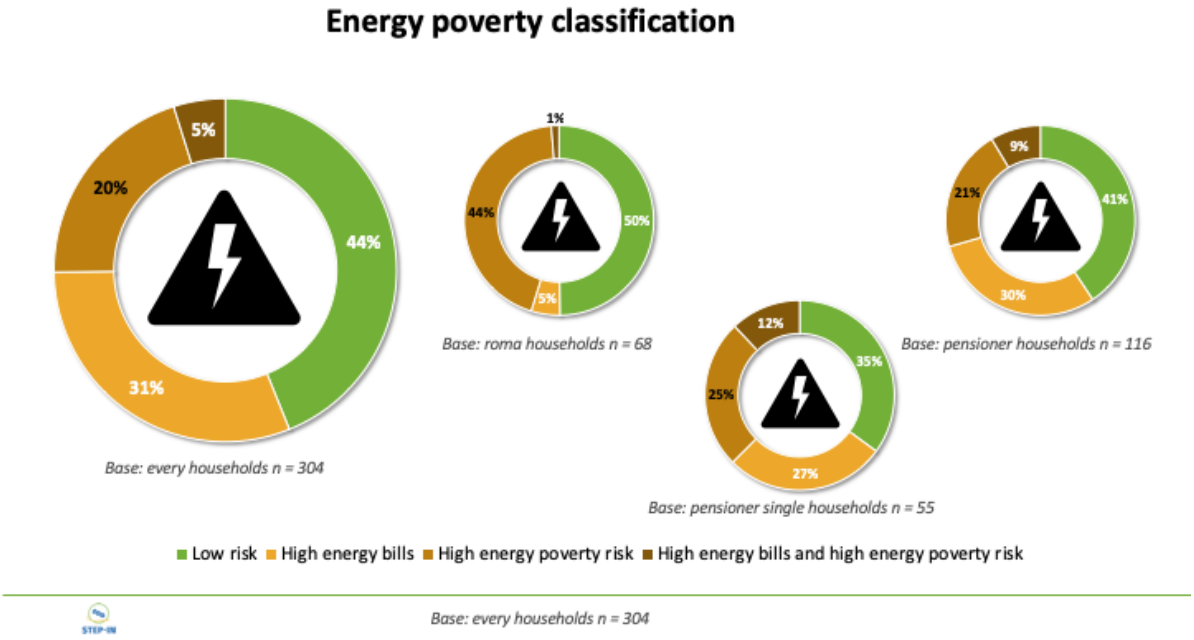


Figure 3: Energy vulnerability classification

3.1.1 Stakeholders

The main stakeholders of the project are the citizens who are participating in the pilot. We engage them through energy cafes, home visits, and various local marketing campaigns.

We also have partnerships with national and local stakeholders. At the national level, we are working with academic institutes (Hungarian Academy of Science, Regional Centre for Energy Policy Research) and energy industry market players (ELMŰ-ÉMÁSZ, NKM). On the local level, we established good relationships with the local gas provider TIGÁZ, local NGOs, and local governmental organizations and with the Social Service Office. These local partners helped us to reach the community and build trust for our service.

3.2 Unique Challenges Identified

The Hungarian rural pilot site has to face several unique challenges. Some of them are country specific, some of them are local area specific.

Frozen energy prices: the government of Hungary first reduced than froze the energy prices in 2012, and in all the bills, the energy utilities have to present how much money the households save as a result. As a consequence, energy prices are lower in Hungary compared with other European countries, especially in the case of electricity. This reduces the effectiveness of any Energy Efficient (EE) intervention. Despite this, based on the baseline survey, people are not satisfied with the subsidies. 75 percent said that the state should do more to support households who cannot pay for energy, and 11 percent said that existing social support measures were not adequate.

Poor dwelling conditions: According to our baseline survey, more than half of the local households struggling with some problem with its dwelling. The most common problem (32 percent) is that dwellings are not comfortably cool during the summer. Nearly the same number of respondents said (28 percent) that their dwellings were not comfortably warm during the winter. The lack of good quality insulation could be the cause of this. 19 percent

noticed condensation on the windows and the walls during the winter, 15 percent said that there was dampness on the walls or floors, and another 15 percent said there was mould in the house. A leaking roof presented as a problem in 8 percent of households.

Lack of access to piped gas in some areas: There are several parts of the area where piped-gas service is not available. These households could use gas tanks to heat water and for cooking, but for heating, they have to use firewood (other heating methods are not used. Fireplace and tile-stove is the most usual heating method in these dwellings, which are much harder to control. Firewood prices are not frozen, and the proper storage of firewood could also be challenging.

Lack of access to electricity: In some households, especially in segregated areas, due to arrears there is no access to electricity. In these cases, we have to work together with the utility company (E.ON) in order to provide safe and legal energy access. Arrear handling also has to be applied here with the help of Máltai.

Heating with rubbish: During the winter period the air pollution level is very high in this area because some households using waste and rubbish to heat. This is a serious problem from an environmental perspective, but it also affects the health condition of the household (and wider area), and it also damages the heating system.

4. Living Lab Implementation

4.1 Overview of Living Lab Timeline

In this chapter, we present the implementation of Hungarian rural Living Lab. The methodology we use has a lot of similarities with the other 2 LL's, but we also have to deal with unique challenges. Local aspects of energy vulnerability are important, there are no general solutions. We even have to shape our own advice framework per target group in order to create answers for all their needs. The next figure summarises the key stages of the first LL cycle.

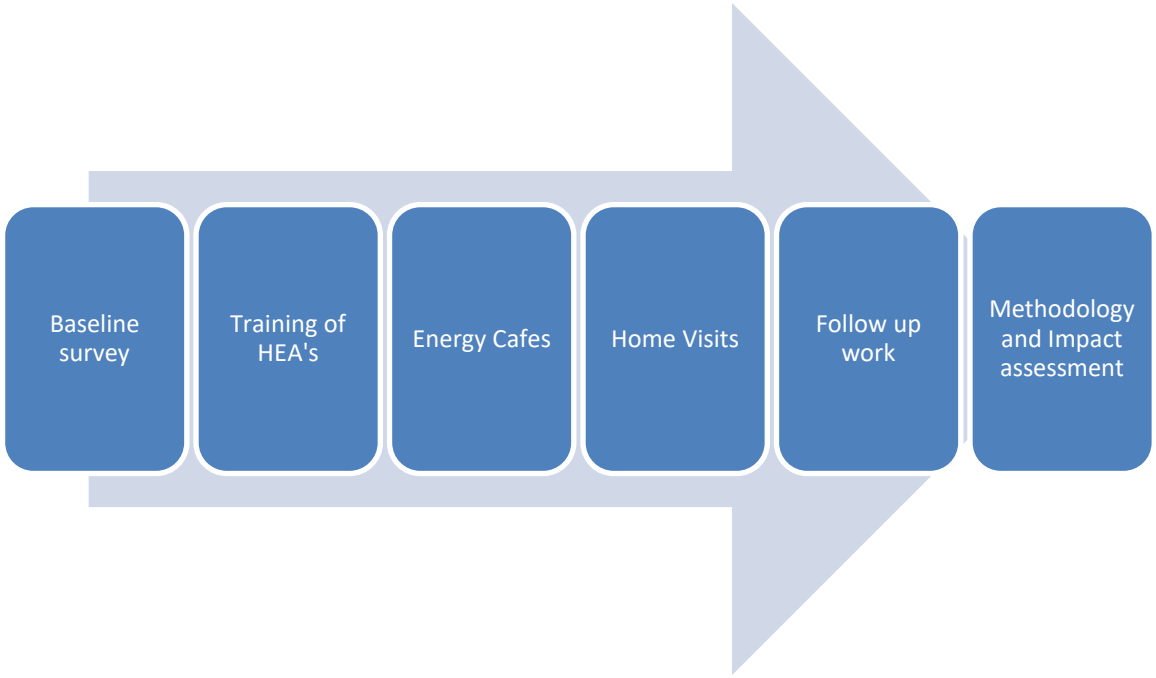


Figure 4: Overview of the LL timeline

Baseline survey

To assess the current situation in this area, we conducted a survey using a detailed questionnaire about energy usage, energy needs, energy literacy, and other aspects of energy poverty (housing conditions). We chose 3 settlements (Nyírbátor, Nyírbéltek, and Kemecse) from the area. The respondents were randomly selected using random-walk sampling. Professional interviewers were hired to conduct the survey. We used paper-and-pencil interviewing (PAPI) technique in the process. All the respondents gave us consent to collect and analyse their data. The fieldwork started in mid-January and finished in mid-February. The sample size was 305. We used this survey to segment the target group and to explore the needs of local citizens. The most important conclusions drawn from the survey were presented in the previous chapter of this report.

Training of HEA's

Our home advisors are trained social workers, but they didn't have any special knowledge of energy-related advice work. So before starting the LL cycle, we held a training for them. E.ON developed a training material for this purpose. This training material covers a wide range of topics, from safe energy access, through arrear handling and a better understanding of energy bills. This training material was based on the experience of a previous successful programme in Tatabánya, Hungary. Tigáz (gas supplier in the area) extended this training material with information

on heating and gas usage. Máltai added elements of available financial schemes for refurbishment actions. In March 2019, local energy advisors (3 in the first round) were trained using the developed training material. Only those energy advisors could take part in the project who went through our training process.

Energy Cafes

Energy Cafes are key parts of the STEP-IN methodology. We use them in multiple ways. Energy Cafes help in raising awareness toward the project and built initial trust between the project team, local experts, and local citizens. Cafes also provide valuable information for service development, as they create discussions between local partners. The description of the Energy Cafe is available in 4.2.6 chapter. The lessons learned from the cafes are presented in 5.2.1 chapter.

Home Visits

Home visits are the core element of our service. Our trained energy advisors visit those households who agree to take part in the project. They fill out an establishment survey with the participants and start a dialogue with them about energy usage and possible energy reduction methods (where appropriate). HEAs share project materials with the participants and also try to identify those actions, which could lead to energy reduction or more balanced energy usage.

Follow up work

Home visits are the first entry points of our service. After the first visit, we offer additional services to the participants. The key part of this service is a personal advice sheet (PEAS), which present the calculation of the energy consumption of the household, provides a comparison with similar households, present the disaggregated electricity consumption on the appliance level, and gives special advice based on the questionnaire data. But above this, our HEAs also help the participants with their specific needs, search for refurbishment schemes for them, help them to overcome the arrears or help them to access electricity if they were not connected to the system. Máltai Information Centre is open every week at dedicated time slots when Home Advisors are available for further discussion.

Methodology and impact assessment

The methodology assessment of the Living Lab consists of two elements. We ask our HEAs to write a summary of their experiences from a methodological point of view. What part of the questionnaire was hard to fill out, which part of the advice framework is easy or hard to use, what are the most challenging situations? We also conduct focus groups with experts and citizens to discuss the methodology of the LL and collect feedback about our work.

The impact assessment is based on a follow-up questionnaire. 300 follow up interviews are planned to evaluate our offered service. As energy reduction is a key part of the objectives, we will do the first follow up interviews after the winter period (April 2020). This means, at this stage, we don't have quantitative information on the impact of the service.

4.2 Methodology Employed

In the next section, we will provide detailed information on the methodology we have employed in the first LL cycle. We will summarize the results and lessons learned in chapter 5.

4.2.1 Recruitment of Living Lab Participants

The most difficult task of the first LL cycle was the recruitment of participants to the Energy Cafes and home visits. We started with information campaigns in the local media and the project local Facebook page in order to raise awareness toward the project (see later in more detail).

In the case of Energy Cafes, we used multiple ways to recruit participants. We shared the information on social media and also asked our local stakeholders to do the same on their Facebook pages. But we also initiated a direct discussion with key NGOs in the community and asked them to speak with their members about our programme. The Báthori István Senior Citizen's Club helped us the most, the bulk of the Energy Cafe participants were recruited through this channel.

In the case of home visits, we used partly different and partly similar strategies. Here we asked local NGO's again to help us reach their community. We also offered our service to Energy Café participants. 8 percent of the programme participants visited one of our Energy Cafes before the home visit. In some settlements, Máltai presence is much stronger because they operate a Children Chance programme. Here they have everyday communication with local citizens. The recruitment was much easier in these settlements. We recruited most of the roma participants through this channel. In the recruitment process, we also built on the existing network of the home advisors. As they worked as social workers in this area, they could identify possible participating households.

We will come back to the recruitment and engagement issue in chapter 5, where we will summarize the main challenges here and our further steps to overcome them.

4.2.2 Benchmarking and Market Segmentation

As described in chapter 3 in detail, we defined three main target groups: pensioners living alone, households with 3+ children, and minority people living in segregated districts. We tried to recruit participants from these target groups. But we didn't apply any filtering technique before the home visits. So everyone interested in this area was able to participate in the programme.

In the first LL cycle, the benchmarking is based on an establishment survey completed at the start of the home visit. We asked detailed questions about actual energy usage patterns, planned EE interventions, dwelling problems, and energy awareness. In the second LL cycle, we plan to extend the data-sources and add smart meter information where possible.

4.2.3 Energy Cafes

Two energy cafes were held during the first Living Lab cycle. The first café was organized on the 12th of April 2019. 15 people participated (including stakeholders and STEP-IN partners). STEP-IN members presented the project to the audience; then roundtables were set up with different topics: discussion on energy saving, tips and tricks, energy bills and arrear handling, heating system, refurbishment schemes, subsidies, right of protected consumers. The second energy café was organized on the 25th of June 2019. 21 people participated (with stakeholders and STEP-IN partners). We added some new elements to the content of the café. We presented the potential benefits of the programme, and we also introduced how we use the questionnaire data to give insightful tips to the households. The two Energy Cafes helped us to increase the local visibility of the project and also helped us to understand better the needs of the citizens.

Figure 5: 2nd Energy Cafe

4.2.4 Home Energy Advisor Visits

Home visits are the core part of the service we offer in this area. Home visits are carried out by the Energy Advisors trained by experts. Home visits start with a brief presentation of the programme and the service that STEP-IN offer. Advisors explain how we process the data that we collect and assure the participants that personal information will be recorded only to track the programme development, and this information stored separately from other data. The participants then have to sign a consent form.

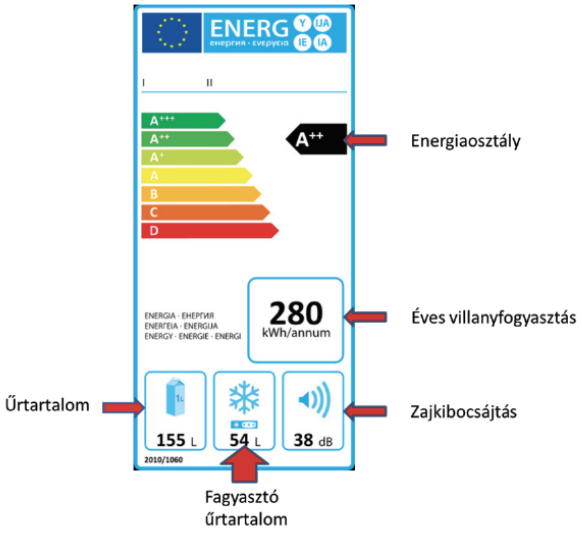
The counselling work starts with an establishment survey. The survey contains the following question blocks:

- questions about the dwelling
- detailed electricity usage
- detailed statistics on appliances
- heating and gas usage
- questions about general energy usage, EE investments
- problems with the dwelling
- cut back strategies to cover energy expenses
- thermal comfort
- energy awareness
- demographic questions

The questionnaire is available in annex1 (Hungarian).

