



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

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Table of abbreviations

| 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.

POWER TARGET



POWER ACT



POWER FUND



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 website¹ or via a stand-alone, dedicated webpage². 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/>

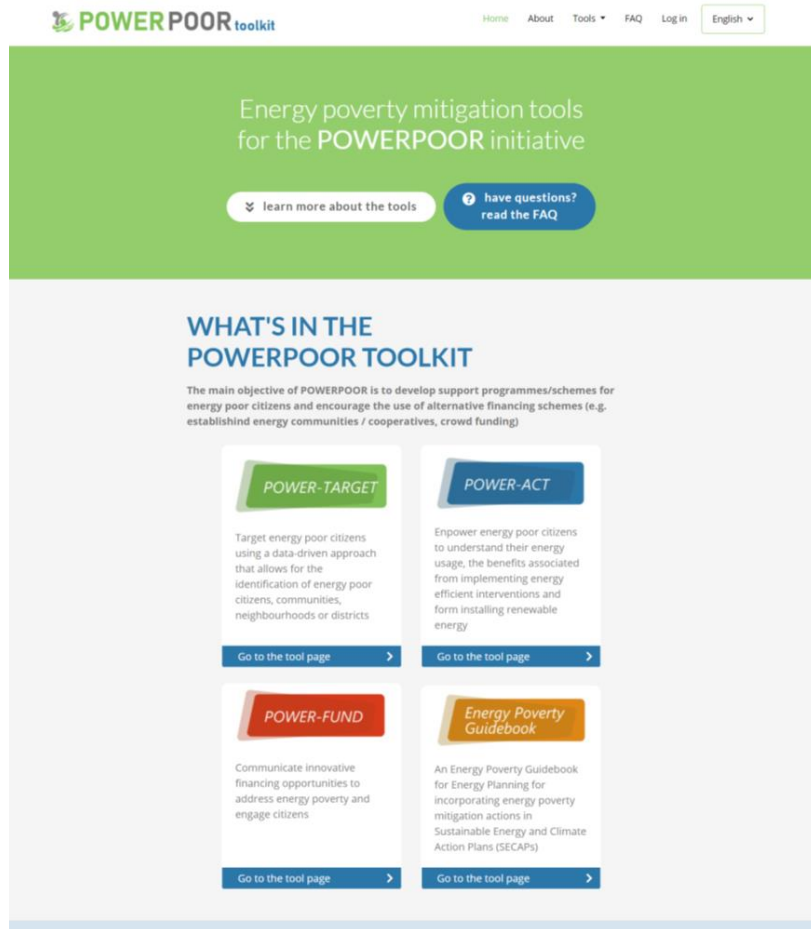


Figure 3 View of the tools in the stand-alone webpage.

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.

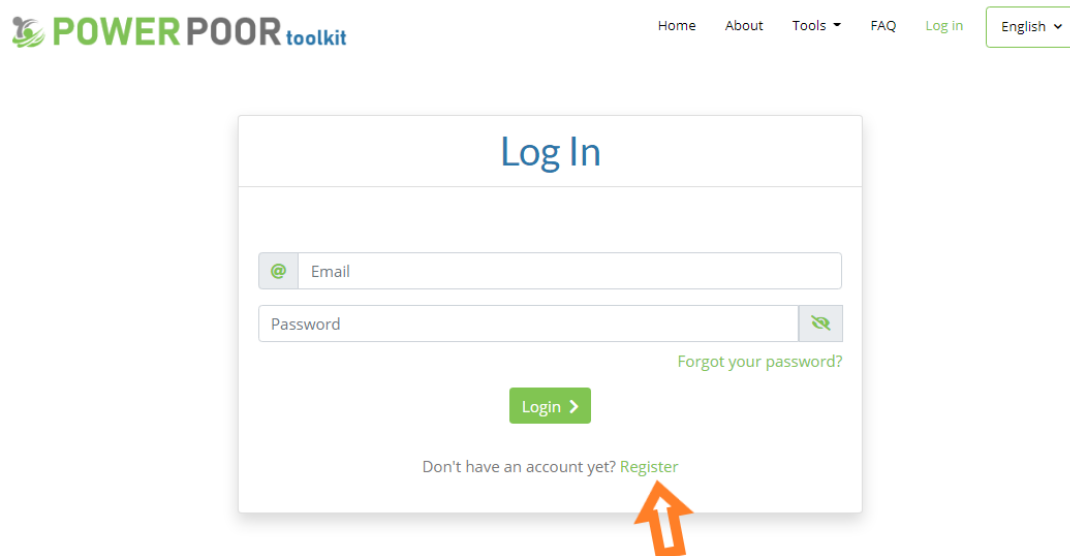


Figure 4 Navigating through the registration

The account's aim is to maintain continuity in users' assessments. Data entered 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.

Register

☒ Personal Account
 ☐ Business Account

Email*
 Language*

Country*
 City*

Password*
 Repeat Password*

* Mandatory fields

[Sign up >](#)

Already have an account? [Log in](#)

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.

POWERPOOR toolkit

Home About Tools FAQ Welcome, chr_

Home / My Account

My Account

Dashboard
 My Buildings
 My Recommendations
 Vulnerability Assessments
 My Behavior Assessments

Personal Information

[Edit](#)

PowerTarget

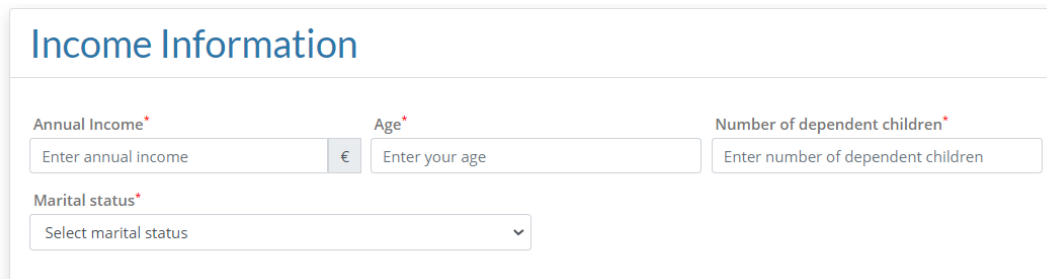
Take the survey to evaluate your energy spending and see how you compare with other households in your country.

PowerAct

Receive personalized suggestions and implement energy efficient behaviors to save money.

Figure 6 Navigating to the Power-Target tool

2.1.4 Income information



Income Information

Annual Income* €

Age*

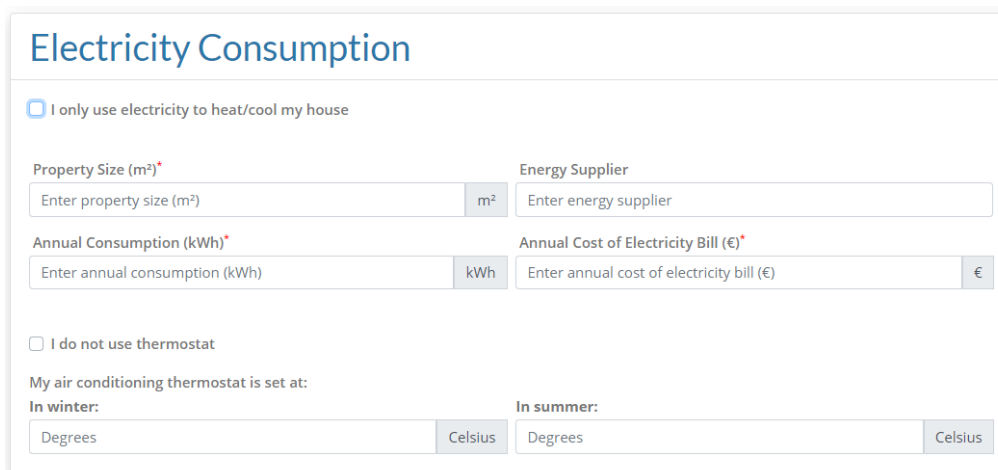
Number of dependent children*

Marital status*

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



Electricity Consumption

☒ I only use electricity to heat/cool my house

Property Size (m²)* m²

Energy Supplier

Annual Consumption (kWh)* kWh

Annual Cost of Electricity Bill (€)* €

☐ I do not use thermostat

My air conditioning thermostat is set at:

In winter: Celsius

In summer: Celsius

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

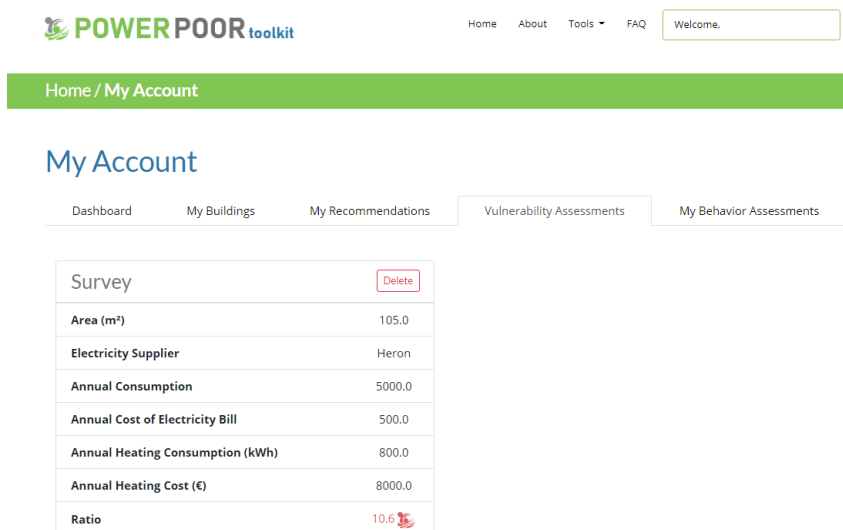
In this section the heating fuel predominantly used during winter for heating (oil, natural gas) needs to be added. If only electric appliances are used for heating, then 0 must be added in the annual cost of heating bill, since these costs have already been accounted for in the previous section. The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



POWERPOOR toolkit

Home About Tools FAQ Welcome, [User Name]

Home / My Account

My Account

Dashboard My Buildings My Recommendations Vulnerability Assessments My Behavior Assessments


| Survey | Delete |
|----------------------------------|--|
| Area (m²) | 105.0 |
| Electricity Supplier | Heron |
| Annual Consumption | 5000.0 |
| Annual Cost of Electricity Bill | 500.0 |
| Annual Heating Consumption (kWh) | 800.0 |
| Annual Heating Cost (€) | 8000.0 |
| Ratio | 10.6  |

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 website³ or via the stand-alone, dedicated webpage⁴ 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.

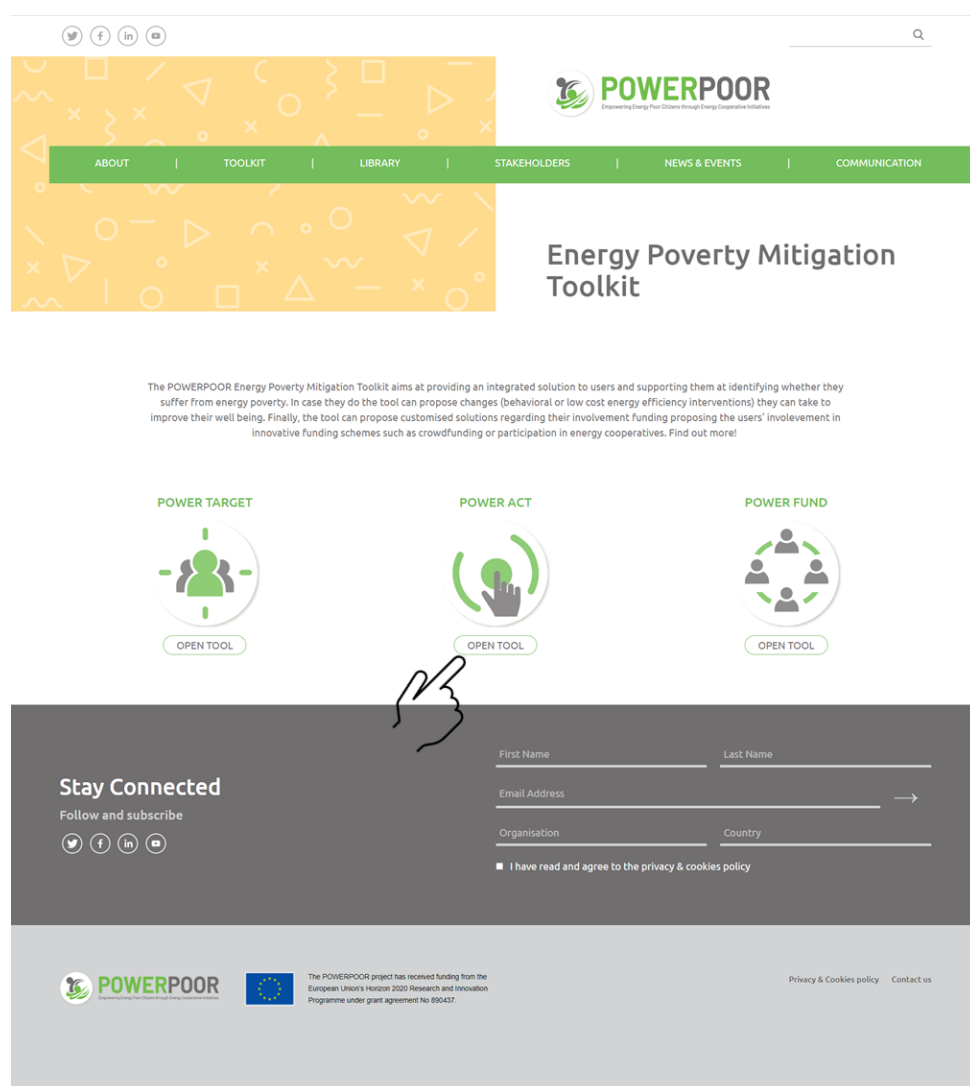


Figure 12 Accessing the POWERPOOR-Toolkit

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/>

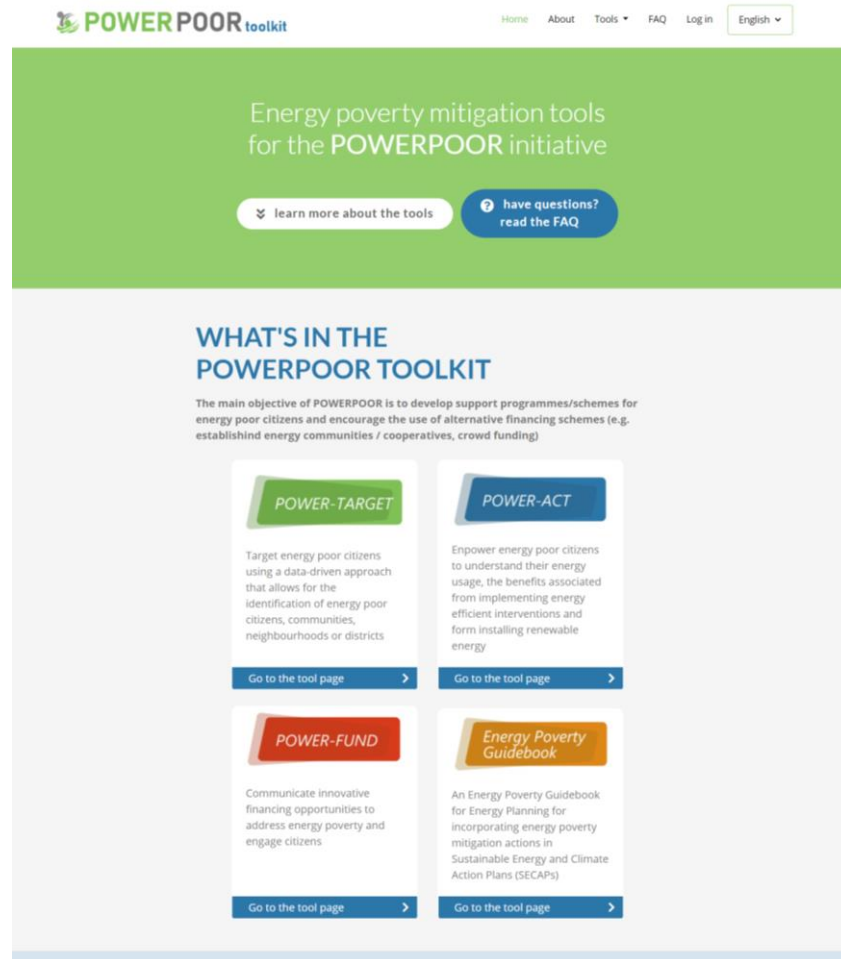


Figure 13 View of the tools in the stand-alone webpage.

