POWERPOOR

Empowering Energy Poor Citizens through Joint Energy Initiatives

POWERPOOR D2.5: Energy Poverty Mitigation Toolkit

Working on the ground with energy-poor households and policymakers on mitigating energy poverty levels.

December 2021

www.powerpoor.eu

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Work Package 2: Tools and methods for mitigating household energy poverty

Deliverable D2.5: Energy Poverty Mitigation Toolkit

Leader Organisation:	INTRA
Type (distribution level):	Confidential
Report author(s):	Mariza Konidi (INTRA)
Report contributor(s):	Akrivi Vivian Kiousi (INTRA)
Reviewer(s):	Eleni Kanellou (NTUA)

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Abbreviation	Explanation
EC	European Commission
EU	European Union
WPx	Work Package number x
Dx.y	Deliverable number y belonging to WPx
M	Month
RES	Renewable Energy Sources
ICT	Information Communication Technologies

1. Introduction

POWERPOOR aims at developing support programmes for energy poor citizens and encouraging the use of alternative financing schemes (e.g., establishing energy communities/cooperatives, leveraging crowd funding campaigns). POWERPOOR facilitates experience and knowledge sharing, as well as the implementation of small-scale no regret energy efficiency interventions and the installation of renewable energy sources, increasing the active participation of citizens.

Within the project, energy poor support programmes/schemes are designed, developed, and implemented in eight countries across Europe, namely Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Portugal, and Spain, led by a network of certified Energy Supporters and Mentors. The Energy Supporters/Mentors will support energy poor households to plan and implement energy efficiency interventions, as well as participate in joint energy initiatives.

To this end, an Energy Poverty Mitigation Toolkit has been developed for energy poor citizens, public authorities, energy communities/cooperatives and other stakeholders. The Energy Poverty Mitigation Toolkit aims, through dedicated ICT tools, at providing an integrated solution to users supporting them to identify whether they are energy poor (POWER-TARGET). In case they do, the tool can propose changes (behavioural or low-cost energy efficiency interventions) they can take to improve their well being (POWER-ACT). Finally, the tool has an online marketplace of energy communities and cooperatives currently active in the pilot countries along with instructions on how to set up and operate an energy community, at the same time the tool includes all the active crowdfunding campaigns and how to set up and operate one (POWER-FUND). An Energy Poverty Guidebook for Energy Planning is also included, with instructions on how to incorporate energy poverty mitigation actions as proposed by POWERPOOR in Sustainable Energy and Climate Action Plans (SECAPs). A Frequently Asked Questions (FAQ) section and an Online Helpdesk have been also provided to offer further support to users.

Figure 1: The three tools as they are displayed in the POWERPOOR website

1.1 Purpose & Scope

The purpose of this document is to delve into the Energy Poverty Mitigation Toolkit. In particular, the functionalities of the final versions of the "POWER-TARGET", "POWER-ACT", "POWER-FUND" tools, and the integration of the Energy Poverty Guidebook for Energy Planning will be described, by providing a short guide of how to optimally use the toolkit.

The development of all the POWERPOOR tools is based on a co-creative approach where all the consortium partners contributed with their expertise and their knowledge of the national contexts. The aim of the POWERPOOR Energy Poverty Mitigation Toolkit is to be user friendly and concise, so that citizens experiencing energy poverty can be easily identified and offered support.

The initial understanding of what the toolkit should include resulted from the workshops held under task 2.1 and the requirements elicitation process, as reported in D2.1 (M5).

After that, initial mock-ups for the "POWER-TARGET", "POWER-ACT" and "POWER-FUND" tools were developed and distributed to the partners for a first round of feedback. Once all the partners contributed with their feedback, these were integrated in the development process of the tools and a first version of them was deployed.

In this document, the final version of the tools is showcased after their refinement during their actual usage in the first engagement cycle of, that took place from May 2021 (M9) to December 2021 (M16) and led to updates and improvements. Within this document, step by step instructions for the above-mentioned tools' optimal usage are presented based on the user needs and requirements of energy poor households as well as the technical requirements' specifications.

The POWER-TARGET has a short survey which when filled in by the user a score comes up. The score is a metric used to identify households experiencing energy poverty. It is based on the 10% indicator and it is enhanced to include more variables (both qualitative and quantitative) that resulted from a concise literature review of the various metrics, tools, and indicators currently employed to measure the phenomenon across Europe.

The POWER-ACT tool has also a short survey that when filled in by the users it provides them with a list of proposed behavioural changes, they can implement to improve their energy efficiency, as well as with a list of no regret small scale energy efficiency interventions that can enhance the energy efficiency or lower their energy expenses.

The POWER-FUND tool has been developed for the use of the Energy Supporters and Mentors or any other motivated individuals or municipalities working on the field at national level, who will use it to propose to the identified end-users', i.e., energy poor people or municipalities, alternative ways of financing, supporting, and implementing specific actions.

The Energy Poverty Guidebook for Energy Planning offers short guidelines on how to incorporate actions that tackle energy poverty in SECAPs according to the POWERPOOR approach.

1.2 Structure of the document

The structure of this document is as follows:

- **Section 2** describes the stepwise guidelines on optimally using the POWER-TARGET tool.

- **Section 3** describes the stepwise guidelines to optimally use the POWER-ACT tool.
- **Section 4** describes the stepwise guidelines on optimally using the POWER-FUND tool.
- **Section 5** describes the information and guidelines given through the Energy Poverty Guidebook for Energy Planning on how to incorporate actions that tackle energy poverty in SECAPs in accordance with the POWERPOOR approach.
- **Section 6** describes the Frequently Asked Questions (FAQs) section of the toolkit.
- **Section 7** describes the Online Helpdesk of the toolkit.
- **Section 8** concludes the deliverable at hand.

2. The POWER-TARGET tool

2.1 Stepwise instructions for using the POWER-TARGET tool

2.1.1 Accessing the tool

The POWER-TARGET tool is accessible via the POWER-POOR website[1] or via a stand-alone, dedicated webpage[2]. On the website, users can navigate to the TOOLKIT page by clicking on the respective category on the navigation bar that lands the user to the tools' page as depicted below. A shortcut to the tools' page has been also added in the project's website homepage.

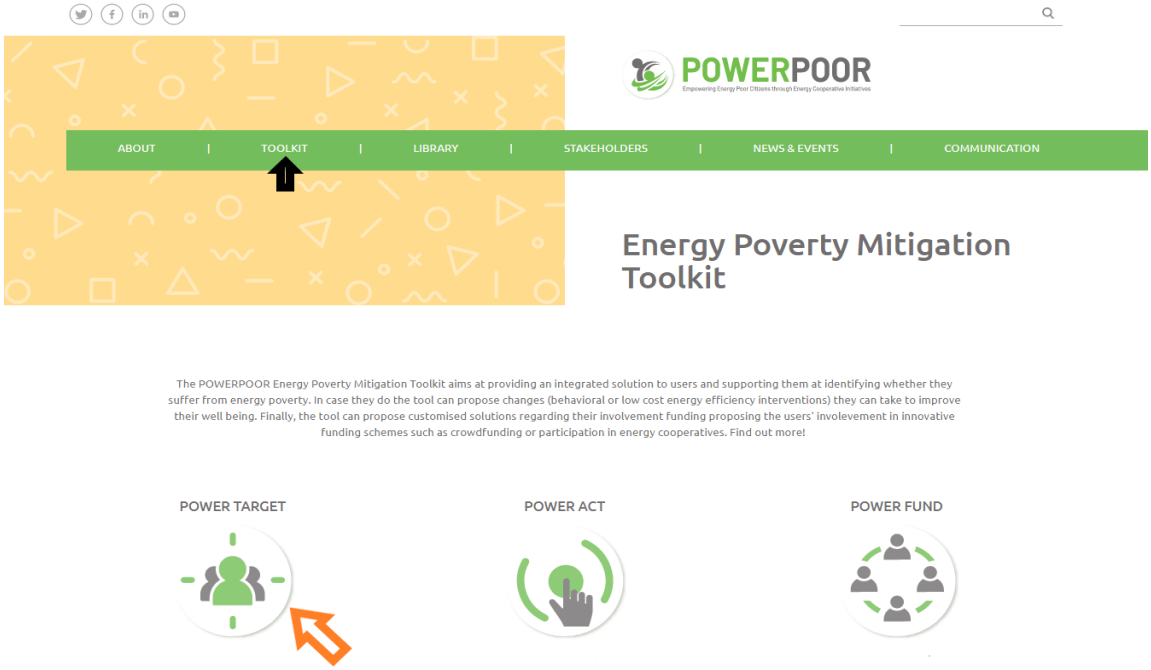


Figure 2 Accessing the POWERPOOR-Toolkit

A view of the standalone webpage of the POWERPOOR toolkit is depicted below.

[1] www.powerpoor.eu
[2] http://powerpoor.epu.ntua.gr/powerpoor-toolkit/

Figure 3 View of the tools in the stand-alone webpage.

2.1.2 Creating an account

Before the user can take the assessment survey to determine whether they are energy poor, they need to create an account as depicted below.

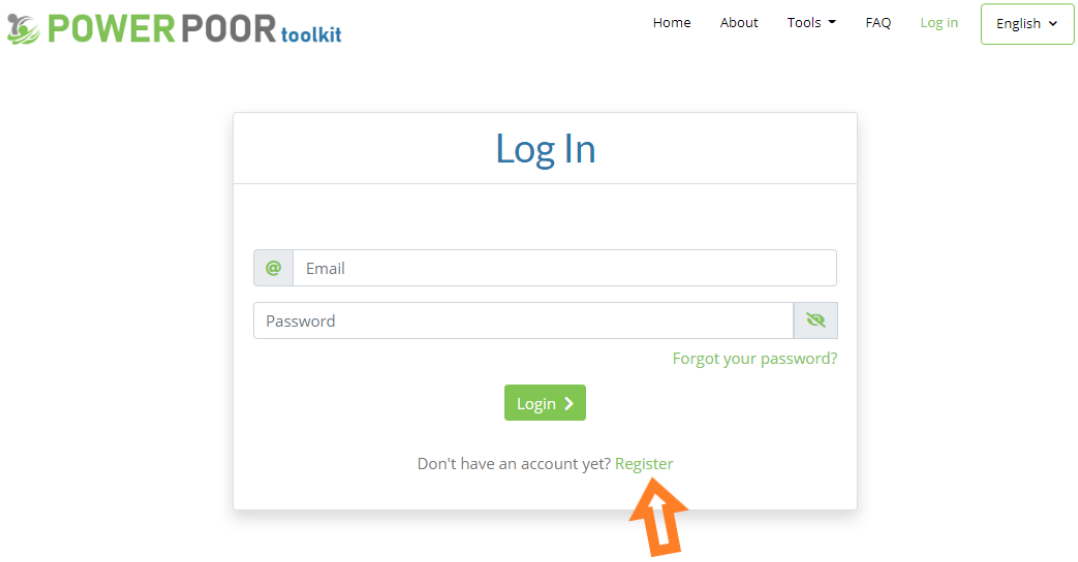


Figure 4 Navigating through the registration

The account's aim is to maintain continuity in users' assessments. Data enterer by the user in POWER-TARGET can be also automatically transferred to POWER-ACT. The users can also retake the assessments to evaluate whether their scores have improved after for instance they have implemented the proposed behaviour changes and/or implemented (small or large scale) energy efficiency interventions.

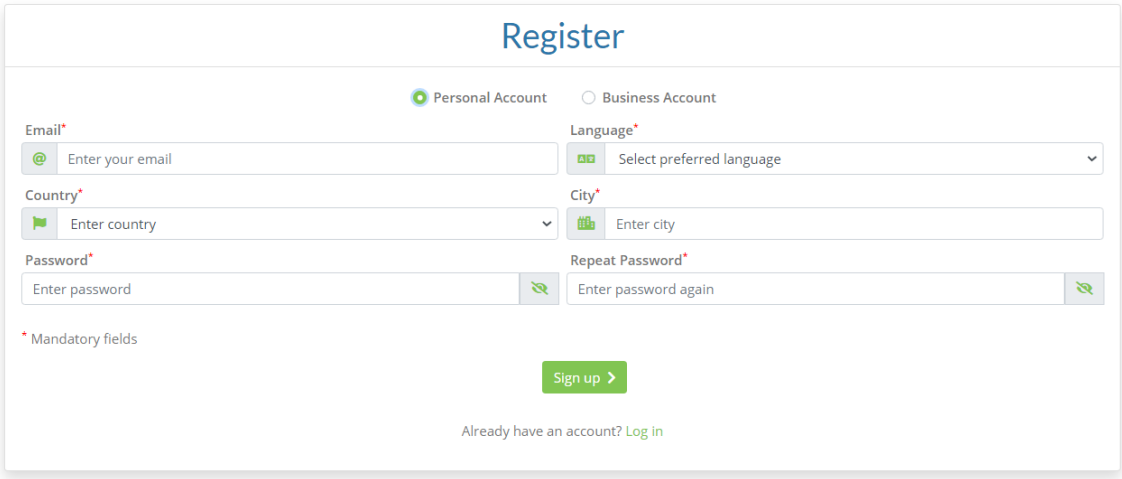


Figure 5 Filling in registration information

During the registration process the users add their email and select their preferred language for the tool's interface. It is worth noting that except for the 8 national languages of the pilot countries namely: Greek, Bulgarian, Hungarian, Croatian, Spanish, Portuguese, Estonian, and Latvian the tool also supports Basque, to better accommodate the potential users' needs from the Basque region, Spain. Users should add the country and city they currently reside in the form fields: country and city.

2.1.3 Starting an assessment

After creating an account, the user can take a new POWER-TARGET assessment by clicking on the PowerTarget button, while on the dashboard their personal information is displayed as depicted below.

