POWERPOOR

Empowering Energy Poor Citizens through Joint Energy Initiatives

Baseline Assessment Report

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

December 2021

www.powerpoor.eu

Published in December 2021 by POWERPOOR.

All of POWERPOOR's reports, analysis and evidence can be accessed from www.powerpoor.eu. The sole responsibility for the content of this publication lies with the authors.

Work Package 4: Engaging energy poor citizens in joint energy initiatives

Deliverable D4.2 Baseline assesment report

Leader Organisation:	DOOR
Type (distribution level):	Public
Report author(s):	Anamari Majdandžić Daniel Rodik Matija Eppert
Report contributor(s):	Eleni Kanellou (NTUA) Chris Stefanatos (NTUA) Signe Mārtiņkrista (ZREA) Nóra Horváth (ENERGIAKLUB) Csaba Csontos (ENERGIAKLUB) Anu Sarnet (EKYL) Aitor Ossa Rissanen (GOIENER) Alice Corovessi (INZEB) Eleftheria Touloupaki (INZEB) Kyriaki Metaxa (INZEB) Rita Marouço (COOPERNICO) Ana Rita Antumes (COOPERNICO) Zdravko Georgiev (SOFENA)
Reviewer(s):	All POWERPOOR partners

December 2021

Table of Contents

Table of Contents 3
Table of Tables 6
Table of Figures 8
Table of abbreviations 9
1 Introduction 11
1.1 Purpose & Scope 11
1.2 Structure of the document 11
2 Energy poverty baseline in eight POWERPOOR pilot countries 13
2.1 Status of energy poverty in eight countries 13
2.2 Dimensions and levels of energy poverty 17
2.2.1 Statistics of energy poverty (data) households 18
2.2.2 Energy prices 22
2.2.3 Housing indicators and energy poverty 24
2.2.4 Energy performance of the existing housing stock 26
2.3 Economic and energy indicators 30
2.3.1 Energy use and heating fuel shares in the residential sector 33
2.4 Environmental, social and health consequences of energy poverty 36
3 Policy level 40
3.1 Bulgaria 41
3.1.1 National policy framework addressing energy poverty 41
3.1.2 Sectoral policy tools and measures to alleviate energy poverty 44
3.2 Croatia 57
3.2.1 National policy framework adressing energy poverty 57
3.2.2 Sectoral policy tools and measures to alleviate energy poverty 62
3.3 Estonia 83
3.3.1 National policy framework addressing energy poverty 83
3.3.2 Sectoral policy tools and measures to alleviate energy poverty 85
3.4 Greece 89
3.4.1 National policy framework addressing energy poverty 89
3.4.2 Sectoral policy tools and measures to alleviate energy poverty 90
3.5 Hungary 109
3.5.1 National policy framework addressing energy poverty 109

3.5.2 Sectoral policy tools and measures to alleviate energy poverty 112
3.6 Latvia 117
3.6.1 National policy framework addressing energy poverty 117
3.6.2 Sectoral policy tools and measures to alleviate energy poverty 119
3.7 Portugal 125
3.7.1 National policy framework addressing energy poverty 125
3.7.2 Sectoral policy tools and measures to alleviate energy poverty 127
3.8 Spain 130
3.8.1 National policy framework addressing energy poverty 130
3.8.2 Sectoral policy tools and measures to alleviate energy poverty 132
4 National, regional, and local stakeholders 136
4.1 Bulgaria 137
4.2 Croatia 139
4.3 Estonia 141
4.4 Greece 143
4.5 Hungary 145
4.6 Latvia 147
4.7 Portugal 149
4.8 Spain 151
5 Country specific POWERPOOR toolkit topics and issues 153
5.1 The POWER TARGET Tool 153
5.2 The POWER ACT Tool 156
5.3 The POWER FUND Tool 160
6 Results from the POWER-TARGET tool 162
6.1 Personal details 163
6.2 Income information 164
6.3 Electricity Consumption 166
6.4 Heat Consumption 168
6.5 Bulgaria 171
6.5.1 Personal details 171
6.5.2 Income information 171
6.5.3 Electricity Consumption 173
6.6 Croatia 178
6.6.1 Personal details 178
6.6.2 Income information 178

6.6.3 Electricity Consumption 180
6.7 Estonia 185
6.7.1 Personal details 185
6.7.2 Income information 185
6.7.3 Electricity Consumption 187
6.8 Greece 192
6.8.1 Personal details 192
6.8.2 Income information 192
6.8.3 Electricity Consumption 194
6.9 Hungary 199
6.9.1 Personal details 199
6.9.2 Income information 199
6.9.3 Electricity Consumption 201
6.10 Latvia 206
6.10.1 Personal details 206
6.10.2 Income information 206
6.10.3 Electricity Consumption 208
6.11 Portugal 213
6.11.1 Personal details 213
6.11.2 Income information 213
6.11.3 Electricity Consumption 215
6.12 Spain 220
6.12.1 Personal details 220
6.12.2 Income information 220
6.12.3 Electricity Consumption 222
7 Conclusion 227
Annex 231

Table of Tables

TABLE 1 KEY INDICATORS WHICH COULD BE MEASURED AND MONITORED 16

TABLE 2 SECONDARY INDICATORS WHICH COULD BE MEASURED AND MONITORED 16

TABLE 3 LIST OF RELEVANT ENERGY POVERTY INDICATORS 18

TABLE 4 SHARE OF POPULATION UNABLE TO KEEP HOME ADEQUATELY WARM BY POVERTY STATUS AND ARREARS ON UTILITY BILLS (2019) 19

TABLE 5 INABILITY TO KEEP HOUSE ADEQUATELY WARM AND ARREARS ON UTILITY BILLS DISAGGREGATED BY TENURE TYPE AND URBAN DENSITY 21

TABLE 6 ELECTRICITY PRICES IN THE PREVIOUS 5 YEARS (SOURCE: EUROSTAT) 22

TABLE 7 GAS PRICES IN THE PREVIOUS 5 YEARS (SOURCE: EUROSTAT) 23

TABLE 8 AVERAGE NUMBER OF PERSONS PER HOUSEHOLDS (2019) 24

TABLE 9 TOTAL HOUSING COSTS IN DISPOSABLE INCOME* (2019) 25

TABLE 10 HOUSING COST OVERBURDEN RATE IN CITIES AND RURAL AREA (2018) 25

TABLE 11 DEMOGRAFIC AND ECONOMY INDICATORS IN POWERPOOR COUNTRIES 30

TABLE 12 ENERGY INTENSITY IN 5-YEAR PERIOD 31

TABLE 13 MAIN ENERGY AND EMISSION INDICATORS IN ALL POWERPOOR PILOT COUNTRIES (SOURCE: EUROSTAT) 32

TABLE 14 TYPES OF ENERGY USED FOR HEATING HOMES 33

TABLE 15 SHARE OF FINAL ENERGY CONSUMPTION IN THE RESIDENTIAL SECTOR BY TYPE OF END-USE, 2018 (SOURCE: EUROSTAT) 34

TABLE 16 SHARE OF FUELS USED IN THE FINAL ENERGY CONSUMPTION IN THE RESIDENTIAL SECTOR, % (2017) 34

TABLE 17 AVERAGE ENERGY CONSUMPTION PER DWELLING, 2018 (CLIMATE ADJUSTED) (SOURCE: ODYSSEE) 35

TABLE 18 KEY POLICIES/LEGISLATION FOR BULGARIA 41

TABLE 19 SECTORAL POLICY TOOLS AND MEASURES IN BULGARIA 44

TABLE 20 SECTORAL POLICIES ANALYSIS 49

TABLE 21 KEY POLICIES/LEGISLATION FOR CROATIA 57

TABLE 22 SECTORAL POLICY TOOLS AND MEASURES IN CROATIA 62

TABLE 23 SECTORAL POLICIES IN CROATIA ANALYSIS 69

TABLE 24 KEY POLICIES/LEGISLATION FOR ESTONIA 83

TABLE 25 SECTORAL POLICY TOOLS AND MEASURES IN ESTONIA 85

TABLE 26 SECTORAL POLICIES ANALYSIS 87

TABLE 27 KEY POLICIES/LEGISLATION FOR GREECE 89

TABLE 28 SECTORAL POLICY TOOLS AND MEASURES IN GREECE 90

TABLE 29 SECTORAL POLICIES ANALYSIS 96

TABLE 30 KEY POLICIES/LEGISLATION FOR HUNGARY 109

TABLE 31 SECTORAL POLICY TOOLS AND MEASURES IN HUNGARY 112

TABLE 32 SECTORAL POLICIES ANALYSIS 114
TABLE 33 KEY POLICIES/LEGISLATION FOR LATVIA 117
TABLE 34 SECTORAL POLICY TOOLS AND MEASURES IN LATVIA 119
TABLE 35 SECTORAL POLICIES ANALYSIS 121
TABLE 36 KEY POLICIES/LEGISLATION FOR PORTUGAL 125
TABLE 37 SECTORAL POLICY TOOLS AND MEASURES IN PORTUGAL 127
TABLE 38 SECTORAL POLICIES ANALYSIS 128
TABLE 39 KEY POLICIES/LEGISLATION FOR SPAIN 130
TABLE 40 SECTORAL POLICY TOOLS AND MEASURES IN SPAIN 132
TABLE 41 SECTORAL POLICIES ANALYSIS 133
TABLE 42 LIAISON GROUP MEMBERS IN BULGARIA PER TARGET GROUP 137
TABLE 43 LIST OF INTERESTS OF THE BULGARIA STAKEHOLDER ORGANISATIONS 138
TABLE 44 LIAISON GROUP MEMBERS IN CROATIA PER TARGET GROUP 139
TABLE 45 LIST OF INTERESTS OF THE CROATIA STAKEHOLDER ORGANISATIONS 140
TABLE 46 LIAISON GROUP MEMBERS IN ESTONIA. PER TARGET GROUP 141
TABLE 47 LIST OF INTERESTS OF THE ESTONIA STAKEHOLDER ORGANISATIONS 142
TABLE 48 LIAISON GROUP MEMBERS IN GREECE PER TARGET GROUP 143
TABLE 49 LIST OF INTERESTS OF THE GREECE STAKEHOLDER ORGANISATIONS 144
TABLE 50 LIAISON MEMBERS IN HUNGARY PER TARGET GROUP 145
TABLE 51 LIST OF INTERESTS OF THE HUNGARY STAKEHOLDER ORGANISATIONS 146
TABLE 52 LIAISON MEMBERS IN LATVIA PER TARGET GROUP 147
TABLE 53 LIST OF INTERESTS OF THE LATVIA STAKEHOLDER ORGANISATIONS 148
TABLE 54 LIAISON MEMBERS IN PORTUGAL PER TARGET GROUP 149
TABLE 55 LIST OF INTERESTS OF THE PORTUGAL STAKEHOLDER ORGANISATIONS 150
TABLE 56 LIAISON MEMBERS IN SPAIN PER TARGET GROUP 151
TABLE 57 LIST OF INTERESTS OF THE SPAIN STAKEHOLDER ORGANISATIONS 152
TABLE 58 COMPARISON OF KEEPING HOME ADEQUATELY WARM AND ARREARS ON UTILITY BILLS IN 8 EU COUNTIRES 227
TABLE 59 COMPARISON OF ELECTRICITY AND GAS PRICES IN 8 EU COUNTIRES 228
TABLE 60 COMPARISON OF HOUSING INDICATORS IN 8 EU COUNTIRES 228
TABLE 61 COMPARISON OF ENERGY INDICATORS IN 8 EU COUNTIRES 229

Table of Figures

FIGURE 1 SHARE OF POPULATION UNABLE TO KEEP HOME ADEQUATELY WARM BY POVERTY STATUS AND ARREARS ON UTILITY BILLS (2019) 20

FIGURE 2 ELECTRICITY PRICES IN THE PREVIOUS 5 YEARS (SOURCE: EUROSTAT) 23

FIGURE 3 GAS PRICES IN THE PREVIOUS 5 YEARS (SOURCE: EUROSTAT) 24

FIGURE 4 HOUSING COST OVERBURDEN IN CITIES AND RURAL AREA (2018) (SOURCE: EUROSTAT) 26

FIGURE 5 DISTRIBUTION OF ENERGY PERFORMANCE CERTIFICATES FOR RESIDENTIAL DWELLINGS BETWEEN 2014 AND 2020 IN PORTUGAL 29

FIGURE 6 ENERGY INTENSITY IN 5-YEAR PERIOD (SOURCE: EUROSTAT) 32

FIGURE 7 STAKEHOLDERS IN BULGARIA PER TARGET GROUP 137

FIGURE 8 STAKEHOLDERS IN CROATIA PER TARGET GROUP 139

FIGURE 9 STAKEHOLDERS IN ESTONIA PER TARGET GROUP 141

FIGURE 10 STAKEHOLDERS IN GREECE PER TARGET GROUP 143

FIGURE 11 STAKEHOLDERS IN HUNGARY PER TARGET GROUP 145

FIGURE 12 STAKEHOLDERS IN LITVAPER TARGET GROU 147

FIGURE 13 STAKEHOLDERS IN PORTUGAL PER TARGET GROUP 149

FIGURE 14 STAKEHOLDERS IN SPAIN PER TARGET GROUP 151

FIGURE 15 TECHNOLOGY ADAPTATION LEVEL OF WORKING POOR WITH NO SOCIAL BENEFITS – LOW INCOMES 157

FIGURE 16 TECHNOLOGY ADAPTATION LEVEL OF PART-TIME WORK, LIMITED/TEMPORARY CONTRACTS, LOW/NO PROTECTION AGAINST DISMISSAL 157

FIGURE 17 TECHNOLOGY ADAPTATION LEVEL OF UNEMPLOYED PERSONS 158

FIGURE 18 TECHNOLOGY ADAPTATION LEVEL OF PERSONS UNDER THE PENSION AGE UNABLE TO WORK 158

FIGURE 19 TECHNOLOGY ADAPTATION LEVEL OF PERSONS OVER THE PENSION AGE WITH LOW PENSIONS (INCLUDING WIDOWS) 158

FIGURE 20 TECHNOLOGY ADAPTATION LEVEL OF HOUSEHOLDS RECEIVING HOUSING BENEFIT 159

FIGURE 21 TECHNOLOGY ADAPTATION LEVEL OF FAMILIES WHO RECEIVE CHILD BENEFIT SUPPLEMENT 159

FIGURE 22 TECHNOLOGY ADAPTATION LEVEL OF SINGLE PARENT FAMILIES 159

FIGURE 23 TECHNOLOGY ADAPTATION LEVEL OF INDIVIDUAL CIRCUMSTANCES - HEALTH ISSUES OR DISABILITIES 160

FIGURE 24 TECHNOLOGY ADAPTATION LEVEL OF REFUGEES 160

Table of abbreviations

Abbreviation	Explanation
EU	European Union
WPx	Work Package number x
Dx.y	Deliverable number y belonging to WPx
WP	Work Package
CSOs	Civil Society Organizations
RES	Renewable Energy Sources
NECP	National Energy Climate Plan
EE	Energy efficiency
NHS	National Health Service
DGS	General Directorate of Health
WHO	World Health Organization
INE	Statistics Portugal
DGEG	Directorate-General for Energy and Geology
ADENE	National Energy Agency;
ERSE	Energy Services Regulatory Authority
IECP	Integrated Energy and Climate Package
EC	European Commission/Energy Community
GDP	Gross domestic product
BGN	Bulgarian currency
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
ESIF	European Structural and Investment Funds
NEEAP	National Energy Efficiency Action Plans

HRK	Croatian currency
EUR	Euro
VAT	Value added tax
HEP	Croatian Electricity Company
ESCO	Energy Service Company
ETF	Exchange Traded Fund
KEA	Social Solidarity Income in Greece
NSRF	National Strategic Reference Framework
EPC	Energy performance contracting
CRES	Centre for Renewable Energy Sources and Saving
NFM	Ministry of National Development in Hungary
ITM	Ministry of Innovation and Technology in Hungary
HUF	Hungarian currency
N/A	Not applicable
ERSE	Portuguese Electricity Regulator
EPOV	EU Energy Poverty Observatory
ERESEE 2020	Spain's Long-term strategy for energy rehabilitation in the building sector
IDAE	Institute for the Diversification and Saving of Energy
ICT	Information Communication Technology
SECAP	Sustainable Energy and Climate Action Plan
SMEs	Small and medium enterprises
EEC	Energy Efficiency Certificate (EEC)
GEIC	Gross inland energy consumption

1 Introduction

Energy poverty is linked to low household income, high-energy costs, and energy inefficiency in households, and it is known to have severe impacts on the health of EU citizens, including increased numbers of winter or summer deaths, detrimental effects on mental health, respiratory and circulatory problems. Existing approaches for the definition of the phenomenon are based on quantitative indicators, such as the proportion of household expenditure on energy bills in relation to their income or the latter's relation to the poverty line after subtracting the cost for energy services (the 10% approach, 'low income – high costs', 'minimum income limit'), and qualitative indicators (consensus approach).

The overall vision of POWERPOOR project is to support citizens suffering from energy poverty to implement energy efficiency interventions and participate in joint energy initiatives. The main objective is to develop support programmes/schemes for energy poor citizens (led by a network of 'Energy Supporters and Energy Mentors'), and encourage the establishment of energy communities and cooperatives, making use of alternative financing schemes (e.g., citizens' cooperatives and crowdfunding).

1.1 Purpose & Scope

This document - D4.2 Baseline Assessment report will map out the present status of energy poverty in the 8 pilot countries using the latest quantitative and qualitative data including national policy frameworks and conditions for the successful development and adoption of the POWERPOOR approach. POWERPOOR project partners from each of the 8 pilot countries, **Bulgaria**, **Croatia**, **Estonia**, **Greece**, **Hungary**, **Latvia**, **Portugal**, and **Spain** contributed to the preparation of the report at hand.

D4.2 shall serve as a data-driven analysis defining the necessary target areas to alleviate energy poverty and prevent its symptoms and it will be used prior to the three engagement cycles to map out the situation in the pilot countries of the project.

1.2 Structure of the document

This report is structured as follows:

- **Section 2** presents energy poverty baseline in eight POWERPOOR pilot countries
- **Section 3** presents an analysis of the existing adopted national policy frameworks that include energy poverty targets covers and analysis of the specific sectoral policy measures in each country and serve as a general framework in the 8 POWERPOOR pilot countries
- **Section 4** presents a review of stakeholders' roles in participation and support of

POWERPOOR activities

- **Section 5** presents the summary of all data relating to the POWERPOOR toolkit taking into consideration energy poor households/subgroups recognised as vulnerable groups of citizens or considered to be experiencing or facing risk of energy poverty

2 Energy poverty baseline in eight POWERPOOR pilot countries

Energy poverty baseline is presented as a qualitative description of the energy poverty definition and status in each of the 8 pilot countries. In addition, overview of the data presented and analyzed in this document could be used for further identification and analysis of the energy poverty alleviation measures in the 8 POWERPOOR pilot countries.

2.1 Status of energy poverty in eight countries

A common European definition for energy poverty does not exist, and most member states have no official definition for the term "energy poverty". Only five of the 27 Member States of the European Union have an explicit definition, and two more have partially formulated it[1]. This term is often described as inability to keep homes adequately warm in the winter or the lack of access to sustainable modern energy services and products. Terms to describe energy poor persons that are often used are fuel poor, energy poor, vulnerable energy consumers or at-risk-of-poverty or low-income people[2]. Below an initial description of the energy poverty status in the pilot countries is presented.

- **Bulgaria**

The term “energy poverty” is not defined in the **Bulgarian** legislation. **Bulgaria** lacks a definition and a monitoring system for energy poverty and only the concept of “vulnerable consumers” is used. The Energy Act defines the term “vulnerable consumers” as “household customers in whose property, supplied with electricity, live persons who for reasons of old age, health or income are exposed to the risk of social exclusion about the supply and consumption of electricity and who benefit from social assistance measures to ensure the necessary electricity supplies”[3]. It includes a wide range of categories: persons over 70 years of age, living alone whose sole source of income is their pensions that is up to the poverty threshold for the respective year, persons with 90% or more limitation of workability and who need additional help, families with children with disabilities who rely on additional help, and persons and families who already receive targeted aid for heating according to the law on social welfare.

- **Croatia**

In **Croatia**, energy poverty is not clearly defined, nor general criteria or methodologies for determining energy poverty have been established so far. Nevertheless, energy poverty exists as a term in the Energy Efficiency Act. **Croatian** legislation has not yet

1 Energy Poverty Observatory, 2020. Towards an inclusive energy transition in the European Union: Confronting energy poverty amidst a global crisis. Available on: https://www.energypoverty.eu/sites/default/files/downloads/observatory-documents/20-06/epov_third_report_final_v2_compressed.pdf
2 https://ec.europa.eu/energy/eu-buildings-factsheets-topics-tree/energy-poverty_en
https://www.habitat.org/emea/about/what-we-do/residential-energy-efficiency-households/energy-poverty
3Ministry of Energy, Definition and measures for protection of the vulnerable customers, 2016
https://www.me.government.bg/files/useruploads/files/vop/ppt_26may.pdf

adopted criteria that would cover broader categories of energy vulnerability of households than the criteria for assistance to vulnerable households in meeting electricity costs. The definition of an energy-vulnerable household in the Regulation on criteria for acquiring the status of vulnerable energy customers from networked systems does not take into account all aspects of vulnerability, and the status of vulnerable energy customer should not only apply to electricity but also to other forms of energy (e.g., heat) as well. Also, **Croatia** does not currently have an established system for monitoring energy poverty, which is why there is no clear insight into the real situation of energy-vulnerable households.