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.

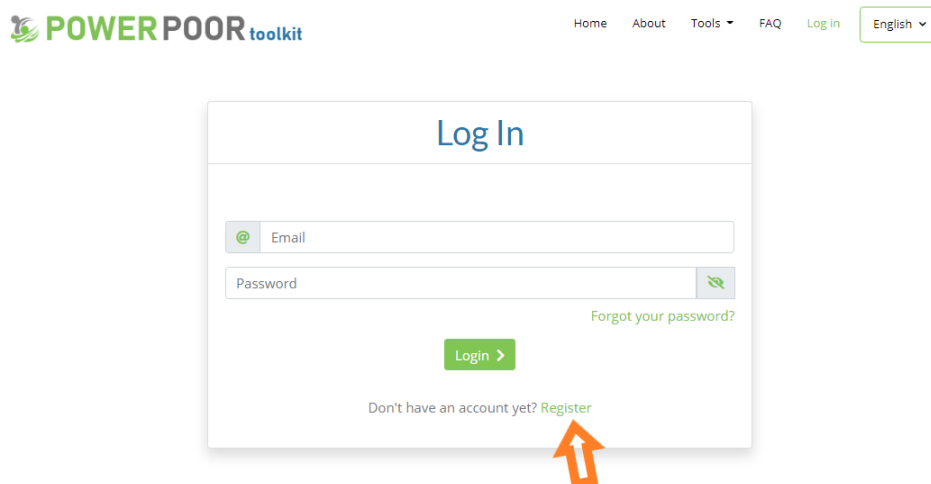
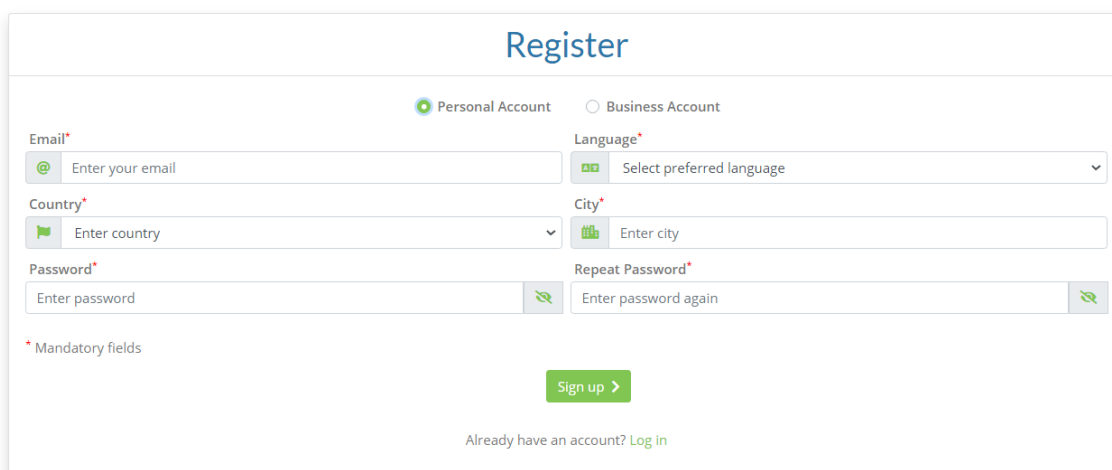


Figure 14 Navigating through the registration

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.



Register

☒ Personal Account
 ☐ Business Account

Email*
 Language*

Country*
 City*

Password*
 Repeat Password*

* Mandatory fields

[Sign up >](#)

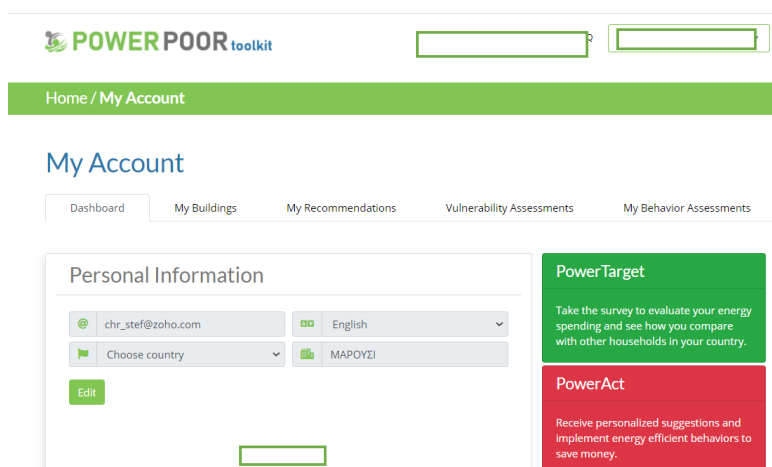
Already have an account? [Log in](#)

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.



POWERPOOR toolkit

Home / My Account

My Account

[Dashboard](#)
[My Buildings](#)
[My Recommendations](#)
[Vulnerability Assessments](#)
[My Behavior Assessments](#)

Personal Information

[Edit](#)

PowerTarget

Take the survey to evaluate your energy spending and see how you compare with other households in your country.

PowerAct

Receive personalized suggestions and implement energy efficient behaviors to save money.

Figure 16 Navigating to the POWER-ACT tool

3.1.4 Building Selection

The 'Building Selection' interface consists of two main components. On the left, there is a box with a large '+' icon and a green button labeled 'Add new' at the bottom. On the right, there is a table-like structure with two rows: 'Place' with the value 'Greece, Marousi' and 'Details' with the value '106.0m², Apartment'. Below this table is a green button labeled 'Choose'.

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.

The 'Add Building' form contains several input fields arranged in two columns. The left column includes 'Country*' (text input), 'Area (m²)*' (text input), and 'Number of floors*' (text input). The right column includes 'City*' (text input), 'Type of building*' (dropdown menu), and 'Build Year*' (text input). A legend at the bottom left indicates that '*' denotes mandatory fields. A green 'Submit >' button is located at the bottom center.

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

Building Information

Property Size (m²)*

106

m²

Electricity Supplier*

Enter electricity supplier

Number of household members*

Enter number of household members

Cumulative hours spent at home / day*

Enter cumulative hours spent at home / day

Hint: A household with 3 members that each spends 14 hours at home on average, note down 42 hours/day