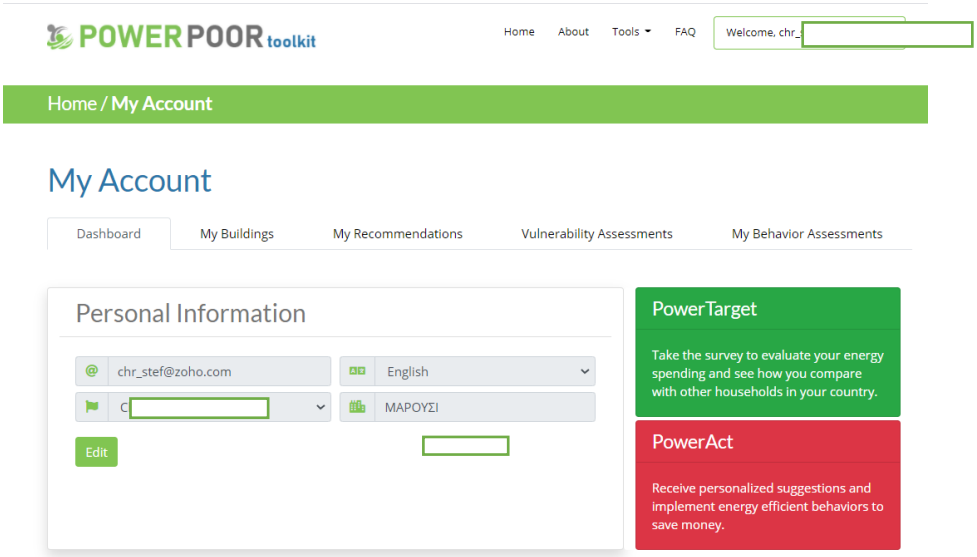


Figure 6 Navigating to the Power-Target tool

2.1.4 Income information

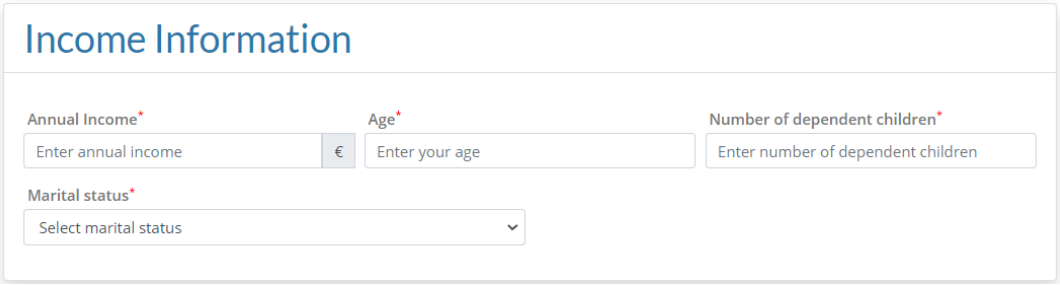


Figure 7 Income information fields

The first area is the income information section. There the user must enter the gross household's annual income including the income of any spouse, partner, or roommate living there, adding any state subsidies any of them may have received. After that, the number of not financially independent children or the number of overall tenants living in the household should be added. If financially independent children reside in the household, the number of children field in the tool should not be increased. The Age of the oldest occupant of the household needs to be included in the age field.

2.1.5 Electricity consumption information

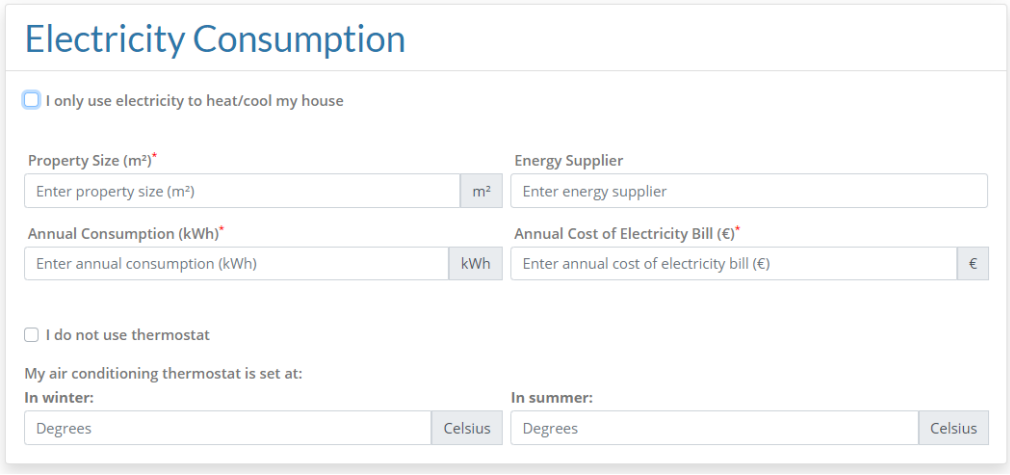


Figure 8 Filling in electricity consumption data

The box "I only use electricity to heat/cool my house" should be ticked if the user is using solely electric appliances e.g., AC units, electric heat pumps, or radiators. In this case the heating fuel filed (described in subsection 1.6) will be hidden. If the household uses other forms of heating as well (e.g., natural gas, district heating, oil) then the Heating fuel consumption data need to be filled in as described in subsection 1.6.

The annual consumption in kWhs and the cost based on the users' yearly electricity bills should also be filled in. This information can be requested to be provided from the utility provider or simply can be a sum of all the bills for one year, or even there are available applications online that can provide an estimation.

In the Thermostat setting fields the user should enter the temperature most commonly set for the heating and the cooling temperature in winter and summer respectively. If the heating system does not feature a thermostat (e.g., district heating, electric

radiators, fans) please tick the "I do not use a thermostat button" and this thermostat fields will be hidden.

2.1.6 Heating fuel consumption

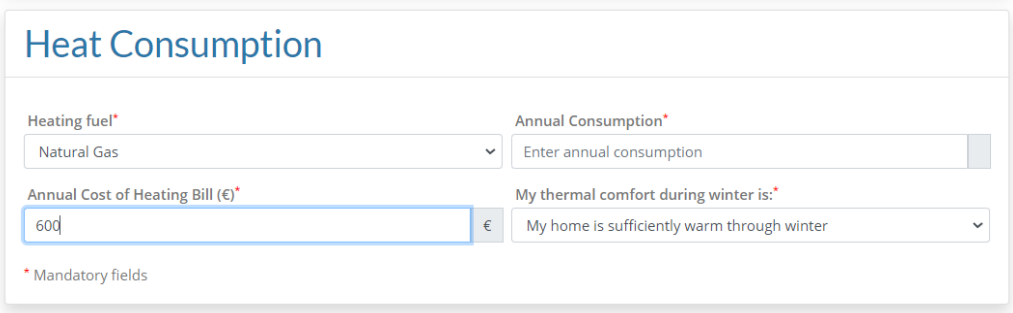


Figure 9 Filling in heating fuel consumption data

In this section the heating fuel predominantly used during winter for heating (oil, natural gas) needs to be added. If only electric appliances are used for heating, then 0 must be added in the annual cost of heating bill, since these costs have already been accounted for in the previous section. The qualitative question about the perceived thermal comfort in winter must also be filled in.

2.1.7 Results evaluation

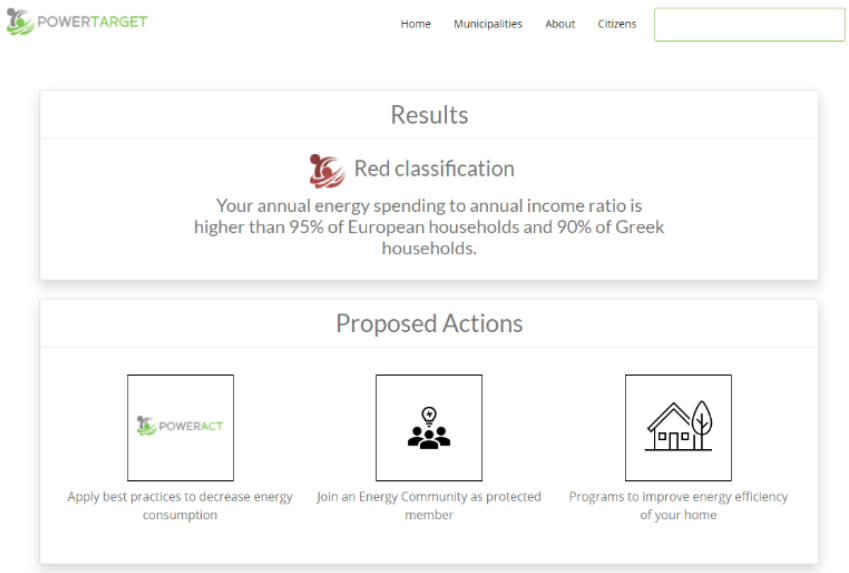


Figure 10 Results' page

After the survey participant presses the submit button, they are redirected to the Score page. There they receive their score and classification. They can then move on and use the POWER-ACT and POWER-FUND tools or find a relevant support programme in a national level.

2.1.8 Reviewing previous assessments

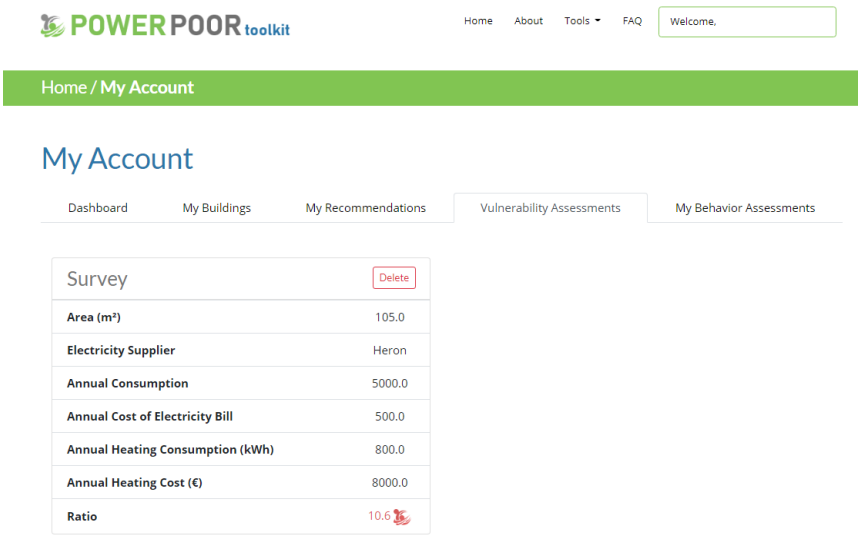


Figure 11 Reviewing existing assessments via "Vulnerability Assessments" tab

In the POWERPOOR toolkit pages, under the "My account" section and the "Vulnerability Assessments" tab users can review their previous assessments and monitor their progress.

2.2 The POWER-TARGET score

POWER-TARGET scores can take different values between 0-100, with the score 0 indicating that energy spending is insignificant in comparison to the total annual household income and score of 100 indicating energy spending that fully depletes household annual income.

Table 1: Classification of the POWER-TARGET users

Score	Description
0-6.99%	Green Classification: Not close to the energy poverty threshold
7%-9.99%	Yellow Classification: Not technically energy poor, but close to the energy poverty threshold (At risk of energy poverty)
10%-15%	Orange Classification: Energy Poor, adjusted percentage of energy spending is above threshold
>15%	Red Classification: Energy Poor, adjusted percentage of energy spending significantly above threshold

Users in Green Classification may:

- Have high incomes that heavily outweigh their energy spending. They are not energy poor or close to the threshold but POWER ACT assessment is advised, as it may reveal energy spending behaviors that are inefficient.
- Have average incomes that heavily outweigh their energy spending. In that case POWER ACT assessment should reveal prudent energy spending behaviors
- They may not heat or cool their homes at all! These are energy poor people.

Users in Yellow Classification may:

- Have average incomes that are depleted by their energy spending. In that case the POWER ACT assessment should reveal inefficient energy spending behaviors
- Have low incomes that are depleted by their modest energy spending. In that case the POWER ACT assessment may reveal overall prudent energy spending

Users in Orange and Red Classification may:

- Have very low incomes that are depleted by their modest energy spending. In that case the POWER ACT assessment may reveal overall prudent energy spending. These users should be supported by targeted fiscal measures/subsidies.
- Have low incomes that are depleted by their inefficient energy spending. These users should first try to adopt recommendations presented by the POWER ACT tool and then take the POWER TARGET assessment again.

For more details on the methodology of the POWER-TARGET score, you may refer to D2.2 - POWER TARGET (M8).

3. The POWER-ACT tool

3.1 Stepwise instructions for using the POWER-ACT tool

3.1.1 Accessing the tool

The POWER-ACT tool is accessible via the POWER-POOR website[3] or via the stand-alone, dedicated webpage[4] that includes the toolkit. On the website, users can navigate to the tools' page by clicking on the respective category on the navigation bar that lands the user to the respective page as depicted below. A shortcut to the tools' page has been also added in the project's website homepage.