- Estonia

Current **Estonian** national development documents do not deal with energy poverty as a separate issue. Household subsistence is monitored fully at national as well as at local government level. The 'Welfare Development Plan 2016-2023 focuses on poverty reduction and aims at the reduction of the absolute poverty rate to 5,8% and reduction of the relative poverty rate to 15% by 2023. In Estonia, the person suffering from energy poverty is linked with the subsistence allowance, which means that recipients of the subsistence allowance also include people experiencing energy poverty. Energy Sector Organization Act[4] defines 'vulnerable energy consumers' as persons living alone for the purposes of the Social Welfare Act or families whose monthly income per family member during the last six months does not exceed the minimum wage and 'person suffering from energy poverty' as a person living alone for the purposes of the Social Welfare Act, or a family who has, at least once during the last six months, received a subsistence benefit and whose income per family member in the last month does not exceed the minimum wage.

- Greece

Greece is among the countries, which are highly affected by energy poverty, having significantly lower performance than the EU average on the population-reported indicators[5] (EU Energy Poverty Observatory, 2020). **Greece** has not adopted yet a formal definition of energy poverty. However, awareness of energy poverty among citizens is rising with 4 out of 5 citizens stating that they have become acquainted in some way with the term[5]. The goal of addressing energy poverty is clearly stated in the NECP as part of the clean energy and energy efficiency axes of actions to be promoted. Finally, the contribution of Energy Communities in the alleviation of energy poverty is also mentioned in Law 4513/2018.

4 https://www.riigiteataja.ee/en/eli/ee/502092016001/consolide/current
5 EU Energy Poverty Observatory, 2018. Addressing energy poverty in the European Union: State of play and Action. http://bit.ly/energypoverty-23

► Hungary

According to relevant studies published by Energiaklub in 2012 and 2014[6], an average Hungarian household spends ~15-20% of their total income on energy costs. However, due to the different definitions of vulnerable group of citizens, it is quite difficult to define the exact number of those who really sufferfrom energy poverty conditions in Hungary.

► Latvia

In Latvia, on 16/02/2021 an amendmend in the Energy Law was adopted - the definition of energy poverty was included in the law, also criteria for households to be considered energy poor were included in the law. It is determined in the law that government institutions in their policy planning process and documents shall take into account the number of energy poor households, they must be as priority in the energy efficiency policy measures. According to the Central Statistical Bureau (CSB) survey, 22% of Latvia's population were at risk of poverty in 2016. Only one policy - National Energy and Climate Plan 2030 (NECP2030) addresses energy poverty with measures of reducing energy poverty and ensuring a fair transition. The targets have been set: to reduce the proportion of households which lack heat in their housing (less than 7,5%) and to increase the number of electricity consumers receiving special service as the protected user (lower tariff of electricity) to 160.000 instead of current 80.000. Also, one of the criteria in energy efficiency improvement measures of buildings is reduction of energy poverty.

► Portugal

According to OpenExp 'European Energy Poverty Index', Portugal ranks 4th among the worst, with a 'very high' level of energy poverty. In Portugal the definition of energy poverty has been elaborated for the National Strategy Against Energy Poverty, currently in public consultation[7], as the "inability to maintain a dwelling with an adequate level of essencial energy services due to a combination of low income, low level of building performance and energy costs". The same National Strategy document also add the definition of "vulnerable consumer" as a "domestic energy consumer in energy poverty who is susceptible to the disconnection of energy services for health reasons or advanced age, among others". This Strategy also estimates the number of families in energy poverty in order to create key and secondary indicators which could be measured and monitored along side with the implementation of the action plan defined. Those indicators are listed in the tables below:

6 POVERTY OR ENERGY POVERTY?, Defining energy poverty in Europe and Hungary Energiaklub 2012, https://energiaklub.hu/files/study/energiaklub_szegenyseg_vagy_energiaszegenyseg.pdf

7https://participa.pt/contents/consultationdocument/Estrate%CC%81gia%20Nacional%20de%20Longo%20Prazo%20para%20o%20Combate%20a%CC%80%20Pobreza%20Energe%CC%81tica_VConsultaPu%CC%81b_2852.pdf

Table 1 Key indicators which could be measured and monitored

Key Indicators		Value	Reference
Inability to keep their households heated	Population living in households unable to keep the house properly heated	18,9% (≃1,9M people)	2019 (INE)
	Population in poverty and living in households unable to maintain the house properly heated	38,0% (≃740000 people)	2019 (INE)
Electricity	Family Units with Social Electricity Tariff	752 956 (≃1,9M people)	2020 (DGEG)
Natural Gas	Family Units with Social Natural Gas Tariff	1 202 567 (≃ 3,0M people)	2020 (DGEG)
Energy Costs	Family Units whose energy expenditure represents +10% of total income	263 033 (≃ 660 000 people)	2016 (INE)
	Family Units in poverty whose energy expenditure represents + 10% of total income	263 033 (≃ 660 000 people)	2016 (INE)

Table 2 Secondary Indicators which could be measured and monitored

Secondary Indicators		Value	Reference
Poverty Risk	Population at risk of poverty	17,2% (≃1,8M people)	2018 (INE)
Housing Poverty	Population living in dwellings with infiltrations, moisture, or rotten elements	24,4% (≃2,5M people)	2019 (Eurostat)
	Population in poverty living in dwellings with infiltrations, moisture, or rotten elements	36,5% (≃900 000 people)	2019 (Eurostat)
Inability to cool down their households	Population living in dwellings not comfortably fresh during the summer	35,7% (≃3,7M people)	2012 (Eurostat)
EPCs	Energy performance of households, with or below class C*	69,6%	2020 (ADENE)
Debt to public utilities	Population with debts to public utilities	4,3% (≃440 000 people)	2019 (Eurostat)
	Population in poverty and with debts to public utilities	11,8% (≃ 52 000 people)	2019 (Eurostat)
Disconections	Disconections due to fact attributable to the customer	524 364	2019 (ERSE)
Energy Literacy	Global energy literacy of private consumers	43,8 points	2020 (ERSE)

* Regarding the EPCs emitted and available in Portugal; ** On a scale from 0 to 100; INE - Statistics Portugal; DGEG - Directorate-General for Energy and Geology ; ADENE – National Energy Agency; ERSE - Energy Services Regulatory Authority

Based on the definition of energy poverty expressed in the National Strategy (in public consultation), analyzing the selected key indicators and crossing with data on social benefits and income, it is estimated that in Portugal between 660 to 740 thousand

people suffer from severe energy poverty (cumulatively with a situation of monetary poverty) and between 1.2 and 2.3 million people suffer from moderate energy poverty.

- Spain

In **Spain** the National Strategy against Energy Poverty 2019-2024[8] was published in April 2019, with official measurement indicators in accordance with those used by the EU Energy Poverty Observatory and indicating that the phenomenon affects to more than 3,5 million citizens in the country. The strategy sets the first official definitions for energy poverty and the vulnerable consumer in a country level and defines the objectives to reduce energy poverty by 25% for each of the indicators by 2025. Currently, the main instrument to help energy poor citizens is the social bonus for electricity, a discount rate that is applied in the electricity bill to consumers considered as vulnerable. Linked to the discount, an additional support also exists to help consumers afford their heating needs. In that regard, energy poverty in Spain is highly related to the large amount of money citizens spend to cover energy needs, and it is significant that the country has one of the highest energy prices in Europe while the salaries are relatively low compared to other countries with similar energy prices. Regarding official institutions, Spain does not have an Energy Poverty Observatory in a national level, and the only one is under the regional government of Gipuzkoa, which publishes statistics related to energy poverty in a regional level.

2.2 Dimensions and levels of energy poverty

The following methodology was employed to determine the dimensions and levels of energy poverty:

- creating a template in the form of a word document that contained tables and questionnaires with clearly set guidelines for filling in with data by the national partners
- analysis of the provided data and information by DOOR
- additional update from platforms using information from e.g., EPOV, EUROSTAT, and the World Bank or using data from national platforms from the partners
- relevant indicators were identified and are presented in chapters *2.2 Dimensions and levels of energy poverty* and *2.3 Economic and energy indicators*

Below a list of energy poverty relevant indicators is presented:

8 Miteco, Estrategia Nacional Contra la Pobreza Energética, 2019
https://www.miteco.gob.es/es/prensa/estrategianacionalcontralapobrezaenergetica2019-2024_tcm30-496282.pdf

Table 3 List of relevant energy poverty indicators

1	Share of population unable to keep home adequately warm by poverty status (2019)
2	Arrears on utility bill (2019)
3	Inability to keep house adequately disaggregated by tenure type and urban density (2017 and 2018)
4	Arrears on utility bills disaggregated by tenure type and urban density (2017 and 2018)
5	Electricity prices in previous 5 years (2016-2020)
6	Gas prices in previous 5 years (2016-2020)
7	Average number of persons per households (2019)
8	Total Housing costs in disposable income (2019)
9	Housing cost overburden rate (2018)
10	Set of demographic and economy indicators: Population, GDP, current, GDP per capita, Gini coefficient of disposable income, Average unemployment rate, public debt, Poverty headcount ratio at national poverty lines
11	Energy intensity (2015-2019)
12	Set of main energy and emission indicators: primary energy production, electricity final consumption, total primary energy supply per capita, CO2 emissions per capita
13	Types of energy used for heating homes
14	Share of final energy consumption in the residential sector by type of end-use (2018)
15	Share of fuels used in the final energy consumption in the residential sector (2017)
16	Average energy consumption per dwelling (2018) (climate adjusted)

2.2.1 Statistics of energy poverty (data) households

Table 4 and Figure 1 shows that the average share of population unable to keep their home adequately warm in the EU is estimated at 6,9%. Analysis of the 8 POWERPOOR pilot countries shows that 5 of them (**Bulgaria**, **Greece**, **Latvia**, **Portugal,** and **Spain**) have a higher percentage than the EU average, and **Bulgaria** compared to the other pilot countries counts 30,1% of population unable to keep home adequately warm. **Estonia**, compared to the other pilot countries, has 2,5% of population unable to keep home adequately warm and it is significant below the EU average.

Table 4 and Figure 1 also shows that the EU percentage for the indicator of arrears on utility bills is 6,2%. Analysis of the 8 POWERPOOR pilot countries shows that 6 of them (**Bulgaria**, **Greece**, **Estonia**, **Croatia**, **Hungary**, **Latvia,** and **Spain**) present a higher percentage than the EU average with **Greece** compared to the other pilot countries having the highest persentage, i.e., 32,5% of population with arrears on utility bills. **Portugal** in relation to the other observed pilot countries has 4,3% of population that has arrears on covering the utility bills which is significantly lower than the EU average and the situation is much better compared to **Greece**. This data could indicate "hidden" energy poverty; households cut down on their energy spending in order to meet their bills. As a result, they lack thermal comfort in their homes.

Table 4 Share of population unable to keep home adequately warm by poverty status and arrears on utility bills (2019)[9]

POWERPOOR pilot country	Unable to keep home adequately warm % of population	Arrears on utility bills % of population
Bulgaria	30,1	27,6
Croatia	6,6	14,8
Estonia	2,5	7,2
Greece	17,9	32,5
Hungary	5,4	10,2
Latvia	8,0	8,7
Portugal	18,9	4,3
Spain	7,5	6,5
European Union 27 (from 2020)	6,9	6,2

(e) estimated

9 https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_mdes07&lang=en (9.04.2021)

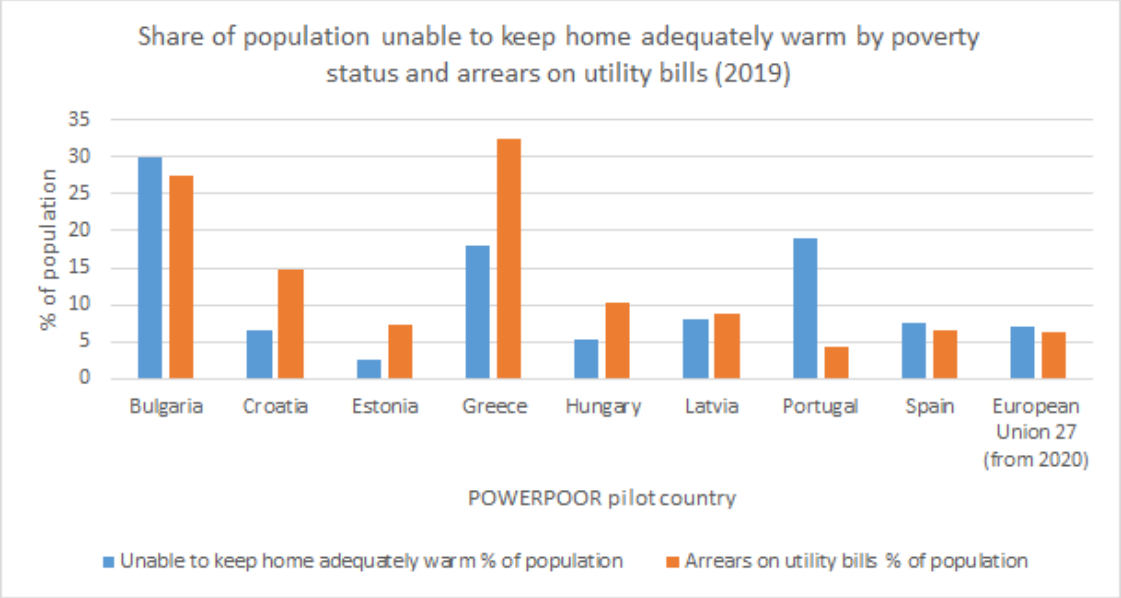

Figure 1 Share of population unable to keep home adequately warm by poverty status and arrears on utility bills (2019)

Table 5 shows the inability of Europeans to keep their houmes adequately warm and the ones that have arrears on utility bills, disaggregated by tenure type and urban density. By comparing Tables 4 and 5 we can see that the share of the population that has arrears on utility bills is declining in all the POWERPOOR pilot countries except for **Estonia**. The share of population unable to keep their home adequately warm is also declining in all the POWERPOOR pilot countries except for **Latvia**.

Observing the indicator by tenure type (Owners, Private tenants, and Social housing) Table 5 shows that in all of the 8 POWERPOOR pilot countries the problem with arrears on utility bills is significant in social housing (**Croatia**, **Hungary**, **Spain**, **Portugal**), followed by owners (**Greece** and **Bulgaria**) and private tenants (**Latvia**). Table 3 also shows inability to keep their house warm in social housing (**Hungary**, **Spain**, **Latvia**, **Bulgaria**, and **Portugal**) then in private tenants (**Greece** and **Croatia**). **Estonia** doesn't have this data in the statistics and one of the reasons may be that 97% of the housing stock is in private ownership and the owners pay the utility bills even if the tenant has temporary problems. So, arrears on utility bills from owner or tenant side are always owner's debt. Furthermore, social housing is only provided by municipalities for very low-income families who are supported with subsidies when the arrears on utility bills emerge.

The correlation is visible between these two indicators (share of population unable to keep their home adequately warm and arrears on utility bills) in common tenure type - social housing.

Table 5 Inability to keep house adequately warm and arrears on utility bills disaggregated by tenure type and urban density *10*

POWERPOOR pilot country		Bulgaria (2018)	Croatia (2017)	Estonia (2017)	Greece (2017)	Hungary (2018)	Latvia (2018)	Portugal (2017)	Spain (2017)
Average	30,1%	30,1%	21,0%	6,3%	38,5%	11,1%	11,6%	5,6%	7,4%
	33,7%	33,7%	7,4%	2,9%	25,7%	6,1%	7,5%	20,4%	8,0%
Owners	30,6%	30,6%	20,0%	N/A	35,7%	10,0%	9,1%	3,9%	5,1%
	33,3%	33,3%	6,7%	N/A	24,0%	5,7%	6,3%	17,5%	5,7%
Private tenants	26,0%	26,0%	15,2%	N/A	46,9%	11,6%	25,1%	9,2%	15,3%
	19,5%	19,5%	17,1%	N/A	31,1%	6,1%	9,8%	25,2%	14,6%
Social housing	28,1%	28,1%	33,6%	N/A	42,9%	21,6%	20,1%	12,1%	15,4%
	38,9%	38,9%	13,4%	N/A	28,1%	8,9%	15,8%	33,2%	17,4%

10 https://www.energypoverty.eu/sites/default/files/downloads/observatory-documents/20-06/mj0420245enn.en_.pdf (9.04.2021)

2.2.2 Energy prices

Table 6 and Figure 2 show that in 2020 **Greece** had the highest electricity price and **Hungary** had the lowest electricity price. The trend in the last 5 years depicts that the price of electricity is rising in **Bulgaria**, **Greece** and **Croatia** while declining in **Hungary**, **Latvia**, **Portugal**, **Estonia**, and **Spain**.

Table 6 Electricity prices in the previous 5 years (Source: Eurostat)[11]

POWERPOOR pilot country	2016	2017	2018	2019	2020
(€ cents/kWh)					
Bulgaria	7,89	8,07	8,27	8,14	8,31
Croatia	10,10	10,11	10,24	10,29	10,14
Estonia	9,47	9,38	10,18	10,04	9,17
Greece	11,73	11,14	11,28	11,65	12,81
Hungary	8,81	8,89	8,82	8,73	8,03
Latvia	10,75	10,41	10,38	11,4	10,00
Portugal	12,25	10,93	10,17	11,92	11,38
Spain	17,57	17,58	19,1	13,23	12,19
European Union 27 (from 2020)	12,76	12,71	13,07	12,83	12,76

11 https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_204/default/table?lang=en (9.04.2021)

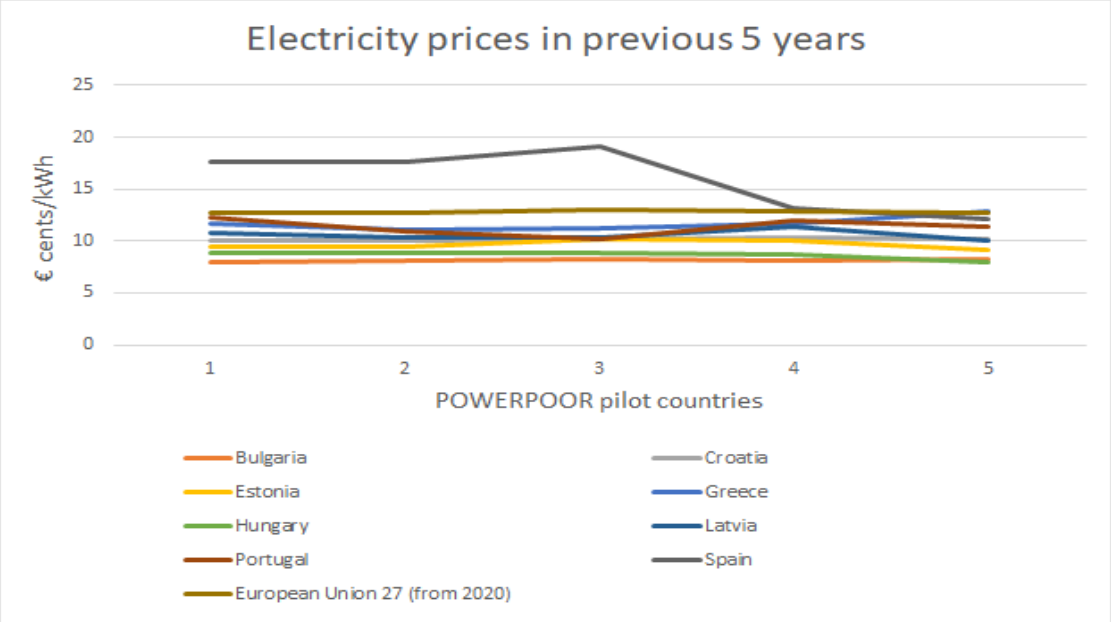

Figure 2 Electricity prices in the previous 5 years (Source: Eurostat)

Table 7 and Figure 3 show that in 2020 **Spain** had the highest gas price and Latvia had the lowest gas price.

Table 7 Gas prices in the previous 5 years (Source: Eurostat)[12]

POWERPOOR pilot country	2016	2017	2018	2019	2020
(€ cents/kWh)					
Bulgaria	2,83	2,94	3,40	3,71	3,1
Croatia	3,19	2,90	2,91	3,12	3,06
Estonia	2,52	3,08	2,96	3,16	3,06
Greece	4,81	4,70	5,11	5,11	4,35
Hungary	2,77	2,82	2,77	2,67	2,47
Latvia	3,25	3,01	3,28	3,12	2,28
Portugal	6,60	5,75	5,76	5,76	5,62
Spain	6,10	6,10	6,12	6,65	6,08
European Union 27 (from 2020)	4,61	4,51	4,64	4,77	4,54

12 https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_202/default/table?lang=en (9.04.2021)

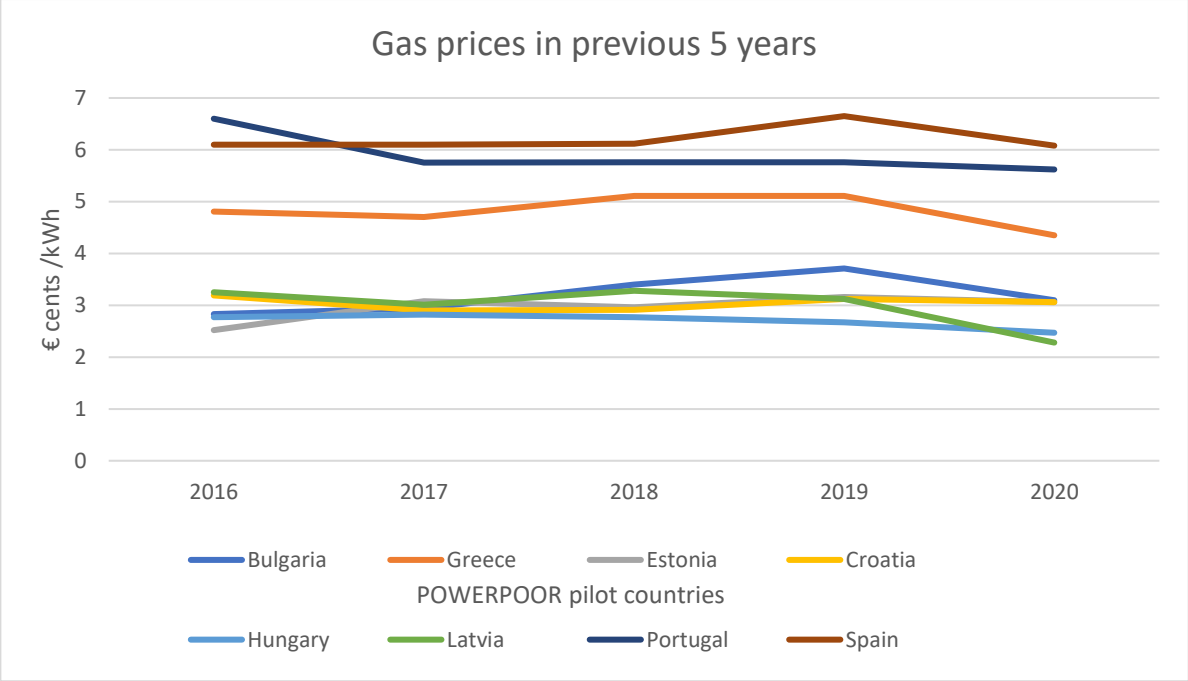

Figure 3 Gas prices in the previous 5 years (Source: Eurostat)

2.2.3 Housing indicators and energy poverty

Table 8 shows that in 2019 the average number of persons per households is relatively similar in all 8 POWERPOOR pilot countries with the highest average number seen in **Croatia** (2,7) and the lowest in **Estonia** (2,1).