Based on the survey the advisors get a general picture of the conditions in the household, and they can identify possible action points. At this point, they can discuss the next steps with the households. This can vary, and it

depends on the needs and also on the feasibility of the given solution. If there is no electricity access, they can facilitate the discussion with the utility. If the household has arrears, they can offer an arrear-handling programme and suggest a change to pre-paid meters (if there is a regular meter in the dwelling). If the household wants to invest in EE appliances, they can present upcoming refurbishment programmes. All the participating households get a general booklet with tips and suggestions about energy reduction strategies.



Egy C-D energiaosztályú hűtő A++ energiaosztályúra cserélése éves szinten akár 3000-5000 forint megtakarítást is hozhat.

Figure 6: General energy advice booklet (sample site)

The counselling is not finished after the first visit. Based on the questionnaire, we generate a Personal Advice Sheet (PEAS). In this small report, we give an overview of the general energy usage of the household, we compare the electricity usage of the household with similar households, and we also disaggregate the electricity consumption on appliance level.

Elektromos eszköz	Fogyasztáson belüli arány (%)
Világítás	13.2
Elektromos tuzhely	17.5
Elektromos sütö	17.5
Mikro	9.3
Számítógép	10.5
TV	8.9
Mosógép	4.2
Hutö	8.9
Fagyasztó	7.7
Mobiltelefon	0.3
Egyéb elektromos eszközök	1.9

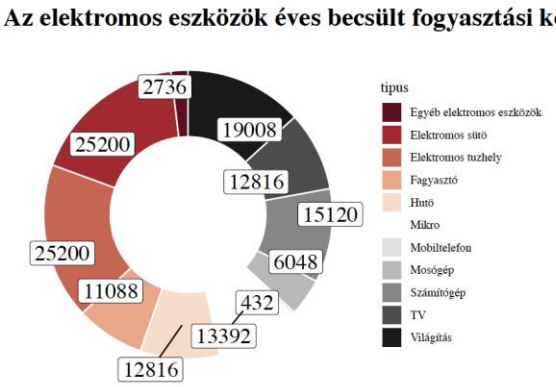


Figure 7: Estimated appliance level energy consumption

At the end of the report, we also give personalized advice to the household. Our algorithm can recommend possible actions ,which could lead energy reduction. If the household has regular bulbs, we calculate the pay-off period of changing to EE bulbs. If a household has old appliances, we present the possible energy reduction (and money savings) with new EE appliances. But we also give tips about heating and arrear handling if this seems to be feasible based on the questionnaire. The HEA presents this report to the participant households in a second meeting if they are open to this. An example report is available in annex2 (Hungarian).

Our HEAs are available for further meetings if the household initiates this, and they could also visit the Information Centre operated by Máltai.

4.2.5 Information Centre

Maltai's office in Nyíbátor serves as the Information Centre of the project. Dedicated time slots are available for citizens to meet the HEAs and discuss any energy-related questions. HEAs use this office to organize the home visits, record the information obtained from the home visits' questionnaire, and hold the follow-up meetings with participants.

4.2.6 ICT Tools

Local project partners discussed how ICT tools could be used in the rural pilot site at the beginning of the project. We have decided to follow a mixed strategy. As the mobile internet connection is far from ideal in this area, and the use of laptops/tablets might not be appropriate in households suffering from deep poverty, we used paper and pencil questionnaires to record the establishment survey data. After the visit, home advisors recorded all the data to an online survey app - Limesurvey. The survey app is hosted by Ariosz.

This app was only used to record the survey data. We also needed another tool to create the PEAS. For this, Ariosz developed a new tool based on R language. The R script reads the survey answers and then creates a unique pdf

report. This tool worked only offline at LL round 1, so we had to download new survey answers and then we had to run the scripts and send the reports back to the HEAs.

4.2.7 Information Campaigns

The STEP-IN service is widely advertised and promoted to local people and relevant stakeholders, using a variety of channels. The project was advertised through local media. Before the first LL, the project leader of Maltai, Gábor Major, gave an interview to the local TV.

https://www.youtube.com/watch?v=ONi3C78t2Wo&feature=share&fbclid=IwAR0i71AiCryclqvkOPYYC7tlfS10rKcAo851cJ6nKM4CFeznk58yxmzpKX8 (starts around 5 minute – Hungarian

Figure 8: Local TV interview 1

One of our home energy advisor (Bea Pálóczi) was also interviewed by the local TV, after the first Energy Cafe. https://www.youtube.com/watch?v=XN_Sa75yp5Y&fbclid=IwAR0s9LR8xmQUDfhM5hg426P4A6suZwnPfjYctbvnc86fHBEB5uu0D_sSQEc (starts around 11 minute – Hungarian),

Figure 9: Local TV interview 2

Beside the local media, our main information channel is Facebook. 50 people follow the project Facebook page: https://www.facebook.com/stepinhungary2019/

All the STEP-IN events are advertised in this page. Relevant information about energy related questions are also regularly shared in the page.

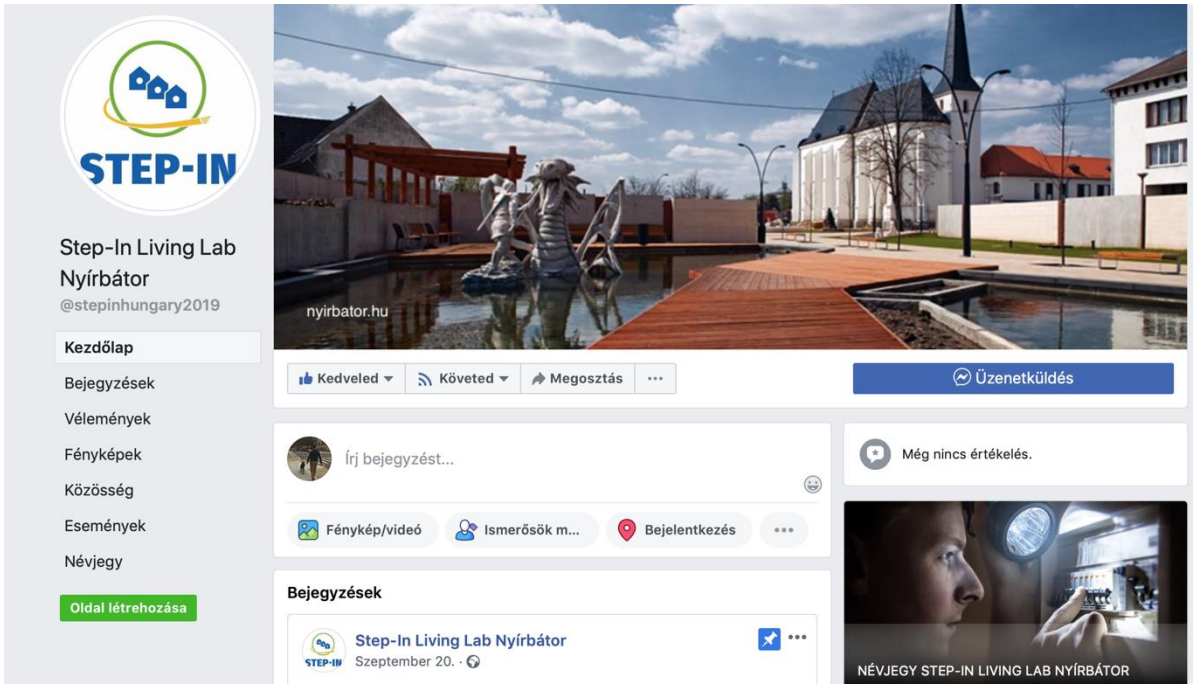


Figure 10: STEP-IN Nyírbátor Facebook page

The project homepage was translated to Hungarian. It contains several pieces of information about the project. Leaflets were also circulated in the area. It was the same leaflet used at the other LLs but translated into Hungarian (see Annex 3).

4.2.8 Focus Group

In the Hungarian rural pilot site, we use focus group discussions to evaluate the used methodological design of our service. We planned one focus group after stage 1, and a second focus group after stage 2. After finishing the first Living Lab cycle, we held the first focus group in Nyírbátor, on the 17th of October 2019. Six people participated, and one moderator. Four people came from the Social Service office. The other two participants were HEAs of the programme. During the discussion, the participants talked about the programme methodology and the target groups of the service. The main discussion centred on possible engagement strategies. The main lessons learned here are presented in chapter 5.

4.3 Stakeholder Involvement

The main stakeholders of the project are the local citizens. They have been involved through energy cafes and home visits. But without the help of the local government and NGOs, we would not have been able to operate the service. At the beginning of the LL, we got support from Nyírbátor City Council and the local Social Service Office. Local non-profit organizations have also helped us to access our main target groups. The Báthori István Senior Citizens' Club, the Youth and Family Snug and Community house of Nyírbátor are our key partners in the area. The local gas provider TIGÁZ helped us to develop the training material and also actively participated in the Energy Cafes. We also built a strong link with local social services. They promote our service among their clients and give us valuable feedback on service quality.

4.4 Ethical Issues

All project documents and procedures were strictly in line with all data processing in the project will be in compliance with GDPR and the Hungarian data protection law. This included consent procedures, as well as data collection, sharing, and storage provisions. The avoidance of stigmatization and the maintenance and promotion of participant well being featured prominently throughout all project processes and activities.

We provide an information sheet for all the participants at the beginning of the home visit (see annex 4). Participants also have to sign a consent form (see annex 5). Without this consent form, we cannot record/store their personal data. The establishment survey contains several sensitive questions (health condition, belonging to ethnic minority). In order to keep this information secure, personal data is stored separately from survey data. All the participants have an identity code. This code contains the first two letters of the settlement, the initial letters of the advisors and a 3-digit number. Only the HEAs have access to personal data. Ariosz, as a partner in the local project, has access only to the survey data. All the reports generated by Ariosz sent back to Máltai – and Maltai shares this report with the participants. The survey tool runs on the server of Ariosz in a secure data environment. Other project partners don't have access to any of the above-mentioned data.

4.5 Conclusions

The methodology of the rural Living Lab has a lot of similarities with the other 2 LL's, but because of unique challenges and needs, it also has to be adjusted. The first step of the process was a baseline survey. We used this survey to segment the target group and to explore the needs of local citizens. Before starting the LL cycle, we hold

a training for the HEAs. E.ON developed a training material for them, alongside with Máltai and Tigáz. Only those energy advisors could take part in the project who went through our training process.

Two energy cafes were held during the first Living Lab cycle. The two Energy Cafes helped us to increase the local visibility of the project and also helped us to understand better the needs of the citizens.

Local STEP-IN service is mainly built on the home visits, so home visits are the core part of the project. The counselling work starts with an establishment survey. Based on the survey the advisors get a general picture of the conditions in the household and they can identify possible action points and we also generate a Personal Advice Sheet (PEAS). The PEAS contains information on the general energy consumption of the household, the comparison of the electricity consumption of the household with similar households and a disaggregated appliance level consumption statistic.

As energy reduction is a key part of the objectives, we will do the first follow up interviews after the winter period (April 2020). This means, at this stage, we don't have quantitative information on the impacts of the service. But we have qualitative information on the quality of the services based on the description of the HEAs and a focus group held in 2019 October.

5. Lessons Learned and Results

5.1 Results

In the first LL period, **93** home visits were carried out. As we highlighted earlier, we want to include the winter period in the impact assessment, so at this stage of the project, we don't have information on the impact of the home visits. Thus, in this part of the report, we present the initial evaluation of the situation recorded during the first home visits. We will focus on the answers derived from the surveys, and we will extend the analysis using the remarks of the HEAs.

5.1.1 Electricity consumption

Before the start of the project, we set two main goals: reduce the energy consumption where possible and provide safe (and legal) electricity access for those households where this is needed. 33 percent of the first-round participant households had no electricity access at the time of the home visits.

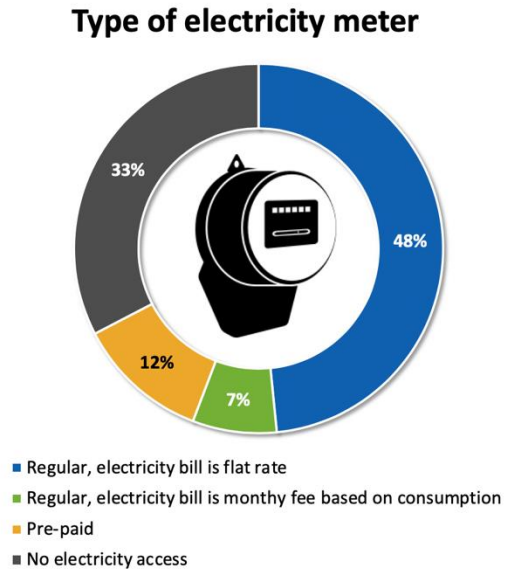


Figure 11: Type of electricity meter – establishment survey

These households don't have a legal contract with the utility, or the contract is cancelled because of large arrears. In these cases our HEAs have limited options. To solve this problem a complex solution is needed where local government work with the utilities and the NGOs. In these households Máltai could offer an arrear handling strategy and they can initiate discussions between citizens and utilities to find an acceptable solution for each actor. In the following part of this section, we only include those participants' data who had electricity access.

Although regular meters are the most common, 12 percent of all households have pre-paid meters. We have found prepaid meters almost exclusively in cases where there have been large arrears previously. As the debt could not be settled in one sum, but they wanted to avoid the cancellation of the service, they were "forced" to change to prepaid meters. In those households where it is difficult to pay their energy bills, the original function of a prepaid meter is that it prevents the accumulation of arrears. But typically, these households are not concerned about arrears; rather

they are concerned about the cancellation of service. Thus, this solution is operating well from the side of utilities, but it not a desired solution of the citizens based on our HEAs experiences.
Flat rate is more typical, 48 percent of the participants pay their energy bill using this scheme. This is a more convenient solution for most of the households, as they don't have to deal regularly with their consumption, and they can also avoid the monthly variation of energy bills. On the other hand, this scheme decreases the energy awareness of households in the long run.

The average annual energy bill was 360 euros; the median was 320. The calculated average kWh consumption was 3250 kWh. The consumption was 5 percent lower in those households where pre-paid meters were deployed.

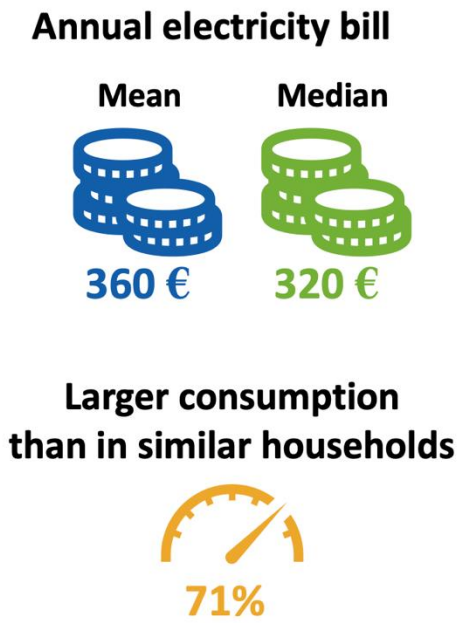


Figure 12: Electricity bill – establishment survey

Within the personal report, we calculated the ideal electricity solution of the household to provide them a comparison. We used a representative survey conducted in 2017 by Ariosz for this purpose. This survey covers all aspects of energy (electricity) consumption of Hungarian households. Based on this survey, we identified those factors, which primarily define the electricity consumption of a household. These are the dwelling size, the dwelling type, and the number of household members. Using these 3 variables, we calculated the ideal or expected electricity consumption of the STEP-IN participant households. In 2/3 of the cases, the real consumption was significantly higher than expected (at least 400 kWh higher the consumption than the ideal one). It was really important for our work, and service to understand what the reason is for this "overconsumption": old and energy wasteful appliances, or behaviour aspects? We found examples for both.