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

Heating

Heating fuel*

Select heating fuel

Heating thermostat*

I set my heating thermostat at

Celsius

Last year consumption*

Last year I consumed

Last boiler service*

I serviced my boiler

years ago

When sat near a closed window in winter:*

Select

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

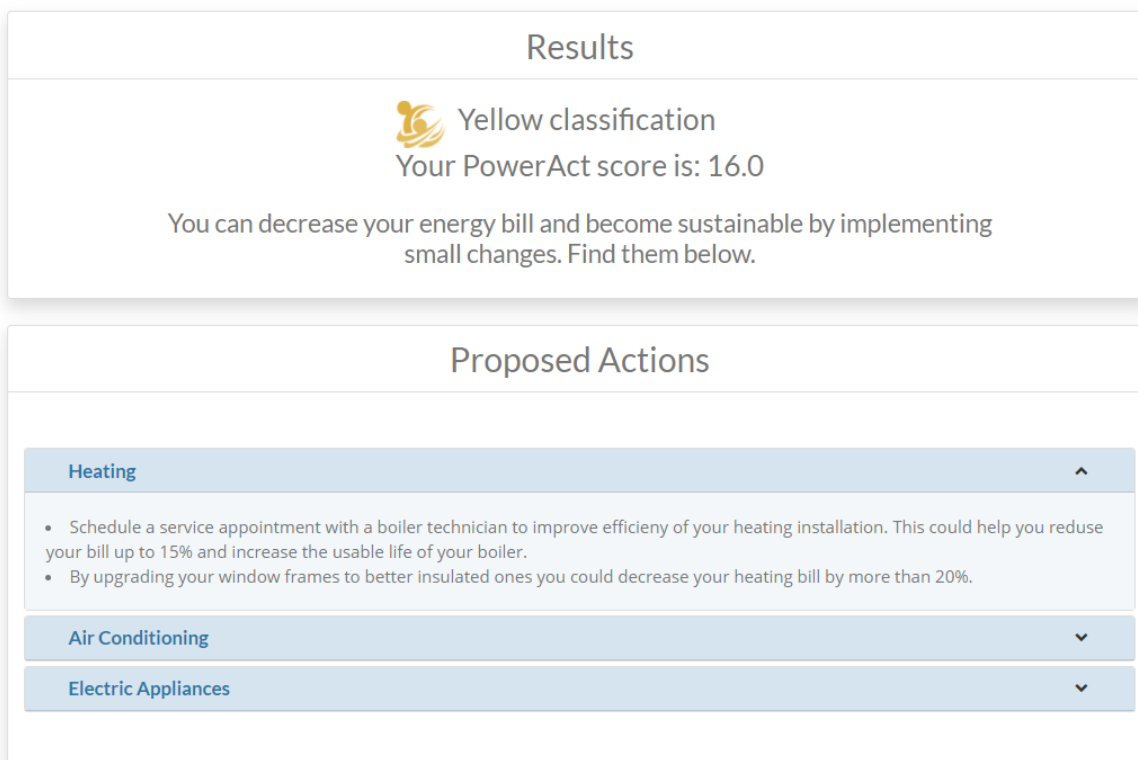
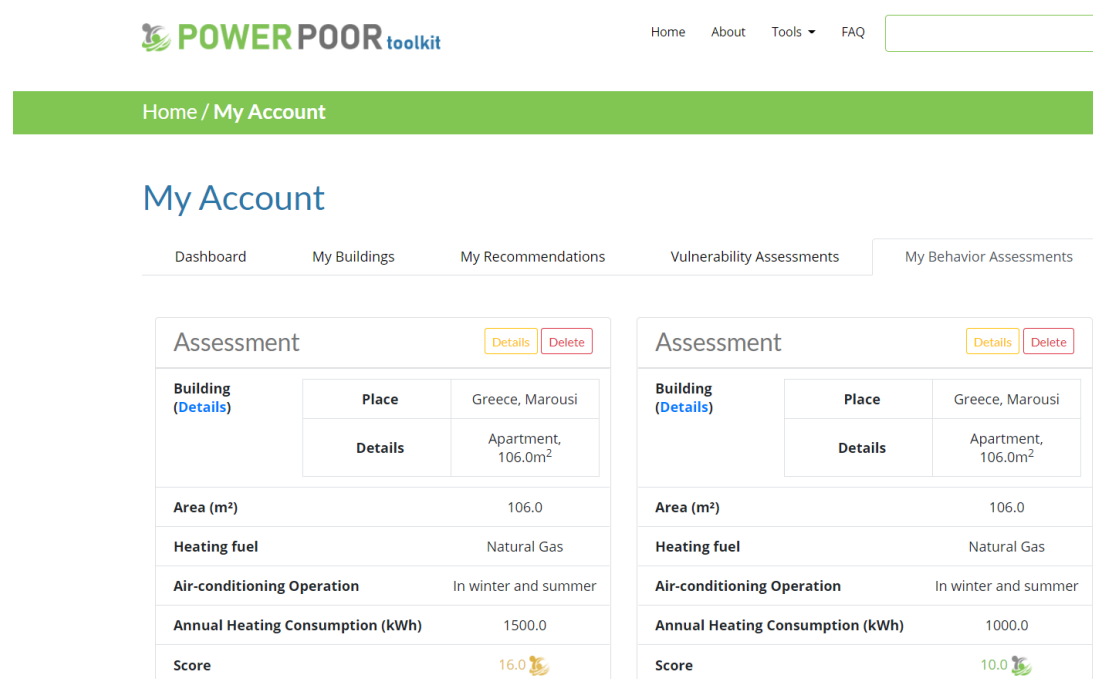


Figure 23 Results page

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



POWERPOOR toolkit Home About Tools ▼ FAQ

Home / My Account

My Account

Dashboard My Buildings My Recommendations Vulnerability Assessments My Behavior Assessments

| Assessment | | Details | Delete |
|---|----------------|--------------------------------|------------------------|
| Building (Details) | Place | Greece, Marousi | |
| | Details | Apartment, 106.0m ² | |
| Area (m²) | | 106.0 | |
| Heating fuel | | Natural Gas | |
| Air-conditioning Operation | | In winter and summer | |
| Annual Heating Consumption (kWh) | | 1500.0 | |
| Score | | 16.0 🏆 | |

| Assessment | | Details | Delete |
|---|----------------|--------------------------------|------------------------|
| Building (Details) | Place | Greece, Marousi | |
| | Details | Apartment, 106.0m ² | |
| Area (m²) | | 106.0 | |
| Heating fuel | | Natural Gas | |
| Air-conditioning Operation | | In winter and summer | |
| Annual Heating Consumption (kWh) | | 1000.0 | |
| Score | | 10.0 🌿 | |

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 website⁵ or via a stand-alone, dedicated webpage⁶. 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.