Table 8 Average number of persons per households (2019)[13]

POWERPOOR pilot country	Average number of persons
Bulgaria	2,4
Croatia	2,7
Estonia	2,1
Greece	2,6
Hungary	2,3
Latvia	2,3
Portugal	2,5
Spain	2,5
European Union 27 (from 2020)	2,3

13 https://ec.europa.eu/eurostat/cache/digpub/housing/bloc-1b.html?lang=en (9.04.2021)

Table 9 also shows that in 2019 the average EU percentage of total housing costs in disposable income* was 20,0%. Analysis of the 8 POWERPOOR pilot countries shows that 2 of them (**Bulgaria** and **Greece**) have a higher percentage than the EU average of total housing costs in disposable income. **Greece** exhibited a significantly higher percentage (38,9%) of total housing costs in disposable income compared to the observed countries.

Table 9 Total Housing costs in disposable income* (2019)[14]

POWERPOOR pilot country	%
Bulgaria	24,8
Croatia	16,6
Estonia	14,2
Greece	38,9
Hungary	13,5
Latvia	15,7
Portugal	15,5
Spain	17,1
European Union 27 (from 2020)	20,0

Table 10 and Figure 4 show that in 2019 the average EU percentage of housing cost overburden in cities was 11,8% and in the countryside 7,0%. Analysis of the 8 POWERPOOR pilot countries depicts that 2 of them (**Bulgaria** and **Greece**) have a higher percentage than the EU average of housing cost overburden in both cities and countryside. **Greece** had a significantly higher percentage compared to the observed countries of housing cost overburden in cities (40,7%) and in the countryside (28,3%) as well.

Table 10 Housing cost overburden rate in cities and rural area (2018)[15]

POWERPOOR pilot country	Cities	Rural area
Bulgaria	15,6%	18,5%
Croatia	3,9%	6,1%

14 https://ec.europa.eu/eurostat/cache/digpub/housing/bloc-2b.html?lang=en (9.04.2021)
* Total Housing costs in disposable income - Housing affordability. Disposable income below 60 % of the national median income indicates people who could be considered as at risk of poverty.
15 https://ec.europa.eu/eurostat/cache/digpub/housing/bloc-2b.html?lang=en (13.04.2021)

Estonia	5,1%	3,3%
Greece	40,7%	28,3%
Hungary	6,9%	2,4%
Latvia	4,8%	6,1%
Portugal	7,3%	4,6%
Spain	10,4%	4,6%
European Union 27 (from 2020)	11,8%	7,0%

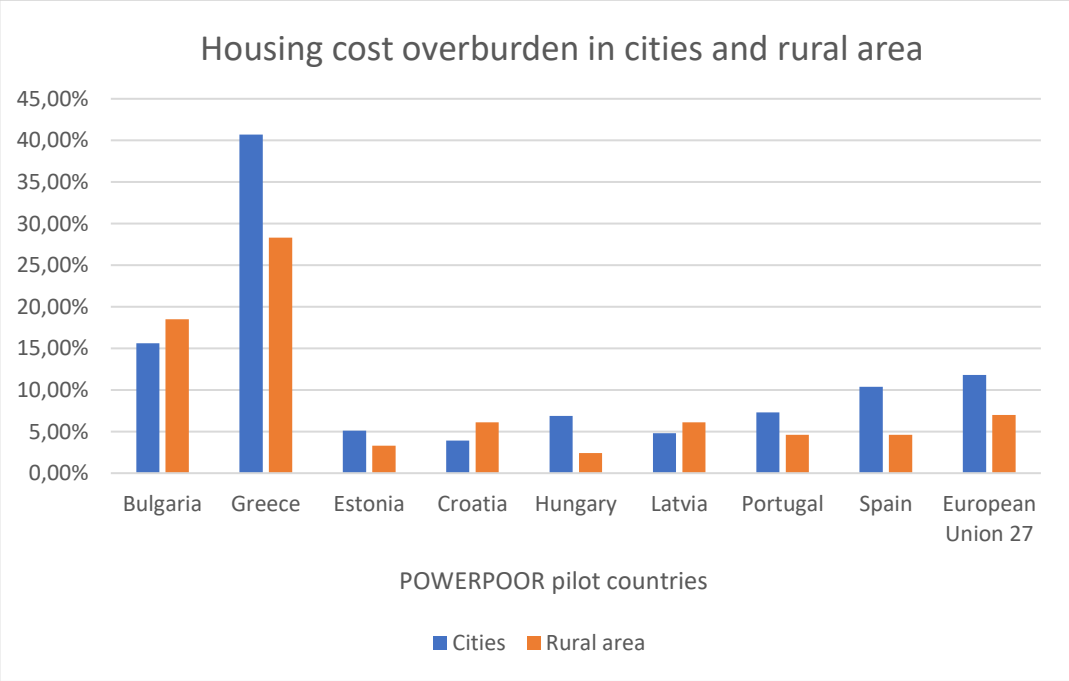

Figure 4 Housing cost overburden in cities and rural area (2018) (Source: Eurostat)

2.2.4 Energy performance of the existing housing stock

► Bulgaria

Residential buildings with poor energy performance (classes E, F and G) represent 91% of non-renovated buildings in **Bulgaria**: class E (with limits from 291 kWh/m^2 year to 363 kWh/m^2 year of primary energy) - 39%, class F (with limits of 364 kWh/m^2 year to 435 kWh/m^2 year of primary energy) - 34%, and class G (with primary energy consumption > 435 kWh/m^2 per year) - 18%.[16]

16 https://www.me.government.bg/files/useruploads/files/ltrs_bg_1.pdf

► Croatia

In **Croatia**, similarly to the entire European Union, almost 50% of final energy consumption is used for heating and cooling, out of which 80% in buildings. Key to this area is the Long-Term Strategy for Mobilizing Investment in the Renovation of the National Building Stock of the Republic of Croatia by 2050[17]. To achieve the strategic goals of reducing energy consumption in construction of buildings, three key energy renovation programs for the period between 2021 and 2030 are expected to be adopted for apartment buildings, family houses and public buildings. According to the Strategy, Croatian national residential building stock consists of 762,397 buildings (multi-residential and family houses) with a total floor area of 142,176,678 m2, while non-residential building stock consists of 124,924 buildings (commercial and public) with a total floor area of 50,342,361 m^2. Energy performance and building characteristics, as well as their energy consumption, are largely determined by the construction period. Annual final energy consumption for heating, cooling, Domestic Hot Water (DHW) generation and lighting varies from 350 kWh/m^2 for the multi-residential dwellings built before 1940 in continental Croatia to 57 kWh/m^2 for the same houses built in 2010. The annual final energy consumption in public buildings varies from 380 to 140 kWh/m^2, also depending on construction period and climate factors (location). For the purpose of energy renovation of buildings by implementing energy efficiency (EE) measures and renewable energy sources (RES), attention is devoted to buildings constructed prior to 1987 and their renovation aimed at achieving a low-energy standard and energy class B, A or A+.[18]

► Estonia

In **Estonia**, existing building stock contributes to about half of total energy consumption with ¾ of it originating from the period between 1961 – 1990. According to the Building Registry, the number of energy performance certificates issued on the basis of consumption data for residential buildings taken into use before 2000 (included) amounts to 3 200. On the scale of energy performance, class A refers to nearly zero energy buildings and class C, energy performance after a major renovation. Class A, B or C has been awarded to only 22% of small residential buildings and 9% of apartment buildings with an energy performance certificate. The number of private houses needing renovation is ~100,000, ~14,000 apartment buildings and ~27,000 non-residential buildings. The financing system, the technical solutions and apartment associations' desire to renovate are there.19 Due to apartment building renovations, the energy consumption of dwellings has remained the same within the buildings last 15 years, despite the construction of new buildings, i.e. increasing building stock. The main bottleneck has been the unstable financing of support measures.

► Greece

17 https://mgipu.gov.hr/UserDocsImages//dokumenti/Engleska//HR-Art4BuildingStrategy_en.pdf
18 https://mgipu.gov.hr/UserDocsImages//dokumenti/Engleska//HR-Art4BuildingStrategy_en.pdf (last visited: 04.08.20)
19 Long term strategy for building renovation in Estonia, https://www.ekyl.ee/wp-content/uploads/Long-term-strategy-for-building-renovation-in-Estonia.pdf

Residential buildings represent 95,4% of the Greek building stock[20]. In addition, 55,7% of residencies in **Greece** has been built prior to 1980, when the first national Insulation Regulation for Buildings was released[21] and therefore, those buildings have little or no insulation at all. The data also indicates that detached and semidetached type dwellings, in which 40% of the Greek population lives, are the most vulnerable in energy poverty. In addition, according to thea survey conducted by INZEB in collaboration with the Heinrich Böll Stiftung Greece in 2018 to assess energy poverty awareness among citizens living in **Greece**, 56,2% of respondents did not possess an Energy Performance Certificate (EPC) for their houses.[22] This fact implies that the owners of these buildings have not proceeded yet to any energy renovation and conditions in these residencies remain sub-standard.

- Hungary

Nowadays the average rating of domestic residential buildings based on energy certificates is "FF" worse, which means that an average **Hungarian** home yearly primer energy consumption is around 200-250 kWh/m^2 - moreover, according to other calculations, the weighted average falls into the "HH" category (annual 310-400 kWh/m^2)[23].

- Latvia

In the area of housing, the high energy consumption of residential houses is a major problem. Compared to EU countries, building stock (serial) originating in **Latvia** from 1946 to 1990 is of lower quality and low energy efficiency. Of all Latvian housing, 69% (approximately a million) are located in multi-apartment residential houses. 45% of apartment dwellings have been constructed by 1941, while between 1961 and 1992 53% and 4% new living houses were built between 1993- 2019[24]. The Latvian Residential Fund is based on panel houses that were built in the 60s-80s; without performing thermal insulation, the energy losses of buildings increase with each year. Buildings are increasingly ageing, but their reconstruction is slow and insufficient[25]. The average energy consumption for buildings of all types is 138-139 kWh/m^2 per year: for single apartment buildings of different types –139 kWh/m^2 per year; for multi-apartment buildings –137 kWh/m^2 per year[26]. Most part of multi-residential buildings belong to E class of energy efficiency. According to the Ministry of Economics, it is currently necessary to renovate more than 23 000 buildings (in the multi-apartment building sector), but it is expected that approximately 1 700 apartment residential buildings will

20 Long-term Renovation Strategy of the Greek Building Stock, 2021. Available on: https://ypen.gov.gr/energeia/energeiaki-exoikonomisi/ktiria/ltrs/
21 Hellenic Statistical Authority, 2011. 2011 Population and housing census-Characteristics and amenities of dwellings. Available on: https://www.statistics.gr/en/statistics/-/publication/SAM05/-
22 Aryblia M., Boemi S-N., Corovessi A., Touloupaki E., Tsoutsos T., 2020. Energy Poverty in Greece 2.0– Policy developments and recommendations to tackle the phenomenon. Available on: https://gr.boell.org/index.php/en/2020/01/15/energy-poverty-greece-20
23 MEHI - Hungarian Energy Efficiency Institute 2021: Renovation Wave in Hungary; https://mehi.hu/sites/default/files/mehi_hazai_felujitasi_hullam_tanulmany_2021_v3_0.pdf
24 https://lvportals.lv/norises/312353-dala-dzivojama-fonda-pamazam-parversas-graustos-2020
25 https://www.lsm.lv/raksts/zinas/ekonomika/skaitli-un-fakti-latvija-par-arvien-nopietnaku-problemu-klust-padomju-laika-daudzdzivoklu-nami.a390930/
26 https://ec.europa.eu/energy/sites/ener/files/documents/lv_2020_ltrs.pdf

be renovated with the funding available in the planning period of the EU funds. So far, during previous 10 years approximately 1000 multi-residential buildings were refurbished, what is 1/40 par of all multiapartment building stock.

- Portugal

In Figure 5 the distribution of Energy Performance Certificates is depicted, which were issued for residential dwellings between 2014 and 2020 in **Portugal**. The majority are in the classes between C and E, where C exhibits the highest percentage.[27]

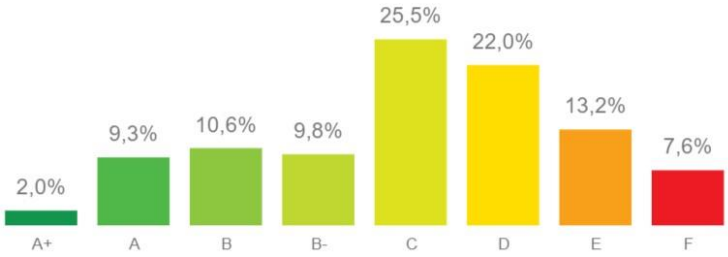

Figure 5 Distribution of Energy Performance Certificates for residential dwellings between 2014 and 2020 in Portugal

- Spain

Based on data from 2018, 51% of the building stock in **Spain** has an energy efficiency qualification of E, being letter A the best qualification and G the worst. Buildings with the qualification of G have a share of 22%, D and F have both a share of 11%, C has a share of 4% while B and A have shares of 1% and 0.2%, respectively.[28]

27 Rui Fragoso, Workshop Temático sobre Eficiência Energética e Pobreza Energética, ADENE, Lisboa 18/3/2019
28 IDAE energy agency: https://www.idae.es/estudios-informes-y-estadisticas)

2.3 Economic and energy indicators

In the demographics and economy analysis of the 8 POWERPOOR pilot countries the following indicators were considered: population, GDP, GDP per capita, Gini coefficient of disposable income, average unemployment rate, public debt and poverty headcount ratio at national poverty lines.

Table 11 Demografic and economy indicators in POWERPOOR countries [29]

POWERPOOR pilot country	Population (million)	GDP, current US$ billion	GDP per capita, current US$	Gini coefficient of disposable income (2019)	Average unemploy-ment rate (%)	Public debt (% of GDP) (2019)	Poverty headcount ratio at national poverty lines, 2018 (% of population) [30]
Bulgaria	6,95	67,859	9764,00	40,8	6%	20	23,8 (2019)
Croatia	4,0	56,8	14.101,40	29,2	9%	87,2	18,3
Estonia	1,32	31,471	39.986,23*	30,5	8,7%[31]	18,2[32]	21,7
Greece	10,71	209,85	19.582,53	31,0	16,9% (2020)[33]	163,1 (2021)[34]	17,9
Hungary	9,76	163,46	34.966,29*	28,0	4,5%	81,2	12,3
Latvia	1,91	34,103	17.828,89	35,2	6,3% (2019)	36,9% (2019)	22,9
Portugal	10,26	238,785	20.770,51**	31,9	5,93%	133,6%[35]	17,2
Spain	47,07	1393	29.600,37	33,0	14,1%[36]	95,5 %[37]	20,7
European Union 27 (from 2020)	6,95	67,859	9764,00	40,8	6%	20	23,8 (2019)

29 https://data.worldbank.org/country (9.04.2021)
30 https://data.worldbank.org/indicator/SI.POV.NAHC (11.04.2021)
31 https://www.tootukassa.ee/eng/content/about-fund/daily-statistics
32 https://www.rahandusministeerium.ee/en/objectivesactivities/state-treasury/financial-reserves-and-liabilities/debt-management
33 Worldbank. Available at: https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=GR&view=chart
34 Estimation for the year 2021. Source: European Semester Greece Report 2020. Available at: https://eur-lex.europa.eu/legal-content/EL/TXT/PDF/?uri=CELEX:52020SC0507&from=EN
35 https://tradingeconomics.com/portugal/government-debt-to-gdp
36 https://ec.europa.eu/eurostat/databrowser/view/tps00203/default/table?lang=en
37 https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_ind_ei&lang=en

* current international $
** current LCU

Table 12 and Figure 6 shows that the energy intensity decline in the period of 2015-2019 in all POWERPOOR pilot countries, with the exception of **Greece**, where a slight increase in 2019 compared to 2018 is noted.

Table 12 Energy intensity in 5-year period 38

POWERPOOR pilot country	2015	2016	2017	2018	2019
kgoe/€ 1000					
Bulgaria	451,65	425,83	425,86	414,59	396,43
Croatia	190,16	185,39	185,56	176,60	174,04
Estonia	327,15	347,31	319,47	326,15	239,87
Greece	141,76	139,72	144,23	139,24	147,40
Hungary	228,42	226,44	226,74	215,48	206,09
Latvia	217,20	215,48	213,34	205,95	206,43
Portugal	140,71	138,29	139,85	132,79	130,06
Spain	121,62	119,36	120,93	118,16	113,03
European Union 27 (from 2020)	123,70	122,16	121,05	117,94	114,34

*Energy intensity is expressed as the ratio between gross inland energy consumption and GDP, in a calendar year. To make comparisons across time series, the indicator is presented as an index, compared with 1990

38 https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_ind_ei&lang=en

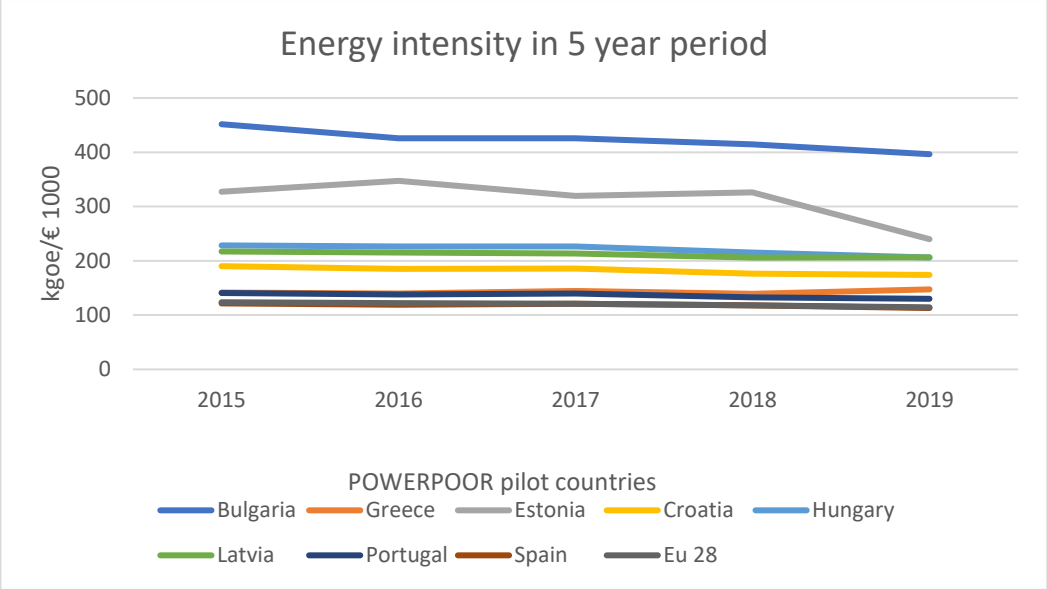

Figure 6 Energy intensity in 5-year period (Source: Eurostat)

Table 13 shows that **Croatia**, **Hungary**, and **Spain** have a reduction of primary energy production in relation to the base year 1990 while other countries display an increase. **Bulgaria** and **Latvia** have a reduction of electricity final consumption in relation to the base year 1990 while other countries have an increase. Data shows that **Estonia** has the highest CO_2 emissions per capita.

Table 13 Main energy and emission indicators in all POWERPOOR pilot countries (Source: Eurostat)

POWERPOOR pilot country	Primary energy production (Mtoe)		Electricity final consumption (TWh)		Total primary energy supply per capita (toe/capita)	CO2 emissions per capita (t CO2/capita)
	Annual average change % 1990-2018	2018	Annual average change 1990-2018	2018	2018	2018
Bulgaria	+27,85	11,89	-13,40	35,93	2,6	5,7
Croatia	-26,67	5,27	+21,38	17,2	2,1	3,7
Estonia	+26,20	6,6	+7,64	9,72	3,9	8,8
Greece	+20,04	18,39	+65,30	54,3	2,1	5,3
Hungary	-23,96	11,17	+20,96	43	2,7	4,7
Latvia	+146,55	2,86	-20,55	7,19	2,3	3,5
Portugal	+73,45	5,88	+105,95	51,92	2,1	4,3
Spain	-1,91	33,95	+89,23	260,14	2,6	4,9

2.3.1 Energy use and heating fuel shares in the residential sector

In the Table 14, types of energy used for heating homes are presented. Significant share of electricity for heating is used in **Bulgaria**, and oil in **Greece** for the same purpose.