Boilers

Electric boilers consume a lot of energy. On a yearly basis, they can use up 1500 or more kWh. In 60 percent of the visited households, electric boilers are used to heat the water. These can be operated by cheaper "night" tariff. But in more than 20 percent of the cases, regular energy is used to operate the boilers. The regular tariff is about 50 percent higher than the night tariff.

It seems a plausible option to change from normal to night tariffs in these households. But when the HEA presented this option, most of the participants were not interested. Night tariff electricity warm up the boilers once a day. In households where 2 or 3 generations live together or the number of children is 3 or higher, the warm water could be insufficient if night tariff would be used. So, these households have to use normal tariff for their boilers.

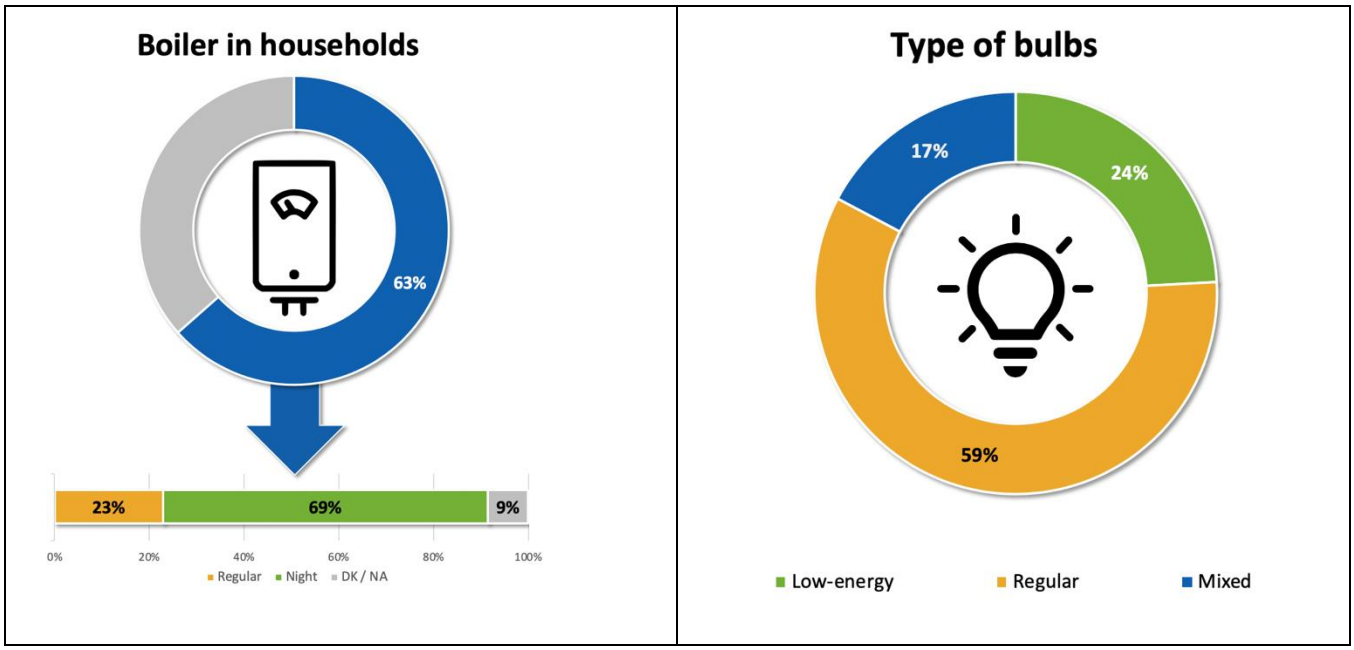


Figure 13: Boiler and bulbs in the dwelling – establishment survey

Lighting

Participant households had some trouble answering survey questions asking about the lightning situation of the dwelling. It was difficult for them to count all the bulbs, their type, their luminous power, and their average usage. Respondents didn't take into account the night lamps, bulbs in rarely used spaces (attic, cellar, garden). So, there is some uncertainty behind these data.

Regular bulbs are still widely used in Hungary, despite the fact that one of the easiest ways to decrease the energy consumption of the household is to change from regular bulbs to low-energy ones. The situation is mixed in the case of participant households. Around ¼ of them only use regular bulbs. On the other hand, 17 percent use only low-energy bulbs. But the typical participating household use both.

As in some room (restroom, cellar), low-energy bulbs are not efficient; this mixed strategy is understandable. It emerged from the visits that households need some time to switch most of the bulbs, as they cannot afford to change all at the same time. During the discussions, it also unfolded that in those households where they have difficulties paying the bills, they also don't have enough extra money to buy low-energy bulbs. This is a clear barrier for them. But this has a behavioural aspect too. As they think that the time to realize the return on investment is too long, they don't even consider implementing the change.

Large appliances

Participants had very limited knowledge about the energy class of the appliances they have in their household. They were only certain of the energy class if they had really old appliances, such as a non-automatic washing machine, or if they just recently bought the product. Additionally, some participants were simply unaware of how much energy is used by specific appliances and how much using low-rated energy appliances can increase energy costs.

The following provides a clear example. One of the participants has an older, not automated washing machine and a new A+++ level one. He/she uses the old one because it uses less water. He/she doesn't take into account the different energy usage of the two washing machines. Old habits can be great barriers with regard to transitioning toward more efficient energy usage.

In the case of washing machine, nearly 20 percent of the participants have B or worse energy class appliances. In the case of refrigerator, this number is better (around 10 percent), but less than 20 percent has an A+++ fridge.

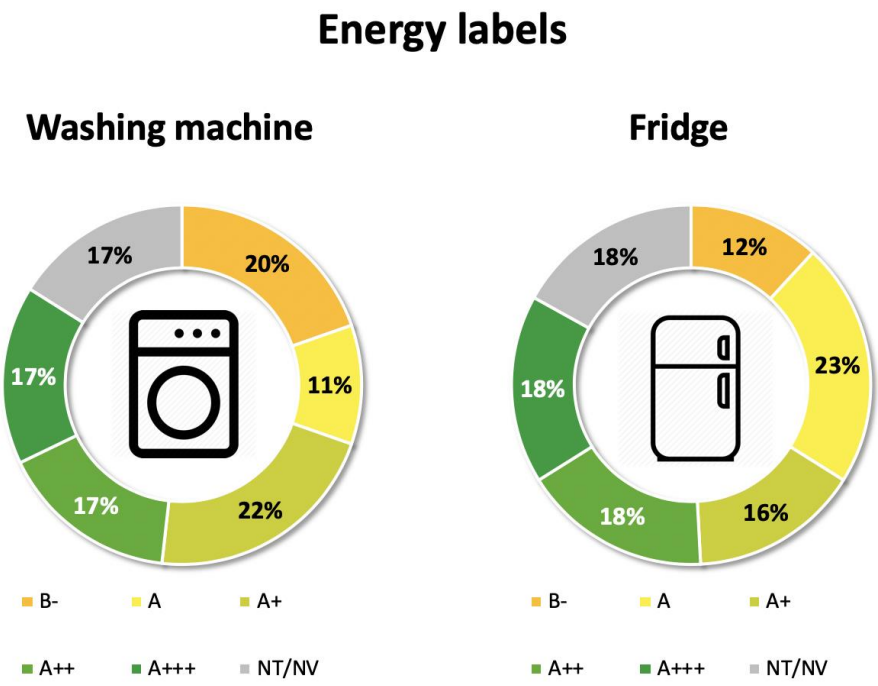


Figure 14: Energy. label of the washing machine and the fidge – establishment survey

Television

Television is still the most essential information source in Hungary. It is very common that households have 2 or more TVs. This is the case in our participant group too. Nearly 50 percent has 2 or more TVs. And people spend a lot of time watching TV. The average participant watches more than 6 hours of TV per day. But there were some households where this value was greater than 15 hours.

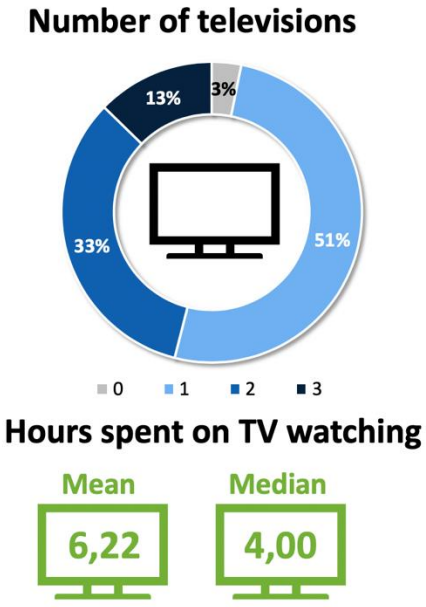


Figure 15: Number of TVs and time spend on watching – establishment survey

Our HEAs reported several possible explanations for this phenomenon, which are only partly linked with energy awareness. Households located in a segregated part of a settlement; TV is sometimes the only access to the outside world. The TV is the news source and the source of entertainment too. In households where there is an inactive person, or children, or elderly, or handicapped people at home, this function of the TV is even stronger. We present two examples here.

In one of the households, the average time watching TV per day is 16 hours. Three generations, live together, the grandma is unemployed, and her daughter is at home with her small child. Based on their description, the grandchild's favourite activity is watching stories on TV. Moreover, everyone has a favourite show.

The other example is an old couple, both inactive and partly disabled. They watch two different TV's, at least 5-6 hours per day.

In most of these cases the income situation of these households is quite grim. Where the living standards are higher, the energy class of the TV is usually better (newer appliances), and they also have laptops and PCs, which decrease the time spent on TV.

Stand-by consumption

It was new information for most of the households that appliances in stand-by mode also use a measurable amount of energy. It was a common misinformation that if they turn off the TV, it also cut its energy access. It was also very frequent that people leave their chargers in the socket, and charge those phones which are already fully charged.

But in some cases, the stand-by mode is fully understandable. For example, routers cannot be shut down because it will also turn off the Wi-Fi service.

5.1.2 Heating

Piped gas is not available in every dwelling. In Nyírbátor, in the city centre, there is piped gas, but in the segregated/outer part of the city (where mostly Roma people live), there is no access to piped gas. These households can only choose firewood or pellet for heating. This highlights a serious problem in the rural areas where gas heating is not available in all the houses. The price of gas is regulated by the state, and it was frozen by the state in recent years. But the price of firewood is not regulated, and there was a serious increase in the last few years (10 percent just last year). This is a key driving factor of rural energy vulnerability in Hungary. But our advisors also met with the opposite situation. Pensioner households (mostly older women), can't deal with the packing and cutting of firewood. So they also don't have any choice, and they have to rely on piped gas in the case of heating.

63 percent of the households use firewood as a primary heating source and a further 13 percent as a secondary source. So overall, ¾ of the participants use firewood for heating. Tile stove is the most frequent heating mode, which is really hard to adjust. Central heating is less frequent. Gas is used by 27 percent as a primary source and 11 percent as a secondary. Here central heating is more frequent than gas convectors. 25 percent of households have a secondary heating option.

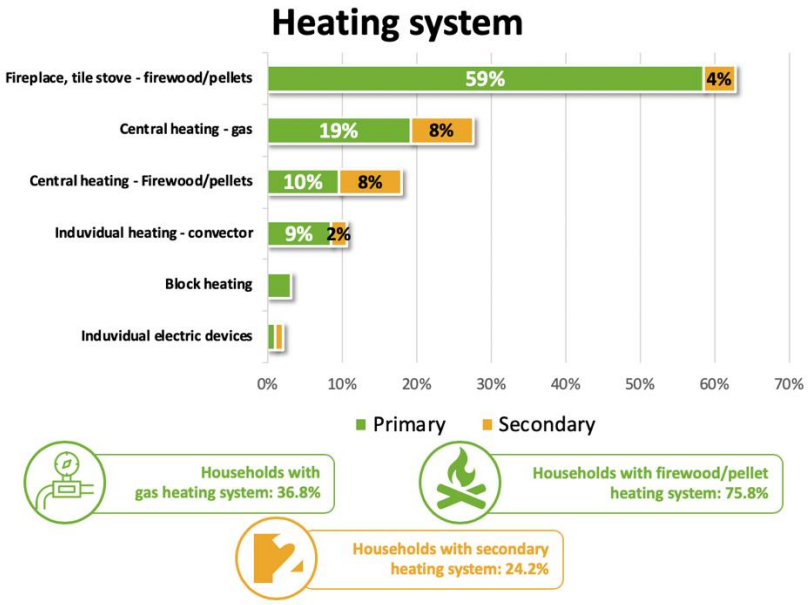


Figure 16: Heating system – establishment survey

The average gas consumption is 410 euros (median: 384) in those households where gas is used. Heating with firewood cost more money. An average household spends 543 euro (median 537) to cover their firewood needs. But we have to use this number as an indicative one. It Is really challenging to measure the firewood consumption of a household, and also the money spent on them. In some cases, they know how much money they spent on firewood. But in other cases, we only have information about the quantity (kg or m^3), and this information is sometimes unreliable. Households buy firewood several different times and from several vendors. Sometimes they buy it in kg sometimes in m3, sometimes just from a trailer. And the heating value of the firewood heavily depends on the species of the tree, but also on the humidity level of the firewood.

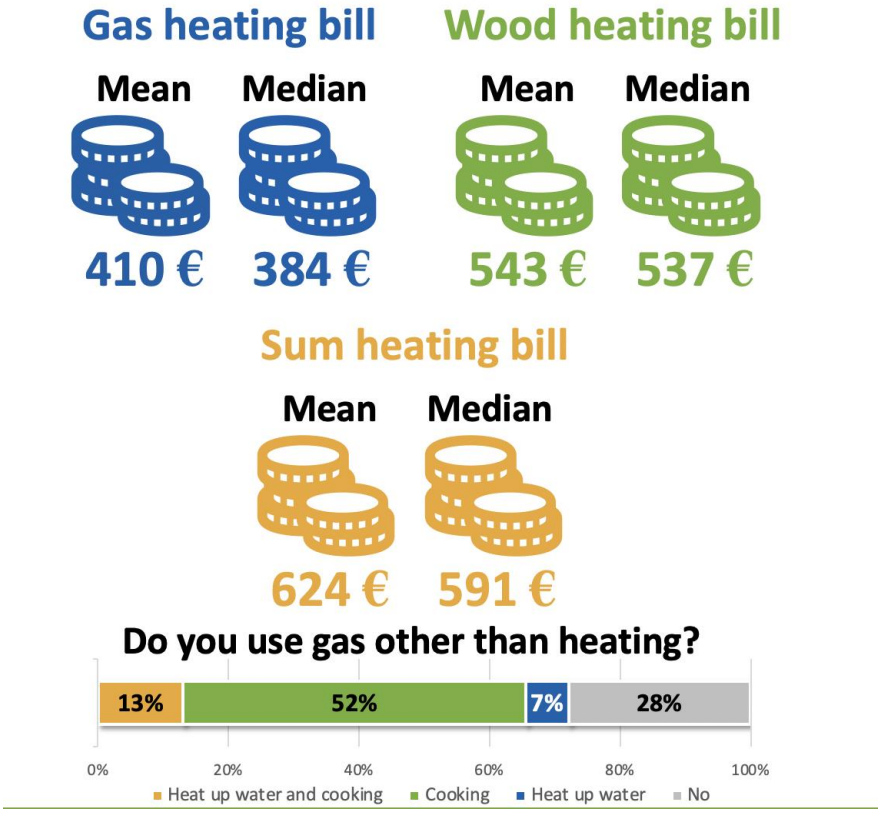


Figure 17: Heating expenses – establishment survey

Overall, participant households spend 624 euros (median 591) for gas and firewood. Gas is not only used for heating, it is also used for cooking and baking, and in some cases, to warm up hot water. Where there is no piped gas, gas tanks are used for this purpose. This option could be very expensive. A regular household use 1 gas tank monthly, which cost them around 18-20 euros. But for households where 2 or more generations live together, or where 3 or more children live - this fee could be twice as much.