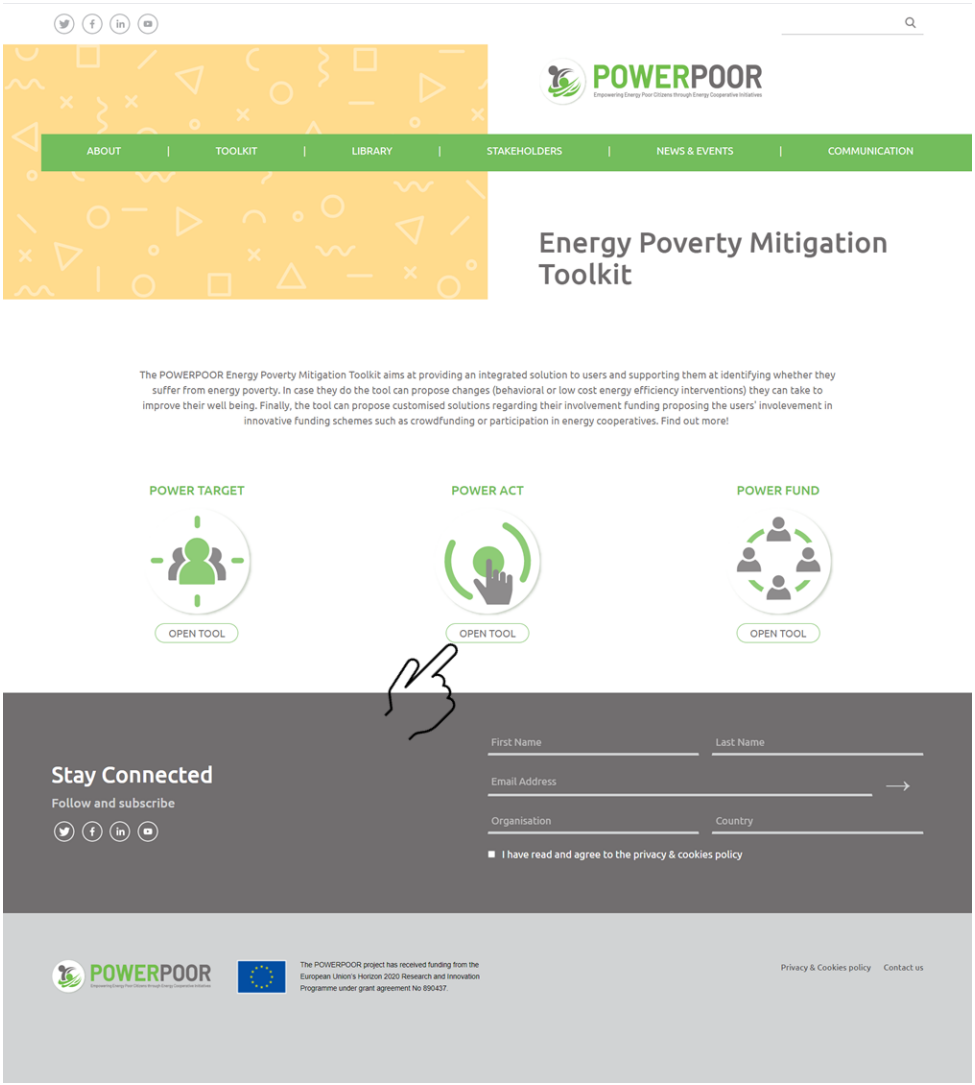


Figure 12 Accessing the POWERPOOR-Toolkit

A view of the standalone webpage of the POWERPOOR toolkit is depicted below.

[3] www.powerpoor.eu
[4] http://powerpoor.epu.ntua.gr/powerpoor-toolkit/

Figure 13 View of the tools in the stand-alone webpage.

3.1.2 Creating an account

Before the user can take the POWER-ACT assessment survey to receive personalised suggestions to improve their energy spending and/or reduce their energy expenses, they need to create an account as depicted below or use the existing account they have already set up for the POWER TARGET tool.

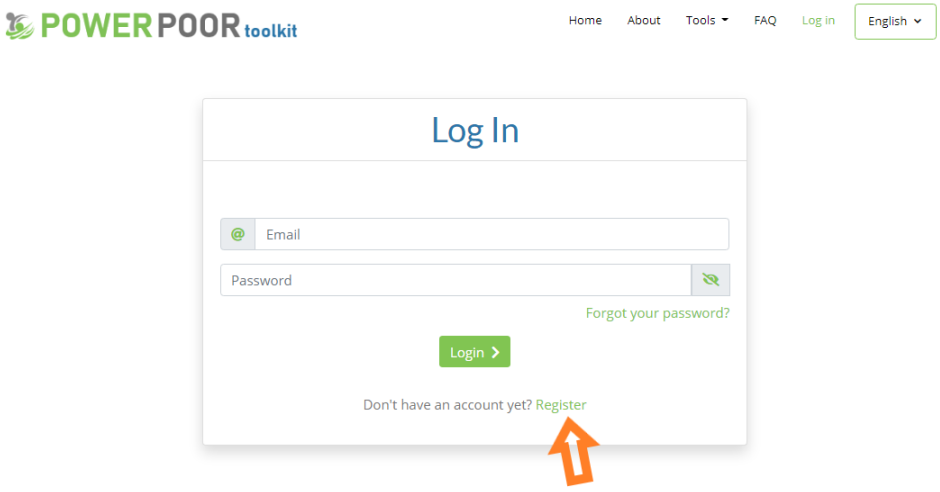


Figure 14 Navigating through the registration

The account's aim is to maintain continuity in users' assessments. Data entered by the user already in the POWER-TARGET tool can be also automatically transferred to the POWER-ACT assessment. The users can also retake the assessments to evaluate whether their assessment has changed after for instance they have implemented the proposed behaviour changes and/or implemented (small or large scale) energy efficiency interventions.

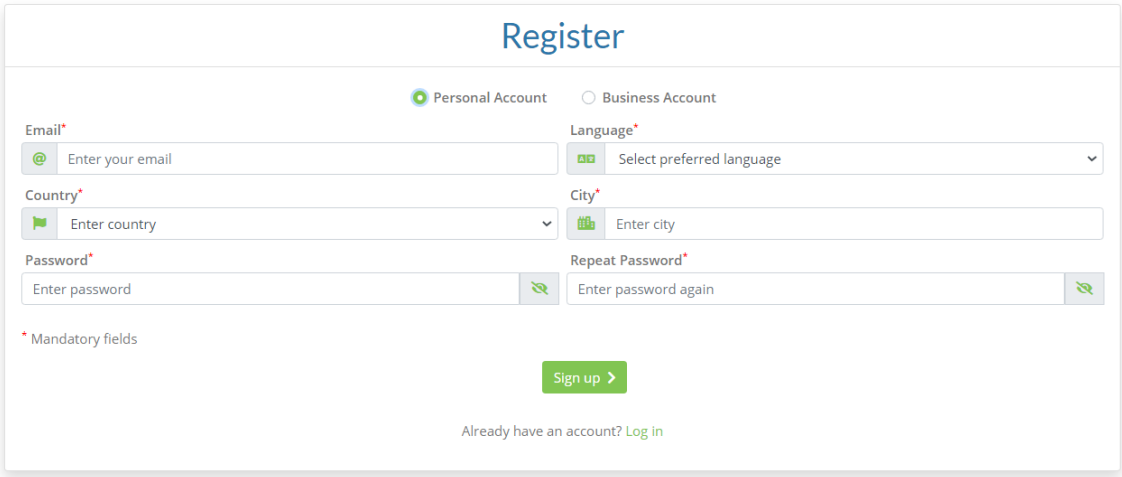


Figure 15 Filling in the registration information

During the registration process the users add their email and select their preferred language for the tool's interface. Same as the POWER TARGET tool except for the 8 national languages of the pilot countries namely: Bulgarian, Croatian, Estonian, Greek, Hungarian, Latvian, Portuguese, and Spanish, the tool also supports Basque, to better accommodate the potential users' needs from the Basque region in Spain. Users should add the country and city they currently reside in the form fields: country and city.

3.1.3 Starting an assessment

After creating an account, the user can take a new POWER-ACT assessment by clicking on the POWER-ACT button, while on the dashboard their personal information is displayed as depicted below.

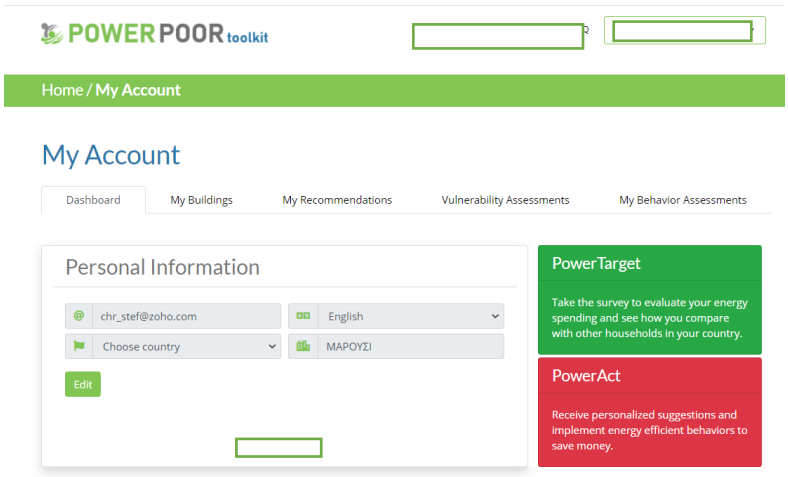


Figure 16 Navigating to the POWER-ACT tool

3.1.4 Building Selection

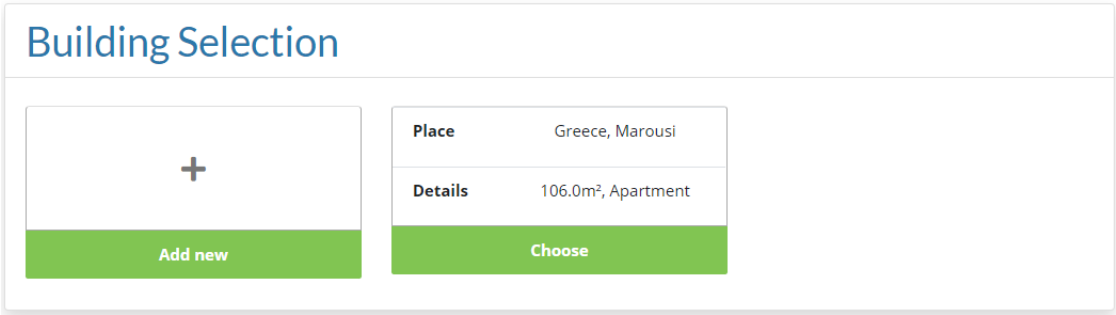


Figure 17 Building selection fields.

The first area is the building selection section. There the user selects one of the existing buildings created in user's account or input details for a new building. The term building covers all the different types of dwellings rather than buildings themselves. The term can be replaced with the word dwelling to better reflect this fact as the issue was brought forward in the 1st POWERPOOR Internal Capacity Building Workshop (April 2021). For instance, if an Energy Supporter supports several apartments within the same block of flats, then each one of them will be a "Building" entry in the tool. In addition, each apartment or house is accompanied by a unique code that acts as an identifier so that the Supporter can better keep track of all the homes they have visited and more easily report back to the national partners so they on their turn can keep track of all the homes getting support in a national level.

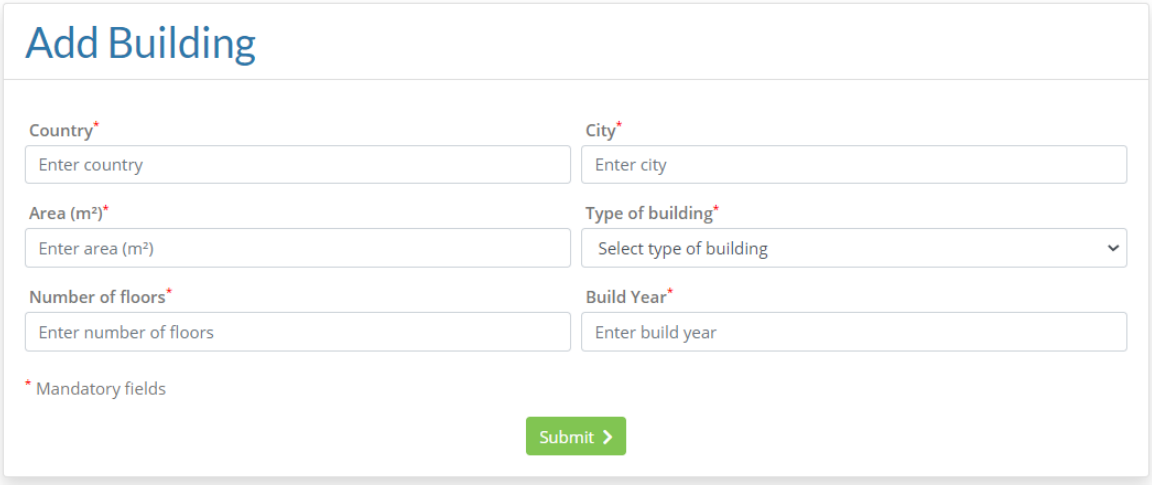


Figure 18 Add a new building field.

To add a new building the user needs to fill in the information presented in Figure 18 and click the submit button. The building will then be saved and will be accessible through both the POWER-TARGET and the POWER-ACT tools.