Table 14 Types of energy used for heating homes

POWERPOOR pilot country	Central/ District heating	Electricity	Oil & Petroleum products	Gas	Coal	Wood (biomass, pellets, briguettes, etc.)	Other (heat pumps etc.)
Bulgaria*[39]	28,4%	51,9%	0,1%	2,5%	6,7%	10,2%	0,1%
Croatia[40]	5%	21%	4% 3%***	19%	/	48%	/
Estonia	62%	N/A	N/A	N/A	N/A	N/A	N/A
Greece[41]	0,6%[42]	12,4%	63,8%	8,7%	/	12,0%	2,5%
Hungary[43]	8,4%	0,8%	0,2%	57,6%	1,8%	31,1%**	0,1%
Latvia	30,4%	13,7%	2,7%	8,9%	N/A	41,4%	N/A
Portugal[44]	10,5%	61,2%	/	7,1%	/	42,3%	7,3%
Spain[45]	N/A	7,59%	31,42%	20,29%	0,9%	39,41% (biomass)	N/A

* Multi-family residential buildings
**Renewable energy (mainly firewood)
***LIquid petroleum gas

39 Source: Expert estimations
40 https://ec.europa.eu/energy/sites/ener/files/documents/croatia_report_eed_art_141update_hr.pdf
41 Hellenic Statistical Authority, 2013. Survey on energy consumption in households, 2011-2012. Available on: https://www.statistics.gr/documents/20181/985219/Energy+consumption+in+households/
42 Hellenic Statistical Authority, 2013. Survey on energy consumption in households 2011-2012. Available at: https://www.statistics.gr/documents/20181/985219/Energy+consumption+in+households/
43 HUNGARIAN ENERGY AND PUBLIC UTILITY REGULATORY AUTHORITY, 2019. http://www.mekh.hu/download/6/8d/e0000/8_1_haztartasok_felhasznalasa_eves_2015_2019.xlsx
44 This percentages are from a study from 2010. It was the only one I could find with such division of the types of energy for heating. The ones most recent only analyse types of energy consumed in the residential sector. You can check it here: https://www.dgeg.gov.pt/media/g5ppb25r/i009949.pdf
45 https://www.idae.es/estudios-informes-y-estadisticas

Table 15 shows that energy used for space heating is predominant in all countries except **Portugal** where cooking holds the biggest share.

Table 15 Share of final energy consumption in the residential sector by type of end-use, 2018 (Source: Eurostat)[46]

POWERPOOR pilot country	Space heating	Space cooling	Water heating	Cooking	Lighting and appliances	Other end uses
Bulgaria	52,8%	0,4%	18,0%	8,5%	20,2%	0,0%
Croatia	68,3%	1,9%	10,0%	6,5%	13,2%	0,0%
Estonia	72,7%	0,0	11,8%	4,9%	10,6%	0,0%
Greece	54,5%	3,6%	15,2%	6,2%	20,5%	0,0%
Hungary	71,7%	0,1%	12,8%	4,9%	10,4%	0,0%
Latvia	66,0%	0,0%	18,5%	7,1%	7,9%	0,6%
Portugal	28,2%	0,6%	17,4%	35,6%	18,1%	0,0%
Spain	43,1%	1,0%	17,0%	7,4%	31,4%	0,0%
European Union 27 (from 2020)	63,6%	0,3%	15,0%	5,7%	14,6%	0,9%

Table 16 shows the final energy consumption in the residential sector in 2017 with electricity being the predominant fuel in **Bulgaria, Greece, Portugal**, and **Spain**. Gas was the fuel used the most in final energy consumption in the residential sector in **Hungary** while renewables (biomass and solid wood) and wastes were the major fuels in final energy consumption in the residential sector in **Estonia, Croatia**, and **Latvia**.

Table 16 Share of fuels used in the final energy consumption in the residential sector, % (2017)[47]

POWERPOOR pilot country	Eletricity	Derived Heat	Gas	Solid fuels	Oil & petroleum products	Renewables and Wastes
Bulgaria	42,3	14,5	3,5	5,1	1,0	33,6

46https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Energy_consumption_in_households#Energy_consumption_in_households_by_type_of_end-use (14.04.2021)
47 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Share_of_fuels_in_the_final_energy_consumption_in_the_residential_sector,_2017_(%25).png (9.04.2021)

Croatia	23,2	4,9	20,3	0,1	5,2	46,3
Estonia	17,0	34,3	5,8	0,1	0,9	41,9
Greece	36,8	1,3	8,5	0,1	26,5	26,8
Hungary	16,8	8,0	48,6	1,6	1,3	23,6
Latvia	11,7	30,1	9,7	0,5	4,4	43,6
Portugal	38,9	0,0	9,4	0,0	14,4	37,3
Spain	43,0	0,0	18,3	0,5	18,6	19,7
European Union 27 (from 2020)	24,6	7,6	36,2	3,1	10,8	17,6

Average EU energy consumption per dwelling was 1,34 toe/dwelling as shown in Table 17. Four countries - **Estonia**, **Croatia**, **Hungary** and **Latvia**- have slightly higher consumption compared to EU average while the highest is observed in **Hungary** with consumption of 1,62 toe/dwelling.

Table 17 Average energy consumption per dwelling, 2018 (climate adjusted) (Source: Odyssee)[48]

POWERPOOR pilot country	toe/dwelling
Bulgaria	0,779
Croatia	1,58
Estonia	1,45
Greece	1,01
Hungary	1,62
Latvia	1,57
Portugal	0,653
Spain	0,807
European Union 27 (from 2020)	1,34

48 https://www.odyssee-mure.eu/publications/efficiency-by-sector/households/average-energy-consumption-dwelling.html (9.04.2021)

2.4 Environmental, social and health consequences of energy poverty

POWERPOOR pilot country	Environment, social and health consequences of energy poverty
Bulgaria	Energy poverty has serious negative impacts on people's health due to the insufficient heating of dwellings and the subsequent deterioration of the living environment in Bulgarian homes. The energy poverty is also related to the predominant use of carbon-intensive solid fuels for heating in combination with inefficient old heating appliances with serious negative impact on the climate resilience including the indoor air pollution in Bulgarian settlements. Energy poverty is associated with increasing household indebtedness and reducing spending on food, education, health care, etc. Energy poverty results in social exclusion and reduced chances for personal development.
Greece	Energy poverty impact on the environment, society, and health are to a great degree intertwined and appear at the personal as well as at a societal level. In fact, similarly to other countries, energy poverty became an apparent and alarming issue in Greece on account of its negative effect on the quality of air and the appearance of smog in the two biggest urban centers in the winters of 2012-13. Following a rise in taxation on heating oil, more and more citizens turned to burning unsuitable material to heat their homes. Ever since smog appears regularly in smaller cities in the Greek periphery. A typical example is Volos that ranks sixth in size. The intensity of the phenomenon has repeatedly prompted the Regional Unit of Magnesia to issue recommendations to vulnerable groups and the general population to limit physical activity and staying outdoors in the afternoon and evening hours. It is noteworthy that in its communication it points out the ban on burning unsuitable materials in fireplaces and stoves[49]. Serious health problems are linked to energy poverty due to poor living conditions (e.g. low or high indoor temperature for extended period, mold, and high humidity). A high percentage of Greek citizens (68,8%) acknowledges that energy poverty has repercussions on citizens' health and wellbeing[50]. Moreover, key findings of a primary survey[51] conducted in Greece, in 2016 shows that 58% of Greek households are energy poor, and 75% of them have reduced other essentials in favor of energy needs. On a personal level, energy poverty health implications prevent citizens from reaching their full potential and participate actively in society (e.g. due to absence from school, work etc.). On a national level, the operational cost of the public health system is increased, which is not to be undermined especially under the toll of the COVID19 pandemic. Sadly, excess mortality is also linked with energy poverty;

49 The atmosphere is aggravated mainly at night - Recommendations from the Regional Unit of Thessaly, 13.11.2021, ERT Volos website. Available here (in Greek): https://cutt.ly/Qxizvfq
50 Aryblia M., Boemi S-N., Corovessi A., Touloupaki E., Tsoutsos T., 2020. Energy Poverty in Greece 2.0– Policy developments and recommendations to tackle the phenomenon. Available on: https://gr.boell.org/index.php/en/2020/01/15/energy-poverty-greece-20
51 Papada, L., Kaliampakos, D., Measuring energy poverty in Greece, 2016. Available here: https://www.energypoverty.eu/publication/measuring-energy-poverty-greece

	between 2,8-6% of deaths recorded annually can be attributed to energy poverty in Greece[52]. Lastly, a big part of public funds is being misused in the form of benefits to tackle energy poverty. However, these provide only short-term relief and carry the risk of lock-in effect in fossil fuels for their beneficiaries. From a national point of view, 650 mil. Euros were spent on heating oil benefits in Greece in the period 2012-2014[53], that could be otherwise directed to funding energy efficiency measures.
Estonia	When defining energy poverty in Estonia, it is important to emphasize the aspects of insufficient heating for climatic reasons, the decrease in the quality of life in terms of other energy services (cooking, lighting, household appliances) and inability to renovate the dwelling according to energy efficiency standards. The absence or insufficient consumption of energy would affect the conditions of the living environment and quality of life of households. According to EPOV (2019) 18.7% of households spend an unusually high share of their income on energy expenditure in Estonia, which is likely to put a strain on the household budget and cause a risk of energy poverty. Also, at 18.9% Estonia has a high number of households that have an unusually low energy expenditure, which means that these households might restrict their energy spending below what is necessary to meet their needs. If a household has had a problem of arrears on utility bills for a long time, the low temperatures at home and insufficient use of energy services begin to affect the mental and physical health of the residents. It is estimated that approximately 30% of households in Estonia have problems with leaks, moisture or mold in their dwelling, causing a risk for long-term health problems. If the household has lack of means for renovating the dwelling according to energy efficiency standards, then in the long run, the home loses the meaning of a comfortable and safe place, which in turn has also a significant impact on human health, and may have a secondary impact to the safety of the district or housing estate and its residents' social exclusion.
Croatia	Similar to other EU countries the continuous increase of energy prices in Croatia is leaving significant share of households with arrears on their utility bills[54]. Limited household budgets are forcing families to live in inadequate conditions, giving up on their energy comfort and often forcing them to decrease their living space in the winter months. The case study which involved surveying a total of 394 households in Sisak-Moslavina County[55] being one of the poorest counties addressed many social and health issues directly connected to energy poverty. Most of interviewed dwellings have no building insulation whatsoever, windows and doors are also inefficient, with single glazing or double single glazed windows, and a single inefficient stove mostly does heating. All of this contributed to adverse impacts on health, ranging from the high prevalence of pulmonary disease to excess winter deaths and poor mental health. In addition, inhabitants are exposed to the indoor air pollution due to old and inefficient wood stoves or old central

52 Atsalis A, Mirasgedis S, Tourkolias C, Diakoulaki D, Fuel poverty in Greece: Quantitative analysis and implications for policy. Energy and Buildings, 131, pp. 87-98, 2016.
53 Alleviating Fuel Poverty in Europe, BPIE, 2014
54 https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_mdes07&lang=en
55 Energetsko siromaštvo u Hrvatskoj: rezultati terenskog istraživanja provedenog u Sisačko-moslavačkoj županiji, DOOR, 2016. https://door.hr/wp-content/uploads/2016/04/Energetsko-siromastvo-u-Hrvatskoj-1.pdf

	heating systems without the possibility of regulating temperature or distributing heat evenly across rooms.
Hungary	One of the most important and severe problems in Hungary is heating-origin air which is tightly linked to energy poverty (harmful residential heating habits, the inefficient building stock and heating devices etc.). Immediate action is inevitable, especially in peripheral regions of the country since heating-origin air pollution causes the serious health problems.
Latvia	According to Eurostat data in Latvia in 2018, only 7.5% of residents rented housing according to the market price value, while the majority of residents (69.3%) own housing without mortgage loan obligations, mainly related to the massive privatization process following the restoration of independence. The European Commission's 2019 report on Latvia shows that the availability of decent housing is limited, particularly for low-income population groups. Very poor household conditions are affected by 15.2% of the population, well above the EU average of 4.5%. In Latvia, the challenge is low population solvency (a high proportion of low income), which is attributable to the relatively low level of remuneration in the country, while also considering the "shadow economy" aspect. The public has to decide between basic costs, including heating, electricity, food, medical costs, as opposed to timely investments in the management and maintenance of buildings. In most of these situations, citizens tend to cover basic costs as priority. The main reason of the poor technical state of buildings is the already mentioned low solvency of building owners and the lack of availability of financial resources in the regions. It should be noted that, with timely and optimal maintenance of buildings and infrastructure, challenges are both for the State, for municipalities and for the population. Latvia, like other countries of the European Union, is currently facing problems in providing affordable housing in terms of costs.[56] Compared to the period of 1960-1990, the average air temperature in winter in Latvia has increased from -4.4 °C to -2.9 °C in the period 1981-2010. Consequently, the length of the heating season in Latvia has decreased to an average of 198,7 days, and the average air temperature of the heating season has increased to +1.1 °C. Consequently, it is concluded that the Latvian climate is getting warmer and as the heating season decreases, measures to boost energy efficiency are becoming less economically justified, as investment repayment time is increasing. Energy poverty is linked to a series of adverse effects on human health and well-being, such as respiratory diseases, which exacerbate due to low temperatures. It also involves bills for gas, heat and electricity that residents cannot afford to pay for. Energy poverty has an indirect impact on a number of quality-of-life indicators, including health, environment and productivity, characterizing the well-being of households and citizens. Thus, it could be said that energy poverty is the energy efficiency mix of low incomes, high energy spending and poor housing. The approach to tackling energy poverty in Latvia is mainly through social policy. Municipalities need to ensure minimum income levels for all households where necessary, and they can also provide housing benefits for households, which should include electricity and heating costs. In addition, the national government provides financial support to individual vulnerable population groups so that they can pay for electricity.

56 https://ec.europa.eu/energy/sites/ener/files/documents/lv_2020_ltrs.pdf

Portugal	In Portugal, specialists agree that the three main reasons for energy poverty are the following: low incomes, high energy prices and low performance building stock. Moreover, there are strong indications that energy poverty is significantly linked to health issues. Such statement can be proved by observing that between 1980 and 2015 the daily rate of mortality is directly correlated with heat waves in summer and cold waves, and flu epidemics, in winter. According to the National Health Service (SNS) and the General Directorate of Health (DGS) also between 2009 and 2019 the peaks of daily deaths were related to intense cold and heat waves.
Spain	According to the World Health Organization (WHO)[57], household living standards have a direct implication in people's heath. Inadequate conditions can bring several types of health risks, and the aspects that most affect to the health are temperature and humidity conditions, lighting, ventilation and building isolation. In that regard, energy poverty is a structural problem which is directly linked to people's wellbeing, with direct as well as indirect implications on the health. Not only physical health, but also mental health problems have been identified as a consequence of the energy poverty. According to a study[58] carried out in the city of Barcelona, citizens that suffer from energy poverty have significantly higher probability to experience health problems, especially chronic bronchitis, depression and anxiety. Besided health issues, energy poverty has also been identified as a cause of social consequences for people suffering it. In a study carried out by the Asociación de Ciencias Ambientales[59], an analysis based on socio-demographic conditions showed that there are certain vulnerability patterns related to aspects such as the educational level, employment situation, type of working contract, marital status, country of origin or the situation of being receiving social assistance. The main consequences of energy poverty identified in Spain that are related to health or social aspects are: excess mortality due to extreme temperatures, illnesses related to moisture, malnutrition, domestic accidents, school and work absenteeism, stigma or social isolation.

57 https://www.who.int/publications/i/item/9789241550376
58 https://www.sciencedirect.com/science/article/pii/S0213911120301941
59 Herrero, S. T., Meneses, L. J., Fernández, J. L., & Hi-dalgo, V. I. (2018). Pobreza energética en Espana 2018. Hacia un sistema de indicadores y una estrategia de actuación estatales, Asociación de Ciencias Ambientales, Madrid, Spain.

3 Policy level

This chapter presents an analysis of the existing adopted national policy frameworks that include energy poverty targets and serve as a general framework in the 8 POWERPOOR pilot countries. National policy frameworks include laws, National Energy and Climate Plans (NECPs), strategies and similar adopted policy instruments at a national level. **Bulgaria, Croatia, Estonia, Greece**, **Hungary**, **Latvia**, **Portugal** and **Spain** represent 8 out of a total of 27 EU countries and that constitutes about 30% of the EU countries in which a detailed analysis of national key policies that address ***energy poverty*** was performed.

A total of 32 different national policy instruments are analysed in the document at hand: **Bulgaria** (4), **Croatia** (9), **Estonia** (3), **Greece** (2), **Hungary** (2), **Latvia** (4), **Portugal** (3), and **Spain** (5). Energy poverty or some other synonyms such as energy vulnerable customers or people at risk of energy poverty or households at risk of energy poverty or energy efficiency of homes of energy poor consumers or vulnerable group of citizens and citizens at risk of energy poverty are mentioned in 22 of the policies analysed. The other 10 policies in their description may not include directly the term of energy poverty but, in some way, they target ***energy poverty*** (e.g., through the energy renovation of buildings).

In addition, this chapter covers specific sectoral policy measures in each country. These measures do not have to be directly linked to energy poverty but to be identified as ones that contribute to the energy poverty alleviation. Each sectoral policy measure is analysed in the table incorporated below the chapter Sectoral policy tools and measures to alleviate energy poverty for each country.

3.1 Bulgaria

3.1.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Bulgaria** can be found in Table 18.

Table 18 Key policies/legislation for Bulgaria

National key policies, plans and strategies	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
Integrated Energy and Climate Plan of the Republic of Bulgaria[60]	Adopted by the Council of Ministers on 27 February 2020	Main goals set in IECP are: - Promoting low-carbon economic development; - Developing a competitive and secure energy sector; - Reducing dependence on fuel and energy imports; - Ensuring that energy is available at affordable prices to all consumers. National energy priorities are: - Increasing energy security and diversifying the supply of energy resources; - Developing an integrated and competitive energy market; - Using and developing energy from renewable sources based on available resources, network capacity and country specifics; - Enhancing energy efficiency by developing and	- To ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market by: - Ensuring adequate protection of people at risk of energy poverty by providing target heating allowances; - Implementation of a mechanism for the protection of vulnerable consumers following full liberalisation of electricity prices for final consumers, including households. - Building stock renovation. The renovation of multi-family residential buildings with a view to upgrading them to energy class B will lower the average monthly cost of heating homes and may	Ministry of Energy

60 https://www.me.government.bg/files/useruploads/files/national_energy_and_climate_plan_bulgaria_clear_22.02.20.pdf
https://ec.europa.eu/energy/sites/ener/files/documents/bg_final_necp_main_en.pdf

		implementing new technologies for a modern and sustainable energy sector; - Consumer protection by ensuring fair, transparent and non-discriminatory conditions for the use of energy services. The policy document adopts the definition of "vulnerable consumers", criteria for identifying them and measures for their protection as already defined by the Energy Act.	result in low-income - households being able to improve their living conditions sufficiently to be dropped from the category of households at risk of energy poverty; - improving energy efficiency by complementing the national target under Article 7 of Directive 2012/27/EU through a requirement for the implementation of measures, as a matter of priority, to improve energy efficiency for the benefit of vulnerable consumers, including households affected by energy poverty and, when appropriate, in buildings used for social housing.	
Long-term National Strategy to Support the Renovation of the National Building Stock of Residential and Non-residential Buildings until 2050[61]	Adopted by the Council of Ministers on 27 January 2021	The Strategy is developed in connection with the requirement of Directive (EC) 2018/844/EC. It contains an overview of the national building stock of residential and non-residential buildings based on statistical samples. Cost-effective approaches to energy renovation are identified, considering the type of buildings and the climate zone. A roadmap with indicators for measuring the achieved results for the following periods is developed: 2021-2030, 2031-2040 and 2041-2050, which reflect the stage target values of the process of energy renovation of the building stock of Bulgaria. An assessment of the necessary funding for achieving the objectives of the Strategy is made and the possibilities for using public funding to attract additional investment from the private	The Strategy envisages that by 2050, 60% of the housing stock and nearly 17% of the non-housing stock will be renovated. This is expected to save 7,329 GWh of energy per year, reducing greenhouse gas emissions by 3,274,453 tonnes of CO2. The implementation of the Strategy will also lead to the creation of 17,600 new jobs and additional annual GDP growth of BGN 557 million by 2030 for the period 2021-2030. Critical for the implementation of the Strategy is the development of policies and measures tailored to the different needs and capabilities of the homeowners in multi-family buildings with a closer link between	Ministry of Energy and Ministry of Regional Development and Public Works