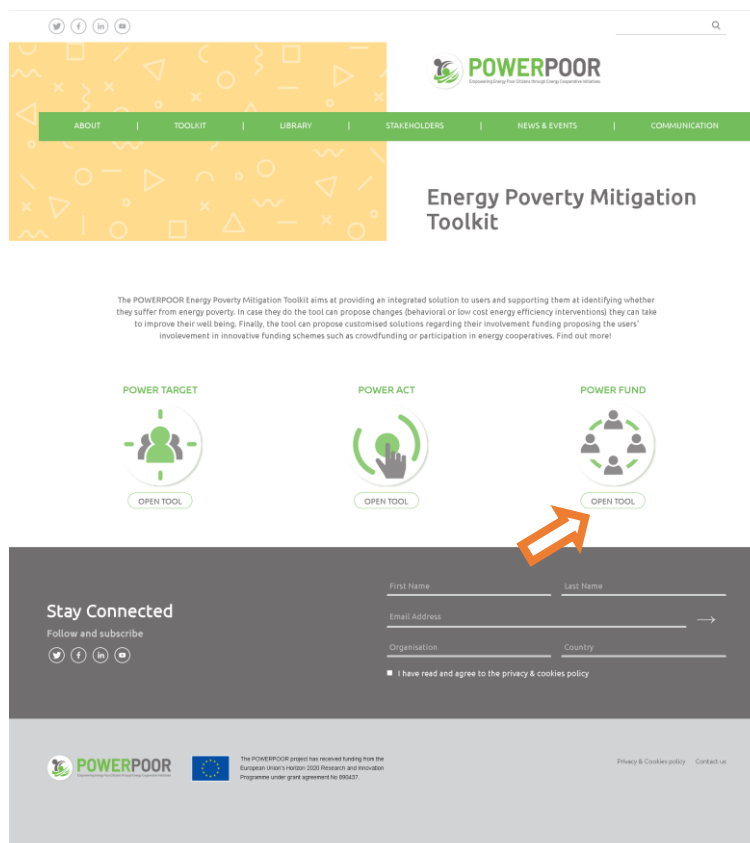


Figure 25 Accessing the POWERPOOR-Toolkit

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/>

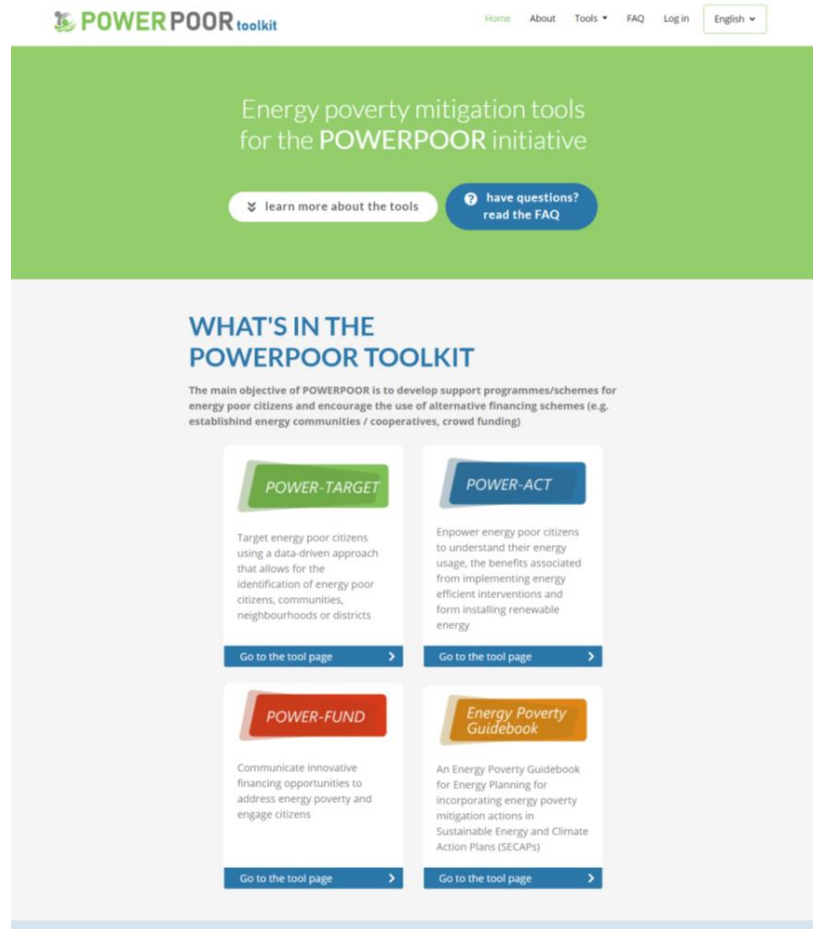


Figure 26 View of the tools in the stand-alone webpage.

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.

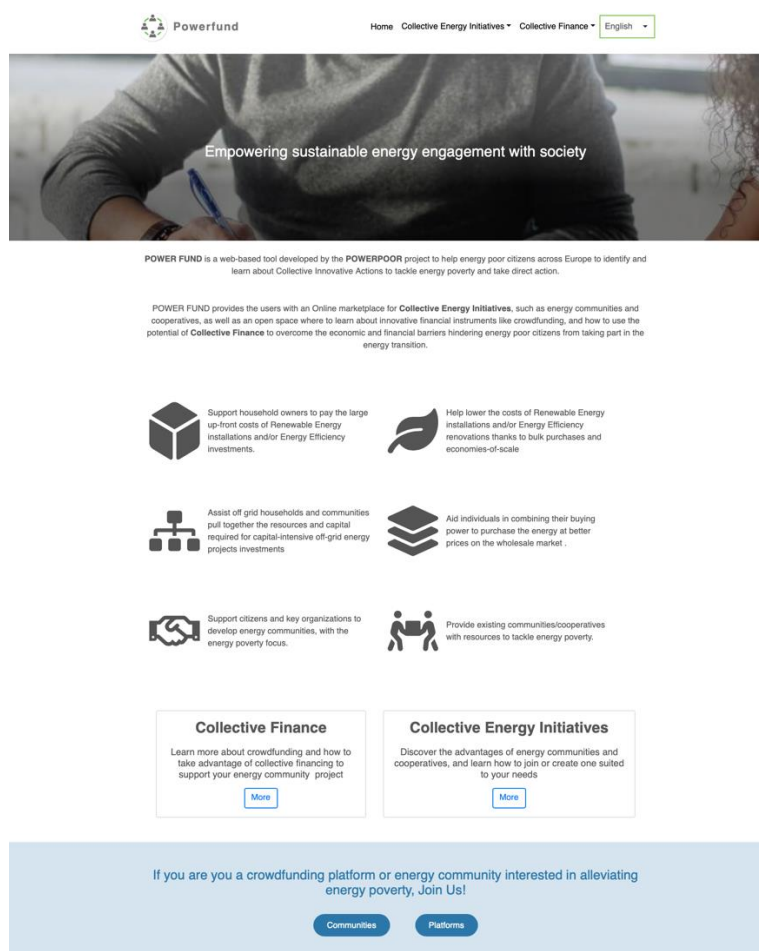


Figure 27 The Power Fund Home Page

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.

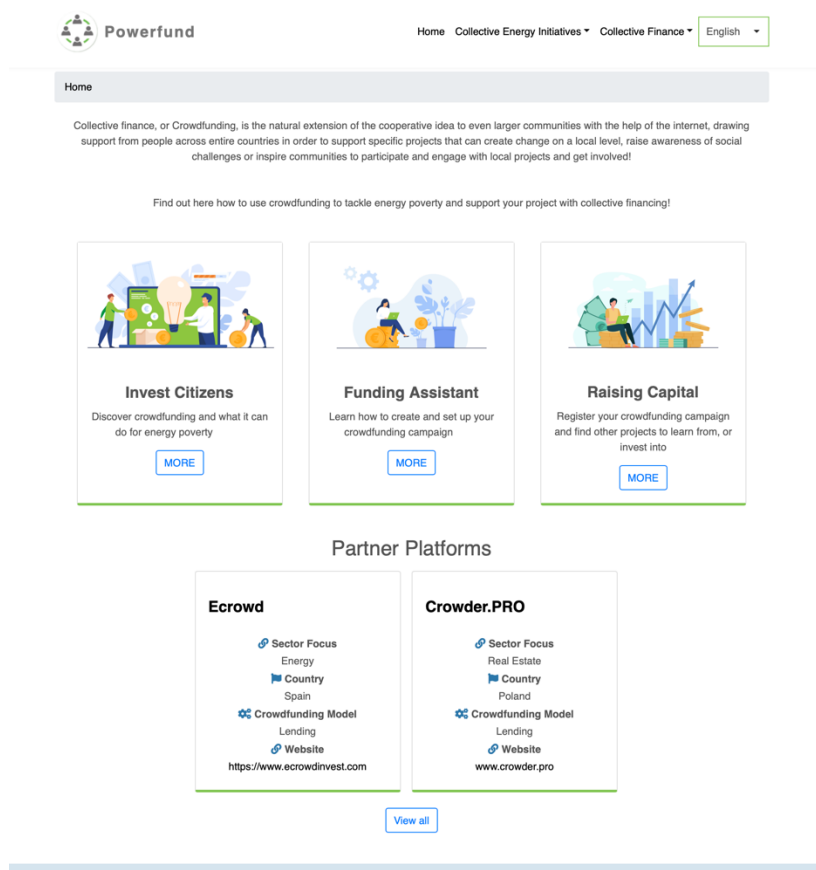



Figure 28 Collective Finance main page

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**).

Discover more about crowdfunding and what you can use it for!

What is crowdfunding?



What do you do when you have a big goal and too little money to achieve it on your own?

You may ask your friends and family to help you by either donating a bit of money or giving you a small loan. When you expand that idea to an entire neighborhood, or region and build an organization around it, it becomes a community.

Crowdfunding, in a nutshell, is the natural extension of this idea to even larger communities with the help of the internet.

Or, to put it in a more simplistic way: **Crowdfunding is a way of raising finance by asking a large number of people to contribute to a funding goal with a small amount of money!**

Through crowdfunding, Communities and individuals can reach out to the crowd to validate ideas, collect money, and engage with both citizens and decision makers. This relatively new funding tool can also improve their visibility and, overall, foster an environment of collective decision-making in order to fund socially relevant projects to the benefit of their members.