3.1.5 Additional building information

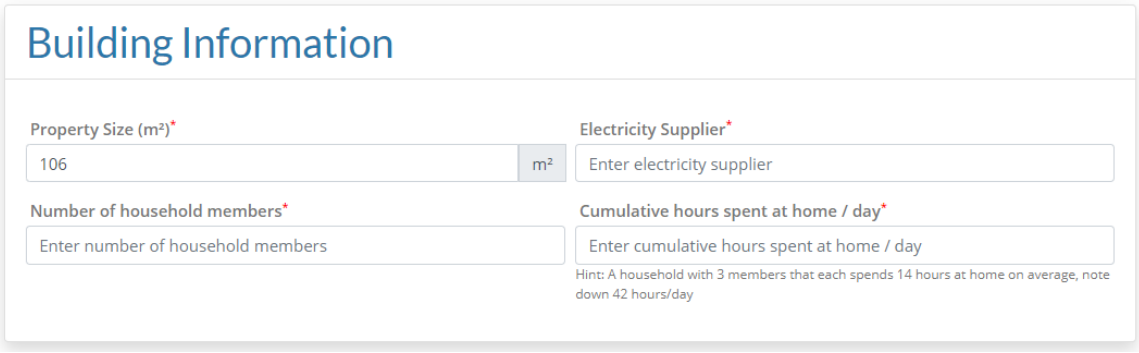


Figure 19 Adding building information

After selecting one of the saved buildings in the previous step the property size field will be already populated with the stored value from the specific building. The user then proceeds to fill in more information such as the electricity supplier (company name) for the building and the number of household members residing in the building. In the cumulative hours spent at home the user enters the sum of hours that all the members spent at home on average on a workday. For example, if a household has three members, and each member spends on average 14 hours at home, the user fills in 42 hours in that field. It is important here to consider the daily habits of the time period that is covered in the bills used so that the respective habits can be included in the "Cumulative hours spent at home per day" field. For instance, if the bills taken into account in the tools reflect a pro covid condition then the respective hours spent at home at the time must be taken into account.

3.1.6 Heating fuel consumption

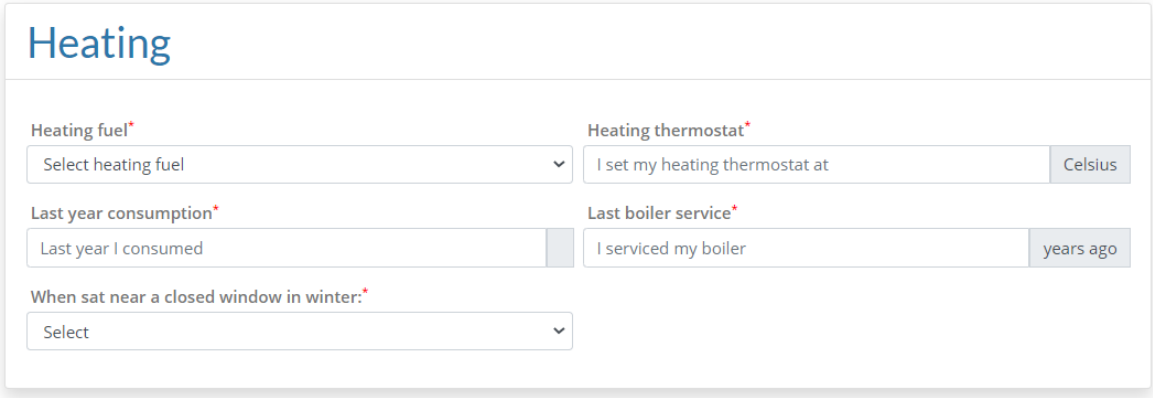


Figure 20 Filling in heating fuel consumption data

In this section, the heating fuel predominantly used during winter for heating (oil, natural gas) needs to be specified. The user also needs to select when the last service of the boiler was. If boiler service is not applicable for them, users should enter 0. The qualitative question about the perceived thermal comfort in winter must also be filled in.

3.1.7 Air-conditioning operation

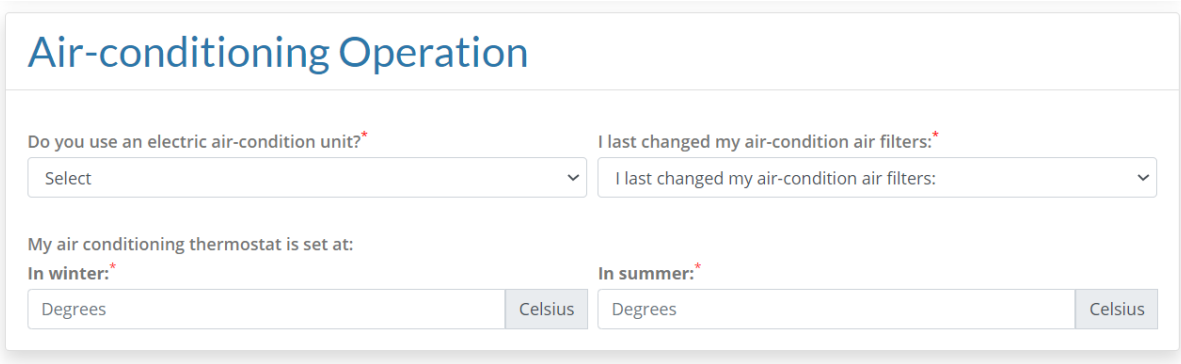


Figure 21 Air-conditioning operation page

In the next section the user can specify whether they are using an air-conditioning unit in winter or summer. In the field "I last changed my air-conditioning filters", the user should set the appropriate answer (if applicable). In the fields for thermostat levels for Winter and Summer, the user should enter the most commonly used temperature one sets the air condition unit each season respectively.

3.1.8 Electric appliances information

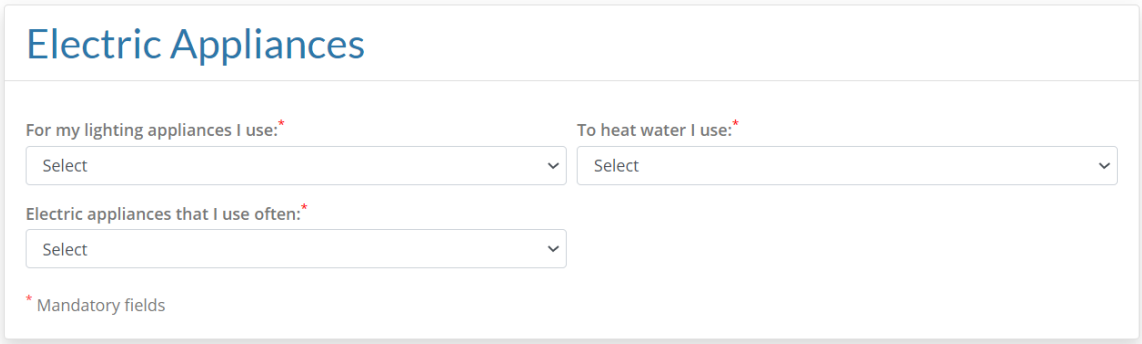


Figure 22 Electric appliances selection fields

In the Electric Appliances section, the user selects whether the lightning appliances are energy efficient. The user also indicates the devices used to heat the water. The final question provides insight to whether the user has multiple appliances in stand-by mode when they are not used. This question does not have to do with the thermal comfort, however electric appliances can be an important driver of cost and with small behavioural changes, the users can lower their electricity bills.

3.1.9 Results Page

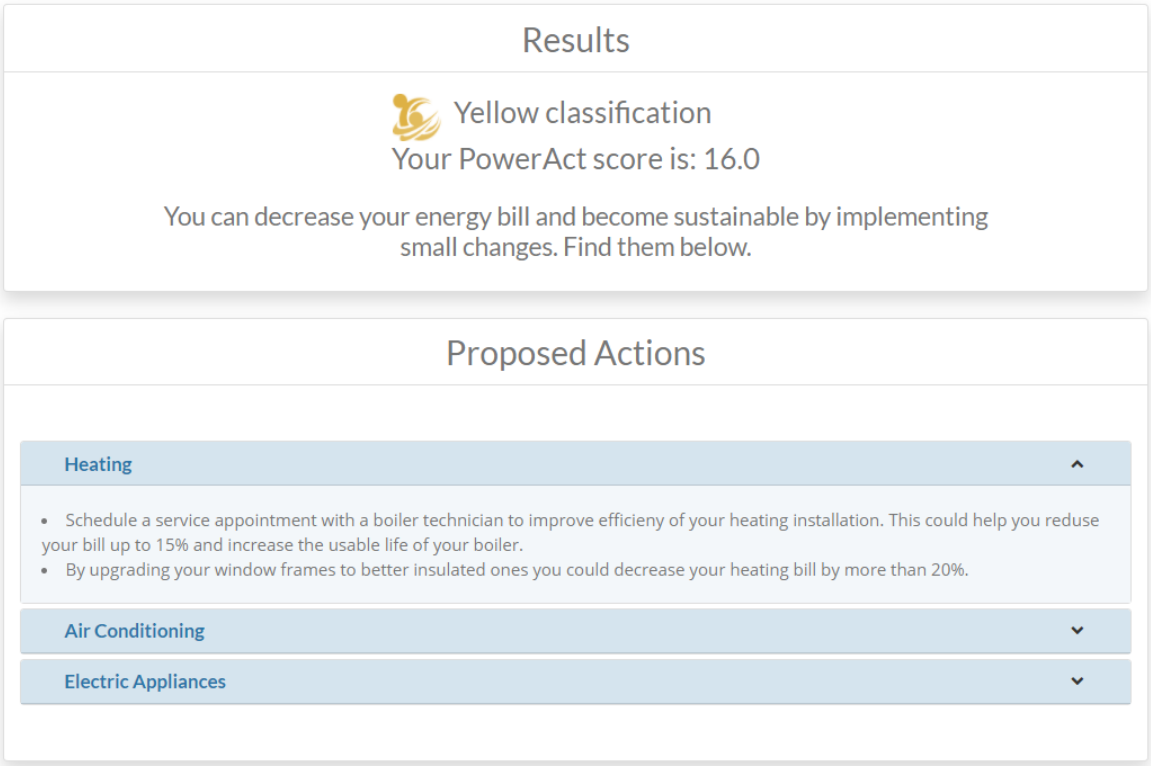


Figure 23 Results page

The POWER-ACT score is calculated based on the responses submitted by the user. Low scores indicate margin for improvement in terms of energy behaviour while higher scores indicate more efficient behaviours and limited room for improvement just from behavioural changes. Scores range from 0-100 with score equal to zero achieved when a user submits responses that indicate the least efficient behaviours possible. A score equal to 100 is achieved when responses indicate the most efficient behaviours possible given the available responses.

In the proposed actions tabs, suggestions are generated based on the responses of the users. The suggestions section is continuously updated.

3.1.10 Reviewing previous assessments

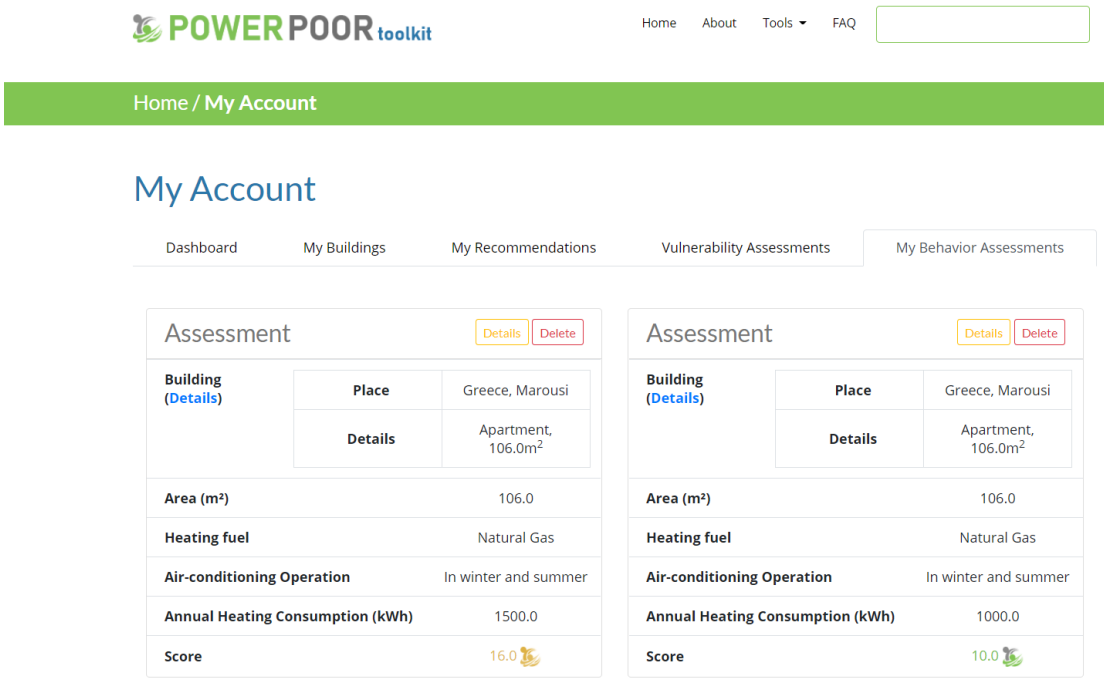


Figure 24 Reviewing existing assessments via "Vulnerability Assessments" tab

In the POWERPOOR toolkit pages, under the "My account" section and the "My behaviour assessments" tab users can review their previous assessments and monitor their progress. The objective of the POWER ACT tool is to add elements of gamification to users' efforts to improve their household's energy efficiency. It is essential that users can retake the assessment after improving their energy spending patterns or implementing energy efficiency improvements in their household, to review whether the score has increased after each action.

3.2 The POWER-ACT score

In the POWER ACT tool low scores indicate margin for improvement in terms of energy behaviour while higher scores indicate more efficient behaviours and leave limited room for improvement to be achieved with just behavioural changes. Scores range from 0-100 with score equal to zero achieved when a user submits responses that indicate the least efficient behaviours possible while score equal to 100 is achieved when responses indicate the most efficient behaviours possible given the available responses in the structured questions.

Table 2: Classification of the POWER-ACT users

Score	Description
0-30	Red classification: Responses to multiple structured questions indicate significant margin for improvement in the behavioural aspect.
30-50	Yellow Classification: Responses indicate user has adopted a limited number of energy efficient practices but substantial margin for improvement remains.
50-75	Blue Classification: Responses from structured questions indicate adoption of multiple energy efficient practices. There is still some margin of improvement.
75-100	Green classification: Responses from structured questions indicate exceptional adoption of energy efficient practices. There is very limited room for improvement with implementing only behavioural changes.