61 https://www.me.government.bg/files/useruploads/files/ltrs_bg_1.pdf

		sector are considered. However, the necessary financial instruments have not been yet developed.	existing and envisaged future social assistance measures for heating during the winter months and support for insolvent persons in the context of their participation in energy renovation programmes. Special attention is given to the need of measures to improve the energy efficiency of homes of energy poor consumers in order to reduce their energy costs and increase their living comfort.	
Recovery and Resilience Plan of Republic of Bulgaria[62]	Under preparation	Pillar 2: Green Bulgaria, Policy Area: Circular and Low Carbon Economy, Programme for Energy Efficiency. Within the first component of the Programme it is intended to finance measures to increase the energy efficiency of the existing housing stock in the country. The energy renovation of residential buildings will be implemented in accordance with the objectives of the newly adopted Long-term National Strategy to Support the Renovation of the National Building Stock of Residential and Non-residential Buildings until 2050 and energy efficiency measures in residential buildings aimed at achieving a minimum class B of energy consumption will be financed.	The main goal of the Programme for Energy Efficiency is to reduce the energy intensity of the economy and to promote the green transition by taking measures to increase the energy efficiency of residential, industrial and public buildings. The energy renovation of Bulgarian homes is raised as a main priority. However, the Programme does not apply a differentiated approach to the participating households and in particular to the socially disadvantaged low-income households in order to support their participation in the energy renovation of their homes. The Programme relies on the general impacts and benefits for them.	Ministry of Regional Development and Public Works

62 http://www.strategy.bg/PublicConsultations/View.aspx?lang=bg-BG&Id=5572

National Strategy to Reduce Poverty and Promote Social Inclusion 2030[63]	Adopted by the Council of Ministers on 30 December 2020	The Strategy contains a vision, goals and priorities for establishing an integrated approach to the prevention of poverty, as well as managing the consequences of its spread.	The Strategy aims to improve the quality of life of vulnerable groups in Bulgarian society and to create conditions for their full realization through adequate income support, including the labour market and access to quality services.	Ministry of Labour and Labour Policy

3.1.2 Sectoral policy tools and measures to alleviate energy poverty

Table 19 Sectoral policy tools and measures in Bulgaria

No	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Social Aid	Winter Supplement Programme "Targeted Heating Aid"	The Programme is regulated by the Social Assistance Act and Ordinance № RD-07-5[64] which defines the terms and conditions (income, property and health status, marital status, age, training and job employment, etc.) for granting target heating allowances during winter season. The regulation defines the risk groups with	The eligible vulnerable households get direct financial support towards their district heating bills, electricity, coal briquettes, or wood. Social aid is provided through a one-time payment in advance in cash for the entire heating season.	The Programme goal is to contribute to poverty alleviation by reducing the social burden of rising prices of electricity and heating and, thus, to provide additional social protection for low-income and energy vulnerable groups during the heating season.	Ministry of Labour and Social Policy

63 https://www.mlsp.government.bg/strategii
64 https://www.mlsp.government.bg/uploads/1/zakoni/naredba-za-otoplenie-28-06-2019.pdf

			differentiated minimum income that are eligible for heating assistance depending on the degree of risk and the priorities set.			
2.	Energy renovation of Bulgarian homes	Energy Efficiency of Multi-Family Residential Buildings National Programme	The Programme is launched by the Ministry of Regional Development and Public Works to provide 100% grant from the state budget for the energy renovation of multi-family residential buildings at the level of energy class "C". The Programme brings the energy renovation management at local level with the active participation of local authorities and, thus, seriously increases the territorial coverage and the scale of the process. The central government keeps the controlling and monitoring functions. The 100% grant is provided without prior social eligibility criteria. About 2000 buildings are renovated till 31.12.2020.	100% grant support to homeowners' associations for the energy renovation of multi-family residential buildings which results in a reduction of heating costs and the improvement of housing and living conditions.	The Programme aims to accelerate energy renovation of multi-family residential buildings and make it a large-scale process. It also aims to reduce household energy costs, improve housing infrastructure, save greenhouse gas emissions, extend life of buildings and increase their value.	Ministry of Regional Development and Public Works
3.	Energy renovation of Bulgarian homes	Operational Programme "Regions in Growth"	The Programme is launched by the Ministry of Regional Development and Public Works to provide 100% grant	100% grant support to homeowners' associations for the energy renovation of	The Programme aims to reduce household energy costs, improve housing infrastructure, save	Ministry of Regional Development

			from the EU funds under the Operational Programme "Regions in Growth" for the energy renovation of multi-family residential buildings at the level of energy class "C" and improve the quality of life in the medium-sized and large cities in Bulgaria. The 100% grant is provided without prior social eligibility criteria.	multi-family residential buildings which results in a reduction of heating costs and the improvement of housing and living conditions.	greenhouse gas emissions, extend life of buildings and increase their value.	and Public Works
4.	Energy efficiency measures in Bulgarian homes	REECL Residential Energy Efficiency Credit Facility	The REECL credit facility is developed by EBRD to provide loans with 20% funding for energy efficiency home improvements. The Programme is effectively organised with a low degree of bureaucratisation and timely subsidy provision. The Programme is limited for the energy-poor households due to their inability to borrow, despite the availability of a 20% grant.	Loans and 20% grant for specific energy efficiency measures including double-glazing, air conditioners, wall insulation, solar water heaters, etc.	REECL Facility aims to help Bulgarian households reduce their energy bills and consumption.	Ministry of Energy
5.	Environment	Operational Programme " Environment" and LIFE Programme Project "Bulgarian Municipalities	The Programme envisages the replacement of old and inefficient solid fuel stoves and transition to more efficient environmentally friendly forms of household	100% grant for the new heating equipment, its installation, five-year warranty, annual technical inspection, on-site training for its	The Programme goal is to contribute to the air pollution reduction in Bulgarian cities. In addition, the Program aims to help socially disadvantaged	Ministry of Environment and Water

		Working Together to Improve Air Quality "	heating with pellets, gas or use of the central heating network. The Programme has a strong social emphasis reflected in the eligibility criteria: presence of children in the household, number of household members, whether it receives targeted heating allowances and monthly social benefits, as well as the energy-efficient characteristics of the dwelling.[65]	operation and maintenance.	households to switch to efficient forms of heating in order to avoid the negative effects of energy poverty on their health and quality of living.	
6.	Energy efficiency measures in Bulgarian homes	DESIREE Gas - Demand Side Residential Energy Efficiency Through Gas Distribution Companies In Bulgaria	The Programme goal is to provide funding, grants and technical assistance for transition from carbon-intensive electricity to natural gas in the Bulgarian households. It finances internal gas installations, high-efficiency gas water heaters and space heating in single-family houses and multi-family units. By 2020, 12,000 households benefited from the grant funding scheme.	30% grant on the initial investment for the installation of high-efficiency gas boilers and connection of households to gas network.	The Programme aims to provide a dedicated and effective mechanism to support the gasification of Bulgarian households.	Ministry of Energy
7.	Upgrade and energy	Microfinance and	Credit line operated jointly by Microfund and Habitat for	Interest free loans for low-income families to	The Programme goal is to help low-income	Microfund

65 https://www.sofia.bg/documents/20182/7139111/Pokana-Sofia-20-01-2020.pdf/

	efficiency measures in Bulgarian homes	Community support	Humanity Bulgaria to provide access to financial solutions for low-income households for improving the energy efficiency of their homes and reduce their energy costs. Habitat for Humanity Bulgaria also operates the programme "Social protection and alleviation from deprivation for at-risk children and adolescents in Bulgaria through improving living conditions and other community-based support" aiming to provide interest-free loans for low-income families, living in poor housing conditions, to improve their homes.	improve their housing conditions and reduce their energy costs.	households to reduce their energy costs and improve the energy status and the quality of living of their homes.	and Habitat for Humanity Bulgaria
8.	Social aid	One-time support	The social aid is regulated by the Social Assistance Act and it is granted under exceptional circumstances to support energy vulnerable/low-income households including payment of overdue heating bills and replacement of broken heating appliances.	One-time safety net payment for vulnerable households in emergency cases when there are extra costs, which could include higher heating costs in winter or broken heating equipment.	To secure energy poor households in case of extreme emergency situations.	Ministry of Labour and Social Policy

Table 20 Sectoral policies analysis

1. Winter Supplement Programme "Targeted Heating Aid"	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes. The Integrated Energy and Climate Plan of the Republic of Bulgaria aims "to ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market" by "ensuring adequate protection of people at risk of energy poverty by providing target heating allowances".
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	This social aid needs to be extended in scope to cover the whole spectrum of energy vulnerable households, not just those in extreme energy poverty. At the same time, models should be considered for redirecting these direct payments to participation in home renovation programs, which will have a positive long-term effect.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Expert analysis and intensive public discussions
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Public authorities: Ministry of Labour and Social Policy, Regional social assistance directorates Specialised CSOc and Energy Agencies
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	State budget
Estimate of the energy poor households' rate, which will benefit by the selected policy	According to the latest statistics, in 2020 around 250,000 energy poor households benefit by this policy.[66] It can be assumed that this number will remain over time in case the programme conditions keep the same.

66 Institute for Market Economy, Analysis of the main programmes for social assistance, 2021 https://ime.bg/var/images/Social_assistance_programs_Jan_2021.pdf

Monitoring procedure of the outcomes of the selected policy including indicative indicators	Indicative indicators to be monitored: 1) inability of households to keep their homes adequately worm, 2) arrears on utility bills, and 3) unusually high share of income on energy expenditure.
2. Energy Efficiency of Multi-Family Residential Buildings National Programme	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes. The Recovery and Resilience Plan of Republic of Bulgaria (under preparation) will be (?) the extension of the National Programme. This is in line with one of the main objectives of the Integrated Energy and Climate Plan of the Republic of Bulgaria namely "To ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market" by "Building stock renovation".
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	It is necessary to introduce a differentiated approach with prior social eligibility criteria to the participating households, considering their social profile and risk of energy poverty.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Expert analysis and intensive public discussions. Communication campaigns to inform the households about the process of energy renovation and the benefits they will get. Provision of technical and legal advice to the interested households. Monitoring of the energy renovation process implementation and analysis of the results achieved.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Public authorities: Ministry of Regional Development and Public Works, regional authorities, and municipalities CSOs: chambers of builders and architects, energy agencies, homeowners' associations Private companies: construction companies, building materials companies
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	State budget
Estimate of the energy poor households' rate, which will benefit by the selected policy	According to latest statistics, energy poor households in Bulgaria are 30.1% of the population. A well targeted housing renovation program could bring long-term benefits to at least half of these households.

Monitoring procedure of the outcomes of the selected policy including indicative indicators	Indicative indicators to be monitored: 1) number of renovated dwellings, 2) number of energy vulnerable households and their share in the total number of households, 3) required and achieved energy efficiency class, and 4) achieved energy savings and energy costs reduction.
3. Operational Programme "Regions in Growth"	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes. The Programme is in line with one of the main objectives of the Integrated Energy and Climate Plan of the Republic of Bulgaria namely "To ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market" by "Building stock renovation".
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	It is necessary to introduce a differentiated approach with prior social eligibility criteria to the participating households, considering their social profile and risk of energy poverty.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Expert analysis and intensive public discussions. Communication campaigns to inform the households about the process of energy renovation and the benefits they will get. Provision of technical and legal advice to the interested households. Monitoring of the energy renovation process implementation and analysis of the results achieved.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Public authorities: Ministry of Regional Development and Public Works, regional authorities, and municipalities CSOs: chambers of builders and architects, energy agencies, homeowners' associations Private companies: construction companies, building materials companies
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	EU funding
Estimate of the energy poor households' rate, which will benefit by the selected policy	According to the latest statistics, energy poor households in Bulgaria are 30.1% of the population. A well targeted housing renovation program could bring long-term benefits to at least half of these households.

Monitoring procedure of the outcomes of the selected policy including indicative indicators	Indicative indicators to be monitored: 1) number of renovated dwellings, 2) number of energy vulnerable households and their share in the total number of households, 3) required and achieved energy efficiency class, and 4) achieved energy savings and energy costs reduction.
4. REECL Residential Energy Efficiency Credit Facility	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes. The Integrated Energy and Climate Plan of the Republic of Bulgaria aims "to ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market" by "improving energy efficiency for the benefit of vulnerable consumers".
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Such programme for energy efficiency home improvements need to be expanded to energy poor households with appropriate financial tools that consider the possibility of redirecting existing social payments to the financing of energy efficiency home improvements.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Expert analysis and intensive public discussions
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Public authorities: Ministry of Energy, Sustainable Energy Development Agency Homeowners and homeowners' associations
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Specialised funding institutions
Estimate of the energy poor households' rate, which will benefit by the selected policy	During the project duration around 10,000 households benefited by this energy efficiency credit facility. It is necessary such programmes to become available to households at risk of energy poverty and the needed financial engineering to be timely applied.

Monitoring procedure of the outcomes of the selected policy including indicative indicators	Indicative indicators to be monitored: 1) number of renovated dwellings, 2) number of households at risk of energy poverty and their share in the total number of households, 3) type of energy efficiency improvements, and 4) achieved energy savings and energy costs reduction.
5. LIFE Programme Project "Bulgarian Municipalities Working Together to Improve Air Quality "	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes. The Integrated Energy and Climate Plan of the Republic of Bulgaria aims "to ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market" by "improving energy efficiency for the benefit of vulnerable consumers".
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	The Programme implementation needs to comply with the following critical requirements: 1) a systematic approach to design and quality of the installations, 2) integrated solutions taking into consideration the different obstacles in the implementation process, 3) trust and acceptance on behalf of citizens, and 4) guarantees on behalf of the administration for achieving the desired results. The priority of energy vulnerable households needs to be preserved and developed in the implementation phase.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Communication campaigns on the benefits for households from the replacement of heating equipment. Provision of technical and legal advice to the interested households. Expert assistance in monitoring the implementation of the programme and the achieved results.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Public authorities: Ministry of Environment and Water, local authorities from the involved municipalities CSOs: Chambers of installers, Energy Agencies, Homeowners and homeowners' associations Private companies: Business in heating equipment Media: PR, TV, Radio, social media, etc.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	EU funding

Estimate of the energy poor households' rate, which will benefit by the selected policy	Approximately 10,000 households benefited by during the Programme duration.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Indicative indicators to be monitored: 1) number of households with replaced old inefficient stoves with emphasis on energy vulnerable households, and 2) achieved reduction of household energy cost.
6. DESIREE Gas - Demand Side Residential Energy Efficiency Through Gas Distribution Companies In Bulgaria	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes. The Integrated Energy and Climate Plan of the Republic of Bulgaria aims "to ensure the protection of energy vulnerable customers in the process of liberalisation of the electricity market" by "improving energy efficiency for the benefit of vulnerable consumers".
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	To secure the project funding by the International Fund "Kozloduy", administered by the European Bank for Reconstruction and Development. To ensure access to the funding scheme for energy vulnerable households.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Communication campaigns on the benefits for households from the high-efficient gas boilers replacement. Provision of technical and legal advice to the interested households. Expert assistance in monitoring the implementation of the programme and the achieved results.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Public authorities: Ministry of Energy CSOs: Chambers of installers, Energy Agencies, Homeowners and homeowners' associations Private companies: Business in gas equipment Media: PR, TV, Radio, social media, etc.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	EU funding

Estimate of the energy poor households' rate, which will benefit by the selected policy	12,000 households benefited for a five-year period from the beginning of the Programme
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The indicative indicators to be monitored: 1) number of households with installed high-efficiency gas boilers with special emphasis on the households at risk of energy poverty, 2) reduced share of household energy costs, 3) achieved energy savings per year, and 4) achieved reduction of GHG emissions.
7. Microfinance and Community support	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	The Programme targets socially disadvantaged families and marginalised communities. Therefore, the implementation requires a flexible approach based on an extensive information campaign and ongoing support for households benefiting from the provided credit instruments.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Stronger practical support for the Programme by local authorities would help to expand its scope.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Non-governmental organisations specialising in working with low-income families and marginalised communities. Public authorities providing social services at local level. Homeowners and homeowners' associations
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	International funding and charity
Estimate of the energy poor households' rate, which will benefit by the selected policy	The Programme has the potential to help alleviate energy poverty through low-cost energy efficiency measures in marginalised communities.

Monitoring procedure of the outcomes of the selected policy including indicative indicators	The indicative indicators to be monitored: 1) total number of loans taken, 2) number of serviced loans and their share of the total number of granted loans, 3) number of improved dwellings, 4) number of households with improved housing conditions, and 5) achieved reduction of heating costs.
8. One-time support	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner SOFENA)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Limited scope
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building of local authorities to monitor the energy vulnerable households under extreme social conditions and provide the needed emergency support.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Regional social assistance directorates with the support of specialised civil society organisations
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	State budget
Estimate of the energy poor households' rate, which will benefit by the selected policy	Limited capacity to support considerable share of energy vulnerable households
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Monitor the extreme emergency cases in winter time

3.2 Croatia

3.2.1 National policy framework adressing energy poverty

A detailed overview of the national key policies in **Croatia** can be found in Table 21.

Table 21 Key policies/legislation for Croatia

National key policies, plans and strategies	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
Energy Act[67]	08/04/2018	Recognizes a group of households where is a probability of potential existence of citizen in energy poverty and is currently defined under the term "vulnerable customer": - energy buyer from the category household who, due to his social status and/or health condition, is entitled to energy supply under special conditions - energy buyer from the category household who is supplied through a mandatory public service within the universal service and/or mandatory public gas supply service and/or heat supply service of tariff customers, also if a person/s live with this energy customer in the household and that person is described with one or both criteria they together form one of 2 categories: a. by which the public officials responsible for social issues have determined the state of endangered social status and the need for this form of social assistance, b. who have been diagnosed with a certain degree of disability, persons with special needs or persons in	4 measures have originated from this law that concern vulnerable group of citizens and citizens at risk of energy poverty: - "Regulation on the criteria for acquiring the status of vulnerable energy customers from networked systems (Official Gazette, number: 120/12, 14/14, 95/15, 102/15, 68/18)" - "Regulation on the monthly allowances for the vulnerable energy customers, the manner of participation in reimbursement of the energy costs of the beneficiary and the actions of the competent social welfare centers (Official Gazette, number: 102/2015) " - "Regulation on the criteria for acquiring the status of a protected customer in conditions of crisis in gas supply (Official Gazette, number: 65/2015)"	Ministry of Economy and Sustainable Development

67 Official Gazette, No. 120/12, 14/14, 102/15, 68/18

		poor health who may be at risk of life or health due to restrictions or suspension of energy supply. - energy buyer from the category of households who meet the conditions of poverty discribed by special regulations are entitled to the social minimum energy consumption determined by the conditions of supply in the appartment / house in which they live, family size, health status of family members and economic status	- "2015 Agreement of Cooperation in Combating Energy Poverty Measures"	
Electricity Market Act[68]	30/05/2019	Distribution system operators have to establish and maintain a register of vulnerable customers. The Act defines that a protected customer has the right to be supplied with a certain amount of electricity in the event of a crisis. Supply of protected customers is done over guaranteed supplier. In the event of a crisis situation during its duration, electricity producers must first offer the produced electricity to a guaranteed supplier.	1 measure has originated from this law that concerns vulnerable group of citizens and citizens at risk of energy poverty: - "Decision on the amount of the fee for the use of space used by production plants for the production of electricity (Official Gazette, No. 84/2013, 101/2013, 72/2015)"	Ministry of Economy and Sustainable Development
Energy Efficiency Act[69]	07/03/2020	Ministry has to develop three-year National Energy Efficiency Action Plans (NEEAPs), the purpose of which is to present energy saving conditions and energy consumption needs, long-term goals, energy efficiency measures and indicators for improving energy efficiency, etc. Energy-related products must have a label that provide standardized product information regarding energy efficiency, energy consumption and other product resources during use and additional information on these products. Thanks to such labels, customers can choose products that consume less energy and save money. However, there is currently no current co-financing program for such products.	1 measure has originated from this law that concerns vulnerable group of citizens and citizens at risk of energy poverty: - "Regulation on the obligation system of energy efficiency (Official Gazette, No. 41/2019)"	Ministry of Economy and Sustainable Development

68 Official Gazette, No. 22/13, 102/15, 68/18, 52/19
69 Official Gazette, No. 127/14, 116/18, 25/20

4th National Energy Efficiency Action Plan (NEEAP)	01/2019	The 4th NEEAP was developed for the period 2017-2019 but Government of the Republic of Croatia adopted it in January 2019, and it had two measures for combating energy poverty. The first measure (Capacity building to combat energy poverty) was intended for the period 2017-2019 and, thus, was not implemented due to the late acceptance of the plan. The second measure (Energy Poverty Reduction Program until 2026) is planned to last until the end of 2026. Although the NEEAP period is 2017-2019, it contains one part for the period 2019-2021 and one until the end of 2026.	The action plan consisted of 2 new measures (only one still active), 1 planned programme (in process) and 2 standard programmes from 3rd NEEAP (neither program is active but the continuation of both programmes is planned for the period 2021-2027): - 2 new measures: 1. "Capacity building to combat energy poverty" - although it is planned for the period 2017-2019 - no programme for energy-poor people has been implemented – no active 2. "Energy Poverty Reduction Programme until 2026" -active - 1 planned program: 1. "Programme to combat energy poverty, which includes the use of renewable energy sources in residential buildings in assisted areas and areas of special state concern for the period 2019-2021" - currently there is no public information available on the stage of development of this Programme - active -2 standard programmes from 3rd NEEAP 1. Programme of energy renovation of family houses 2014 – 2020 – Public Call for to finance the energy renovation of family houses for vulnerable groups of	Ministry of Economy and Sustainable Development

			citizens at risk of energy poverty – no active 2. Programme of energy renovation of multi-apartment buildings for the period 2014 – 2020 – no active	
Energy development strategy of the Republic of Croatia until 2030 with a view to 2050[70]	28/02/2020	It emphasized the importance of the role of increasing energy efficiency in reducing energy costs and alleviating energy poverty. The financing of the European Investment Bank and the European Bank for Reconstruction and Development, as well as the European Structural and Investment Funds (ESI Funds) and the European Fund for Strategic Investments (EFSI) are financial instruments used by the EU to help Member States achieve energy and climate goals. Accordingly, the cooperation of the Croatian Bank for Reconstruction and Development (HBOR) with the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) with the aim of designing, creating and financing programmes and projects related to renewable sources, energy, energy efficiency and energy poor households.	According to the Strategy, it is necessary to develop: - "Energy Poverty Reduction Programme" (this program is already listed under 4th NEEAP – "Energy Poverty Reduction Program until 2026") - to combat energy poverty which will have the following components: a. Unique model for covering energy costs for energy-poor households, b. Energy consulting for energy poor households and c. Measures for energy renewal and energy efficiency improvements in energy-poor households.	Ministry of Economy and Sustainable Development
Integrated National Energy and Climate Plan for the Republic of Croatia for the period from 2021 to 2030 (NECP)	12/2019	The Plan states that one of the energy efficiency measures would also be the implementation of the Energy Poverty Reduction Programme. This programme is already listed under 4th NEEAP – "Energy Poverty Reduction Programme until 2026" and under "Energy development strategy of the Republic of Croatia until 2030 with a view to 2050 (Official Gazette, No. 25/2020)".	2 programmes have originated from NECP that concerns vulnerable group of citizens and citizens at risk of energy poverty (only one still active but continuation of second program is planned for the period 2021-2027): - "Programme to combat energy poverty, which includes the use of renewable energy sources in residential buildings in assisted areas	Ministry of Economy and Sustainable Development