Crowdfunding for energy poverty

Crowdfunding's collective financing model is especially appropriate to answer the enormous challenges faced by citizens and households suffering from energy poverty. In this scenario, crowdfunding can provide the necessary funds for community-driven, small-scale renewable and/or energy efficiency projects in a timely manner, with less bureaucracy and regulatory complexity if compared to more traditional financing sources, where bank loans, structured around economies of scale, are effectively crowded out.




| | | |
|--|---|---|
|  <p>Building retrofit</p> <p>Muster the support of the crowd to support energy efficiency renovation of your household / building. Pull your resources together to upgrade your HVAC system, re-coat your building or improve the insulation of your windows to reduce your heating consumption.</p> |  <p>Renewable energy generation</p> <p>Use crowdfunding community approach to finance the installation of solar panels and start producing your own renewable energy. Collective financing can help realize installations by putting up the initial capital required to make a large investment in electricity generation capacity.</p> |  <p>Community Energy projects</p> <p>If you are part of an off-grid community, crowdfunding can also support you in improving your access to energy by allowing you to pull together the resources and capital required for capital-intensive off-grid energy projects.</p> |
|--|---|---|


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.

Learn how to set up and create your own crowdfunding campaign!

0. Setting the stage

To successfully prepare a crowdfunding campaign there are a number of steps that must be considered, from setting the objective up to the marketing and communication strategy, each one requiring careful planning and attention to details.



Set a clear objective: To create a crowdfunding campaign you have to set a clear objective and make sure that this goal is shared by funders, staff and partners. The clearer, more concise and specific you are, the better the chances that the crowdfunding campaign will live up to the funding goals you have set. The key to running a successful campaign is to focus on one prioritized objective and seek finance for that. You have also to consider that smart planning can and should involve asking experts for assistance, as to make your objective smart!

Set your funding target: To set your funding target you have to begin with your financial plan. To define the right amount you would like to raise with your campaign, you have to specify all costs and outlays of the project and account for the platform's fees and other campaign related costs

Identify the fitting type: It is important that your project's characteristics match the crowdfunding type that you will choose. Each type of crowdfunding has its own funding limits, so after setting your financial needs you can move on to identify the types of crowdfunding that best suit your project. Be also aware of the risk regarding crowdfunding campaigns set on all-or-nothing terms. Keeping in mind all these factors, you have to choose the most suitable type of crowdfunding for your project or you can combine various types using the mixed model.

Set out your value proposition: To set out your value proposition you have to find out your target group's preferences and create attractive rewards and perks to capture your funders' attention. It is also important to prepare a convincing story where you explain your backers why you are running the campaign, what's the project about and why and how they should support you. It is also very effective to present yourself, the organization and the current status of the project.

Communication and marketing: Before you launch the campaign, you have to conduct a thorough research to find benchmarks for your project, to try to relate your campaign to relevant news, topics and events and to find the best channels and multipliers for your communication actions. You also have to prepare usable information for your funders and followers not only in a digital way, but as well, depending on the situation. Via traditional marketing media that could complement your digital efforts. The more you keep your community informed, the better chances you have to gain support. Finally, focus on your inner circle and existing networks first, then try to reach new communities by leveraging influencers and various communication channels that you will have identified before. Recent research, in fact, shows that the so-called "third circle" may be even more important for the campaign's success, as it enjoys wide following.

Once the groundwork is done, the time has come to put your campaign online. You may set up your own campaign site with Ory ("do it yourself") crowdfunding and payment tools or you can register on an existing platform. The opted-for type of crowdfunding determines which selection of platforms may suit your needs best. Just remember:

- Each platform has its own strategy and conditions, so you have to check them very carefully.
- There is no guarantee that the platform chosen will succeed and your project may get stuck with less or no results.
- Only around 50% of campaigns are successful.
- If you fail in reaching your target consider that you have failed the project.
- Learn from the experienced ones: communicating with your supporters.

- How to engage your network and go beyond
- How to create compelling incentives for your backers
- How to set your crowdfunding campaign's goal

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.

Find relevant campaigns and projects across Europe to learn from and invest into, or share our own crowdfunding campaign with the POWERPOOR network!

Register your Campaign

[Register](#)


Crowdfunding Campaigns



La Energia Del Cole

What if you could support a school that wants to produce its own renewable energy, transform its village and eradicate energy poverty in the community...


[Open](#)



Rehabilitación energética de Comunidad de Propietarios - Balmes BCN

Project to replace community boilers and other energy efficiency measures in the centralized hot water production system of a community of owners in...

[Closed](#)



Let's solarize Greece

Solarization

With energy poverty being one of the most dramatic symptoms of the Greek crisis (6 out of 10 households are struggling to pay their energy bills)...

[Closed](#)

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

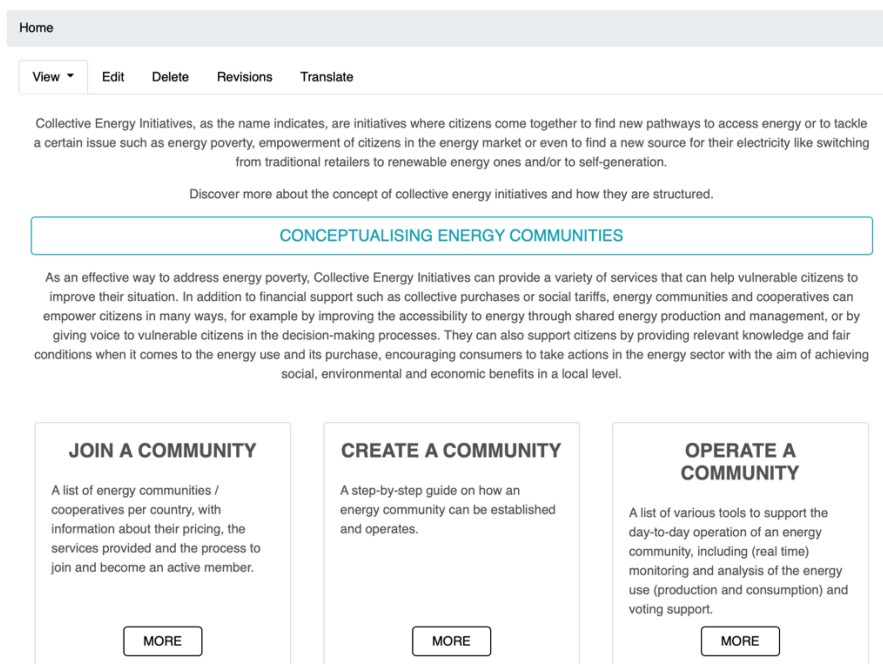


Figure 32 Collective Energy Initiatives main page

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.

There are two main used type of initiatives where citizens come together to tackle common energy issues: **Energy Communities**, which can be further divided into Citizens Energy Communities or Renewable Energy Communities, and **Energy Cooperatives**.