Classification Explanation:

Users with Red and Yellow classifications can take immediate, low-cost, or behavioural steps to improve their energy spending behavior such as changing the bulbs in their lightning appliances, servicing their heating appliances, etc.

Users with Blue and Green classifications usually need to proceed with more substantial upgrades that are associated with higher costs such as upgrading their window frames and their heating systems to improve their scores.

For more details on the methodology of the POWER-ACT score, you may refer to D2.3 - POWER ACT (M8).

4. The POWER-FUND tool

4.1 Stepwise instructions for using the POWER-FUND tool

4.1.1 Accessing the tool

The POWER-FUND tool, similarly to the POWER TARGET and ACT tools, is accessible via the POWERPOOR website[5] or via a stand-alone, dedicated webpage[6]. In the website users can navigate to the toolkit page by clicking on the respective category on the navigation bar that lands the user to the tools' page as depicted below. A shortcut to the tools' page has been also added in the project's website homepage.

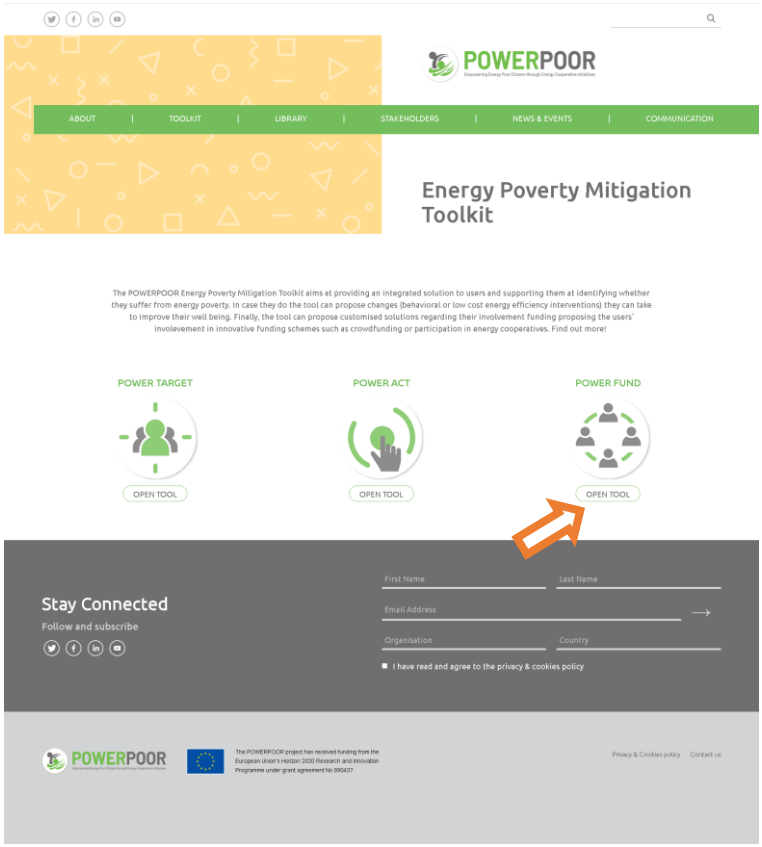


Figure 25 Accessing the POWERPOOR-Toolkit

A view of the standalone webpage of the POWERPOOR toolkit is depicted below.

[5] www.powerpoor.eu
[6] http://powerpoor.epu.ntua.gr/powerpoor-toolkit/

Figure 26 View of the tools in the stand-alone webpage.

Differently from the other POWERPOOR Tools, POWER-FUND does not require a login account. Users will be able to access the tool directly, without registration.

4.2.2 Structure

The structure of the tool is visible from the navigation bar located on the top right of the home page and is the following:

- Home Page
- Collective Finance
  - Invest Citizens
  - Funding Assistant
  - Raising Capital
- Collective Energy Initiatives
  - Join a Community
  - Create a Community
  - Operate a Community

Home Page

After clicking on the POWER-FUND button, users are redirected to the tool's Home Page. The page provides an intro to the POWER-FUND tool, what it can be used for as well as a list of few selected action areas.

Scrolling down, two cards present the main sections of the tool, **Collective Finance** and **Collective Energy Initiatives**, with action buttons linking directly to the dedicated pages.

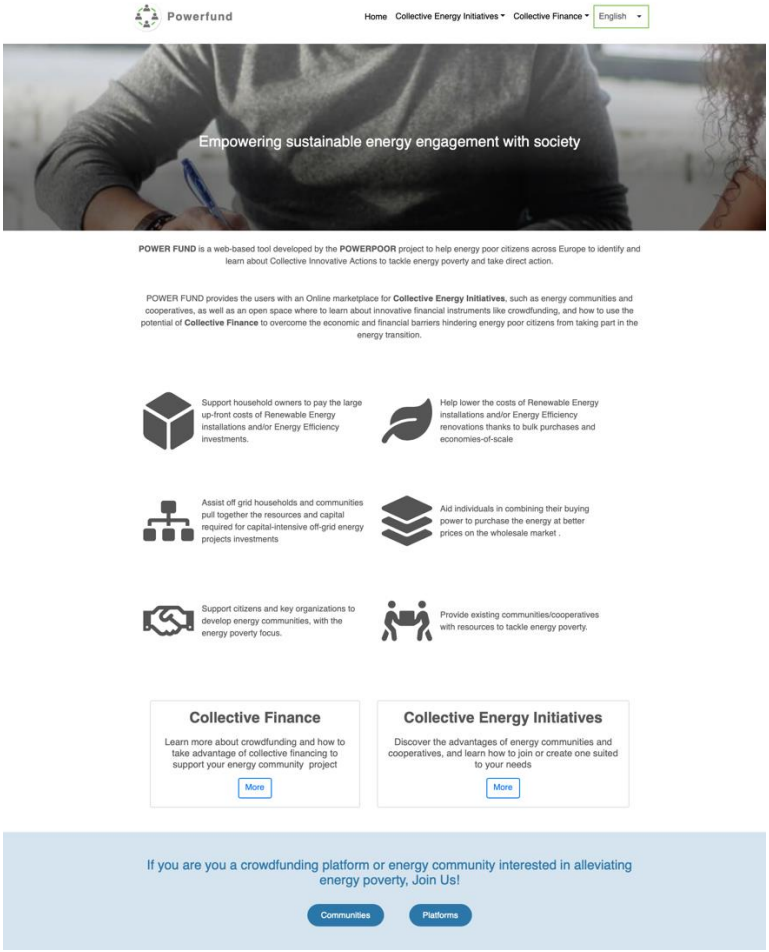


Figure 27 The Power Fund Home Page

Versions of the tool in each of the pilot countries' main languages are available by selecting the appropriate language from the top menu.

Collective Finance

The Collective Finance section holds all the information about crowdfunding and how to use it to support energy poverty related projects.

At the top, a short text introduces the concept of collective finance, followed by a banner showcasing the logos of partner crowdfunding platforms that registered to the tool.

Details about the registered platforms and their main features are presented in a carrousel at the bottom of the page, along with the banner inviting the platforms to register.

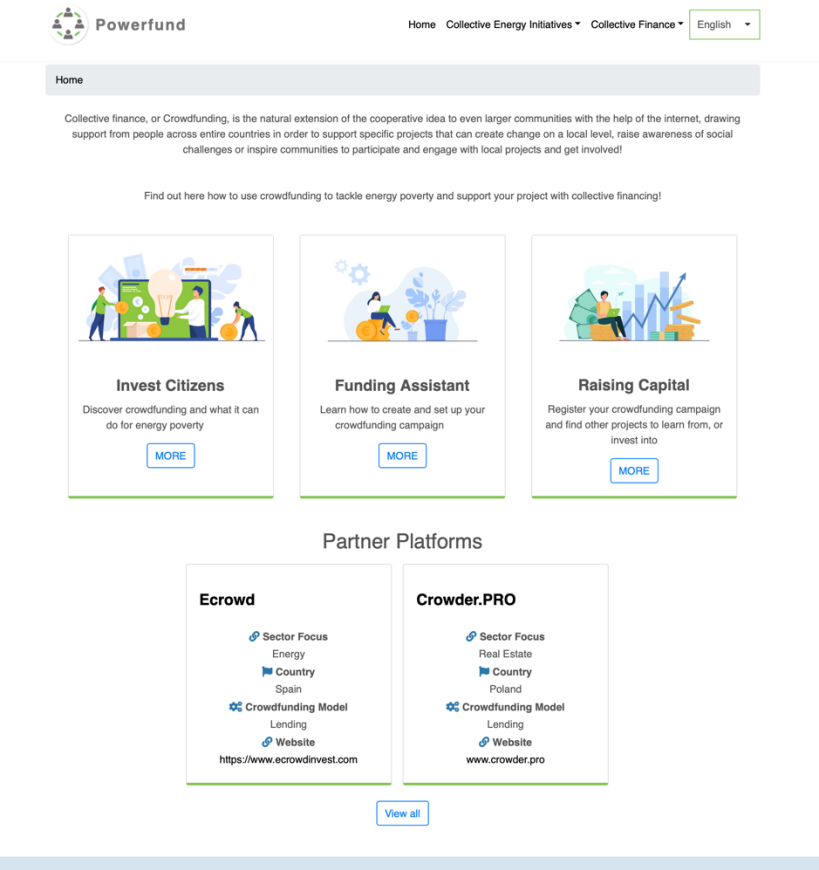


Figure 28 Collective Finance main page

In the center of the page, three cards introduce the links to the sub-pages of the section providing an in-depth focus on crowdfunding (**Invest Citizens**), a step-by-step guide on how to use it (**Funding Assistant**), as well as a space to register new crowdfunding campaigns and/or find crowdfunded projects to learn from (**Raise Capital**).

Figure 29 Invest Citizens

Invest Citizens provides an introduction to crowdfunding with information on what it is (types of crowdfunding, a brief explanation of how the process works, finding the right crowdfunding platform, namely the differences among platforms according to field of specialization, allocation of funding, costs, etc.) and how to pursue financing opportunities in order to implement sustainable energy interventions, such as energy efficiency measures in their house/ apartment.

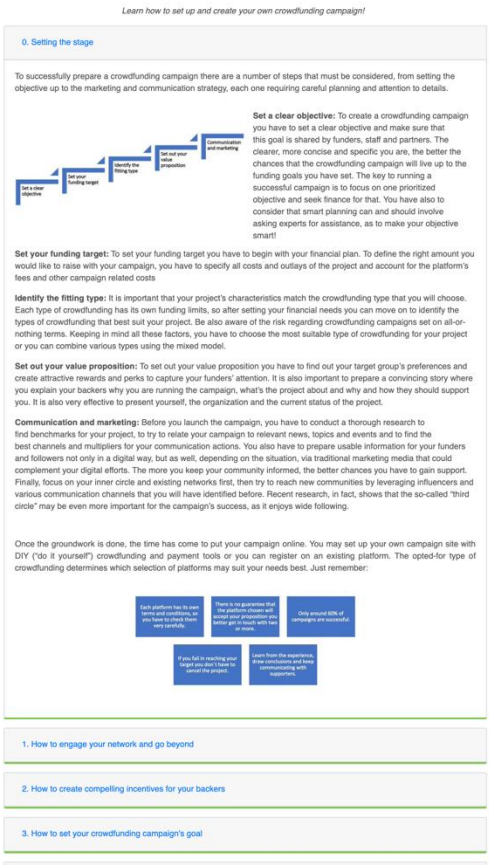


Figure 30 Funding Assistant

Funding Assistant offers a detailed guide for users on how to create a Crowdfunding campaign, including how to choose the preferred model (objective, funding target, incentives), how to prepare a campaign (target audience, marketing video, social media), how to manage a campaign (monitoring, audience engagement), and how-to follow-Up.

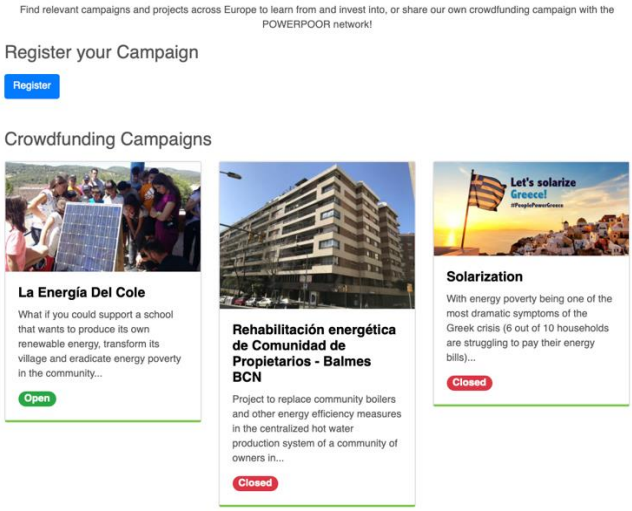


Figure 31 Sample Registered Campaign

The **Rising Capital** page is a repository of relevant Investment opportunities (Crowdfunding campaigns) for citizens to examine and/or invest in, with all relevant info such as technology deployed, participation type (reward, lending and equity-based), location, and link to the hosting platform.

The registered campaigns only show some basic information as well as a link redirecting to the host platform website for those interested in knowing more.