70 Official Gazette, No. 25/2020

			and areas of special state concern for the period 2019-2021" – currently there is no public information available on the stage of development of this Programme - and this programme is also part of 4th NEEAP - active - "Programme of energy renovation of multi-apartment buildings for the period 2014 – 2020" – no active	
Long-term strategy for the renovation of the national building stock until 2050	in the process of adopting	Workshops important for the development of the Long-Term Strategy: "Energy Poverty", "Application of modern solutions and rules of fire protection and risk of increased seismic activity during energy renovation of buildings", "Amendments to the Construction Law" and "Renovation of the National Building Fund of the Republic of Croatia "	The Decision on the adoption of the Long-Term Strategy for the Renovation of the National Fund of Buildings until 2050 was adopted	Ministry of Physical Planning, Construction and State Assets
Climate Change and Ozone Protection Act[71]	01/01/2020	Act promotes the adoption of a new Plan for the use of funds obtained from the sale of emission allowances. This law states that, starting from 2021, the amount of emission units at the level of the European Union will be gradually reduced with the application of a linear factor of 2.2%.	1 measure has originated from this law that concerns vulnerable group of citizens and citizens at risk of energy poverty: - A new plan must be developed and adopted - funds to design and launch a systematic program to combat energy poverty through the implementation of energy efficiency measures. The Plan states that measures to combat energy poverty will be co-financed with funds obtained from the sale of emission allowances through auctions	Ministry of Economy and Sustainable Development
Social Welfare Act care (OG 157/13, 152/14, 99/15, 52/16,	01/01/2020	In 2012, the Ministry formed a Working Group for Vulnerable Consumers, which recommended that the energy poor should be equated with those receiving monthly social benefits under the Social Welfare Act and	2 measures had originated from NECP that concern vulnerable group of citizens and citizens at risk of energy poverty:	Minister of Labor, Pension System,

71 Official Gazette, No. 127/19

16/17, 130/17, 98/19)		those receiving disability benefits, and that a solidarity benefit of HRK 0.03 should be introduced. Compensation for housing costs according to Article 41 of the Social Welfare Act refers to rent, utility fees, electricity, gas, heating, water, drainage and other housing costs. Only the beneficiary of the guaranteed minimum benefit can be entitled to such compensation. Local self-government units, i.e. the City of Zagreb, recognize the right to compensation for housing costs up to 50% of the amount of the guaranteed minimum compensation granted to a single person or household.	- The Guaranteed Minimal Support programme (Social Welfare Act (Official Gazette, number: 157/13, 152/14, 99/15, 52/16, 16/17, 130/17, 98/19, 64/20, 138/20) - Decision on the basis for calculating the amount of the minimum fee (Official Gazette, No. 157/2013)	Family and Social Policy

3.2.2 Sectoral policy tools and measures to alleviate energy poverty

Table 22 Sectoral policy tools and measures in Croatia

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Social care	The Guaranteed Minimal Support programme [72]	The right to a financial assistance for a single person or a household to meet their basic living needs because they do not have sufficient funds to meet their basic living needs.	Subsidy	Access of all users who have the right to the quaranteed minimal support	Minister of Labour, Pension System, Family and Social Policy
2	Social care	Decision on the basis for calculating the amount of the minimum fee[73]	The basis on which the amount of the guaranteed minimum financial assistance is calculated is determined by a decision of the Government of the Republic of Croatia and amounts to 800.00 HRK (107 EUR). The amount of the minimum	Subsidy	- guaranteed minimum financial - to financial assistance in	Minister of Labor, Pension System, Family and Social Policy

72 Social Welfare Act, Official Gazette, number: 157/13, 152/14, 99/15, 52/16, 16/17, 130/17, 98/19, 64/20, 138/20)
73 Official Gazette, No. 157/2013

			financial assistance for a single person who is unable to work is 115%, while for a single person that is capable to work is 100% of the basis. For a single parent the amount is 100% (800.00 HRK), for an adult member of the household it is 60% (480.00 HRK = 64 EUR), for a child it is 40% (320.00 HRK = 43 EUR), and for a child of a single parent it is 55% (440.00 HRK = 59 EUR) of the basis. All recipients of guaranteed minimum financial assistance are entitled to financial assistance in terms of housing costs like energy bills (heating) which are approved by the local authorities in the amount of half of the guaranteed minimum financial assistance. A single person or household beneficiary of the guaranteed minimum financial assistance who are using wood for heating have the right to compensate their heating costs once a year with 3 m³ of wood or approved monetary amount to cover that cost that is determined by the competent local authority. There is also one-time support that may be granted in exceptional circumstances when residents incur extra costs, such as higher heating costs in winter or repairs/replacements for heating equipment.		terms of housing costs like energy bills (heating) which are approved by the local authorities in the amount of half of the guaranteed minimum financial assistance - compensate their heating costs once a year with 3 m³ of wood or approved monetary amount to cover the cost that is determined by the competent local authority	
3.	Social care	Regulation on the monthly allowances for the vulnerable energy customers, the manner of	Co-financing of electricity costs to a maximum of 200 HRK per month (26,39 euro per month) for the vulnerable energy customers according to the reached recognition of the right for allowance for the vulnerable energy customer by competent center for social welfare. Allowance is provided through the solidarity fee paid by electricity	Subsidy	- Co-financing of electricity costs to a maximum of 200 HRK per month (26,39 euro per month)	Minister of Labor, Pension System, Family and Social Policy

		participation in reimbursement of the energy costs of the beneficiary and the actions of the competent social welfare centers[74]	customers from the household category as an amount of 0.03 HRK for each kWh of electricity consumed that doesnot include value added tax (VAT). The solidarity fee is paid to the supplier in accordance with the end-user supply contract, which pays the collected funds once a month to the state budget account, and they are recorded as assigned funds of the Minister of Labour, Pension System, Family and Social Policy.			
4.	Social care	2015 Agreement of Cooperation in Combating Energy Poverty Measures	Representatives of electricity suppliers (GEN-I, RWE and HEP) waived the possibility of including a solidarity fee in the energy price. Although HEP Opskrba applies the said Regulation (Official Gazette, number: 102/2015), at the same time it grants a discount to customers from the household category of HRK 0.03 for each kWh of electricity consumed, which means that their electricity bill, which they pay to HEP Supply, remains unchanged. The agreement on cooperation in measures to combat energy poverty, by which HEP took over the costs of solidarity compensation, was established by agreement between the Government of the Republic of Croatia and suppliers and may expire at any time, which would increase the price of electricity for citizens.	Subsidy	- grants a discount to customers from the household category of HRK 0.03 for each kWh of electricity consumed	Ministry of Economy and Sustainable Development
5.	Social care	Regulation on the criteria for acquiring the status of vulnerable	Definition of the status of vulnerable customer that may have the end user on the networked system from the household category, under the criterion that the customer is:	/	- consumer protection	Ministry of Economy and Sustainable Development

74 Official Gazette, number: 102/2015

		energy customers from networked systems[75]	- beneficiary of the guaranteed minimum financial assistance; - a member of the household who is a beneficiary of the guaranteed minimum financial assistance; - beneficiary of disability benefit - or that lives in a household with a beneficiary of disability benefit. In addition, the Regulation states that the supplier of the end-user in the household category must check the customer's current vulnerability situation at the competent social welfare center before issuing a disconnected order and inform the system operator to which that customer is connected			
6.	Social care	Regulation on the criteria for acquiring the status of a protected customer in conditions of crisis in gas supply[76]	Regulation to protect certain categories of end users of gas in conditions where sufficient quantities of gas to cover consumption cannot be obtained on the market, and consequently can lead to crisis in gas supply. Therefore, a "protected customer" was defined as a customer, belonging to the following categories: households and social service, who has the right to be supplied with a certain amount of energy in the event of a partial disruption in the energy supply. The operator of the transmission or distribution system to which the protected customer is connected, must determine the required quantities of gas for all protected	/	- consumer protection	Ministry of Economy and Sustainable Development

75 Official Gazette, number: 120/12, 14/14, 95/15, 102/15, 68/18
76 Official Gazette, number: 65/2015

			customers and allocates them to individual suppliers.			
7.	Energy efficiency	Programme of energy renovation of family houses 2014 – 2020 - programme is planned to continue according to the Energy renovation programme for single family houses 2021-2027	The goal is to increase energy efficiency of the existing houses, to reduce energy consumption and emissions of CO_2 into the atmosphere, and to reduce the monthly costs for the energy generating products, with the overall improvement of the quality of living. From the last year the programme has a criterion for energy vulnerable households, which states that the owner of a family house or a member of a household residing in a family house must be a beneficiary of the guaranteed minimum financial assistance. Public Call to finance the energy renovation of family houses for vulnerable groups of citizens at risk of energy poverty was on the 1 September 2020 with 20% of the total funds (28.4 million HRK = 3.79 million EUR) that was set aside for such vulnerable group of citizens. These households have compensated their energy efficiency renovation with 100% of the required amount. Also, for such vulnerable households, funds costs for energy auditors and making of energy certificate before and after renovation will be fully financed. Social welfare centres coordinated certified energy auditors to help in the application process to the citizens most at risk.	Grant	- no active policy - there are no existing targets/goals for now – but it is planned for period 2021-2027 - especially for energy-vulnerable households	Environmental Protection and Energy Efficiency Fund
8.	Energy efficiency	Programme of energy renovation of multi-	Support the implementation of energy renovation measures and use of renewable energy sources in apartment buildings, especially using the integrated approach. The Program	Grant	- no active policy - there are no existing targets/goals	Environmental Protection and Energy Efficiency Fund

		apartment buildings for the period 2014 – 2020 - programme is planned to continue according to the Energy renovation programme for multi-apartment buildings 2021-2027	states that one of the most significant expected effects is, among other things, the alleviation of energy poverty, and that the implementation of this Program would certainly include a part of such vulnerable group of citizens. However, in addition to the criteria for the energy poor, the Program also lacks concrete measures to meet the needs of energy-poor citizens in the energy renovation of apartment buildings.		for now – but it is planned for period 2021-2027 - especially for energy-vulnerable households	
9.	Social care	Decision on the amount of the fee for the use of space used by production plants for the production of electricity[77]	With this Decision, energy entities, i.e. owners of production plants for electricity production, are obliged to pay compensation to the premises where power plants are built to local self-government units, i.e. municipalities and cities, which should be used for social welfare programs, i.e. assistance to energy vulnerable groups and in accordance with the provisions of the Strategies for combating poverty and social exclusion in the Republic of Croatia (2014-2020).	Subsidy	/	Ministry of Economy and Sustainable Development
10.	Energy efficiency	Regulation on the obligation system of	One of such goals is the reduction of energy poverty, the purpose of which is to increase energy efficiency in residential areas of beneficiaries of the fee for vulnerable energy customers (in accordance with the regulation on	Subsidy	- the fee for vulnerable energy customers (in accordance with	Ministry of Economy and Sustainable Development

77 Official Gazette, No. 84/2013, 101/2013, 72/2015

		energy efficiency[78]	social welfare) and in households in areas with developmental disabilities. The Regulation stipulates that the savings' calculation is increased by 20% for an energy-saving customer, if the savings are the result of measures taken in the residential premises of the beneficiary of the fee for the endangered energy buyer, while the calculation of savings resulting from final consumption measures in areas with development specifics increases by 10%.		the regulation on social welfare) is increased by 20% for an energy-saving customer or 10% for residential energy-saving customer	
11.	Energy efficiency	Energy Poverty Reduction Programme until 2026 -	This measure envisages the design and launch of a systematic programme to combat energy poverty through the implementation of energy efficiency measures: - replacement of household appliances according to the "old for new" system; - improving or replacing heating systems (increasing the efficiency of heating systems) and replacing energy sources (especially electricity and fuel oil) with more environmentally, economically and energy-efficient ones, especially systems that use renewable energy sources; - simple energy efficiency measures. The measure also envisages the establishment of a system for monitoring socio-demographic and energy indicators describing energy poverty at national level, which should contribute to clearer and more transparent collection of data on vulnerable and energy-poor households. In	Grant, subsidy	- no active policy - there are no existing targets/goals for now – but it is planned - especially for energy-vulnerable households	Ministry of Economy and Sustainable Development

78 Official Gazette, No. 41/2019

			addition, it is planned to implement energy efficiency measures in 50,000 households (as many as currently have the status of vulnerable energy buyer). It is estimated that in the period of the 4th NEEAP, about 330 households will participate in the programme annually throughout Croatia, with an average area of 70 m^2 of living space, and that the average energy class of building F.			
12.	Social care	Act on Write-Off of Debts to Natural Persons[79]	On the basis of which one-off assistance measures are implemented in order to solve the problem of blocked accounts of natural persons. Thus, for example, HEP writes off debts to persons up to the maximum amount of debt of HRK 5,000 in the name of the debt principal and costs, increased by the related interest.	debt write-off	- writes off debts to persons up to the maximum amount of debt of HRK 5,000	Croatian Electricity Company (HEP)

Table 23 Sectoral policies in Croatia analysis

1. The Guaranteed Minimal Support programme	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very high

79 Official Gazette, No. 62/2018

Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining co-financing specially for poor households Guarantee - Ensuring national fund for payment of Guaranteed Minimal Support additionally for poor households Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term energy poor citizen Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government CSOs
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Subsidy - national funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/
2. Decision on the basis for calculating the amount of the minimum fee	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High)	Very high

(The estimation presents the views of the national partner DOOR)	
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining calculation of amount of the minimum fee additionally for poor households Guarantee - Ensuring national fund for payment of Guaranteed Minimal Support additionally for poor households Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term energy poor citizen Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	• National government • Regional government • Local government • CSOs
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Subsidy - national funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/
3. Regulation on the monthly allowances for the vulnerable energy customers, the manner of participation in reimbursement of the energy costs of the beneficiary and the actions of the competent social welfare centers	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO

Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining financing specially for poor households Guarantee – Ensuring national fund for payment/co-financing of electricity costs to a maximum of 200 HRK per month (26,39 euro per month) Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term energy poor citizen Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government CSOs Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Subsidy - national funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/

4. 2015 Agreement of Cooperation in Combating Energy Poverty Measures	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining financing specially for poor households Guarantee - Ensuring that utilities grants a discount to customers from the household category of HRK 0.03 for each kWh of electricity consumed Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term energy poor citizen Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Subsidy - national funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	/

Monitoring procedure of the outcomes of the selected policy including indicative indicators	/
5. Regulation on the criteria for acquiring the status of vulnerable energy customers from networked systems	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Administration - Non-existent clearly elaborated criteria for a vulnerable group of citizens and citizens at risk of energy poverty.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term of 'energy poor citizen' Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government CSOs
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	/
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/

6. Regulation on the criteria for acquiring the status of a protected customer in conditions of crisis in gas supply	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Guarantee - Ensuring that utilities protect consumer Administration - Non-existent clearly elaborated criteria for a vulnerable group of citizens and citizens at risk of energy poverty.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term of 'energy poor citizen' Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	/
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/

7. Programme of energy renovation of family houses 2014 – 2020 - programme is planned to continue according to the Energy renovation programme for single family houses 2021-2027	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining the source of financing specially for poor households (besides EU grants for renovation) Guarantee - Ensuring guarantee fund for repayment of investment Administration - Helping energy poor apply and manage
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government Housing associations Research centers and universities CSOs ESCOs Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	ESIF + ETS national funds

Estimate of the energy poor households' rate, which will benefit by the selected policy	<1000 HH
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Croatia has developed a system for measurement and verification of implemented measures
8. Programme of energy renovation of multi-apartment buildings for the period 2014 – 2020 - programme is planned to continue according to the Energy renovation programme for multi-apartment buildings 2021-2027	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining the source of financing specially for poor households (besides EU grants for renovation) Guarantee - Ensuring guarantee fund for repayment of investment Administration - Helping energy poor apply and manage
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government Housing associations Research centers and universities CSOs

	ESCOs Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	ESIF + ETS national funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	<1000 Households
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Croatia has developed a system for measurement and verification of implemented measures
9. Decision on the amount of the fee for the use of space used by production plants for the production of electricity	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining financing specially for poor households Guarantee - Ensuring local self-government units, I.e. municipalities and cities, used funds for social welfare programs, I.e. assistance to energy vulnerable groups Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to targeted among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term energy poor citizen Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods

	Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Regional government Local government CSOs Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Subsidy – local/regional funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/
10. Regulation on the obligation system of energy efficiency	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining financing specially for poor households Guarantee - Ensuring that the fee for vulnerable energy customers (in accordance with the regulation on social welfare) is increased by 20% for an energy-saving customer or 10% for residential energy-saving customer Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty

Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops - to get acquainted with the term of an energy poor citizen Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government Housing associations CSOs Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	National funds - the fee for vulnerable energy customers
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/
11. Energy Poverty Reduction Programme until 2026	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining financing and co- financing specially for poor households

administration...)	Guarantee - systematic program to combat energy poverty Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	National government Regional government Local government CSOs Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	ESIF + ETS national funds
Estimate of the energy poor households' rate, which will benefit by the selected policy	50,000 households
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Croatia has developed a system for measurement and verification of implemented measures
12. Act on Write-Off of Debts to Natural Persons	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner DOOR)	Very High

Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Criteria - Define the term of an energy poor citizen or an energy poor household. Defining the criteria for energy poor Financing - Defining writes off debts specially for poor households Guarantee – Fund to maximum amount of debt of HRK 5,000 Administration - Better management of statistics and lists of beneficiaries of this measure, in particular to target among them vulnerable group of citizens and citizens at risk of energy poverty
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Educational workshops Technical assistance - Advisory services for measures development Legal assistance - Development of policy proposals using participatory methods Tools - Organization of workshops, public hearings and similar
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Utilities
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	National funds - writes off debts
Estimate of the energy poor households' rate, which will benefit by the selected policy	/
Monitoring procedure of the outcomes of the selected policy including indicative indicators	/

3.3 Estonia

3.3.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Estonia** can be found in Table 24.

Table 24 Key policies/legislation for Estonia

National key policies (strategies, action plans)	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
Estonia's 2030 National Energy and Climate Plan (NECP 2030)	2019	Estonia's 2030 National Energy and Climate Plan ('NECP 2030') is a communication document that has been drawn up to meet the requirement laid down in Article3(1) of Regulation (EU) No 2018/1999 on the Governance of the Energy Union and Climate Action ('the Regulation').	Current Estonian national development documents do not deal with energy poverty as a separate issue. Measures for tackling energy poverty will be specified in the course of drafting new legislation. The aim is to improve the situation of natural persons and households who are not able to participate in the energy saving measures without additional support. To achieve this, the policy measures, a list of which is approved by the Government of the Republic from among the measures necessary for meeting the general energy saving obligation, must be assigned to the natural persons or households under economically insecure situations or the service providers responsible for them to mitigate energy poverty. Transposition of the Directive links the person in energy poverty with the subsistence allowance, which means that recipients of the subsistence allowance also include people experiencing energy poverty. A person living alone or a family who in the last six months has received once the subsistence	Ministry of Economic Affairs and Communications

			allowance for housing costs (incl. energy purchase) and whose previous month income (gross) is not higher than the minimum wage for equivalence scales 1,0;0,8;1,2 is deemed to be experiencing energy poverty. In 2018, 21,000 people, i.e. 1.6% of Estonian population, received the subsistence allowance to cover housing costs, including the apartment house loan.	
Long-term strategy for building renovation	2020	The strategy is a part of Estonia's national energy and climate plan, describing the process of cost-effective renovation of the existing building stock into nearly zero-energy buildings by 2050.	The main goal of this long-term renovation strategy is the full renovation, by 2050, of buildings erected before 2000. The depth of full renovation is reflected in the minimum required energy performance of a building after a major renovation, which, according to the Estonian energy performance regulations, currently is class C. Goal for energy poverty: When planning full renovation of existing buildings, it must be remembered that some households are not capable of carrying out renovation. Renovation of a building requires the owner to make a financial contribution even if there are support measures available and households with lower incomes are not able to provide that. Vulnerable households need additional support for participating in energy saving measures.	Ministry of Economic Affairs and Communications
Welfare Development Plan 2016-2023	2016	The Welfare Development Plan focuses on the strategic objectives of labour market, social protection, gender equality, and equal treatment policies for 2016–2023. The Development Plan provides a thorough overview of the main objectives, courses of action,	Focuses on poverty reduction and aims at the reduction of the absolute poverty rate to 5.8% and reduction of the relative poverty rate to 15% by 2023.	Ministry of Social Affairs

		and problems regarding these policies.		