In the heating block of the survey, the most surprising information for the participants was that 20-21 C is enough for thermal comfort. Most households consider temperatures above 21 ° C to be ideal.

The answer to the question of how much the average inside temperature in the winter period was almost always above 21° C for families with small children - from one to school age. One of the HEA met with a participant who said that 28° C is the ideal inside temperature. Local nurses recommend 24 ° C for new-borns. Elderly and / or ill people also consider a high ideal temperature because of health-related issues.

Based on the ideal and real temperature, we could estimate how many people live in colder dwellings than ideal. Within the participant households, 38 percent of the dwellings were below the ideal temperature, and 12 percent was far from the ideal (at least 3 Celsius difference).

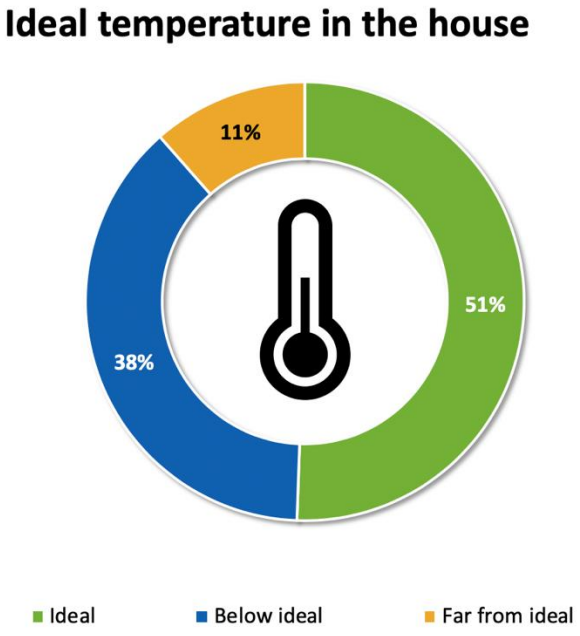


Figure 18: Thermal comfort – establishment survey

We found that, regardless of family income, everyone in the heating season strives to find the right temperature. If they are facing financial problems, heating is every time solved by reallocating expenses, either by deferring the payment of certain bills or by applying for a loan.

5.1.3 Overall energy consumption

The average overall energy consumption of a household is 860 euros. The median value is a little bit lower, 740 euros. 35 percent spends more than 1 000 euros on energy per year.

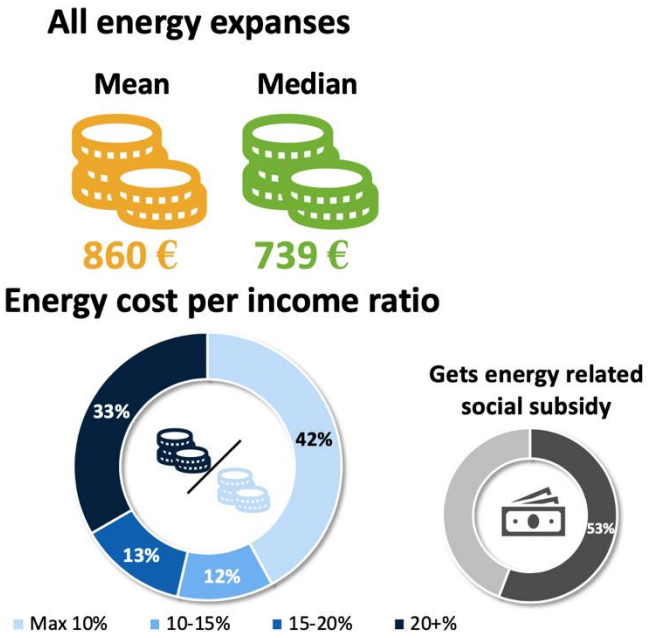


Figure 19: Energy expenses – establishment survey

An average household spent 16 percent of their income to cover their energy expenses. But more than 30 percent of the households spend more than 20 percent of their income on energy bills, which might be an even bigger burden in the winter months when most of the heating expenses have to be paid. Moreover, this relatively high cost of energy could be higher without social subsidy. More than 50 percent of the participant got some social support from the local government to help cover the energy expenses.

5.1.4 Energy efficiency and energy awareness

We asked the respondent what type of energy efficiency (EE) measures have they implemented or are planning to implement in their dwelling. 37 percent of the households bought low-energy bulbs, and 28 percent bought new EE appliances. Around 33 percent of the household installed new at least double-glazed external windows, mostly PVC. 17 percent of households installed additional floor, wall, or roof insulation in the last 10 years.

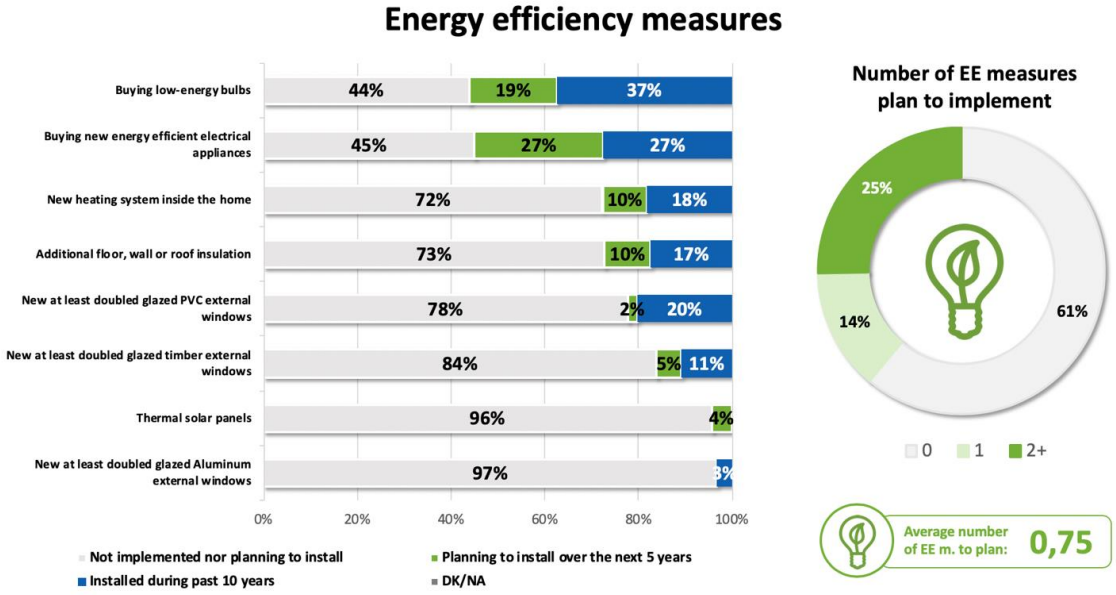


Figure 20: Type EE measures – establishment survey

We also asked about their future plans. Around 40 percent of the household plan to implement something, and 25 percent want to implement more than one measure. New EE appliances, new windows, and low-energy bulbs are the most commonly planned changes.

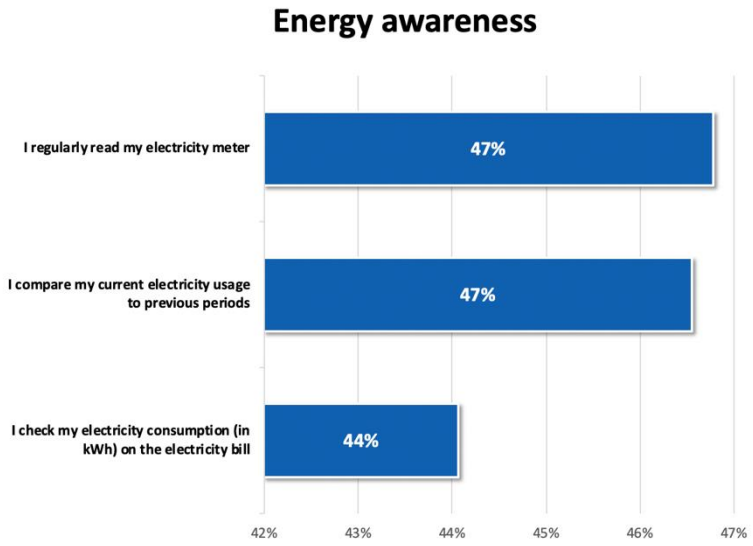


Figure 21: Energy awareness – establishment survey

Based on the respondents' answers, energy awareness is moderately high in this group. 47 percent read the actual energy consumption indicated on the bills, 47 percent regularly read its energy meter, and 44 percent compared his/her energy usage with previous periods.

5.1.5 Energy vulnerability

We use a complex approach to map the energy vulnerability risk of participant households. We asked several questions about the condition of the dwelling, possible barriers to pay the energy bills, and questions about payment on energy.

11 percent of the households didn't have any problem with the dwelling, but around 35 percent of the households marked 3 or more problem. The most common problem (49 percent) was that dwellings are **not** comfortably cool during the summer. The lack of good quality insulation could be the cause of this. A lower but significant number of participants (24 percent) said that their dwelling was **not** comfortably warm during the winter, and 16 percent said they had a problem with the temperature in the house in both seasons.

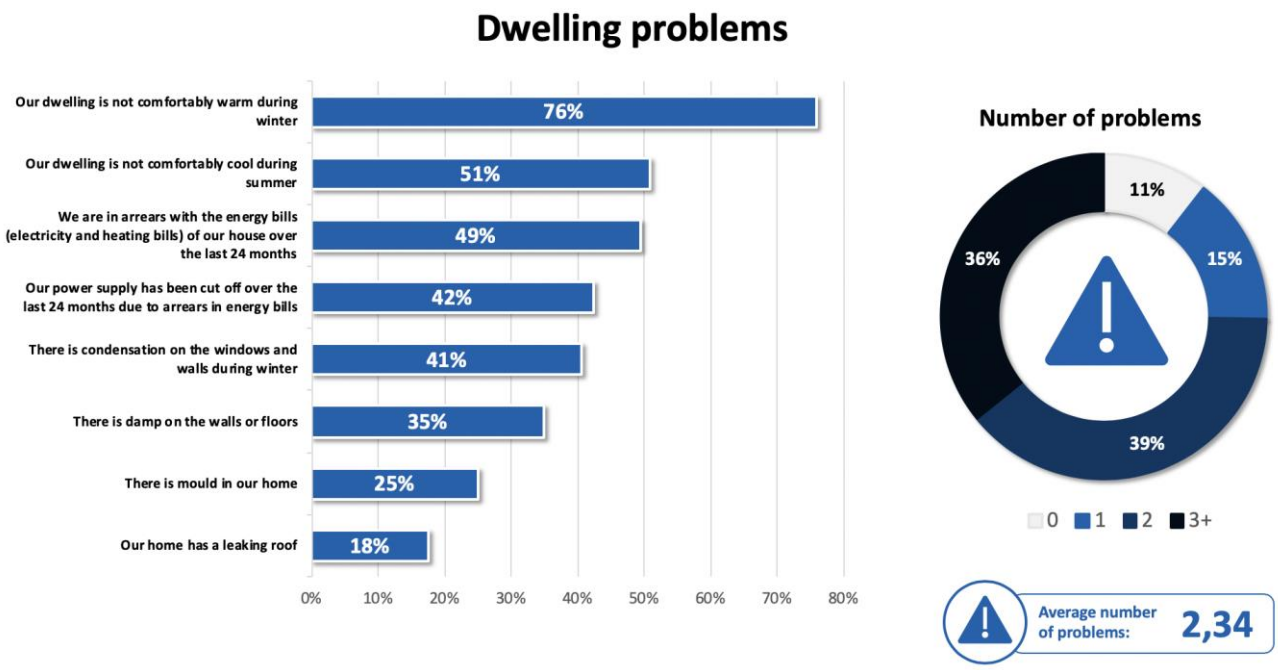


Figure 22: Dwelling problems – establishment survey

41 percent noticed condensation on the windows and the walls during the winter, 35 percent said that there was dampness on the walls or floors, and another 25 percent said there was mould in the house. Leaking roofs presented as a problem in 18 percent of the households. 51 percent of the respondents said that they were in arrears in the last 24 months, and in a lot of cases, the power supply has been cut off due to arrears.

We also asked whether the respondents have been forced to restrict other essential needs in order to be able to pay for electricity, gas, heating, or other energy used in the home over the last 24 months?

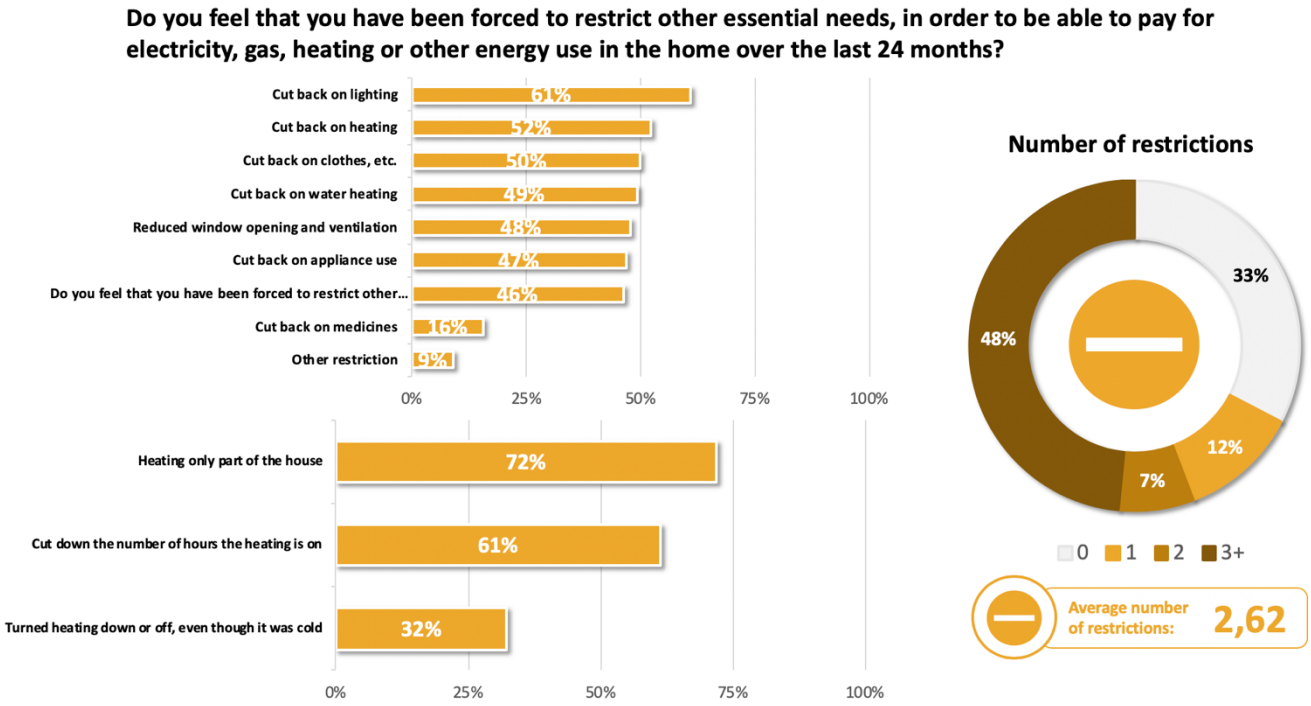


Figure 23: Restrictions – establishment survey

Only 33 percent of the households did not have to implement any restrictions. The two most typical strategies were cutting back on lighting (61 percent) and cutting back on heating (52 percent). Within those who had to cut heating, 72 percent chose to heat only part of the house, 61 percent cut down the number of hours the heating is on, and 32 percent turned heating down or off even though it was cold. We would like to highlight one additional result. 16 percent of the households had to cut back on medicines in order to pay the energy bills. This ratio was even higher in the case of pensioners and disabled people.