Collective Energy Initiatives

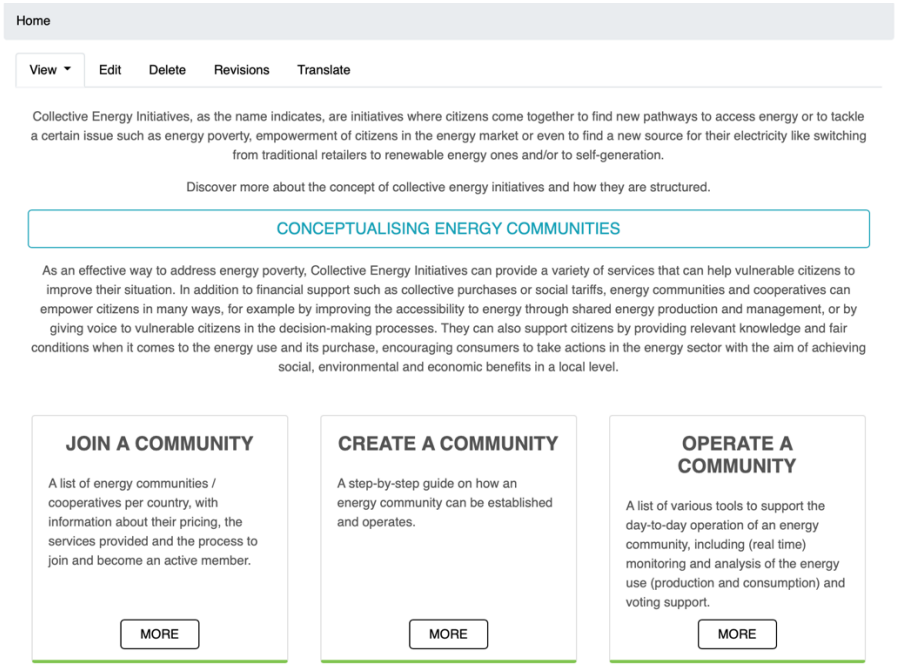


Figure 32 Collective Energy Initiatives main page

The **Collective Energy Initiative** section holds all the information about energy communities and cooperatives.

Similarly, to the **Collective Finance** main page, at the top, a short text introduces the concept of Collective Energy Initiatives followed by a banner showcasing the logos of partner cooperatives/communities that registered onto the tool. The banner inviting the cooperatives to register is located at the bottom.

In line with the recommendation of the D2.1 User Requirements (M5) an action button after the intro text gives the possibility to access an additional page about **conceptualising energy communities**, describing the different configurations they can take and listing a few examples of the services they can offer.

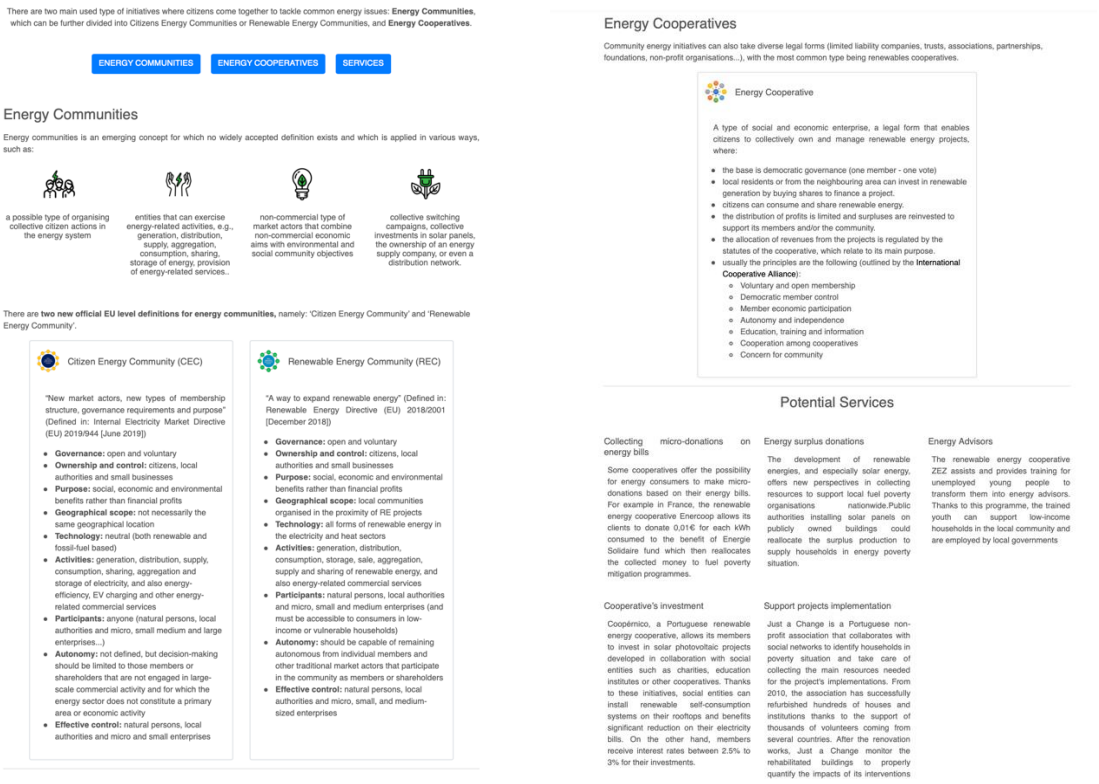


Figure 33 Conceptualising Energy Communities

The three title cards at the center link to the sub-pages of the section providing access to the energy communities/cooperatives marketplace listing the registered communities with all the required information needed for people to join them (**Join a Community**), a step-by-step guide on how to create an energy community (**Create a Community**), as well as list of useful tools to aid in the day-to-day management and operation of a community (**Operate a Community**).

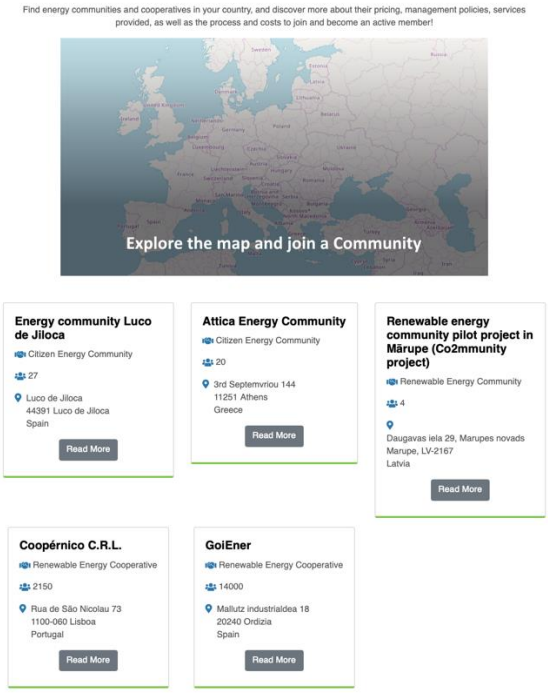


Figure 34 Join a Community

Join a Community provides list of energy communities / cooperatives per country, with information about their pricing and management policies, the services provided to energy poor citizens, and the process to join and become an active member.

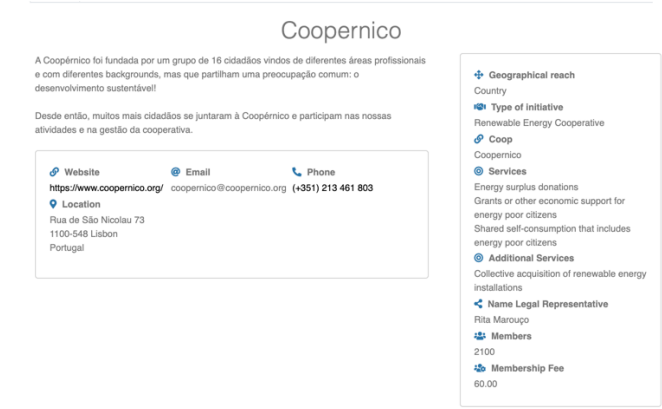


Figure 35 Sample Registered Community

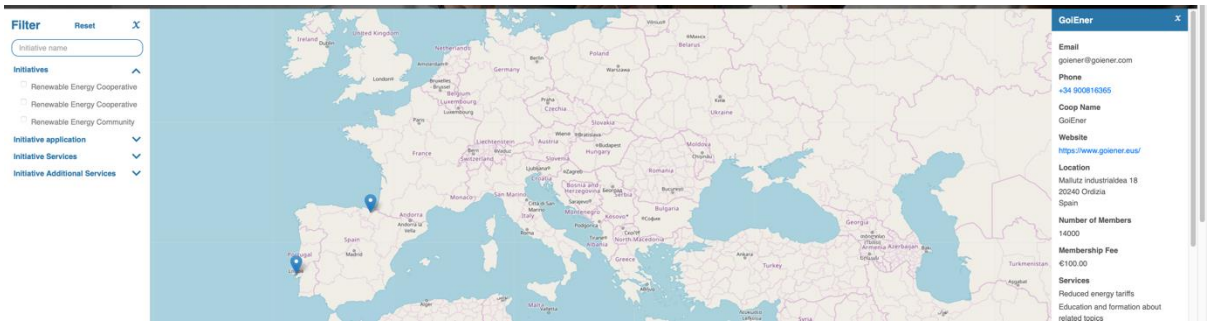


Figure 36 Operate a Community

The section is integrated with detailed info card for each registerd community, as well as an interactive map with dedicated filters and a geolocation feature to allow users to identify the communities in their country/region.

Figure 37 Create a Community

Create a Community offers guidelines on how an energy community can be established and managed in close collaboration with local stakeholders. A dedicated section providijng links to national guidelines for energy communities in the pilot countries is also included.

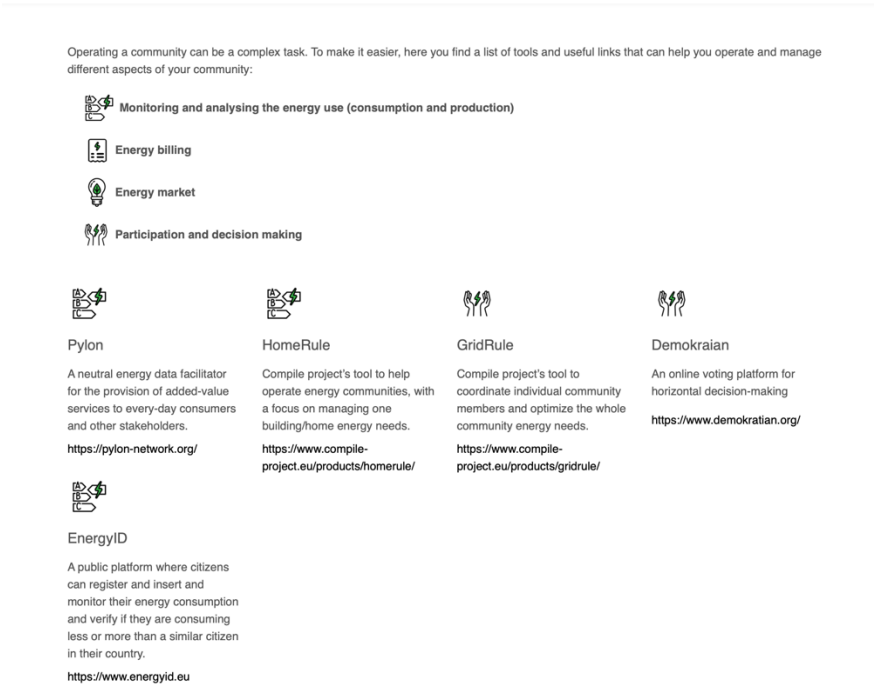


Figure 38 Operate a Community

The **Operate a Community** page lists tools to help users in managing and operating their energy community, including tools for monitoring data on energy consumption / production, and evaluating the performance of a city/community/buildings, in terms of energy efficiency).

4.2.3 Registration forms

The POWER-FUND tool presents a number of sections showcasing content provided by third parties, namely, **Partner Platforms** and **Partner Energy Initiatives**, as well as a number of **crowdfunding campaigns** that users and platforms can register to be shown in the tool.

For each type of external content, the tool provides an anonymised registration form with key minimum mandatory fields.

The forms are tailored to the specific content and can be accessed by clicking on the call to actions banners in the dedicated pages, i.e., Collective Finance, Raise Capital and Collective Energy Initiatives.

Figure 39 Call to Action Banners

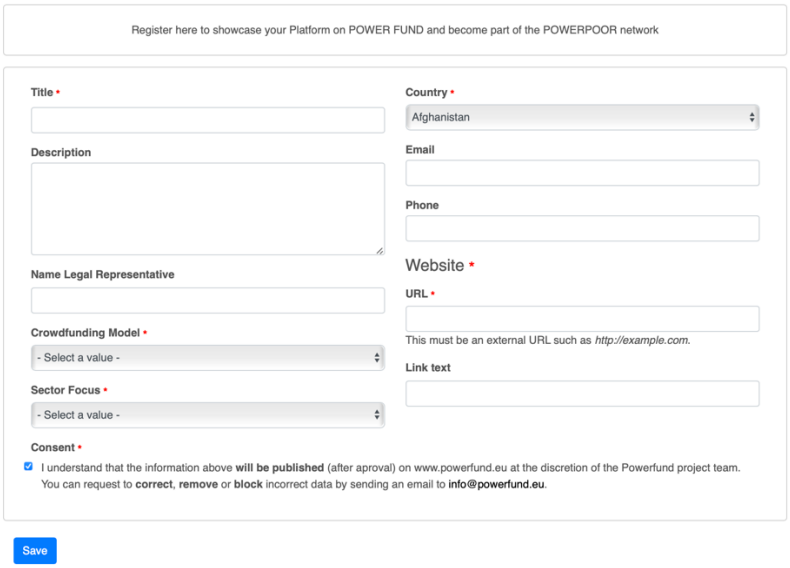


Figure 40 Crowdfunding Platform Registration Form (Backend)

The **Create Partner Platform** form is reserved to crowdfunding platforms that wish to register on the tool and be showcased in the carousel located on the **Collective Finance** main page.