[ENERGY COMMUNITIES](#) [ENERGY COOPERATIVES](#) [SERVICES](#)

Energy Communities

Energy communities is an emerging concept for which no widely accepted definition exists and which is applied in various ways, such as:



There are two new official EU level definitions for energy communities, namely: 'Citizen Energy Community' and 'Renewable Energy Community'.

| Citizen Energy Community (CEC) | Renewable Energy Community (REC) |
|---|---|
| <p>"New market actors, new types of membership structure, governance requirements and purpose" (Defined in: Internal Electricity Market Directive (EU) 2019/944 (June 2019))</p> <ul style="list-style-type: none"> Governance: open and voluntary Ownership and control: citizens, local authorities and small businesses Purpose: social, economic and environmental benefits rather than financial profits Geographical scope: not necessarily the same geographical location Technology: neutral (both renewable and fossil-fuel based) Activities: generation, distribution, supply, consumption, sharing, aggregation and storage of electricity, and also energy-efficiency, EV charging and other energy-related commercial services Participants: anyone (natural persons, local authorities and micro, small medium and large enterprises...) Autonomy: not defined, but decision-making should be limited to those members or shareholders that are not engaged in large-scale commercial activity and for which the energy sector does not constitute a primary area or economic activity Effective control: natural persons, local authorities and micro and small enterprises | <p>"A way to expand renewable energy" (Defined in: Renewable Energy Directive (EU) 2018/2001 (December 2018))</p> <ul style="list-style-type: none"> Governance: open and voluntary Ownership and control: citizens, local authorities and small businesses Purpose: social, economic and environmental benefits rather than financial profits Geographical scope: local communities organised in the proximity of RE projects Technology: all forms of renewable energy in the electricity and heat sectors Activities: generation, distribution, consumption, storage, sale, aggregation, supply and sharing of renewable energy, and also energy-related commercial services Participants: natural persons, local authorities and micro, small and medium enterprises (and must be accessible to consumers in low-income or vulnerable households) Autonomy: should be capable of remaining autonomous from individual members and other traditional market actors that participate in the community as members or shareholders Effective control: natural persons, local authorities and micro, small, and medium-sized enterprises |

Energy Cooperatives

Community energy initiatives can also take diverse legal forms (limited liability companies, trusts, associations, partnerships, foundations, non-profit organisations...), with the most common type being renewables cooperatives.

Energy Cooperative

A type of social and economic enterprise, a legal form that enables citizens to collectively own and manage renewable energy projects, where:

- the base is democratic governance (one member - one vote)
- local residents or from the neighbouring area can invest in renewable generation by buying shares to finance a project
- citizens can consume and share renewable energy
- the distribution of profits is limited and surpluses are reinvested to support its members and/or the community
- the allocation of revenues from the projects is regulated by the statutes of the cooperative, which relate to its main purpose

usually the principles are the following (outlined by the **International Cooperative Alliance**):

- Voluntary and open membership
- Democratic member control
- Member economic participation
- Autonomy and independence
- Education, training and information
- Cooperation among cooperatives
- Concern for community

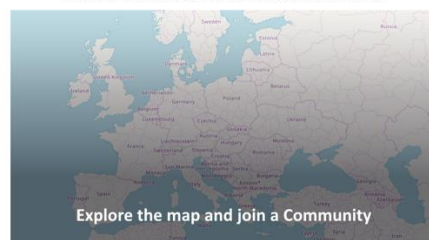
Potential Services

| | | |
|---|--|--|
| <p>Collecting micro-donations on energy bills</p> <p>Some cooperatives offer the possibility for energy consumers to make micro-donations based on their energy bills. For example in France, the renewable energy cooperative Enercoop allows its clients to donate 0.01€ for each kWh consumed to the benefit of Energie Solidaire fund which then reallocates the collected money to fuel poverty mitigation programmes.</p> <p>Cooperative's investment</p> <p>Coopérnico, a Portuguese renewable energy cooperative, allows its members to invest in solar photovoltaic projects developed in collaboration with social entities such as charities, education institutes or other cooperatives. Thanks to these initiatives, social entities can install renewable self-consumption systems on their rooftops and benefits significant reduction on their electricity bills. On the other hand, members receive interest rates between 2.5% to 3% for their investments.</p> | <p>Energy surplus donations</p> <p>The development of renewable energies, and especially solar energy, offers new perspectives in collecting resources to support local fuel poverty organisations nationwide. Public authorities installing solar panels on publicly owned buildings could reallocate the surplus production to supply households in energy poverty situation.</p> <p>Support projects implementation</p> <p>Just a Change is a Portuguese non-profit association that collaborates with social networks to identify households in poverty situation and take care of collecting the main resources needed for the project's implementations. From 2010, the association has successfully refurbished hundreds of houses and institutions thanks to the support of thousands of volunteers coming from several countries. After the renovation works, Just a Change monitor the rehabilitated buildings to properly quantify the impacts of its interventions</p> | <p>Energy Advisors</p> <p>The renewable energy cooperative ZEZ assists and provides training for unemployed young people to transform them into energy advisors. Thanks to this programme, the trained youth can support low-income households in the local community and are employed by local governments</p> |
|---|--|--|

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**).

Find energy communities and cooperatives in your country, and discover more about their pricing, management policies, services provided, as well as the process and costs to join and become an active member!



| | | |
|--|--|---|
| <p>Energy community Luco de Jiloca</p> <p> Citizen Energy Community</p> <p> 27</p> <p> Luco de Jiloca 44391 Luco de Jiloca Spain</p> <p>Read More</p> | <p>Attica Energy Community</p> <p> Citizen Energy Community</p> <p> 20</p> <p> 3rd Septemvriou 144 11251 Athens Greece</p> <p>Read More</p> | <p>Renewable energy community pilot project in Mārupe (Co2mmunity project)</p> <p> Renewable Energy Community</p> <p> 4</p> <p> Daugavas iela 29, Marupes novads Mārupe, LV-2167 Latvia</p> <p>Read More</p> |
| <p>Coopérnico C.R.L.</p> <p> Renewable Energy Cooperative</p> <p> 2150</p> <p> Rua de São Nicolau 73 1100-060 Lisboa Portugal</p> <p>Read More</p> | <p>GoiEner</p> <p> Renewable Energy Cooperative</p> <p> 14000</p> <p> Mallutz Industrialdea 18 20240 Ordizia Spain</p> <p>Read More</p> | |

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.

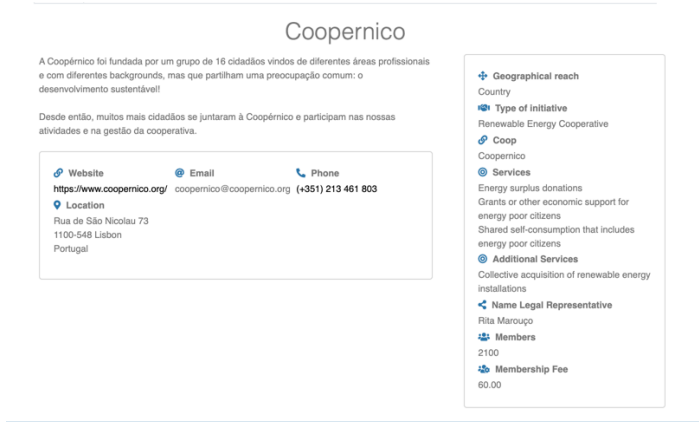


Figure 35 Sample Registered Community

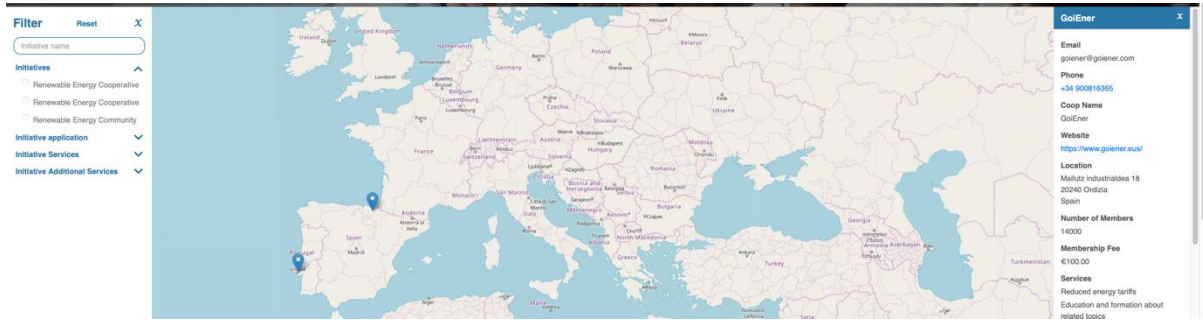


Figure 36 Operate a Community

The section is integrated with detailed info card for each registered 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.

Discover step-by-step how to set up and create your own community

STEP 1: Get organized: build up your group!