We applied multiple measures to analyse the energy vulnerability situation of the participant's household. Based on these indicators, we calculated a complex typology of energy vulnerability. For this, we used two composite indicators. The first indicator is the ratio of energy spending per income (see above). This is the economic approach of energy vulnerability. The other indicator is a more consensual one, and it uses the same method as Bouzarovski and Tirado Herrero (2017) suggested in their paper. They created the energy vulnerability index using 3 indicators: Inability (0,5 weight), arrears (0,25 weight), and housing condition (0.25 weight). We measure inability with the difference between ideal and real home temperature, the arrears indicator with our arrears question, and the housing condition with dwelling problems such as a leaking roof and presence of dampness and/or mould. The minimum value of this index is 0, and the maximum is 100.

The next schematic table presents the method of how we calculated the complex energy vulnerability typology.

		Energy Vulnerability Indicator	
		0-25	**26-100**
Energy expenses / income	**Below 15+**	Low risk	High EPI
	Above 15%	High energy bills	High energy bills and high EPI

Table 2 Energy vulnerability classification

There were a lot of households where there was no access to electricity at the time of the home visit. We treated them separately and applied a 5th category in their cases.

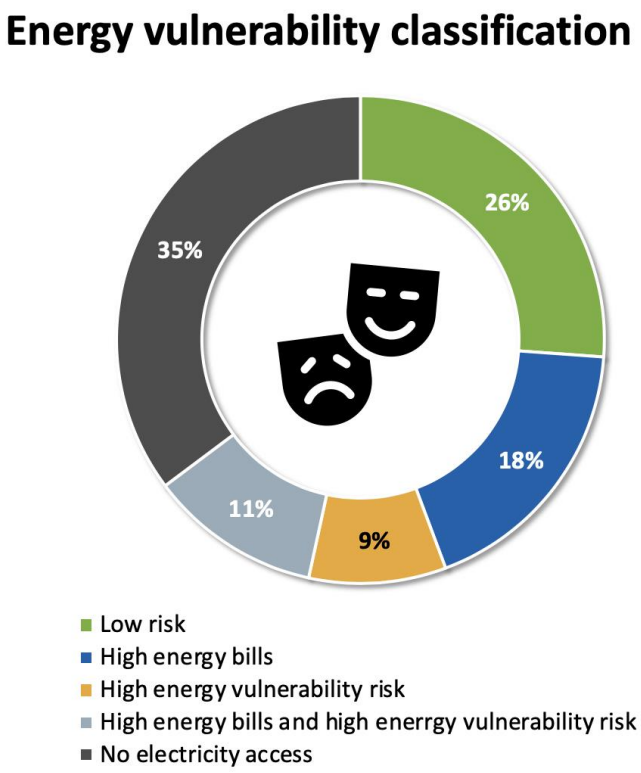


Figure 24: Energy vulnerability classification – establishment survey

Based on this typology, 26 percent of the households have low energy vulnerability risk. 18 percent of the households have to pay high energy bills compared with their income situation, but the EVI value is not high in their case which means they could avoid some negative consequences of energy vulnerability like low thermal comfort or arrears. 11 percent of the households have high energy vulnerability indices without the problem of high energy burden. Moreover, there is 9 percent who are at risk for both aspects. These are the most vulnerable households regarding energy vulnerability, alongside with that,, 33 percent respondent who had no electricity access.

5.2 Methodological Aspects

In this part of the report we present the methodological lessons we learned from the first LL round. We focus on the home visits, and the information collected by the home advisors. As well, we summarise the lessons of the Energy Cafes very briefly first.

5.2.1 Energy Cafes

In the previous part of the report we presented the methodology of the Energy Cafes. In our case, the Energy Cafes did not completely achieve our objectives. The number of participants was lower than planned, and there was no lively large table discussion between citizens and experts. But those who participated were delighted after the event because our experts answered their specific questions. Initially, we wanted to use the Energy Cafes to shape our service we offer for the citizens. But we didn't get too much feedback regarding our service. The participants preferred asking their specific questions from our experts and sought an answer for their specific needs. This format was different from what we wanted, but it helped us to present the project to the local community, and it also helped us to raise awareness and trust toward us. However, the biggest issue was not with the content, but rather with the

organization of the energy cafes itself. We had to organize the events during workdays and work hours. This limited the number of participants and also defined the main target group: pensioners. Pensioners are one of our main target group, but not our sole target group.

Based on these lessons, we have decided to shape the objectives and the format of the Energy Cafes for the second LL round. The primary objective of the cafes will be to raise awareness toward the project and to help arrange new home visits. But of course, we will try to collect as much useful information about our services as possible in these cafes. Regarding the format - we will try to link the cafes with existing local events. Well-established local events with a lot of visitors could help us to reach more people and more diverse people.

5.2.2 Home visits

Household engagement

In many situations, the citizens did not want to take part in the survey, and even if they took part, they did not sign the consent form. In these cases, we conducted the home visit but didn't record any personal data. In many cases, the reason for the rejection was that there was personal acquaintance between the HEA and the person addressed, and they didn't want to share private information with a person familiar with them.

Those who refused to participate had two main reasons. Some of them felt that we could not help them, and they did not need this type of counselling. They said they were paying attention to energy use, they were aware of the savings tips, and they could easily pay their energy bills. So, of course, there are households that do well in terms of energy consumption and awareness.
However, there were some other cases of rejection where people seemed to be more resigned to their own situation. Due to their financial situation and old age, they felt that they did not need the information/service provided by the program – and they were not planning any future investments.

It also made it difficult to engage the local community, that in the first period of the advice service, our personal advice sheet (PEAS) was not available. So we could not provide short-term and tangible 'evidence' of the effectiveness of energy counselling. The information in the general advisory booklet did not give the possible participants enough motivation to take part in our project. The number of rejections decreased somewhat when HEAs were able to present personal sample reports.

The other difficulty with engagement was that the embeddedness of Máltai in Nyírbátor is not so strong. Thus, it is really challenging for the HEAs to raise public interest there. The opposite is true in Nyírpilis - where Máltai has a strong ongoing presence through the Children's Chance program. The operation of the program and the continued presence of Máltai social workers created an environment of trust where local engagement was much easier.

5.2.3 Focus group

After finishing the first Living Lab cycle, we held a focus group discussion at Nyírbátor, on the 17th of October, 2019. The main discussion developed around possible engagement strategies.

Experts mentioned that apartment buildings could be a good entry point to the programme. Those who live there face some unique challenges. In these building block-heating operates, which is really hard to control. It often causes a very low energy awareness and frequent energy waste. Some of the energy cost in these houses is paid by all of the owners. The staircase lighting is a good example of that. If this could be changed to EE bulbs, it could decrease the total energy usage of the apartment building. The programme has to find the key representative of the building, who provides access to the other households.

The other target group we discussed was the clients of the Social Service Office. The Social Service Office offers a complex service. One part is personal care, which is primarily about health care. The other is social care, which has several elements, from assisting with administration to paying the bills. This could be an entry point for STEP-IN. Experts said that they also have difficulties in raising awareness toward their own social service. The elderly people have limited or no access to information, and in some cases, they are not even interested. In case of financial problems, investing could also be difficult because of the low-income situation. Accessing these groups is really challenging, as they don' trust anyone except well-known people. - They are distrustful, but if we use the SSO to reach them, our chances are higher.

Overall the focus group meeting reached its objectives. We could improve our engagement strategy with new information we got.

5.3 Dissemination Activities

Nationwide scientific dissemination is not started during the first LL cycle. But we continuously share our experiences with local stakeholders in order to improve the quality of the service. The Facebook page of the pilot site also works as a dissemination channel. We share all relevant project information here, and also advertise and disseminate our events. The Facebook page has 50 followers.

6. Conclusions

The methodology of the rural Living Lab has a lot of similarities with the other 2 LL's, but because of unique challenges and needs, it also has to be adjusted. The first step of the process was a baseline survey. We used this survey to segment the target group and to explore the needs of local citizens. Before starting the LL cycle, we held a training for the HEAs. E.ON developed a training material for them, alongside with Máltai and Tigáz. Only those energy advisors could take part in the project who went through our training process.

The Hungarian rural pilot site has to face several unique challenges. Some of them are country specific, some of them are local area specific.

- The government of Hungary first reduced than froze the energy prices in 2012, and in all the bills, the energy utilities have to present how much money the households save as a result. As a consequence, energy prices are lower in Hungary compared with other European countries, especially in the case of electricity. This reduces the effectiveness of any Energy Efficient (EE) intervention.
- In some households, especially in segregated areas, due to arrears there is no access to electricity. In these cases, we have to work together with the utility company (E.ON) in order to provide safe and legal energy access. Arrear handling also has to be applied here with the help of Máltai.
- During the winter period the air pollution level is very high in this area because some households using waste and rubbish to heat. This is a serious problem from an environmental perspective, but it also affects the health condition of the household (and wider area), and it also damages the heating system.
- There are several parts of the area where piped-gas service is not available. These households could use gas tanks to heat water and for cooking, but for heating, they have to use firewood (other heating methods are not used. Fireplace and tile-stove is the most usual heating method in these dwellings, which are much harder to control. Firewood prices are not frozen, and the proper storage of firewood could also be challenging.

Two energy cafes were held during the first Living Lab cycle. In our case, the Energy Cafes did not completely achieve our objectives. Initially we wanted to use the Energy Cafes, to shape our service we offer for the citizens. Initially, we wanted to use the Energy Cafes to shape our service we offer for the citizens. But we didn't get too much feedback regarding our service. The participants preferred asking their specific questions from our experts and sought an answer for their specific needs. This format was different from what we wanted, but it helped us to present the project to the local community, and it also helped us to raise awareness and trust toward us.

Local STEP-IN service mainly built on the home visits, so home visits are the core part of the project. The counselling work starts with an establishment survey. Based on the survey the advisors get a general picture of the conditions in the household and they can identify possible action points. We gained a lot of insights during this phase:

- 33 percent of the first-round participant households had no electricity access at the time of the home visits. These households don't have a 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, a complex solution is needed where local governments work together with the utilities and the NGOs. In these households, Máltai could offer an arrear handling strategy, and they can initiate discussions between citizens and utilities to find an acceptable solution for each actor.
- In 2/3 of the cases, the real consumption was significantly higher than expected (at least 400 kWh higher the consumption than the ideal one). It was really important for our work, and service to understand what the reason is for this "overconsumption": old and energy wasteful appliances, or behaviour aspects? We found examples for both.
- Participants had very limited knowledge about the energy class of the appliances they have in their household. They were only certain of the energy class if they had really old appliances, such as a non-automatic washing machine, or if they just recently bought the product. Additionally, some participants

were simply unaware of how much energy is used by specific appliances and how much using low-rated energy appliances can increase energy costs.

- It is very common that households have 2 or more TVs. This is the case in our participant group too. Nearly 50 percent has 2 or more TVs. And people spend a lot of time watching TV. The average participant watches more than 6 hours of TV per day. In most of these cases the income situation of these households is quite grim. Where the living standards are higher, the energy class of the TV is usually better (newer appliances), and they also have laptops and PCs, which decrease the time spent on TV.
- Piped gas in not available in every dwelling. 63 percent of the households use firewood as a primary heating source and a further 13 percent as a secondary source. So overall, ¾ of the participants use firewood for heating. Tile stove is the most frequent heating mode, which is really hard to adjust.
- 11 percent of the households didn't have any problem with the dwelling, but around 35 percent of the households marked 3 or more problem. 16 percent of the households had to cut back on medicines in order to pay the energy bills. Only 26 percent of the households have low energy vulnerability risk. 18 percent of the households have to pay high energy bills compared with their income situation, but the EVI value is not high in their case which means they could avoid some negative consequences of energy vulnerability like low thermal comfort or arrears. 11 percent of the households have high energy vulnerability indices without the problem of high energy burden. Moreover, there is 9 percent who are at risk for both aspects. These are the most vulnerable households regarding energy vulnerability, alongside with those 33 percent respondent who had no electricity access.

Home visits and individual reports show clearly that every participant is different. They have different needs and knowledge, and different awareness level. Actual energy consumption of a household depends on many things. It is not just about the accuracy of recorded data, but also background information that is not revealed by completing the questionnaire. While STEP-IN service is not specifically responsible for assessing and managing deep poverty problems, at least we have to try. Thus, we have to provide complex counselling, where in addition to energy related advices, we also need to provide debt management strategies.

7. Bibliography

Bouzarovski, S., & Tirado Herrero, S. (2017). The energy divide: Integrating energy transitions, regional inequalities and poverty trends in the European Union. *European Urban and Regional Studies*, *24*(1), 69-86.

8. Annexes

Annex 1: Establishment survey

A VÁLASZADÁS ÖNKÉNTES!
CSAK 18 ÉVEN FELÜLI SZEMÉLY KÉRDEZHETŐ!

STEP-IN FELMÉRŐ KÉRDŐÍV

2019

Kérdőív sorszáma:

Kérdőív sorszáma: Település első két betűje, kérdező monogramja (két betű) és egy három jegyű szám (kérdező adja növekvő sorrendben)

Kérdezés napja **hónap:** | | **nap:** | |

KUTATÁSUNK AZT VIZSGÁLJA, HOGYAN LEHET CSÖKKENTENI A CSALÁDOK ENERGIA SZÁMLÁIT ÉS HOGYAN LEHET SEGÍTENI ABBAN, HOGY MEGFELELŐEN FŰTÖTT LAKÁSBAN ÉLJENEK TÉLEN. A KUTATÁS MAGYAR PARTNEREI A MAGYAR MÁLTAI SZERETETSZOLGÁLAT, AZ E.ON VALAMINT AZ ARIOSZ KUTATATÓINTÉZET. A KUTATÁST AZ EURÓPAI UNIÓ FINANSZÍROZZA.

A felmérést azzal a személlyel szeretném elkészíteni, akinek az Önök háztartásában az áram- és gázfogyasztást érintő ügyekben döntő a szava.

Lakással kapcsolatos kérdések

Milyen típusú lakásban/házbank laknak?

1 – Családi ház
2 – Ikerház
3 – Társasház (több emeletes)
4 – Sorház
5 – Panel lakás
6 – egyéb, éspedig: .....

9 – NT/NV

Mikor épült a lakás/ház?

				évben

9999 – NT/NV

Mekkora a lakás nagysága, hány négyzetméter?

			négyzetméter

999 – NT/NV

A fürdőszobán, WC-n és tároló helységeken kívül hány szoba van a lakásban?

	szoba

9 – NT/NV

A lakás/ház kinek a tulajdona?

1 – Ön vagy családtagja a tulajdonosa
2 – Magánszemélytől bérli a lakást
3 – Önkormányzattól bérli a lakást
4 – Másnak a tulajdona, de ingyen használhatják
5 – Osztatlan közös tulajdon
6 – egyéb tulajdonban van, éspedig: .....

9 – NT/NV

ÁRAMFOGYASZTÁSSAL kapcsolatos kérdések

A tanácsadáshoz fontos, hogy pontos képünk legyen arról, hogy mennyit költenek Önök energiára, mekkora az energia fogyasztásuk. A következő kérdések ezt járják körbe.