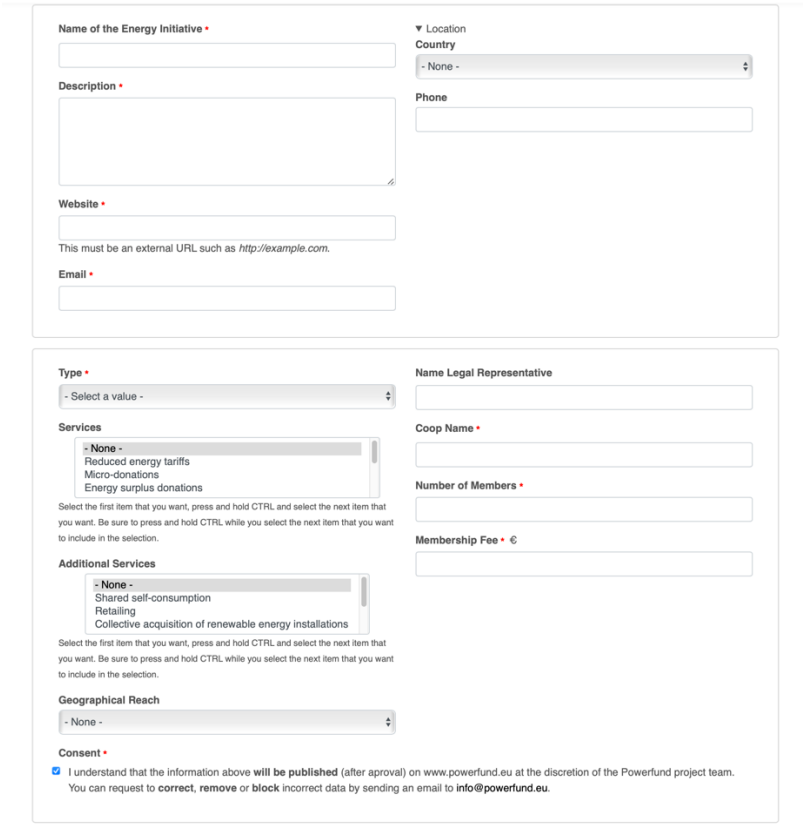


Figure 41 Energy Initiative Registration Form

The **Create Energy Initiative** form is reserved to energy communities and cooperatives that wish to register on the tool and be showcased in the online marketplace in the **Join a Community** section.

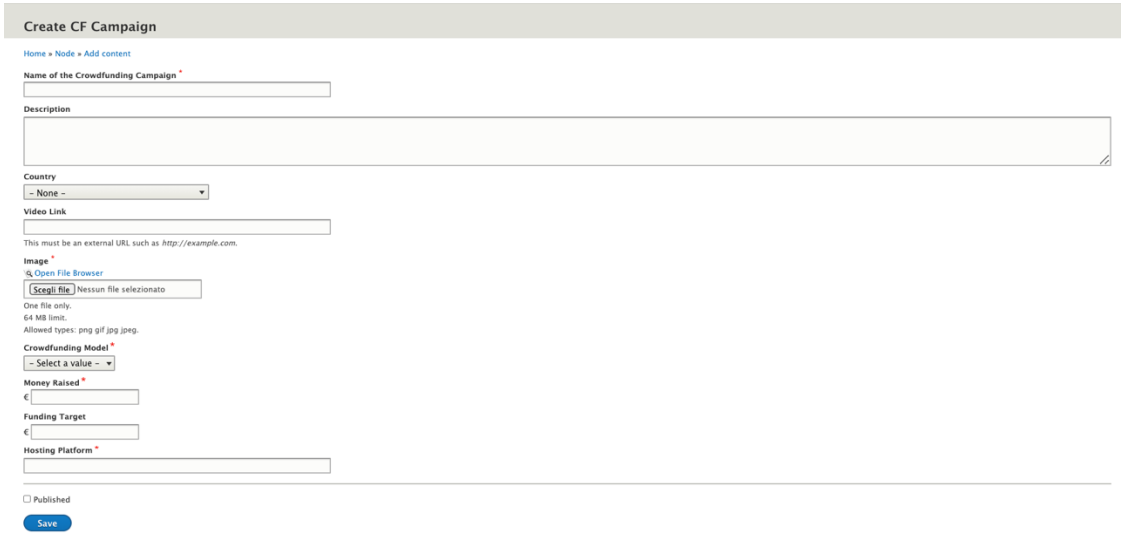
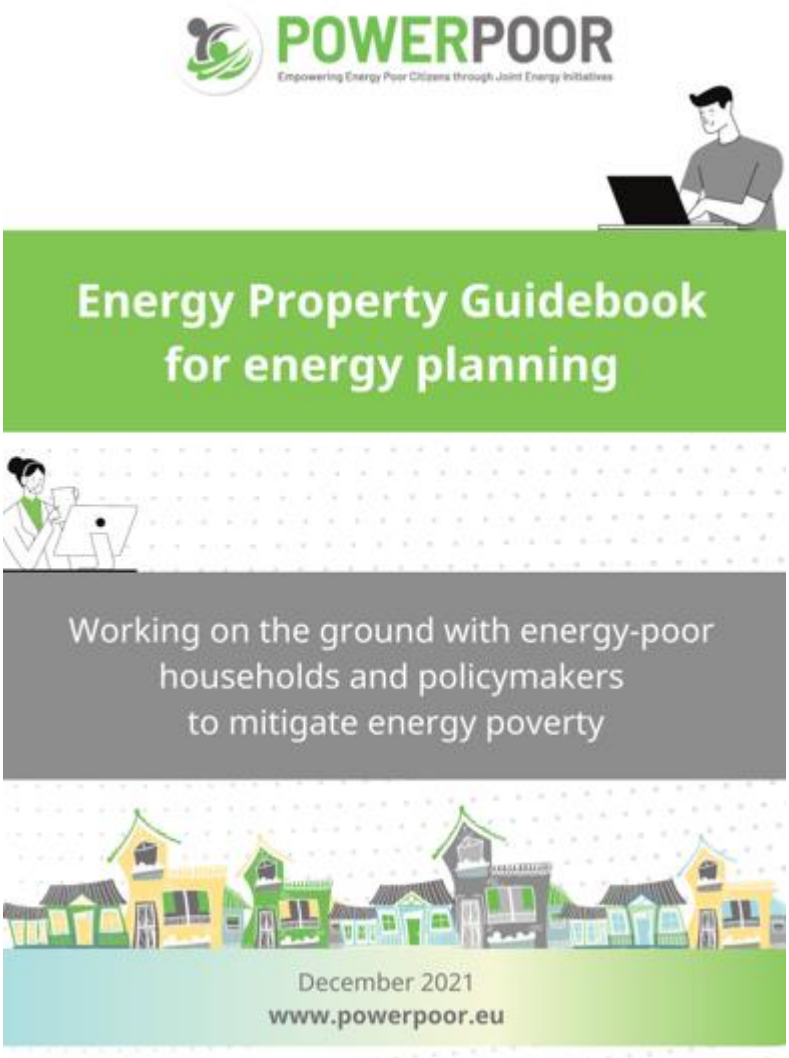


Figure 42 Crowdfunding Campaign Registration Form

The **Create CF Campaign** form is reserved to any user, (individual, platform, or cooperative) that wish to showcase an existing campaign the **Raise Capital** section.

5. Energy Poverty Guidebook for Energy Planning

The Energy Poverty Mitigation Toolkit will also include the Energy Poverty Guidebook for Energy Planning, developed within the framework of T5.4 aiming to support local authorities on alleviating energy poverty according to the POWERPOOR approach. The Guidebook provides guidelines for identifying energy poor citizens, communities, areas, and districts depending on data availability and for incorporating pioneer actions to alleviate energy poverty in Sustainable Energy and Climate Action Plans (SECAPs) as it is proposed by the POWERPOOR project. It also includes a set of best practices as they are being brought forward by the POWERPOOR project. The Guidebook will be focusing on the POWERPOOR approach and is complementary to the set of indicators developed by the Covenant of Mayors and the handbook prepared by the Energy Poverty Advisory Hub.



6. Frequently Asked Questions (FAQs)

A list of Frequently Asked Questions (FAQs) is included in the Energy Poverty Mitigation Toolkit, which are answered online, in order to inform the relevant stakeholders and the general public about the project solutions and help the users with the use of the tools. A list of these questions and their respective answers is listed below.

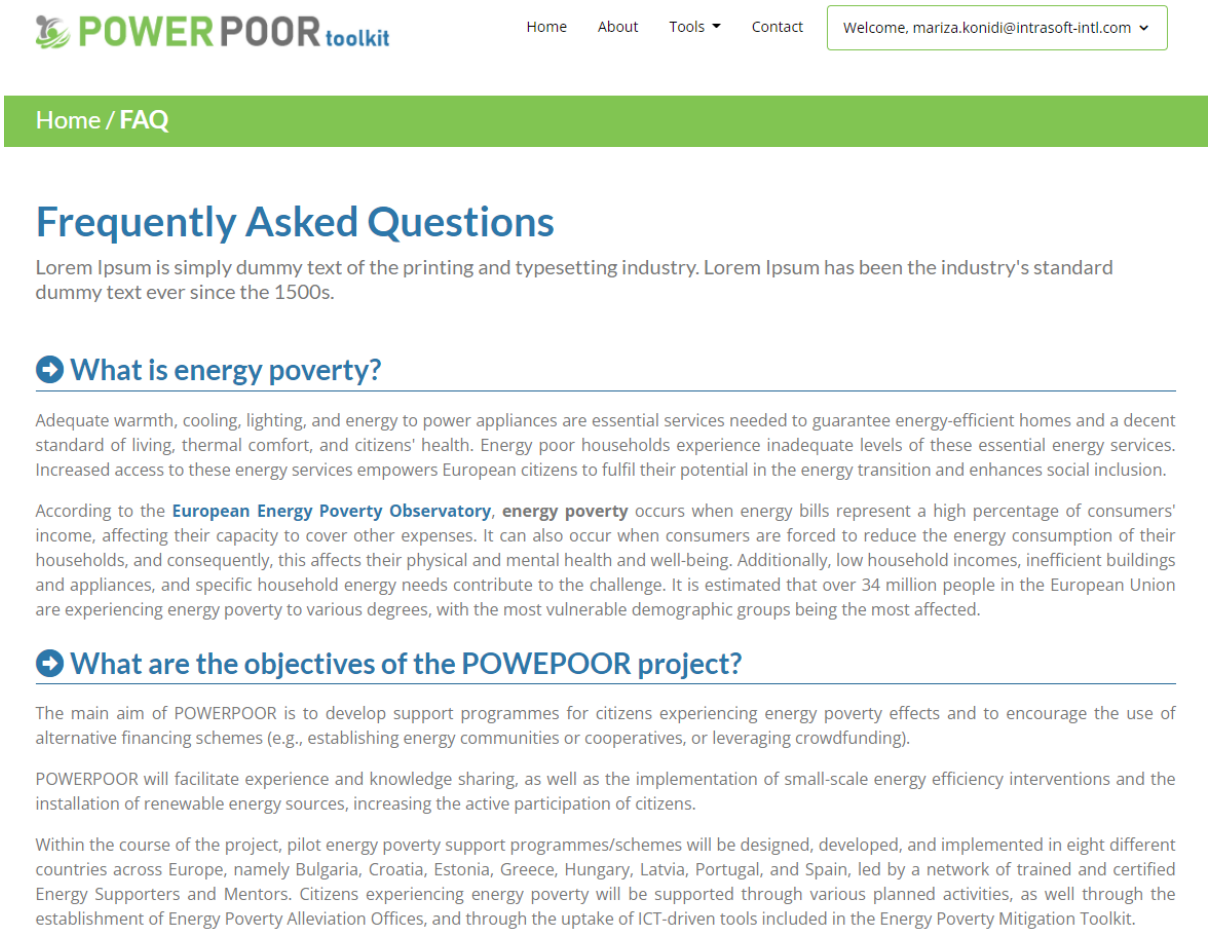


Figure 43: FAQ section of the Energy Poverty Mitigation Toolkit

What is energy poverty?

Adequate warmth, cooling, lighting, and energy to power appliances are essential services needed to guarantee energy-efficient homes and a decent standard of living, thermal comfort, and citizens' health [1]. Energy poor households experience inadequate levels of these essential energy services. Increased access to these energy services empowers European citizens to fulfil their potential in the energy transition and enhances social inclusion [2].

According to the European Energy Poverty Observatory, energy poverty occurs when energy bills represent a high percentage of consumers' income, affecting their capacity to cover other expenses [1]. It can also occur when consumers are forced to reduce the energy consumption of their households, and consequently, this affects their physical and mental health and well-being. Additionally, low household incomes, inefficient buildings and appliances, and specific household energy needs contribute to the

challenge. It is estimated that over 34 million people in the European Union are experiencing energy poverty to various degrees, with the most vulnerable demographic groups being the most affected [2].

What are the objectives of the POWEPOOR project?

The main aim of POWERPOOR is to develop support programmes for citizens experiencing energy poverty and to encourage the use of alternative financing schemes (e.g., establishing energy communities or cooperatives, or leveraging crowdfunding).
POWEPOOR will facilitate experience and knowledge sharing, as well as the implementation of small-scale energy efficiency interventions and the installation of renewable energy sources, increasing the active participation of citizens.
Within the course of the project, pilot energy poverty support programmes/schemes will be designed, developed, and implemented in eight different countries across Europe, namely Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Portugal, and Spain, led by a network of trained and certified Energy Supporters and Mentors. Citizens experiencing energy poverty will be supported through various planned activities, as well through the establishment of Energy Poverty Alleviation Offices, and through the uptake of ICT-driven tools included in the Energy Poverty Mitigation Toolkit.