3.3.2 Sectoral policy tools and measures to alleviate energy poverty

Table 25 Sectoral policy tools and measures in Estonia

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Energy efficiency of buildings	Energy and Climate Policy Sectoral policy: Energy Efficiency	The energy saving measures for persons experiencing energy poverty include provisions on access to energy-efficiency measures. Housing benefit for families with many children. Support for the reconstruction of apartment buildings. Specifications have been created for the regions where property values are lower and energy poverty is greater. Reconstruction grant for small residences - The objective of the grant is achieving energy efficiency and the better indoor climate of small residences, reducing their energy consumption, and facilitating the adoption of renewable energy. Case-by-case investment aid to develop local government building stock. This aid helps to improve the availability of rented accommodation for households that are not able to buy or rent it from the rental market, including socio-economically	Grants help to improve the energy efficiency of apartment houses and support all members of the apartment association to carry out energy-efficiency measures, incl. facilitating the adoption of renewable energy. Supporting loan and loan guarantee are available for apartment associations.	Objective of Estonia for 2030 is to keep the final energy consumption at the current 32-33 TWh/y and to reduce the primary energy consumption up to 14%, both with the help of the proposed energy savings measure. The main aim is a cost - effective renovation of the existing building stock into nearly zero energy buildings by 2050. The policy has an extremely large social dimension as it is estimated that it would improve the living and working conditions of 80% of Estonian population. The renovation of homes and workspaces as well as tearing down all	Ministry of Economic Affairs and Communications or Ministry of Environment (depending on the instrument)

			disadvantaged persons. Replacement of an apartment building's heating unit that runs on biomass or fossil fuel or a heating unit that partially uses electrical heating with a heating unit that uses renewable fuel or connecting an apartment building with the district heating network. Installation of local heating to replace the district heating system of an existing building and demolishing the parts of the district heating system that falls into disuse as a result thereof.		derelict buildings will make the building stock safer, of better aesthetic quality, better for health, better accessible and more affordable.	
2.	Social care	Social policy	Depending on the situation, local governments use social services and other social assistance for the alleviation of need.	Subsistence benefit - financial state support for persons in need that it is paid by the local government. The subsistence benefit is paid if other measures for the alleviation of poverty and need have proven inadequate. The municipal or city government can also assign and pay additional social benefits from the local budget. Families applying for a subsistence benefit whose members include children receiving child allowance can also apply for a needs-based family benefit.	The objective of subsistence benefit is to alleviate material deprivation of persons and families in need of assistance as a temporary measure supporting the ability of persons to cope independently by providing minimum funds to satisfy the primary needs.	Ministry of Social Affairs, local governments

Table 26 Sectoral policies analysis

1. Energy and Climate Policy /Energy Efficiency	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner EKYL)	Very High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	The main challenges are: Financing – the support measures don't cover all the need for funding currently Administration on apartment associations' level – the challenge is to convince apartment associations to use the available measures (as more than 95% of the housing stock is privatized in Estonia, only the apartment owners in apartment associations can make the final decision to adopt the energy-efficiency measures in the buildings)
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building - Informing and educating the population on energy efficiency and energy poverty. Better awareness of the use of electricity and heat by residents and apartment associations allows them to plan measures for achieving energy efficiency and adopting renewable energy.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Ministry, financial institutions (Fund KredEx, banks), local authorities, apartment associations
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	In the coming years, the measures will be implemented using the state's tax revenue, the funds of the European Union budget framework for 2014-2020 (above all, the funds of the European Regional Development Fund, the Cohesion Fund and, to a smaller extent, Horizon 2020) and the auctioning revenue from the European Union scheme for greenhouse gas emission allowance trading.

Estimate of the energy poor households' rate, which will benefit by the selected policy	N/A
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The outcomes are monitored by the ministry. According to the long-term strategy 320 000 apartments and private houses will have improved energy use by 2030.
2. Social Policy	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner EKYL)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	The main challenge is the high unemployment rate in some regions which makes low-income households dependent on social subsidies.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	As social services are provided by the local authorities, it depends on the authority but the policy is effective mostly.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Local authorities, residents/apartment owners
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	The measures will be implemented using the state's tax revenue and local authority's tax revenue.
Estimate of the energy poor households' rate, which will benefit by the selected policy	According to the statistics, 1.6% of the population in Estonia needs subsistence benefit/allowance (21 000 people) and, therefore, will benefit by the policy.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The outcomes are monitored by the ministry and local authorities.

3.4 Greece

3.4.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Greece** can be found in Table 27.

Table 27 Key policies/legislation for Greece

National key policies (strategies, action plans)	Date of official adoption on a national level	Short description	Existing targets/goals	Coordination authority
National Energy and Climate Plan	31/12/2019	The National Energy and Climate Plan (NECP) is a strategic plan for the Greek Government on climate and energy issues and presents a roadmap for achieving specific Energy and Climate Objectives by 2030. NECP presents and analyses policy priorities and measures in a wide range of development and economic activities for the benefit of Greek society, making the plan as the reference point for the next decade	The goal of addressing energy poverty is clearly stated as part of the clean energy and energy efficiency axes of actions to be promoted. More specifically, targets/goals which affect energy poverty directly or indirectly are mentioned as follows and with a timeframe until 2030: Reduction by at least 50% of relevant energy poverty indicators by 2025 (75% compared to 2016 levels) and well below EU average. Reduction of greenhouse gas emissions by at least 40% compared to 1990 levels. RES share in electricity production at least 35%. Final energy consumption in 2030 same as 2017. Completely eliminate coal energy production till 2028. Increase energy efficiency by 38% according to the EU proposed methodology. Annual renovation of 5.400m2 used by the central government services. Energy renovation of	Ministry of Environment and Energy

			600.000 housing units (12-15%) of the national building stock. Increase gas share in final energy by 50% compared to 2017 levels.	
Long-term Strategy for the renovation of the Greek building stock	03/2021	The Long-Term Renovation Strategy (LTRS) accompanies NECP and places special emphasis on the importance of the energy upgrade of the Greek building stock (residential and commercial buildings, public and private), facilitating the cost-effective conversion of existing buildings into buildings with almost zero energy consumption. The third edition of the National LTRS (2021)[80] has been submitted to the European Commission.	Convert the building stock to carbon-free and highly energy efficient by 2050	Ministry of Environment and Energy

3.4.2 Sectoral policy tools and measures to alleviate energy poverty

Table 28 Sectoral policy tools and measures in Greece

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Buildings	"Exikonomo-Autonomo" (eng. I am saving – I am getting autonomous)	The Programme consists of providing incentives for energy saving interventions and enhancing energy autonomy in the residential building sector with the aim of reducing energy needs and the consumption of conventional fuels, pertaining to the transition to a "Smart Home". Eligible residencies for financing are a one-family	Grant	Renovation of at least 60.000 homes annually till 2030	Ministry of Environment and Energy

80 https://ec.europa.eu/energy/sites/default/files/2020_ltrs_el.pdf

		renovation scheme	house, a whole block of flats and an apartment that complies with the following criteria: 1. It is used as a main residence, 2. It has a legitimate building permit, 3. It is classified according to the Energy Efficiency Certificate (EEC) in a class lower than or equal to C. Indicative Financed works: 1. Replacement of window frames, 2. Installation of thermal insulation at the building envelope (including the roof/and the pilots space), 3. Heating/cooling and hot water system upgrade, 4. Other Savings - Autonomy Interventions (photovoltaic, smart home, elevator upgrade, etc.) Highest eligible budget: The eligible budget of interventions per property may not exceed Euro 50.000 including VAT of main use as a residence, whereas for apartment block of type B may not exceed Euro 80.000 including VAT.			
2.	Community energy	Law on Energy Communities	Energy Communities (ECs) under Law 4513/2018 are civil cooperatives exclusively active in the energy sector with the aim of promoting social and solidarity-based economy and innovation in the energy sector, addressing energy poverty, and promoting energy sustainability, production, storage, self-consumption, distribution, and energy supply, enhancing energy self-sufficiency / security in island municipalities as well as improving energy efficiency in end-use at a local and regional level. The law encourages citizens, local authorities, and private and public agencies to participate in the production, distribution and supply of energy, setting a locality criterion (at least 51% of the members to be related to the	Financial and other type of incentives* *exemption from bidding processes is revoked as of 2022 (Law 4579/2020, article 160)	To install 600 MW by 2030 (to reach in total more than 1 GW of installed capacity) through community schemes primarily for self-production (net-metering)	Ministry of Environment and Energy

			place where the EC is headquartered). Each member has one vote regardless of the cooperative capital it owns. Especially for small islands (<3100 inhabitants), the participation rates of local or regional authorities can reach 50%. Provisions for the application of virtual-net metering open the road for citizens to become prosumers. There are two types of ECs; the not profit and the for-profit that differentiate on the number and type of members as well as the possibility of distributing surplus.			
3.	Social care	Heating allowance	A heating allowance is given to consumers who are using heating oil, gas or biomass to aid with heating expenses. The amount which corresponds to each household is calculated based on meteorological and geographical parameters, ranging from 80€ to 650€ for 2020.	Subsidy	To aid with heating expenses and compensate for the increase in fuel prices over the last years.	Ministry of Finance
4.	Social care	Minimum Guaranteed Income/Social Solidarity income (KEA)	The Social Solidarity Income (KEA) is a monthly welfare allowance that combines: - Income aid of minimum 200€/month (for a single person household) - Complementary social services, benefits and goods such as free medical care for the uninsured, referral and integration into social care/support structures and services/programs to tackle poverty. - Social tariff for electricity, water supply and Municipal costs. Promotion of beneficiaries, if they are able to work, in actions aimed at their integration/reintegration in the labor market (community service programmes, vocational	Subsidy	KEA aims to act as a safety net for vulnerable households to tackle the effects of poverty and avoid social exclusion.	Ministry of Interior, Ministry of Education, Ministry of Labour and Social Affairs, Ministry of Finance

			training programs, traineeships, joining/returning to the education system and second chance schools)			
5.	Social care	Housing Allowance	The Housing Allowance is a welfare rent subsidy program for households renting their main residence. It provides financial aid to cover (partially) the cost of rent for vulnerable households ranging from 70€ to 210€/month. Income, property value and renting contract criteria apply for the beneficiaries.	Subsidy	This programme aims to act as an effective social protection system for the first home.	Ministry of Labour and Social Affairs
6.	Energy market	Social tariff	Vulnerable households which fall under certain categories regarding their income, property value and health conditions are entitled to discounted electricity charges and other additional benefits. There are two categories of beneficiaries: Those who also receive the "Social Solidarity Income (KEA)" and are charged 75€/MWh, also exempt by distribution and network charges, and the rest who are charged 45€/MWh.	Discount	To protect vulnerable consumers.	Ministry of Environment and Energy
7.	Buildings	Legalisation fine deduction for energy efficiency/structural interventions	This is a financial incentive available to citizens (not only homeowners) who legalize their buildings which were built without a permit or include constructions/uses that are not completely legitimate and have been completed until July 2011. Expenses made to increase the energy efficiency or structural resilience of these buildings can be discounted from the fine to be paid up to the percentage of 50%.	Discount	To encourage both the legalization and the energy efficiency upgrade/structural reinforcement of these buildings with the guidance of engineers/experts.	Ministry of Environment and Energy
8.	Tax incentives	Tax deduction for renovation costs	This is a financial incentive available to citizens (not only homeowners) who perform building renovation works, including energy efficiency	Tax incentive	To reduce tax evasion among the building industry professionals and	Ministry of Finance

			interventions. 40% of the cost of the works is discounted from the annual income tax for a period of 4 years.		encourage building upgrade works.	
9.	Energy market	Vulnerable Customers	Special protective measures are provided to Vulnerable Customers by all electricity and gas suppliers. These consist of a deadline of forty days for the payment of electricity bills, the possibility for partial and interest-free payment of the electricity bills, suspension of the supplier's capability to order the disabling of the electricity meter (electricity cut off) due to outstanding debts during the winter period (November to March) and the summer period (July and August) as well as stricter conditions for the termination of the electricity supply contract by the supplier. As per the gas safety net, this has been enhanced to prohibit interruption of supply due to debts for consumers suffering from serious health problems, the advance payment for the inclusion of vulnerable customers in a settlement of overdue debts is abolished and the number of installments for settlements is reduced. Residential Electricity Customers may be included in the Vulnerable Customers Registry only for electricity consumed in their main residence, irrespective of the selected electricity supplier, if they belong to one of the following categories: - Customers already included in the Social Residential Tariff - Customers whose household includes member(s) who need life support with medical devices, with the same income criteria currently applied for inclusion in the	Protective provisions	To enable vulnerable energy consumers to access the full benefits of the liberalized energy market, which may not be otherwise available due to issues such as energy affordability.	Ministry of Environment and Energy

			Social Residential Tariff (property criteria do not apply) - Customers who have reached the age of seventy (70) provided that all other (if any) adult members of the household have reached the age limit mentioned above, with the same income criteria currently applied for inclusion in the Social Residential Tariff, increased by eight thousand (8,000) euros (property criteria do not apply).			
10.	Energy market	Energy efficiency obligation schemes	In Greece, the energy efficiency obligation schemes (Law 4342/2015 of the Greek Parliament), constitute the first and only active market-based instrument in the energy saving sector to date. The particular instrument was in effect for the period 2017-2020 and will continue to apply until 2030. Within the energy efficiency obligation scheme fuel and energy service providers, electricity suppliers etc. are obliged to use their own capital to meet national energy efficiency targets while consumers are safeguarded and not burdened with added costs. The energy efficiency obligation schemes framework contains provisions for addressing energy poverty. In particular, for the 1st implementation period of 2017-2020 a premium is anticipated for energy savings as a result carrying out technical and / or behavioral measures in energy vulnerable households, by applying an increase coefficient of 1.4. Modifications are expected with the aim of improving both the operation and the efficiency of the scheme and especially motivating	Energy savings measures as part of company strategy	Energy efficiency obligation schemes will account for 20% of the total cumulative energy savings target, for the period 2021-2030	Ministry of Environment and Energy

			obligated actors to embark on more technical interventions.			

Table 29 Sectoral policies analysis

1. "EXIKONOMO-AUTONOMO" RENOVATION SCHEME	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No (but the same goal of 600.000 dwellings' renovation till 2030 is mentioned)
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Very High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Even though the eligibility criteria favors the vulnerable and energy poor households through a significantly higher percentage of covered expenses that may rise up to 95% for households with very low income in areas to be delignified, the application procedure to the scheme is based on chronological order (first in-first out), meaning that the vast majority of interested households are excluded because the funds run out after a few minutes. Moreover, the scheme covers only a part of the renovation costs and the rest must be paid either by a loan or by the homeowners themselves. These upfront costs, along with the costs for the preparation of the EPC and the files to be submitted as part of the application, are often very difficult to be covered from vulnerable citizens and banks have strict procedures for assessing creditworthiness before granting a loan to these customers. Finally, in the case of vulnerable citizens who rent their residence, the problem of split incentives arises.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Technical assistance to establish a different application procedure and selection criteria that will clearly promote energy poor households. The Greek Minister of Environment and Energy has recently announced (February 2021) that in the next cycles of the programme, new

	selection criteria will be established based on a factor such as the age of the building, the annual income, and the extreme weather conditions of the specific region.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Environment and Energy, Energy Inspection Departments, Energy and renovation market professionals, Engineers, Banks.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	The Program is funded by the National Strategic Reference Framework (NSRF) resources and it is co-financed by Greece and the European Union.
Estimate of the energy poor households' rate, which will benefit by the selected policy	600.000 households until 2030. A number of these beneficiaries are considered to be vulnerable households based on specific selection criteria and cannot be officially characterized as energy poor.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The Ministry of Environment and Energy publishes annually statistical data on EPCs which also include data on renovated buildings through this scheme (number, average budget etc).
2. LAW 4513/2018 ON ENERGY COMMUNITIES	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Within two years of the adoption of the Law, more than 400 Energy Communities (ECs) were founded according to a mapping survey conducted in 2020[81]. It should be noted that for 26 ECs (out of the total 409) information about their address was not available. These ECs were not included in the online map. The main challenges for ECs were recorded during the 1st Energy Democracy Dialogues workshop[82] and are listed below: - Securing financing.

81 Electra Energy, 2020. Mapping of Energy Communities in Greece survey. Available on: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiits_PyIPvAhWBlosKHTHCAS4QFjAAegQIAhAD&url=https%3A%2F%2Fwww.greenpeace.org%2Fstatic%2Fplanet4-greece-stateless%2F184045bd-mapping_of_energy_communities_v1.2.pdf&usg=AOvVaw1UmGlU3Z0GoXMSp2pzVeKE

821st Energy Democracy Dialogue workshop "Energy Communities discuss Energy Communities", organised by INZEB & ELECTRA Energy Cooperative on 3.12.2020. Results available at:

	- Frequent/negative changes in the institutional framework of RES. - Private actors and companies hijacking the model. - Lack of female representation. - Lack of available space in cities for RES facilities. - Difficulty speeding up procedures due to volunteer work, bureaucracy, long decision-making process. - ECs competition with private investors through tenders.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Awareness raising over the social impact of both types of ECs (not-profit/ for-profit) and the potential they hold to increase the social acceptance of RES projects, among policy makers, traditional energy market actors, banking institutions. Provision of capacity building and networking support to ECs that would enable them to advocate for a more favorable legal framework and secure appropriate financial mechanisms.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Environment and Energy, Local and regional authorities, Civil society organizations, Local development agencies, Market actors, Various associations.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	New Development Law for Investment Incentives (4399/2016), Partnership Agreement for the Development Framework, Consignment Deposits and Loans Fund (provides loans to municipalities who can establish ECs), Green Fund (through the Special Transition Program for Delignification expected in 2021 and targeting only ECs in the lignite region of Western Macedonia)
Estimate of the energy poor households' rate, which will benefit by the selected policy	According to a study conducted by Greenpeace in 2016[83], more than 700 MW photovoltaics of the ECs could be installed in the country by 2030, which is translated into 230.000 citizens becoming involved in the effort. Many municipalities have also expressed their interest in establishing ECs with the aim of providing affordable energy to their vulnerable citizens, but no actual quantitative data are available. Lack of an official definition on energy poverty hinders targeting the energy poor citizens.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	All ECs are enlisted in the General Commercial Registry (G.E.MI.), which cannot, by default, provide information about the goals and activities of the founded ECs. The regional chambers are responsible for conducting the registration of ECs and keeping their data.

83 CE Delft, September 2016. The potential of energy citizens in the European Union. Available on: http://bit.ly/energypoverty-46

3. HEATING ALLOWANCE	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	Financial interventions such as this offer a short-term relief and do not address some of the other fundamental factors involved in energy poverty. As a result, they carry the risk of entrapment of energy vulnerable/poor citizens in this condition and lead to inefficient use of financial resources.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Technical assistance aiming at restructuring the policy in a way that would promote decarbonization of the building sector and increase in the energy efficiency of the beneficiary's housing unit, building on small but meaningful interventions related for example to the lighting/appliances' energy consumption, airtightness of the doors/windows, monitoring and maintenance procedures encourage behavioral change, prioritize possible interventions etc. The long-term effects of such measures could be more effective in combating energy poverty. This would require support for the coordination authority in the sectors of capacity building, technical assistance and relevant tools' development.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Ministry of Finance, fuels' suppliers (oil, gas, biomass etc.). In addition, energy providers could be involved as they offer gas, or electricity and gas combined services to their customers.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	The consolidated statement of beneficiaries is sent to the Accounting Department of the General Government, which issues a special order to the Bank of Greece for transferring the relevant funds to the credit institutions of recipients, debiting the Treasury account of the Greek State.
Estimate of the energy poor households' rate, which will benefit by the selected policy	For 2021, a total of 688.412 households received this allowance10. These beneficiaries are considered to be vulnerable households based on specific selection criteria and cannot be officially characterized as energy poor.

Monitoring procedure of the outcomes of the selected policy including indicative indicators	A table with the number of successful/unsuccessful applications per fuel source and the costs of the programme is published on the website of the Independent Public Revenue Authority (the portal through which the applications are submitted).
4. MINIMUM GUARANTEED INCOME /SOCIAL SOLIDARITY INCOME (KEA)	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	This policy, even though it can be considered as a welfare subsidy scheme, sets a minimum guaranteed income for vulnerable households. Compared to other subsidy financial interventions it addresses the income factor of energy poverty in a more effective way by offering additional support that aims at beneficiaries' integration/reintegration in the labor market (community service programmes, vocational training programs, traineeships, joining/returning to the education system and second chance schools). Despite its potential, the policy has received criticism over the very strict eligibility criteria on income and property. As a result, it provides support to the most deprived (who most probably also suffer from energy poverty) while it leaves many poor citizens excluded. Another point revolves around the level of income support that cannot ensure a dignified standard of living[84].
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building assistance and tools are needed a) for the effective identification of more potentially energy poor/vulnerable households, which are now mostly self-identified by applying to the KEA scheme, b) enhancement of the support actions aiming at beneficiaries' access to the labor market and setting a monitoring process to evaluate their impact. Approaches to avoid stigmatization should be considered.