Hagyományos vagy előre fizetős villany mérő van az Önök háztartásában?

1 – Hagyományos
2 – Előre fizetős
9 – NT/NV

B2-B3 kérdéseket akkor kérdezd, ha B1=1!

Ön havonta diktálja az áram fogyasztását, vagy általány díjat fizet?

1 – havonta diktálja
2 – általányt fizet
9 – NT/NV

B3 kérdést akkor kérdezd, ha B2=1. Ha nem tud pontos összeget mondani, csak tól-től értéket, akkor a középértéket kell kódolni!

Kérem, mondja meg, mekkora az átlagos havi áramszámlájuk télen, illetve nyáron!

TÉLEN

					Forint

88888 – NT
99999 – NV

NYÁRON

					Forint

88888 – NT
99999 – NV

B4. kérdést akkor kérdezd, ha átalányt fizetnek B2=2

Mekkora átalányt fizetnek havonta?

					Ft

88888 – NT
99999 – NV

B5-B7. kérdéseket akkor kérdezd, ha B1=2, vagyis előre fizetős mérő órájuk van.

Milyen gyakran szokta feltölteni az egyenlegét az előre fizetős mérőn?

1 – Hetente vagy gyakrabban
2 – Havonta többször
3 – Havonta
4 – Ritkábban mind havonta
9 – NT/NV

Összesen egy átlagos nyári hónapban hány forintot szokott feltölteni az egyenlegére?

					Ft

88888 – NT

99999 – NV

Összesen egy átlagos téli hónapban hány forintot szokott feltölteni az egyenlegére?

					Ft

88888 – NT

99999 – NV

MINDENKITŐL!

B8. kérdésnél, ha van rá lehetőség akkor az éves elszámoló számla alapján töltsék ki a kérdést, de mindenképp javasolt számlába betekinteni!

Hány kWh áramot használnak el 1 év alatt?

					kWh

88888 – NT

99999 – NV

Van-e az Önök háztartásában vízmelegítő bojler?

2 – van

1 – nincs

9 – NT/NV

B10 és B11 kérdést akkor kérdezd, ha B9=2

Hány literes a vízmelegítő bojler?

			liter

888 – NT

999 – NV

Az Ön tudomása szerint normál vagy éjszakai (vezérelt) árammal működik a bojler?

1 – normál

2 – éjszakai (vezérelt)

9 – NT/NV

MINDENKITŐL!

Mennyi most az óraállás a villanyórán (kérem olvassák le):

					kWh

88888 – NT

99999 – NV

A következő kérdésekben a különböző elektronikai készülékeivel kapcsolatban fogok kérdéseket feltenni. Erre azért van szükség, hogy minél pontosabb képet kapjunk arról, milyen eszközök mennyi energiát fogyasztanak az ön háztartásban. Ezek a kérdések segítenek abban, hogy személyre szabott energia riportot készíthessünk.

Milyen elektromos izzók vannak az Ön háztartásában?

			darabszám 99 - NT/NV	átlagos napi használat órában (csak ha darabszám nem egyenlő nullával) – 99 - NT/NV
1	–	Hagyományos izzó – 60W		
2	–	Hagyományos izzó – 40W		
3	–	Kompakt fénycsövek – 12W		
4	–	Kompakt fénycsövek – 8W		
5	–	Energiatakarékos izzó – 9W		
6	–	Energiatakarékos izzó – 5W		

Most különböző elektromos eszközöket fogok felsorolni. Kérem mondja meg, hogy van-e az önök háztartásban az adott eszköz, ha igen milyen gyakran használják azt?

			2 - van, 1 - nincs, 9 - NT/NV	Naponta átlagosan hány órát van bekapcsolva (csak ha van neki)) – 99 - NT/NV
1	–	Klíma (nyári használatra gondoljon)		
2	–	Elektromos tűzhely (csak főzőlap)		
3	–	Elektromos sütő		
4	–	Mikrohullámú sütő		
5	–	Számítógép, laptop		
6	–	Rádió, hifi		
7	–	Elektromos fűtés		
8	–	Átfolyós elektromos vízmelegítő		
9	–	Kerti szivattyú (nyári használatra gondoljon)		
10	–	Porszívó		
11	–	Szagelszívó		
12	–	Konyhai robotgép		
13	–	Elektromos kávéfőző		
14	–	Hajszárító, hajsütő		

A következő kérdések a háztartásban használatban lévő televíziókészülékek vonatkoznak

			2 - van, 1 - nincs, 9 - NT/NV	Készülék típusa: 1 - hagyományos, 2 - síkképernyős LCD, 3 - Plazma, 9- NT/NV	Készülék nagysága 1 - 32-37 col (80-90 cm), 2 - 40-50 col (100-130 cm) 3 - 50 col felett, 9 - NT/NV	Naponta átlagosan hány órát van bekapcsolva (csak ha van neki)) – 99: NT/NV
1	–	Készülék 1.				
2	–	Készülék 2.				
3	–	Készülék 3.				

A következő kérdések a mosogatógéppel, mosógéppel kapcsolatosak

			2 - van, 1 - nincs, 9 - NT/NV	**heti** mosások/mosogatások száma (db) – 99 - NT/NV	Készülék energetikai besorolása 1 - B vagy rosszabb, 2 - A, 3 - A+, 4 - A++, 5 - A+++, 9 - NT/NV
1	–	mosogatógép			
2	–	mosógép			
3	–	mosó-szárítógép			

A következő kérdések a hűtőgéppel, fagyasztóval kapcsolatosak

			2 - van, 1 - nincs, 9 - NT/NV	Méret, **literben** megadva – 999 - NT/NV	Készülék energetikai besorolása 1 - B vagy rosszabb, 2 -A, 3 - A+, 4 - A++, 5 - A+++, 9- NT/NV	Hűtő esetén annak típusa: 1 - egyajtós fagyasztó nélkül, 2 - egyajtós fagyasztóval, 3 - külön ajtós fagyasztóval, 9 - NT/NV
1	–	hűtő				
2	–	fagyasztó				
3	–	fagyasztó láda				

Hány mobiltelefont használnak a háztartásban?

	db

9 – NT/NV

„fűtéssel", gázfogyasztással kapcsolatos kérdések

Önök hogyan fűtik a lakást/házat (megadhat egy elsődleges és egy másodlagos fűtési módot is)?

01 – Házközponti fűtés
02 – Központi fűtés **olajjal**
03 – Központi fűtés **gázzal**
04 _ Központi fűtés **fával**
05 – Olajradiátor
06 – Egyedi gázfűtés (konvektor)
07 – Elektromos fűtőtest
08 – Fűtésre használt légkondicionáló berendezés
09 – Kandalló, (fával), cserépkályha (fával), kályha (fával)

☐☐ **elsődleges**

☐☐ **másodlagos**

10 – Elektromos kandalló

11 – Egyéb, éspedig: .....

99 – NT/NV

Megközelítőleg hány éves az a fűtési rendszer, amivel elsődlegesen fűtik a lakást/házat?

		éves

99 – NT/NV

Milyen rendszeresen tartják karban az elsődleges fűtési rendszert?

3 – Minden évben

2 – Kétévente vagy ritkábban

1 – Gyakorlatilag soha

9 – NT/NV

Használnak-e bármilyen megújuló energiaforrást a házban/lakásban (pl.: napkollektor, geotermikus energia stb.)?

2 – igen, éspedig: .....

1 – nem

9 – NT/NV

C5-C11 kérdések, ha fűtenek fával: C1=4 vagy C1=9!

Összesen az előző fűtési szezonban milyen mennyiségű fát használtak fel fűtésre?

					m^3

88888 – NT

99999 – NV

és/vagy

					kg (1 mázsa 100 kg)

88888 – NT

99999 – NV

Elsősorban milyen típusú fát használtak fűtésre?

1 – Bükk

2 – Tölgy, Csertölgy

3 – Gyertyán

4 – Akác

5 – Egyéb tűzifa (kőris, juhar, szil, gyümölcsfák)

6 – Fabrikett

7 – Pellet

9 – NT/NV

Mikor vették a tűzifát az előző fűtési időszakhoz? (ha többször is vettek arra gondoljon, amikor a legnagyobb mennyiséget vette)

1 – A fűtési időszakot megelőző tavasszal vagy még korábban
2 – A fűtési időszakot megelőző nyáron
3 – Közvetlen a fűtési időszak előtt
4 – Folyamatosan vették a fűtési időszak közben
5 – Nem vettek tűzifát

9 – NT/NV

Előfordult-e az előző fűtési időszakban, hogy kaptak tűzifát önkormányzattól, vagy valamilyen munkáért cserébe fával fizették ki Önöket (pl: fakitermelés, tisztítás)

2 – igen
1 – nem

9 – NT/NV

C9 kérdés ha C8=2!

Megközelítőleg a felhasznált tűzifa mekkora aránya származott ilyen forrásból?

1 – nagyon kicsi része
2 – kevesebb mint a fele
3 – nagyjából a fele
4 – több mint a fele
5 – Közel a teljes része
6 – Teljes egésze

9 – NT/NV

Összesen Önök mennyit költöttek tűzifával való fűtésre az előző fűtési időszakban

						forint

888888 – NT
999999 – NV

Előfordult-e, hogy a fűtési időszakban a fűtésre felhasználtak háztartási hulladékot, műanyagot, szemetet?

2 – igen
1 – nem

9 – NT/NV

C12-C15 kérdések ha fűtenek gázzal: C1=1 vagy C1=3 vagy C1=6!

C13. kérdésnél, ha van rá lehetőség akkor az éves elszámoló számla alapján töltsék ki a kérdést, de mindenképp javasolt számlába betekinteni!

Ön havonta diktálja a gáz fogyasztását, vagy általány díjat fizet?

1 – havonta diktálja

2 – általányt fizet

9 – NT/NV

Összesen az előző évben milyen mennyiségű gázt használtak fel összesen?

					m^3

88888 – NT

99999 – NV

Mennyit költenek télen átlagban gázszámlára?

havonta				
99999 – NT/NV				

vagy

teljes téli időszakban					
999999 – NT/NV					

Kérem olvassák le az óraállást a gázórán:

					m3

88888 – NT

99999 – NV

MINDENKITŐL!

(A fűtésen kívül) használnak másra (is) gázt?

1 – nem
2 igen, vízmelegítésre
3 igen, sütésre-főzésre
4 – igen, vízmelegítésre és sütésre-főzésre

9 – NT/NV

C17 kérdés, ha C16=2 vagy C16=3 vagy C16=4

Mennyit költenek nyáron átlagban gázszámlára?

						forint

88888 – NT

99999 – NV

MINDENKITŐL!

Van a lakásukban központi analóg, vagy digitális termosztát, amivel lehet a hőmérsékletet szabályozni?

1 – analóg termosztát
2 digitális termosztát
3 van termosztát, de nem tudom, hogy milyen
4 – nincsen

9 – NT/NV

általLÁNOS energia használat, nehézségek

A következőkben energiahatékonyságot támogató beruházásokról fogom kérdezni.
Végzett-e vagy tervez-e ilyen beruházásokat?

			Végzett ilyen beruházást az elmúlt 10 évben	Tervez ilyen beruházást a következő 5 évben	Nem végzett és nem is tervez végezni	NT/NV
1	–	Új legalább dupla üvegű fa külső ablakok beszerelése a régiek helyett	3	2	1	9
2	–	Új legalább dupla üvegű PVC külső ablakok beszerelése a régiek helyett	3	2	1	9
3	–	Új legalább dupla üvegű alumínium külső ablakok beszerelése a régiek helyett	3	2	1	9
4	–	Új fűtési rendszer kiépítése	3	2	1	9
5	–	Padló, fal vagy tető szigetelés	3	2	1	9
6	–	Napkollektor, napelem beszerelése	3	2	1	9
7	–	Energia hatékonyabb berendezések vásárlása (pl. A+++ hűtő, mosógép stb.)	3	2	1	9
8	–	Energia hatékony izzók vásárlása	3	2	1	9

A következő állítások inkább igazak vagy inkább hamisak a háztartássukkal, házukkal kapcsolatban?

			Inkább igaz	Inkább hamis	NT/NV
1	–	Télen az ablakon vagy a falakon párafoltok/vízfoltok jelennek meg	2	1	9
2	–	Nyirkos a lakás	2	1	9
3	–	Penész van a lakásban	2	1	9
4	–	Beázik a tető	2	1	9
5	–	A lakás kellemesen meleg télen	2	1	9
6	–	A lakás kellemesen hűvös nyáron	2	1	9
7	–	Az elmúlt **két** évben előfordult, hogy késtünk az energia számláink befizetésével, és így tartozásunk volt az energia szolgáltatók felé	2	1	9
8	–	Az elmúlt **két** évben előfordult, hogy az energia szolgáltató kikötötte az áramot/gázt/vizet a lakásból tartozás miatt	2	1	9

Az elmúlt **két** évben volt-e arra szükség, hogy alapvető fontosságú szükségletekben korlátozzák önmagukat azért, hogy ki tudják fizetni az energia számláikat?

			Igen	Nem	NT/NV
01	–	Kevesebbet költöttek élelmiszerre, ételre	2	1	9
02	–	Kevesebb meleg vizet használtak	2	1	9
03	–	Kevesebbet használták a lámpákat a lakásban	2	1	9

04	–	Kevesebbet használták az elektromos eszközeiket	2	1	9
05	–	Kevesebbet költöttek gyógyszerre	2	1	9
06	–	Kevesebbet költöttek ruhákra	2	1	9
07	–	Ritkábban szellőztettek télen	2	1	9
08	–	Kevesebbet fűtöttek	2	1	9
09	–	Egyéb korlátozás, éspedig:	2	1	9

D4. kérdést akkor kérdezd, ha d3. kérdés 08. sorában 2-es kód van!

Hogyan próbálta csökkenteni a fűtés számláját?

			Említi	Nem említi	NT/NV
01	–	Nem fűtöttek annak ellenére, hogy hideg volt a lakásban.	2	1	9
02	–	Kevesebb ideig fűtöttek.	2	1	9
03	–	Csak a lakás egyes részeit fűtötték be	2	1	9
04	–	Egyéb módon, éspedig:	2	1	9

Van-e Önnek vagy a háztartás más tagjának, olyan egészségügyi problémája, amit a lakás nem megfelelő fűtése okozhatott (pl.: gyakori megfázás, reuma)?

2 – van

1 – nincs

9 – NT/NV

Hány fok az átlagos hőmérséklet télen a lakásban?

1 – ≤ 15 ^{0}C

2 – 15-18 ^{0}C

3 – 18-21 ^{0}C

4 – > 21 ^{0}C

8 – Nem tudja

9 – Nem válaszol

Az Ön véleménye szerint mi lenne az ideális hőmérséklet a lakásában télen?

1 – ≤ 15 ^{0}C

2 – 15-18 ^{0}C

3 – 18-21 ^{0}C

4 – > 21 ^{0}C

8 – Nem tudja

9 – Nem válaszol

Ön mit gondol a lakása hőmérsékletéről télen?

1 – nagyon hideg van a lakásban

2 – hideg van a lakásban

3 – meleg van a lakásban

4 – nagyon meleg van a lakásban

8 – Nem tudja

9 – Nem válaszol

Kaptak-e az elmúlt időszakban bármilyen állami/önkormányzati támogatást ahhoz, hogy az energia számláikat ki tudják fizetni, a lakást tudják fűteni? (A rezsicsökkentést nem kell figyelembe vennie!)

2 – igen

1 – nem

9 – NT/NV

Ön szerint mennyire jellemző a településen, hogy fűtésre felhasználnak háztartási hulladékot, műanyagot, szemetet?