- Gather people who are motivated: persons with technical skills and knowledge are important, but the key in energy communities is to be formed by people who are motivated and will be engaged in the long term. (Keep in mind: the motivation can come from the interest and knowledge, but it can also come from a necessity)
- Identify key leaders within your group, or welcome potential leaders to your initiative.
- Take into account the existing groups around you that are already creating community in a broad sense, be them energy communities or not. Learn from their successes and mistakes, they may help and boost the energy community.
- Keep your team informed and engaged: maintain the communication, activities, discussions... (this links to the second step!)

STEP 2: Define your goals

STEP 3: Choose your legal form

STEP 4: Look for support

STEP 5: Start with your activity!

Next steps

National Guidelines


Find out how Collective Energy Initiatives are regulated across Europe.





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 providing links to national guidelines for energy communities in the pilot countries is also included.


Operating a community can be a complex task. To make it easier, here you find a list of tools and useful links that can help you operate and manage different aspects of your community:

 Monitoring and analysing the energy use (consumption and production)

 Energy billing

 Energy market


 Participation and decision making



Pylon

A neutral energy data facilitator for the provision of added-value services to every-day consumers and other stakeholders.


<https://pylon-network.org/>



HomeRule

Compile project's tool to help operate energy communities, with a focus on managing one building/home energy needs.


<https://www.compile-project.eu/products/homerule/>



GridRule

Compile project's tool to coordinate individual community members and optimize the whole community energy needs.


<https://www.compile-project.eu/products/gridrule/>



Demokraian

An online voting platform for horizontal decision-making

<https://www.demokratian.org/>



EnergyID

A public platform where citizens can register and insert and monitor their energy consumption and verify if they are consuming less or more than a similar citizen in their country.

<https://www.energyid.eu>

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.

If you are you a crowdfunding platform or energy community interested in alleviating energy poverty, Join Us!

Communities

Platforms

Figure 39 Call to Action Banners

Register here to showcase your Platform on POWER FUND and become part of the POWERPOOR network

| | |
|---|--|
| Title * | Country * |
| <input type="text"/> | <input type="text" value="Afghanistan"/> |
| Description | Email |
| <input type="text"/> | <input type="text"/> |
| Name Legal Representative | Phone |
| <input type="text"/> | <input type="text"/> |
| Crowdfunding Model * | Website * |
| <input type="text" value="- Select a value -"/> | URL * |
| Sector Focus * | <input type="text"/> |
| <input type="text" value="- Select a value -"/> | <small>This must be an external URL such as http://example.com.</small> |
| Consent * | Link text |
| <input checked="" type="checkbox"/> I understand that the information above will be published (after approval) on www.powerfund.eu at the discretion of the Powerfund project team. You can request to correct, remove or block incorrect data by sending an email to info@powerfund.eu . | |

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.

| | |
|--|---------------------------------------|
| Name of the Energy Initiative * | Location |
| <input type="text"/> | Country |
| Description * | <input type="text" value="- None -"/> |
| <input type="text"/> | Phone |
| <input type="text"/> | <input type="text"/> |
| Website * | |
| <input type="text"/> | |
| <small>This must be an external URL such as http://example.com.</small> | |
| Email * | |
| <input type="text"/> | |

| | |
|---|----------------------------------|
| Type * | Name Legal Representative |
| <input type="text" value="- Select a value -"/> | <input type="text"/> |
| Services | Coop Name * |
| <input type="text" value="- None -"/> Reduced energy tariffs Micro-donations Energy surplus donations | <input type="text"/> |
| <small>Select the first item that you want, press and hold CTRL and select the next item that you want. Be sure to press and hold CTRL while you select the next item that you want to include in the selection.</small> | Number of Members * |
| Additional Services | <input type="text"/> |
| <input type="text" value="- None -"/> Shared self-consumption Retailing Collective acquisition of renewable energy installations | Membership Fee * € |
| <small>Select the first item that you want, press and hold CTRL and select the next item that you want. Be sure to press and hold CTRL while you select the next item that you want to include in the selection.</small> | <input type="text"/> |
| Geographical Reach | |
| <input type="text" value="- None -"/> | |
| Consent * | |
| <input checked="" type="checkbox"/> I understand that the information above will be published (after approval) on www.powerfund.eu at the discretion of the Powerfund project team. You can request to correct, remove or block incorrect data by sending an email to info@powerfund.eu . | |

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.

Create CF Campaign

[Home](#) » [Node](#) » [Add content](#)

Name of the Crowdfunding Campaign *

Description

Country

Video Link

This must be an external URL such as <http://example.com>.

Image *

[Open File Browser](#)

[Select file](#) Nessun file selezionato

One file only.
64 MB limit.
Allowed types: png gif jpg jpeg.

Crowdfunding Model *

Money Raised *

Funding Target

Hosting Platform *

☐ Published

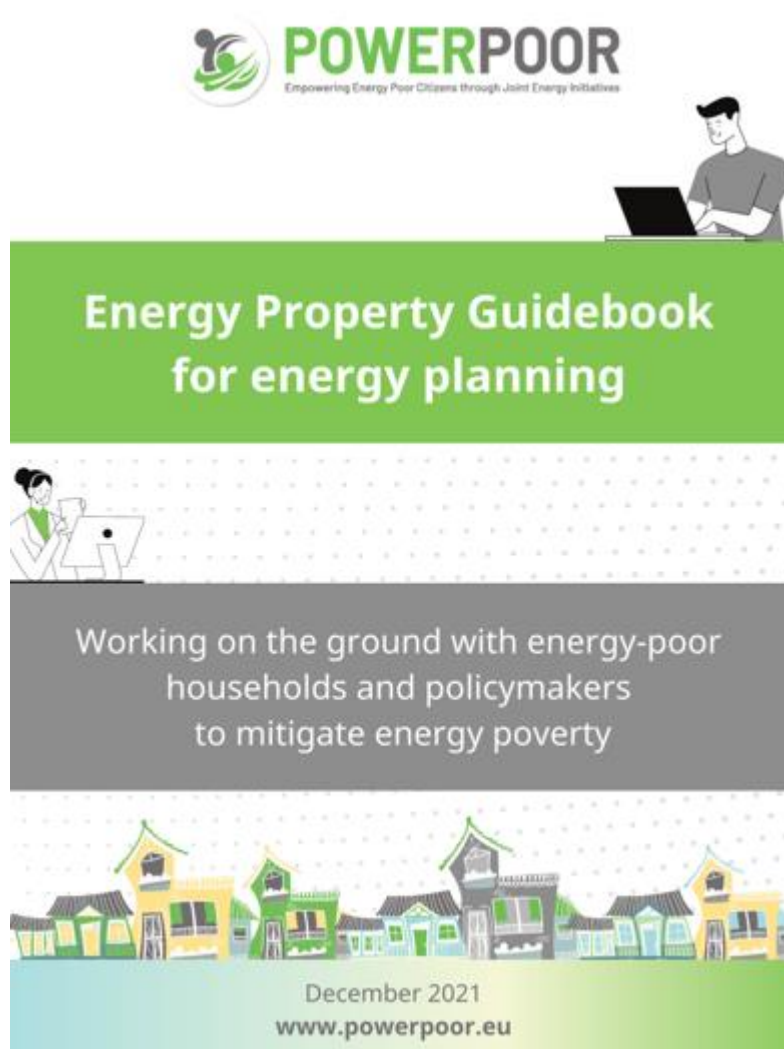
[Save](#)

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.



Home About Tools ▼ Contact

Welcome, mariza.konidi@intrasoft-intl.com ▼

Home / FAQ

Frequently Asked Questions

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s.

➔ 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. 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.

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. 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.

➔ What are the objectives of the POWERPOOR project?

The main aim of POWERPOOR is to develop support programmes for citizens experiencing energy poverty effects and to encourage the use of alternative financing schemes (e.g., establishing energy communities or cooperatives, or leveraging crowdfunding).

POWERPOOR 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.

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 POWERPOOR 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).

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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 processes as 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 or 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 handled 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.

How can we help?

For all enquiries, please email us using the form below.

Email *

We'll never share your email with anyone else.

Country *

Subject *

Message *

Choose a file (e.g. a screenshot of the issue you are facing)

+

Send email >

* Mandatory fields

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.

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