More specifically, the POWERPOOR vision will be accomplished through the following objectives:

- Engage with energy poor citizens and groups for ensuring the citizens' long-term participation in the POWERPOOR activities.
- Increase the overall uptake of energy efficiency measures and joint energy initiatives to reduce energy poverty, using ICT and other tools.
- Build a network of Energy Supporters and Energy Mentors that will support energy poor citizens.
- Design and implement energy poor support programmes to alleviate energy poverty.
- Replicate the POWERPOOR pilot energy poor support programmes.
- Develop policy recommendations for mitigating energy poverty.

How can the POWERPOOR toolkit help me?

The POWERPOOR Energy Poverty Mitigation Toolkit aims at providing an integrated solution to users and supporting them at identifying whether they experience energy poverty.
In case they do, the tool can propose behavioural changes or low-cost energy efficiency interventions that they can take, to improve their well-being.
The tool can also propose solutions relevant to funding, proposing innovative funding schemes such as crowdfunding or the participation in energy cooperatives, that can enable the alleviation of energy poverty.
For more information about the POWERPOOR toolkit, visit http://powerpoor.epu.ntua.gr/powerpoor-toolkit.

What is the POWER-TARGET tool about?

The POWER TARGET tool follows a data-driven approach aiming at supporting local and regional authorities to identify energy poor as well as groups or communities. The users take an assessment survey through the tool, which uses qualitative and quantitative indicators, such as energy-related data, building characteristics and other sociodemographic data, providing the citizens with a specific "score".
The POWER-TARGET score is a metric used to identify households suffering from energy poverty. It is based on the 10% indicator, and it is enhanced to include more variables that resulted from a concise literature review of the various metrics, tools, and indicators currently employed to measure the phenomenon across Europe.
For more information about POWER-TARGET, visit http://powerpoor.epu.ntua.gr/powerpoor-toolkit/target.

What is the POWER-ACT tool about?

The POWER-ACT tool is a citizen centred application, utilised by citizens to facilitate behaviour change and support them in implementing energy efficiency measures.
More specifically, POWER-ACT will empower energy poor citizens to understand their energy use and the benefits from implementing small scale energy efficiency interventions and installing renewable energy, by providing them with a list of proposed behavioural changes, in order to improve their energy efficiency and lowering their energy expenses.
For more information about POWER-ACT, visit http://powerpoor.epu.ntua.gr/powerpoor-toolkit/act.

What is the POWER-FUND tool about?

POWER-FUND is a web-based tool that helps energy poor citizens across Europe to identify and learn about Collective Innovative Actions to tackle energy poverty and take direct action.
POWER-FUND provides the users with an Online marketplace for Collective Energy Initiatives, such as energy communities and cooperatives, as well as an open space where to learn about innovative financial instruments like crowdfunding, and how to use the potential of Collective Finance to overcome the economic and financial barriers hindering energy poor citizens from taking part in the energy transition.
For more information about POWER-FUND, visit https://www.powerfund.eu.

Do I need to register to all tools, or can I choose in which one I want to register?

All the POWERPOOR tools are accessible via the POWERPOOR website or via the POWERPOOR Energy Mitigation Toolkit. In order to use the POWER TARGET and ACT tools, the users are requested to create an account to the POWERPOOR Toolkit. The POWER FUND tool can be used without requiring registration.
During the registration process the users add their email and select their preferred language for the tool's interface. The tool supports the 8 national languages of the pilot countries namely: Greek, Bulgarian, Hungarian, Croatian, Spanish, Portuguese, Estonian, Latvian as well as Basque, to better accommodate the potential users' needs. Users should also add the country and city they currently reside in the form fields: country and city.

The account's aim is to maintain continuity in users' assessments. For example, data entry that was added in the POWER-TARGET tool can be also automatically transferred to the POWER-ACT tool.

Is the use of the tools free or should I pay a monthly/annual fee?

The use of the tools is completely free.
The tools can also be accessed several times. For example, the users can retake the assessments to evaluate whether their scores have improved after for instance they have implemented the proposed behaviour changes and/or implemented (small or large scale) energy efficiency interventions.

What info does the Energy Poverty Guidebook provide?

The Energy Poverty Guidebook is a guidebook that will be developed to support national, regional, and local authorities that are interested in integrating actions for mitigating energy poverty in Sustainable Energy and Climate Action Plans (SECAPs) and Urban Development Planning processes. More specifically, it provides guidelines for identifying energy poor citizens/communities/areas/districts depending on data availability and for incorporating pioneer actions to alleviate energy poverty according to the POWERPOOR approach.
The guidebook includes best practices identified during the capacity building activities and pilot programmes. The guidebook can be translated in all project languages and can be adjusted if needed to address specific needs in pilot countries.

How can Municipalities benefit from the POWERPOOR project?

In the POWERPOOR project, various municipalities across Europe participate. The municipalities engaged through the POWERPOOR project are going to be the pioneers that will incorporate the POWERPOOR approach within their main activities. They are going to be part of the POWERPOOR network and from their experiences, best practices and conclusions are going to be drawn and shared across Europe. The project will support them in developing, implementing, and monitoring actions for mitigating energy poverty in Sustainable Energy and Climate Action Plans (SECAPs) and Urban Development Planning processesas well as for the establishment of the Energy Poverty Alleviation Offices.

What services are offered through the Energy Poverty Alleviation Offices?

In the Energy Poverty Alleviation Offices, the citizens can find information about energy poverty, identify whether they suffer from the phenomenon, find Energy Supporters or Mentors to advise them on low-cost energy efficiency measures and on behavioural changes that can enhance their energy efficiency. There, they can also find out information on how to be part of energy cooperatives or communities and how to leverage innovative financing schemes. These offices are a one-stop-shop for individuals to go to for any energy poverty related issue.

I am interested in becoming an Energy Supporter/Mentor. What should I do?

Energy Supporters and Mentors are the focal points among the POWERPOOR approach and the energy poor households or interested municipalities. Their relevant experience

and motivation are going to make them the trusted advisors aiming at alleviating energy poverty in a local level.
If you are interested in becoming an Energy Supporter or Mentor, please contact us at info@powerpoor.eu or through our online helpdesk http://powerpoor.epu.ntua.gr/powerpoor-toolkit/contact/.
The first Energy Supporters and Mentors are already working on alleviating energy poverty. You can find a list of the certified Energy Supporters and Mentors in all the POWERPOOR countries here.

What are the benefits of becoming an energy supporter/mentor?

Energy Supporters will engage energy poor citizens enabling them to recognise the issue and providing them with advice on behaviour changes or low cost no regret measures. They will help energy poor citizens plan, secure funding and implement energy efficiency interventions. Energy Mentors will provide support and expertise in a municipality level working on all the key areas associated with the operation and/or creation of an energy community/cooperative, comprised of energy poor citizens or the set-up of a crowdfunding campaign.
When becoming an Energy Supporter of Mentor, you are part of a strong European Network of experts. You get to be part of the POWERPOOR approach aspiring to alleviate energy poverty in a local, national, and European level.
Find out more about the POWERPOOR certification scheme and the benefits of becoming an Energy Supporter or Mentor here.

Is there any online learning material I can have access to?

In order to serve as a pool of resources that can be used to build the capacity of the Energy Supporters and Mentors, in supporting energy poor citizens and local actors on the field, but also the general public, POWERPOOR created the Online Trainer Library. This library aspires to address knowledge gaps with regard to energy poverty policies, alleviation practices and innovative financing at local, national, and European levels. Especially, the role of innovative financing schemes as a means to mitigate energy poverty is highlighted.
The Online Trainer Library can be accessed either through the shortcut on the homepage of the POWERPOOR website or via the navigation bar on the top. Through the drop-down menu on the top, or via the corresponding buttons users can access:

a) the deliverables of the project
b) the relevant publications
c) the training material

A search functionality with search filters is set up to assist users in navigating through this pool of training resources. The library is a dynamic element of the POWERPOOR website and will be regularly updated with deliverables, training and other interesting material and relevant publications.

How can I stay informed about the POWERPOOR activities?

In order to stay connected to the POWERPOOR news and actions:

- Visit our website: https://powerpoor.eu/
- Follow the project on social media:

  - Twitter: https://twitter.com/POWERPOOR_EU
  - Facebook: https://www.facebook.com/PowerpoorEU
  - LinkedIn: https://www.linkedin.com/company/powerpoor-eu
  - YouTube: https://www.youtube.com/channel/UCjknqWsb70aqdgw24VKSZJg
- Subscribe to our newsletter: https://bit.ly/3k1BkHr

7. Online Helpdesk

POWERPOOR provides expert support to users through a virtual help desk that is included in the Energy Poverty Mitigation Toolkit, giving the ability to the users to upload a file if they need to. The online helpdesk will have the form of an online web form with the following fields/features:

- Name
- Email
- Country (dropdown menu)
    - Croatia
    - Estonia
    - Greece
    - Hungary
    - Latvia
    - Spain
    - Portugal
    - Bulgaria
- Subject (dropdown menu)
    - Energy communities
    - Energy supporters/mentors
    - POWERPOOR Tools (POWER-TARGET, POWER-ACT, POWER-FUND)
    - Other – General question
- Message
- Upload file

The recipients of the form will be the representatives of the pilot partners as well as a general email (helpdesk@powerpoor.eu) that will be habdled by the coordinator of the project.
The message sent by the user will be filtered based on the country selected and will be sent to the respective pilot partner and the generic email (helpdesk@powerpoor.eu). After receiving the message, the responsible partner has the obligation to answer to the user within a business week.

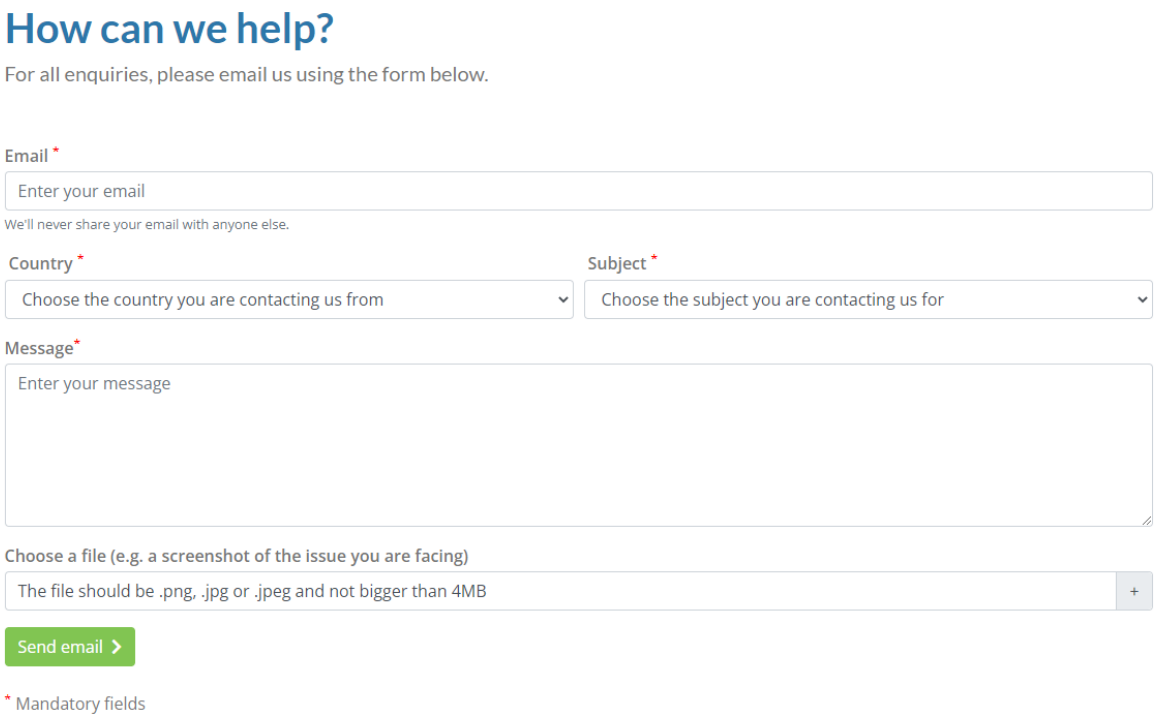


Figure 44: Online Helpdesk of the Energy Poverty Mitigation Toolkit

8. Conclusions

POWERPOOR aims at enabling energy poor citizens to alleviate the phenomenon through implementing small scale interventions and behavioural changes as well as through participating in joint energy initiatives, including innovative financing schemes that can support large scale interventions and enable them to tackle energy poverty.

To be able to support energy poor citizens, POWERPOOR developed a user friendly and concise Energy Poverty Mitigation Toolkit that consists of ICT tools that can identify the energy poor, propose behavioural and no regret changes as well as support the creation of energy communities and cooperatives and enable them to leverage innovative funding schemes.

The individual tools that were developed to cover the above-mentioned objectives, such as POWER-TARGET, POWER-ACT and POWER-FUND as well as the Energy Poverty Guidebook for Energy Planning have been integrated into the Energy Poverty Mitigation Toolkit.

In the present report, the final version of the tools was presented along with step-by-step instructions for their optimal use and sections that offer support to the users for the tools' optimal usage, such as the FAQ section and the Online Helpdesk.

Bibliography

[1] What is energy poverty? | EU Energy Poverty Observatory, https://www.energypoverty.eu/about/what-energy-poverty

[2] Bouzarovski, S., Thomson, H.: Towards an inclusive energy transition in the European Union: Confronting energy poverty amidst a global crisis. Publications Office of the European Union. (2020)