4 – nagyon jellemző

3 – inkább jellemző

2 – inkább nem jellemző

1 – egyáltalán nem jellemző

9 – NT/NV

tudatosság

A következő állítások inkább igazak vagy inkább hamisak a háztartásával, lakásával kapcsolatban?

			Inkább igaz	Inkább hamis	NT/NV
1	–	Rendszeresen leolvassuk az áramfogyasztást a mérőóráról	2	1	9
2	–	Összehasonlítjuk az áramfogyasztást a korábbi időszakkal	2	1	9
3	–	Az áram számlán mindig megnézzük, hogy mennyi energiát fogyasztottunk	2	1	9

Most különböző állításokat fogok felolvasni. Kérem 1-5 skálán jelezze, hogy mennyire ért egyet ezekkel az állításokkal. Az 5-ös azt jelenti, hogy teljes mértékben egyetért, az 1-es pedig azt jelenti, hogy egyáltalán nem ért egyet. Köztes osztályzatot is adhat.

			Teljes mértékben egyetért	4	3	2	Egyáltalán nem ért egyet	NT/NV
1	–	Csak akkor kapcsolom be a TV-t, ha nézem	5	4	3	2	1	9
2	–	Lekapcsolom a lámpákat azokban a szobákban, ahol éppen nem tartózkodunk	5	4	3	2	1	9
3	–	Ha lehetőségem van rá figyelek arra, hogy olyan eszközöket vásároljak, amelyek energia takarékosak	5	4	3	2	1	9
4	–	Inkább több ruhát veszek fel télen, hogy kevesebbet kelljen fűteni	5	4	3	2	1	9
5	–	Ha valahova el lehet jutni gyalog vagy biciklivel autó helyett, nem ülök autóba	5	4	3	2	1	9

6	–	Fürdésnél/zuhanyozásnál figyelek rá, hogy minél kevesebb vizet fogyasszak	5	4	3	2	1	9
7	–	Ha hosszabb időre elmegyek otthonról minden elektronikai eszközt áramtalanítok (kivétel hűtő, fagyasztó)	5	4	3	2	1	9

Részt vett-e már korábban bármilyen energiatanácsadással kapcsolatos rendezvényen, a STEP-IN program keretében (pl: energia kávézó, városnapokon tanácsadó stand...)?

2 – igen

1 – nem

9 – NT/NV

demográfia

Végezetül a statisztikai feldolgozhatóság érdekében szeretnék feltenni Önnek néhány személyes kérdést.

Kérem, sorolja fel mindazokat, akikkel Ön ebben a lakásban közös háztartásban él!

közös háztartás = közös kassza. a keresztneveket írd be a háztartástábla első oszlopába, majd soronként kérdezd végig a táblázatot (a-tól F-ig)!

A háztartástag nemére csak akkor kérdezz rá, ha a keresztneve alapján nem tudod eldönteni!

Kezdjük Önnel. Kérem, mondja meg, hogy Ön melyik évben született!

		a	b	c				d	e	f
	Keresztnév	Neme 1 - férfi 2 - nő	Családi állapota: 1- nőtlen, hajadon, egyedülálló 2 - házas 3 – elvált 4 – özvegy 5 – nőtlen, hajadon, élettárssal él 9 – NV	Születési éve				Legmagasabb befejezett iskolai végzettsége 1 – kevesebb, mint 8 osztály 2 – 8 általános (régen 4 polgári) 3 – szakmunkásképző, szakiskola 4- középiskola (gimnázium, szakközépiskola, technikum) 5 – főiskola, felsőfokú technikum 6 – egyetem 9 – NT/NV	Dolgozik? 1 – aktív dolgozó 2 – munkanélküli 3 – öregségi nyugdíjas 4 – rokkant nyugdíjas 5 – háztartásbeli, GYES/GYED-en lévő 6 – tanuló 7 – egyéb inaktív	Van tartós betegsége? 2 – van 1 – nincs
1.	kérdezett									
2.	.....									
3.	.....									
4.	.....									

5.	.....									
6.	.....									
7.	.....									
8.	.....									
9.	.....									

Mennyi az Önök (közös háztartásban élők) nettó jövedelme havonta összesen? Kérem, hogy az Ön jövedelmét is számolja hozzá! Tehát számítson bele minden bevételt: családi pótlékot, gyerektartást, háztájit, másodállást stb.)!

						Ft/hó

000000 – nincs jövedelme

999999 – NT/NV

Hogyan érzi, Önök anyagilag:

5 – gondok nélkül élnek,

4 – beosztással jól kijönnek,

3 – Éppen, hogy kijönnek a havi jövedelmükből,

2 – hónapról-hónapra anyagi gondjaik vannak, vagy

1 – nélkülözések között élnek?

9 – NT/NV

Van-e az Ön családjában kisebbségi származású személy?

2 – van

1 – nincs

9 – NT/NV

F5. kérdést akkor kérdezd, ha F4=2!

Milyen kisebbségből?

1 – cigány/roma

2 – német

3 – egyéb kisebbség

9 – NT/NV

KÖSZÖNJÜK, HOGY VÁLASZAIVAL SEGÍTETTE MUNKÁNKAT!

Annex 2: Personal Advice Sheet (PEAS) – sample document – Hungarian

Programunk

A STEP-IN célja, hogy segítse a családokat az energiával kapcsolatos kiadásaik csökkentésében, a hideg otthonok megszüntetésben, az energia használat tudatosabbá tételében és az energia számlák jobb megértésében. A STEP-IN tanácsadás fogyasztó központú. A fogyasztók részvétele teszi lehetővé, hogy valóban hatékony és hosszú távú eredmények jöjjenek létre mind egyéni mind közösségi szinten. A projekt keretében nyújtott szolgáltatások ingyenesek. Az Európai Unió által finanszírozott kutatás keretében három országban nyújt a projekt tanácsadást, ezek közül Magyarország, és ezen belül Nyírbátor térsége az egyik helyszín.

A program hazai partnerei a ***Magyar Máltai Szeretetszolgálat****, az* ***E.ON*** *és az* ***Ariosz****.*

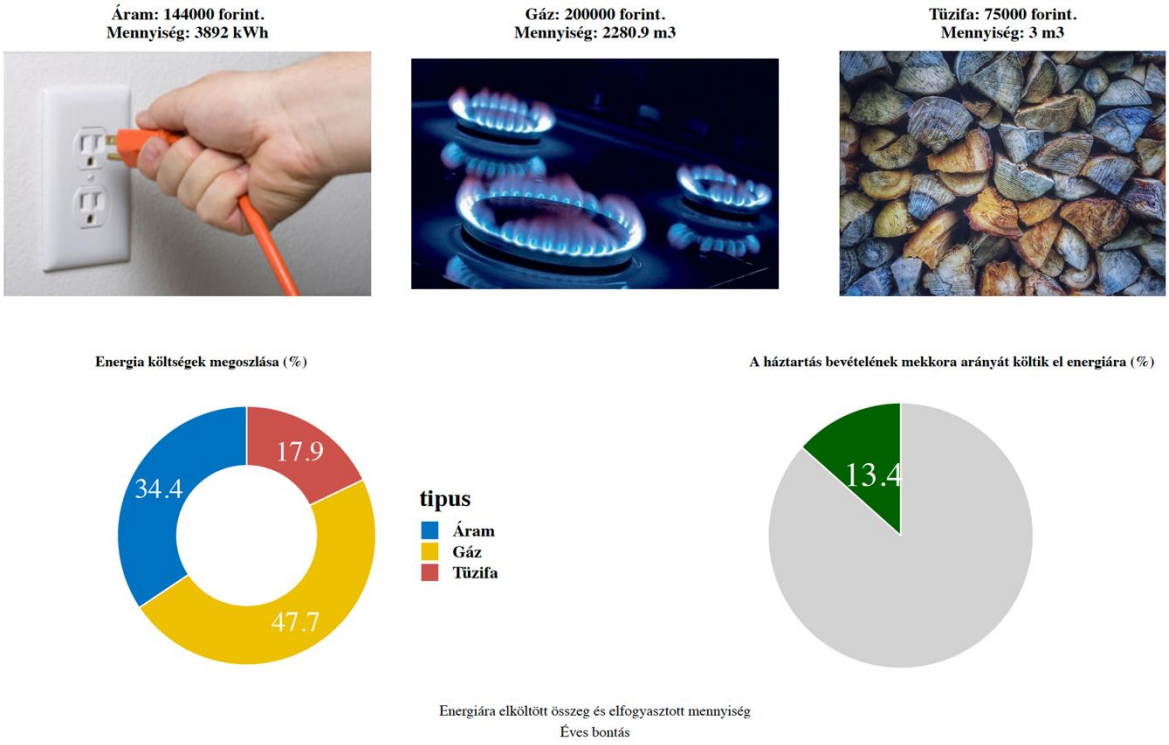
Egyedi tanácsadás

A programban részt vevő családokkal az energia tanácsadóink az első találkozáskor kitöltetnek egy felmérő kérdőívet. Ez a felmérő kérdőív elsősorban azt a célt szolgálja, hogy pontos képet kapjunk arról, mennyi energiát fogyasztanak a háztartásban és hol tudunk beavatkozni annak érdekében, hogy alacsonyabb legyen az energia számla. Az egyedi tanácsadás használhatósága nagyban függ attól, hogy milyen pontosan sikerül kitölteni a kérdőívet. A kérdések egy része nem egyszerű, hiszen olyan dolgokról kérünk információt, amiről egyébként ritkán gondolkoznak az emberek. Tudjuk, hogy az energiafogyasztás nem egy olyan központi kérdés, amiről nap mint nap beszélünk. De a nagyobb tudatosság és a nagyobb odafigyelés már magában is segíthet abban, hogy kevesebbet fogyasszunk. Ez a kis tájékoztató dokumentum azt mutatja meg, hogy a felmérő kérdőív segítségével milyen egyedi elemzéseket tudunk nyújtani a programban résztvevőknek. Mivel az energia fogyasztás nagyon sok tényezőtől függ, ezért a számításaink sosem lesznek tökéletesek, ezek mindig tájékoztató jellegűek. Az egyes elektromos készülékek pontos fogyasztásának megmérésben további segítséget tudnak adni tanácsadóink.

Energiaköltés

A legtöbb ember nincs tisztában azzal, hogy éves szinten mennyit költ energiára. Az energiatudatosság felé az első lépés az, hogy átgondoljuk az energia kiadásainkat. Felmérő lapunkban több erre vonatkozó kérdés is szerepel. A felmérő kérdőívben vizsgáljuk az áram- és gáz-fogyasztás, valamint a fával fűtést is. A kiszámolt adatok akkor a legpontosabbak, ha mind az elfogyasztott mennyiséget, mind az elköltött összeget meg tudja mondani a kérdezett. De ha csak egyik információ áll rendelkezésre akkor is meg tudjuk becsülni a fogyasztást. A példánkban szereplő család áramszámláját havonta fizeti, 12 000 forintot. A havi (éves) fogyasztás mennyiségét (kWh) nem tudják. Vegyes kazánnal fűtenek, elsősorban gázt használnak, de néha fát is. A gáz felhasználásukat nem tudják pontosan, annyit azonban beírtak a kérdőívbe, hogy a téli hónapokban átlagban 20ezer forintot költenek gázszámlára. A fűtésen kívül máshoz nem használnak gázt. A tűzifa esetében az összeget nem tudják, hogy mennyit költöttek el a fűtési időszakban, arra viszont emlékeztek, hogy 3m^3 akácfát vettek.

A megadott adatok alapján kiszámoltuk a család energia fogyasztását. Áramra éves szinten közel 150 ezer forintot költöttek, gázra 200 ezer forintot, tűzifára 75 ezer forintot. Tehát energia költségeik egy harmada megy el áramra, a többi fűtésre.

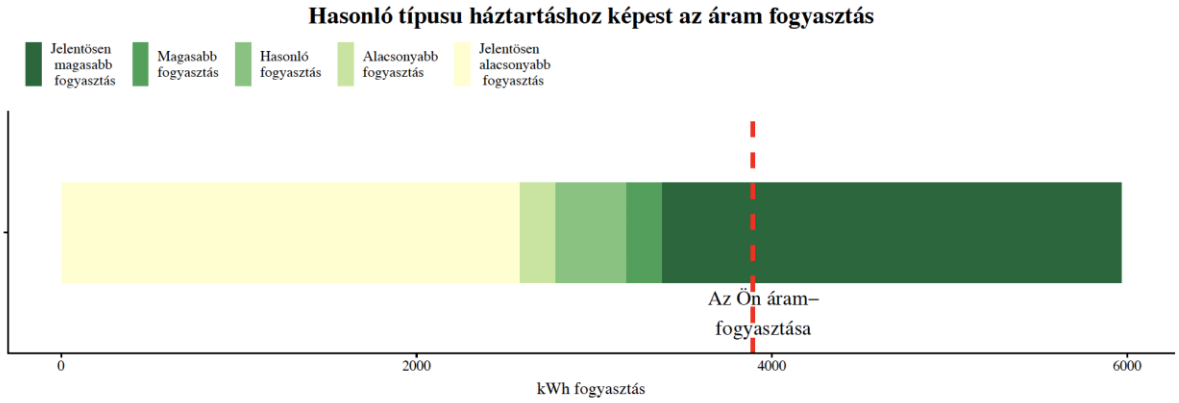


A megadott jövedelmi adataik alapján (pontos adatok hiányában megbecsüljük a jövedelmet) kiszámoltuk azt is, hogy a család az összes bevételének több, mint 13 százalékát költi energia kiadásra.

Összehasonlítás hasonló háztartásokkal

Az energia fogyasztásunk megítélésekor mindig nehézséget okoz annak eldöntése, hogy amennyit elköltünk az sok vagy kevés, lehetne-e esetleg spórrolni.

A példa háztatásunk közel 4 ezer kWh áramot fogyaszt el 1 évben. De vajon mennyit fogyaszt egy hasonló háztatás? Az áramfogyasztást leginkább az határozza meg, hogy milyen a lakás jellege, mekkora lakásban lakik a család és hogy hány főt számlál. A példa családunk kertes házban lakik, a házuk nagyobb mint 120 m2 és 3 főt számlálnak. Egy hozzájuk hasonló Kelet-Magyarországi család átlagos energia költése 3 ezer kWh. A példa családunk ennél 30 százalékkal többet költ, ami jelzi, hogy vagy nagyon sokat használnak bizonyos elektromos eszközöket, vagy nem energia takarékosak az eszközeik.



Jellemzö	Érték
Földrajzi elhelyezkedés	Kelet–Magyarország
Kertesház	Igen
Lakás nagysága	120 M2 nagyobb
Háztartás nagysága	2 vagy 3 fös háztartás

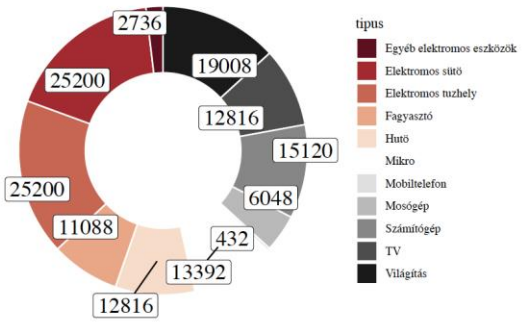
A becsült áramfogyasztása a kérdöív alapján 3892 kWh. Az önéhez hasonlö jellemzökkel rendelkezö háztartásban az átlagos fogyasztás 2983 kWh. Az összehasonlítás alapján azt mondhatjuk hogy az ön háztartásának áram fogyasztása nagyon magas.

Eszközökre lebontott energia fogyasztás

A legtöbb embernek nincs igazán fogalma arról, hogy melyik elektromos eszköze mennyit fogyaszt. A kérdőívben részletesen megvizsgáljuk, hogy milyen elektronikai eszközökkel rendelkezik a család, ezeket mennyit használják és mennyire régiek/újak ezek az eszközök. A kérdések segítségével ezután megbecsüljük, hogy az energia fogyasztása, hogyan oszlik meg az eszközök között.

Elektromos eszköz	Fogyasztáson belüli arány (%)
Világítás	13.2
Elektromos tuzhely	17.5
Elektromos sütö	17.5
Mikro	9.3
Számítógép	10.5
TV	8.9
Mosógép	4.2
Hutö	8.9
Fagyasztó	7.7
Mobiltelefon	0.3
Egyéb elektromos eszközök	1.9

Az elektromos eszközök éves becsült fogyasztási költsége



Példa családunknak elektromos tűzhelye és sütője van és sokak főznek otthon. Áramfogyasztásuknak ez közel a harmadáért felel. Nagyobb áramfogyasztónak számít még a számítógépük, amit szintén sokat használnak, illetve világításra is sokat költenek.

Javaslataink

A felmérő kérdőív alapján megfogalmazunk javaslatokat is a családnak. Jelenleg a család nem energiatakarékos izzókat használ. Ha lecserélnék az égőket energiatakarékosra, akkor közel 12 ezer forintot spórolnának évente. Hűtő/fagyasztó cserével is tudnának 15 ezer forintot spórolni. Tehát ha nyílik olyan pályázat, amikor ezeket az eszközöket lehet cserélni érdemes lehet ezekben részt venni, pár év alatt megtérülne a kifizetett költség. A riportban a fűtéssel kapcsolatban is megfogalmazunk a példa családnak javaslatokat. A pontos javaslatokat itt olvashatják

- *Jelenleg világításra elkölt a háztartás 19008 forintot. Ha lecserélné az összes égőt energiahatékony izzóra, akkor éves szinten 3621 forint lenne az erre elköltött összeg. Lehetséges spórolás: 15387 forint*
- *Hűtő + fagyasztó(láda) éves költsége: 19240 forint. Energiahatékony eszközök esetében ez a költség lecsökkenne 7400 forintra. Lehetséges spórolás: 11840 forint*
- *A fa kivágáskor mintegy 50 százalék vizet tartalmaz, ami fajtától függően körülbelül egy éve alatt csökken le 15-20 százalék körüli értékre. Érdemes várni a szárítással, mivel a nedves fa kevésbé hatékony tüzelőanyag. Annak, aki otthonában fatüzelést használ, vagy gondolkodik az átálláson, érdemes még a nyári hónapokban beszerezni a télre szükséges készletet, így a fának lesz ideje megszáradni, ráadásul a fűtési szezonhoz közeledve valószínűleg az árak is egyre magasabbá válnak.*
- *Bármilyen a fűtési rendszerünk, a kazánok, gázkészülékek karbantartásán nem érdemes spórolni, hiszen a rosszul beállított égő, a lerakódott korom és por rontja a hatásfokot. Ellenőriztessük minden évben szakemberrel a kazánt, konvektorokat, így akár 5-10 százalékkal is csökkenhet a fűtés költsége! A karbantartás nemcsak a jobb energiafelhasználás, de a balesetek elkerülése miatt is fontos. Az újabb kondenzációs kazánok akár 20-30 százalékkal is csökkenthetik a fűtési költségeket.")*

Tanácsadás Önnek

Energia tanácsadóink otthonában meglátogatva adnak részletes és egyedi tanácsokat Önnek hogyan tudja energia felhasználását csökkenteni és saját igényeihez jobban igazítani. A tanácsadás többek közt érinti a fűtési rendszer hatékonyságát, lakásának és eszközeinek energia szükségletét és az elérhető támogatások körét. Kérem keresse meg a helyi kollégánkat Nyírbátorban, ha további információra van szüksége vagy szeretne részt venni a programban. A projekt keretében nyújtott szolgáltatások **ingyenesek**.

Elérhetőségünk:

Magyar Máltai Szeretszolgálat

Pálóczi Beáta +36 30 457 4491

Facebook oldalunk: **Step-In Living Lab Nyírbátor**

Annex 3: Flyer – Hungarian rural lab

STEP-IN Konzorcium

A STEP-IN partnerei (fogyasztói egyesületek, kutató intézetek, energia vállalatok, szabályozó hatóságok) komoly tapasztalatokkal rendelkeznek abban, hogy miként lehet minél energiahatékonyabb társadalmat kialakítani. A konzorcium célja a fogyasztók életének jobbá tétele egy energiahatékonyabb társadalomban.

A partnerek elkötelezettek abban, hogy a tudásuk és szakértelmük segítségével segítsenek azoknak, akik igazán rászorulnak.

Rod McCall
STEP-IN Coordinator, Luxembourg Institute of Science and Technology

Szeretne részt venni a STEP-IN projektben és segítséget kapni az energia tanácsadóinktól?

A STEP-IN célja, hogy segítsen az energiával kapcsolatos kiadások csökkentésében, a hideg otthonok megszüntetésben, az energia használat tudatosabbá tételében és az energia számlák jobb megértésében.

Kérem keresse meg a helyi kollégánkat Nyírbátorban, ha további információra van szüksége vagy szeretne részt venni a projektben

NYÍRBÁTORI JÁRÁSI VIZSGÁLATI HELYSZÍN

Gabor Major
Magyar Máltai Szeretetszolgálat Nyírbátor és térsége
major.gabor@maltai.hu

PROJEKT KOORDINÁTOR

Rod McCall
Luxembourg Institute of Science and Technology (LIST)
Belvaux, Luxembourg
roderick.mccall@list.lu

STEP-IN

Magasabb életminőség
Improving energiahatékonyság
Magasabb komfort

Látogassa meg a STEP-IN Facebook oldalát

A STEP-IN projekt az Európai Uniótól kapott kutatási támogatást a Horizon H2020 kutatási és innovációs program keretében. A pályázat azonosítója: 785125

Annex 4: Information sheet about the project - Hungarian

ADATKEZELÉSI TÁJÉKOZTATÓ

Az Adatkezelő adatai

Az Adatkezelő neve: Ariosz Szolgáltató, Informatikai és Tanácsadó Kft.

Az Adatkezelő cégbírósági nyilvántartási száma: 01-09-171101

Az Adatkezelő székhelye: 1077 Budapest, Rózsa utca 29. II/3.

Az Adatkezelő telephelye és levelezési címe: 1134 Budapest, Kassák Lajos utca 69-71. 1. emelet

Az Adatkezelő elektronikus elérhetősége: ariosz@ariosz.hu

Az adatkezelés célja a StepIN megnevezésű önkéntes részvétel melletti társadalomkutatási projekt (a továbbiakban: Projekt) megvalósítása és a társadalomkutatási munka szakmai követelményei betartásának ellenőrzése.

Az adatkezelés jogalapja a Projektben részt vevő természetes személyek hozzájárulása.

Az adatkezelés terjedelme a Projekt eredményes megvalósításához és a társadalomkutatási munka szakmai követelményei betartásának ellenőrzéséhez elengedhetetlenül szükséges minimális és indokolt személyes adatokhoz igazodik.

Az adatok forrása a Projektben részt vevő természetes személyek önkéntes szolgáltatása.

Az adatkezelés időtartama a Projekt megvalósításáig és a társadalomkutatási munka szakmai követelményei betartásának ellenőrzéséig, illetve az adatkezelési hozzájárulás visszavonásáig tart. Az anonimizált (személyek felismerésére alkalmatlan) adatokat további kutatási célokra a project zárása után 10 évig lehet használni. 10 év után minden adatot töröl az adatkezelő.

Az adattárolás helye: az Adatkezelő telephelye, **az adattárolás módja:** papír alapú, zárt tárolás és védett elektronikus adatbázis létrehozása.

Hozzáférés az adatokhoz: az adatkezeléssel Érintett adatokhoz az Adatkezelő és annak alkalmazottai továbbá a Projekt megvalósításába az Adatkezelő által bevont szerződéses partnerek kaphatnak hozzáférést. Az anonimizált adatokhoz hozzáférést kaphatnak a StepIN kutatás konzorciumi partnerei. Audit céljából a megfelelő Európai Uniós szervek hozzáférhetnek az adatokhoz, de az auditáláson kívül az adatokat másra nem használhatják.

Az adatvédelem érdekében tett speciális intézkedések: *anonimizálás*

Adattovábbításra a StepIN konzorciumi partnereit kivéve az Adatkezelő nem jogosult.

Az Adatkezelő hatályos **Adatkezelési és Adatvédelmi Szabályzat**ának elektronikus elérhetősége: http://ariosz.hu/index.php?inc=html&p=adatvedelem.html

Az Adatkezelő adatvédelmi felelőse, akihez az érintetti jogok érvényesítése kapcsán fordulni lehet:

Név: Zeke Julianna

Beosztás: adatfelvételi vezető

Elérhetőségek: +36/30/422-0119; zeke.julianna@ariosz.hu

A személyes adatok érintettjét (a továbbiakban: Érintett) megillető jogok:

1. A hozzáférés joga: Az Érintett jogosult arra, hogy az Adatkezelőtől visszajelzést kapjon arra vonatkozóan, hogy személyes adatainak kezelése folyamatban van-e, és ha ilyen adatkezelés folyamatban van, jogosult arra, hogy a személyes adatokhoz és a rendeletben felsorolt információkhoz hozzáférést kapjon.

2. A helyesbítéshez való jog: Az Érintett jogosult arra, hogy kérésére az Adatkezelő indokolatlan késedelem nélkül helyesbítse a rá vonatkozó pontatlan személyes adatokat. Figyelembe véve az adatkezelés célját, az Érintett jogosult arra, hogy kérje a hiányos személyes adatok – egyebek mellett kiegészítő nyilatkozat útján történő – kiegészítését.

3. A törléshez való jog: Az Érintett jogosult arra, hogy kérésére az Adatkezelő indokolatlan késedelem nélkül törölje a rá vonatkozó személyes adatokat, az Adatkezelő pedig köteles arra, hogy az Érintettre vonatkozó személyes adatokat indokolatlan késedelem nélkül törölje meghatározott feltételek esetén.

4. Az elfeledtetéshez való jog: Ha az Adatkezelő nyilvánosságra hozta a személyes adatot, és azt törölni köteles, az elérhető technológia és a megvalósítás költségeinek figyelembevételével megteszi az észszerűen elvárható lépéseket – ideértve technikai intézkedéseket – annak érdekében, hogy tájékoztassa az adatokat kezelő adatkezelőket, hogy az Érintett kérelmezte tőlük a szóban forgó személyes adatokra mutató linkek vagy e személyes adatok másolatának, illetve másodpéldányának törlését.

5. Az adatkezelés korlátozásához való jog: Az Érintett jogosult arra, hogy kérésére az Adatkezelő korlátozza az adatkezelést, ha az alábbi feltételek valamelyike teljesül:

- az Érintett vitatja a személyes adatok pontosságát, ez esetben a korlátozás arra az időtartamra vonatkozik, amely lehetővé teszi, hogy az adatkezelő ellenőrizze a személyes adatok pontosságát;
- az adatkezelés jogellenes, és az Érintett ellenzi az adatok törlését, és ehelyett kéri azok felhasználásának korlátozását;
- az adatkezelőnek már nincs szüksége a személyes adatokra adatkezelés céljából, de az Érintett igényli azokat jogi igények előterjesztéséhez, érvényesítéséhez vagy védelméhez;
- az Érintett tiltakozott az adatkezelés ellen; ez esetben a korlátozás arra az időtartamra vonatkozik, amíg megállapításra nem kerül, hogy az adatkezelő jogos indokai elsőbbséget élveznek-e az Érintett jogos indokaival szemben.

6. Az adathordozhatósághoz való jog: Az Érintett jogosult arra, hogy a rá vonatkozó, általa egy Adatkezelő rendelkezésére bocsátott személyes adatokat tagolt, széles körben használt, géppel olvasható formátumban megkapja, továbbá jogosult arra, hogy ezeket az adatokat egy másik adatkezelőnek továbbítsa anélkül, hogy ezt akadályozná az az adatkezelő, amelynek a személyes adatokat a rendelkezésére bocsátotta.

7. A tiltakozáshoz való jog: Az Érintett jogosult arra, hogy a saját helyzetével kapcsolatos okokból bármikor tiltakozzon személyes adatainak a kezelése ellen, ha a személyes adatok kezelésére az Adatkezelő jogos érdeke, vagy a közhatalmi jellege miatt kerül sor.

8. Tiltakozás közvetlen üzletszerzés estén: Ha a személyes adatok kezelése közvetlen üzletszerzés érdekében történik, az Érintett jogosult arra, hogy bármikor tiltakozzon a rá vonatkozó személyes adatok e célból történő kezelése ellen, ideértve a profilalkotást is, amennyiben az a közvetlen üzletszerzéshez kapcsolódik. Ha az Érintett tiltakozik a személyes adatok közvetlen üzletszerzés érdekében történő kezelése ellen, akkor a személyes adatok a továbbiakban e célból nem kezelhetők.

Annex 5: Consent form - Hungarian

Kérdőív sorszáma: Település első két betűje, kérdező monogramja (két betű) és egy három jegyű szám. Ugyanazt a sorszámot használja, mint a felmérő kérdőíven!							

Hozzájáruló nyilatkozat
személyes adatok kezeléséhez

Alulírott, jelen nyilatkozat aláírásával **hozzájárulok** ahhoz, hogy az Ariosz Kft. (a továbbiakban: Adatkezelő) a STEP-IN megnevezésű, önkéntes részvétel melletti társadalomkutatási projekt (a továbbiakban: Projekt) megvalósítása és ennek későbbi ellenőrzése során az alábbi személyes adataimat az információs önrendelkezési jogról és az információszabadságról szóló 2011. évi CXII. törvény (Infotv.) és az Európai Parlament és a Tanács (EU) 2016/679 számú rendelete (GDPR) irányadó rendelkezéseinek megfelelően kezelje. Tudomásul veszem és elfogadom, hogy az általam megadott személyes adatokat az Adatkezelő a Projekt megvalósítása érdekében és a társadalomkutatási munka szakmai követelményei betartásának **ellenőrzése** céljából szabályszerűen kezeli.

Személyes adatok	
Név:	
Lakcím:	
Telefonszám:	
Kérjük, a fenti adatokat nyomtatott nagybetűkkel megadni szíveskedjen!	

Aláírásommal igazolom, hogy jelen az Adatkezelő Projektre vonatkozó Adatkezelési Tájékoztatóját átvettem, az Adatkezelő Adatkezelési és Adatvédelmi Szabályzatáról és ennek elektronikus elérhetőségéről megfelelő tájékoztatást kaptam, erre figyelemmel jelen hozzájárulást önkéntesen és megfelelő előzetes tájékoztatás alapján adom meg. Tudomással bírok arról, hogy a jelen nyilatkozat felvételében közreműködő energiatanácsadó, a STEP-IN programba jogszerűen bevont adatfeldolgozó, akire az Adatkezelő fentiekben hivatkozott adatkezelési előírásai is megfelelően irányadók. Tudomásul veszem, hogy a hozzájárulásomat bármikor visszavonhatom, mely esetben az Adatkezelő a személyes adataim kezelésének megszüntetésére köteles. Tudomásul veszem továbbá, hogy az Adatkezelő nem jogosult a személyes adataim továbbítására olyan harmadik személyek felé, akik a Projekt megvalósításában – az Adatkezelő által bevontan – nem működnek közre.

Kelt: ……(helység) …… (év) ……. (hónap) …… (nap)

Aláírás