84 Ziomas D., Capella A., Konstantinidou D., The national roll-out of the "Social Solidarity Income" scheme in Greece, EUROPEAN SOCIAL POLICY NETWORK Flash Report 2017/68. Available on: https://cutt.ly/elTlMzi

Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Interior, Ministry of Education, Ministry of Labour and Social Affairs, Ministry of Finance, Local authorities, Civil Society Organizations.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	The Organization of Welfare Benefits and Social Solidarity manages the payments to the beneficiaries, which are funded by the national budget on Social Security Organizations.
Estimate of the energy poor households' rate, which will benefit by the selected policy	For 2018, a total number of 319.468 households received this allowance[85]. These beneficiaries are considered to be vulnerable households based on specific selection criteria and cannot be officially characterized as energy poor.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	An annual monitoring report is published by the Ministry of Labour and Social Affairs which contains statistical data on a) the number of applications through the digital portal of the programme, b) the basic demographic characteristics of beneficiary households, c) their income/property profile, d) their work and education status and e) the payments and monthly costs of the programme.
5. HOUSING ALLOWANCE	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Financial interventions such as this offer a short-term relief and do not address some of the other fundamental factors involved in energy poverty. Indeed, the allowance ranges from 70€ to 210€ monthly and can only partially cover the rent costs of the beneficiaries, who are determined by a set of income, property and residence (legal and constant for the last 5 years) criteria.

85 Ministry of Labour and Social Affairs, 2018. Monitoring Report of the Social Solidarity Income. Available on: https://kekpa.gr/el/component/rsfiles/preview?path=KEA%252FMonitoring%2BReport_October_L-compressed.pdf

Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Technical assistance with the goal to integrate elements that would mobilize beneficiaries to dedicate part of the benefit to addressing the energy efficiency inadequacies of their housing unit, building on small but meaningful interventions related for example to the lighting/appliances' energy consumption, airtightness of the doors/windows, monitoring and maintenance procedures, encourage behavioral change, prioritise possible interventions etc. The long-term effects of such measures could be more effective in combating energy poverty. This would require support for the coordination authority in the sectors of capacity building, technical assistance and relevant tools development.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Labour and Social Affairs, Organization of Welfare Benefits and Social Solidarity
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	The monthly payment to the beneficiaries is made after the annual approval of the relevant expenditure (with a ministerial decision) from the budget of the Ministry of Labor, through the Organization of Welfare Benefits and Social Solidarity which carries out the payments.
Estimate of the energy poor households' rate, which will benefit by the selected policy	The scheme has a total annual budget of 300 million euros, targeting 260.000 households and 667.000 people[86]. These beneficiaries are considered to be vulnerable households based on specific selection criteria and cannot be officially characterised as energy poor.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	An annual statistics' report[87] is published through the Digital Social Security Governance website, which contains statistical data on a) the number of applications through the digital portal of the programme, b) the basic demographic characteristics of beneficiary households and their composition, c) their income range and d) the monthly and annual costs of the programme.
6. SOCIAL TARIFF	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes

86 Organization of Welfare Benefits and Social Solidarity website, accessed 2021. General information on the Housing Allowance. Available on: https://opeka.gr/stegasi-proti-katoikia/epidoma-stegasis/

87 Housing Allowance Website, accessed 2021. Available on: https://www.epidomastegasis.gr/pub/Home/StatisticsReports

Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Financial interventions such as this offer a short-term relief and do not address some of the other fundamental factors involved in energy poverty.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building and technical support is needed for the design of a more ambitious energy policy which will promote innovative schemes on energy supply and production to alleviate energy poverty.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Environment and Energy, Energy Providers, Local authorities.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	There is no direct funding through this scheme. A discount is applied to the energy cost and additional charges included in the energy bill.
Estimate of the energy poor households' rate, which will benefit by the selected policy	According to a press release of 20/2/2018, the total number of successful applications was 65.827[88]. However, these beneficiaries are considered to be vulnerable households based on specific selection criteria and cannot be officially characterised as energy poor.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	There is no official monitoring process in place. Data may be available at the Ministry of Environment and Energy or the Electronic Governance of Social Security portal, through which the applications are submitted.
7. LEGALISATION FINE DEDUCTION FOR ENERGY EFFICIENCY/STRUCTURAL INTERVENTIONS	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No

88 Electronic Governance of Social Security website, accessed 2021. Press release on Social tariff applications. Available on: http://www.idika.gr/files/deltiatypou/Δ.Τ._Στοιχεία_ΚΟΤ_2018_02_20_18_30.pdf

Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Very Low
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Vulnerable households often live-in buildings with sub-standard conditions that are not completely legitimate regarding permits. Measures like this could encourage both the legalisation and the energy efficiency upgrade/structural reinforcement of these buildings with the guidance of engineers/experts. However, additional financial aid to cover the cost of services for legalisation and construction management should be foreseen, as this is the main challenge for low-income homeowners who do not proceed to a legalisation procedure.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	This measure should be adapted to favor vulnerable households with a higher percentage of fine discount for lower incomes.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Environment and Energy, Technical Chamber of Greece, engineers, technicians active in the building industry.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	There is no direct funding through this scheme. A discount is applied at the future payments of legalisation fines.
Estimate of the energy poor households' rate, which will benefit by the selected policy	There is no official data available on how many beneficiaries have used this feature. Statistical data may be available at the Ministry of Environment and Energy and the Technical Chamber of Greece.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	There is no official procedure for monitoring the outcomes of this policy. Statistical data may be available at the Ministry of Environment and Energy and the Technical Chamber of Greece.
8. TAX DEDUCTION FOR RENOVATION COSTS	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No

Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Very Low
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Taxpayers who declare incomes above 16.000€ (and therefore their tax reaches or exceeds 1.600€/year) will fully exploit this measure since the tax deduction is divided equally over four years. Moreover, the eligible expenses of renovation/building upgrade exclude building materials and require tax invoices as well as the use of electronic payment methods (not payments in cash). Many low-income households, avoid the request of an official invoice from building professionals to avoid payment of VAT which is 24%, significantly raising the upfront cost of works. Moreover, these household may be less accustomed to electronic methods of payment and may also not be aware of this measure due to lack of finance experts in their close environment.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	This measure should be adapted to favor vulnerable households with a higher percentage of tax discount for lower incomes.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Finance, engineers, technicians active in the building industry.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	There is no direct funding through this scheme. A tax deduction is applied, divided equally over four years, at the future payments of income tax.
Estimate of the energy poor households' rate, which will benefit by the selected policy	Since this law was passed in 2020, there is no official data available yet on how many beneficiaries have used this feature. In the future, statistical data may be available at the Ministry of Environment and Energy and Ministry of Finance.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	There is no official procedure for monitoring the outcomes of this policy. Statistical data may be available at the Ministry of Finance.
9. VULNERABLE CUSTOMERS	

Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	This is a measure in line with the European framework on consumers' protection in the context of an energy market under rapid transformation. In this context, there is general mistrust towards energy providers who have been recorded to deploy unethical practices in order to increase their share of the market. In addition, there is a lack of transparency in terms of the energy billing and more particularly high difficulty to read the energy bill, which is overburdened with third party charges that are irrelevant to the electricity consumed. Lastly, information about the measure is provided in an unclear and fragmented way.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Defining energy poverty and energy poor citizens will increase the effectiveness of the measure. Moreover, providing all information regarding Vulnerable Customers (being either for electricity or for gas) in one-place, implementing national awareness campaigns, building an online tool that would help citizens' access information and assess their eligibility would be also beneficial to this end. On a general note, lifting the third-party charges (e.g., municipal duties) that are currently collected via electricity bills will reduce the risk of payment arrears that many vulnerable households face. Simplifying the energy bills and building on citizens' energy literature would emancipate consumers to make smarter choices and enjoy the full benefits of the energy market.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Ministry of Environment and Energy, Regulatory Authority for Energy, Energy providers, Consumers' associations
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	There is no direct funding through this scheme. Overall, proceeding with the planned interconnections of the remaining non-interconnected Greek islands would release funds

	(estimated 800 million Euros annually[89]) that could be allocated for measures aiming at the protection of vulnerable customers.
Estimate of the energy poor households' rate, which will benefit by the selected policy	It is estimated that approximately 500.000 households benefit from the Vulnerable Customers for electricity measure[90]. Additionally, 1.500 vulnerable households who were disconnected by the network by 31st December 2020 will benefit from the extension of the regulation regarding the one-time reconnection allowance, which was previously available to those disconnected by the 30th of April 2020[91].
Monitoring procedure of the outcomes of the selected policy including indicative indicators	There is no official procedure for monitoring the outcomes of this policy.
10. ENERGY EFFICIENCY OBLIGATIONS SCHEME	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner INZEB)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	In the first period of implementation, the obligated parties engaged in soft measures, primarily information campaigns and actions to trigger consumers' behavioral change towards energy consumption. As mentioned in the NECP, the next phase of the Energy Efficiency Obligations Scheme will focus more on engaging parties in energy efficiency interventions and in buildings' renovation. Considering the increased upfront costs entailed in such interventions, sound economic incentives need to be provided to the involved market actors in order to maximize the measure's potential.

89 Power supply to non-interconnected islands in Greece, Parliamentary question E-006974-17 by M. Spyraki on 10.11.2017. Available at: https://www.europarl.europa.eu/doceo/document/E-8-2017-006974_EN.html

90 RAE: New favorable regulation is coming for the vulnerable customers of the electricity providers - What is expected, News portal enikonomia.gr, 28.02.2020. Available (in Greek) at: http://www.enikonomia.gr/my-money/231727,rae-erchetai-nea-evnoiki-rythmisi-gia-tous-evalotous-pelates-ton-.html

91 Press release "The safety net for vulnerable electricity consumers is being expanded", Ministry of Environment and Energy, 25.02.2021 Available (in Greek) at: https://ypen.gov.gr/dievrynetai-to-dichty-prostasias-gia-tous-evalotous-katanalotes-ilektrikou-revmatos/

Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Technical assistance for the proper planning of the next period of the measure, building on exchange and adaptation of best practices from other member states and countries with a special focus on targeting energy poor citizens. Defining energy poor citizens will increase the effectiveness of the measure.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Environment and Energy, Energy and fuel providers
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	So far there was no direct funding through this scheme as the implemented actions focused on promoting behavioral change aiming at energy savings at the end-user level.
Estimate of the energy poor households' rate, which will benefit by the selected policy	There is no publicly available data on the contribution of the measure to energy poverty mitigation. The annual report provides solely information on the degree to which the set targets have been achieved or not by each obligated party.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The Centre for Renewable Energy Sources and Saving (CRES) as the administrator of calculation, monitoring, control and verification of the Energy Efficiency Obligation Scheme, is responsible, among other tasks, for monitoring the compliance of each obligated party and submitting an annual report to the Ministry of Environment and Energy.

3.5 Hungary

3.5.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Hungary** can be found in Table 30.

Table 30 Key policies/legislation for Hungary

National key policies (strategies, action plans)	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
National Energy Strategy 2030	Publication date: 2012. Until 2030, with an outlook to 2050.	The Hungarian National Energy Strategy 2030 puts great emphasis on the economical and energy security challenges; however, it falls short considering social and welfare considerations. Goals, targets, timeframes or responsible institutions are vaguely set, if at all. Statements on affordability, economic growth, energy security, decentralisation of the energy system vs. job opportunities contain contradicting elements to international research findings and tendencies. While the National Energy Strategy calls for social benefits targeting the elimination of energy poverty to be allocated on a need basis there are only very few current or planned social benefits falling into this category. It appears that the document was drafted to power economic growth and to further support middle-class families, leaving small	- The afforestation of land and the cultivation of energy crops would enable the production of local energy sources and, thus, the mitigation of energy poverty. - Introduction of smart meters may help avoid that vulnerable consumers should run into debt as well as regulate consumption. - 7.4 Social and Welfare Considerations subchapter: a. Social benefits will be allocated on a need basis. b. In the long-term welfare considerations should be completely dissociated from energy objectives.	NFM (Ministry of National Development), later ITM (Ministry of Innovation and Technology)

		municipalities and those in energy poverty behind.		
National Energy and Climate Plan of Hungary (NECP)	From 2020 to 2030.	"The energy poverty sub-chapter (2.4.4) of the Hungarian NECP plans to monitor energy poverty based on the share of households that spend more than 25% of their income on energy. There is no objective and timeframe set for reducing the share of energy poor households. No institution is designated as a responsible organisation to monitor energy poverty. Two target groups (large families in rural areas and single pensioners living in apartments) are identified as primary beneficiaries under energy poverty-related policies. The following policy areas are mentioned in the document as key fields of interventions to tackle energy poverty: energy fee guarantee for the most deprived households, supporting energy poor households with the income from a future energy saving obligation scheme, subscription based electricity for households living in low-quality housing to secure the heating of one room, drafting a programme to improve the situation of vulnerable consumers and awareness raising. However, sections on these policies are unfortunately very brief and lacking in detail. Various sections of the NECP refer to support of use of	- 2.4.4 Energy Poverty subchapter: a. As a success of the reduced energy overhead costs launched in January 2013, and other schemes the household energy costs are one of the lowest in Europe. b. Priority in helping vulnerable consumers with a focus on two specific socio-economic groups. c. The lignite-fired Mátra Power Plant has an important role in providing jobs. The restructuring of the region therefore has a significant social importance. - 3.4.4 subchapter on the policies and measures noted in 2.4.4 regarding EP alleviation: a. The continuation of maintaining suitable overhead costs for the households, while ensuring the earning power of energy companies. b. Plans on the expansion of the prepayment-meters for families living in buildings unsuitable for renovation. c. Bigger future emphasis on information provision and awareness-raising campaigns.	ITM (Ministry of Innovation and Technology)

		biomass in individual heaters. Under the renewable energy chapter, the NECP aims to encourage "the use of heat pumps, burning of biomass in efficient individual heating equipment, and the establishment of decentralised community heating plants producing renewable energy (...) with non-refundable aids"." "Energy efficient renovation of the housing stock would be a key policy element to tackle energy poverty, but this is neglected in the NECP energy poverty chapters. Policies are mostly price-focused and the document refers to the price reduction policy of the government, as key to keeping energy prices affordable (Bajomi, 2020, p. 20)."[92]		

92LIFE Unify (2020), "Tackling energy poverty through National Energy and Climate Plans: Priority or empty promise? "

3.5.2 Sectoral policy tools and measures to alleviate energy poverty

Table 31 Sectoral policy tools and measures in Hungary

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Energy market, utility bills	Utility cost reduction programme (Rezsicsökkentés) since 2013	Since 2013, household energy prices have been reduced in three steps, regardless of social status. While in the NECP this appears to be the main energy poverty measure. However, it cannot be called an effective intervention in several respects (more support is given to the more modest, it does not affect the users of solid fuels). In addition, in 2015, the central housing maintenance and debt management support, which unlike the utility cost reduction was socially targeted, was discontinued.	This policy is really costly for the state. according to the relevant research between 2013-2017 due to this policy: 600 billion (HUF) was saved by the Hungarian households.	Keep utility bills low as far as possible	The Hungarian Government in cooperation with Hungarian Energy and Public Utility Regulatory Authority & Ministry of Innovation and Technology
2.	Social care	Vulnerable consumer protection (Védendő fogyasztói státusz)	Socially deprived and disabled customers can claim protected consumer status. This provides a deferral and instalments payment option to repay the debt, but does not provide a discount or other support. In	This policy has no exact financial measures	Reduce cut offs, increase energy consciousness in the vulnerable groups, avoid	Local or regional energy supplier in cooperation with Hungarian Energy and Public Utility Regulatory Authority

			order to avoid repayment and future debts, service providers can often install prepaid meters, which, in addition to their benefits, can increase consumer vulnerability. If a household has no way to top up its balance, it will lose access to the network.		dept spirals	
3.	Social care	Social Fuel Programme (Szociális célú tüzelőanyag támogatás)	Municipalities with a population of less than 5,000 can apply for the social fuel support program, and from the amount thus obtained, they purchase solid fuel, which is distributed to households in need according to locally determined conditions. It is also worrying that since 2014, in addition to firewood, this source can also be used for lignite.	Since 2018, the budget of the program has reached 5 billion (HUF). However, the fair way of distribution, both at a national and local level, is questionable.	Initially, 84 municipalities took advantage of this opportunity, but in 2019 their number increased to 252.	Local municipalities and Ministry of Agriculture

Table 32 Sectoral policies analysis

1. Utility Cost Reduction Programme	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner ENERGIAKLUB)	Low
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	This subsidy could make sence only if: . social status is considered . the saved money could be the recycled into energy efficiency developments (e.g. insulation) of energy-poor households
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building in order to define (with specific scientific methods and indicators) the exact circle of those households which are in need.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Ministry of Innovation and Technology & Hungarian Energy and Public Utility Regulatory Authority
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	The financial coverage of this subsidy is given mainly by the energy supply companies. Therefore, they need to be supported by the state. So, at the end of the day the taxpayers cover the costs.
Estimate of the energy poor households' rate, which will benefit by the selected policy	Theoretically, all of them but those who heat their homes with firewood, lignite or household waste are almost totally excluded from this subsidy.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Monitoring of statistics about arrears on utility bills. Creating exact energy poverty indicators and indexes.

2. Vulnerable consumer protection	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Somehow yes via energy communities
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner ENERGIAKLUB)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	It does not solve the problem, just conservate it. It does not contain any awareness rising programme; however, it would be crucial to teach vulnerable households how to save energy and money.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Statistical data collection would be important in order to find out how a prepaid metering system works in reality. According to the results it would be important to carry out a subsidy and an awareness rising program as well.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Local Energy Supplier (electricity, natural gas, district heating etc.) & Hungarian Energy and Public Utility Regulatory Authority
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	/
Estimate of the energy poor households' rate, which will benefit by the selected policy	In 2017 there were 55 328 vulnerable households in Hungary. The eligibility of them was based 95% on social issues and 5% on some kind of disability. In the given year 17 269 consumers used prepaid meters.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Regular monitoring of cut-offs statistics and debt analysis.
3. Social Fuel Programme	

Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner ENERGIAKLUB)	Neutral
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration...)	The quality of firewood is crucial. Dry firewood has more than two times higher calorific value than wet firewood. However, the quality of this heating subsidy is really questionable since thousands of houses get lignite instead of firewood. Furthermore, there are a lot of detected discrepancies during the distribution process.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Technical assistance and quality check.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	Local authorities, Ministry of Agriculture, relevant CSOs and charity organisations
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	/
Estimate of the energy poor households' rate, which will benefit by the selected policy	Around 170 - 180 thousand households per year.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Local air pollution statistic.

3.6 Latvia

3.6.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Latvia** can be found in Table 33.

Table 33 Key policies/legislation for Latvia

National key policies (strategies, action plans)	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
National energy and climate plan 2030 (NECP2030)	26/06/2018	Policy planning document setting out Latvia's objectives and performance measures: - reductions in greenhouse gas emissions (GHG) and increases in carbon dioxide attraction, - increase in the share of renewable energy sources (RES), - reductions in energy use and improvements in energy efficiency, - ensuring energy security and reducing energy dependency, - maintaining and improving the infrastructure of energy markets, - reducing energy poverty and ensuring a fair transition, - improving innovation, research and competitiveness.	- The 2030 target for the indicator "the proportion of households that were prevented from providing heat in housing" is to ensure that this rate will be less than 7.5% in Latvia. - The services of the protected user (electricity consumers) are received by all those who are entitled to it (160 000 instead of 80 000) and targeted measures are being taken to substantially reduce energy poverty. - The condition for reducing energy poverty is included as a criterion in measures to improve the energy efficiency of buildings and to improve the energy performance of district heating, local heating and individual heating, provided that if within implemented measures the level of energy poverty would decrease, it would be particularly assessed.	Ministry of Economics

National development plan (NAP) 2027[93]	02/07/2020	The NAP determines the largest state budget investments in Latvia's development and improving the quality of human life over a period of 7 years. This includes national development priorities, targets and investment directions, as well as planned reforms and policy changes.	The Goal [338]: Housing. Housing is available to all households in Latvia. By 2050, housing meets high standards in energy efficiency, construction, safety and amenities. The legal framework encourages private and public investment in housing. - Improving the availability of housing for people in difficulty and disadvantaged situations. - Energy efficiency improvement measures in multi-apartment houses; promotion of efficient use of resources to reduce the amount of thermal energy consumed.	Cross-sectoral coordination center of Republic of Latvia
Long-term strategy for building renovation	2017	In accordance to the European Parliament and the Council Directive No. 2012/27/ES (of 25/10/2012) the Member State should develop a long-term strategy for buildings to mobilize investments in both public and private residential buildings and commercial areas	The current energy performance targets for buildings are: - the availability of financing for economically justified projects throughout the territory of Latvia, including regions; - quality project management and supervision; - focusing activity monitoring on achieving results, including energy savings; - the achievement of high energy efficiency and high-quality construction; - improvement of the procedures for the selection of the construction company; - reduction of resources' costs.	Ministry of Economics
Energy Law	03/09/1998	This Law governs energy as an economic sector covering the acquisition and use of energy resources for different types of energy production, energy transformation, purchase, storage, transmission, distribution,	To ensure an efficient, secure and high-quality supply of energy-to-energy users in the quantities required and at reasonable prices, by diversifying the types of energy resources to be used, increasing the security	Ministry of Economics

93 https://www.pkc.gov.lv/sites/default/files/inline-files/NAP2027__ENG.pdf

		trade and use.	of energy supply and complying with environmental requirements; To ensure the right of energy users to choose the type and trader of energy to be consumed; To promote the use of local, renewable and secondary energy resources; Promoting environmentally friendly impact of energy and the use of environmentally efficient technologies.	

3.6.2 Sectoral policy tools and measures to alleviate energy poverty

Table 34 Sectoral policy tools and measures in Latvia

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1	P1. Energy	P1.1. Support for protected users (Support to electricity consumer)	The electricity market law states that protected users, i.e. poor or disadvantaged families (persons), multi-child families or families (persons) in the care of which a child with disabilities exist, are entitled to receive the electricity trading service of the protected user.	Protected users receive 100 kW of electricity at a subsidized price of EUR 0,03758/kWh for each calendar month. For a multi-child family, 300 kWh of electricity is provided at a price of 0,03758 EUR/kWh per calendar month. Also, a part of the fixed network and feed-in tariff is compensated depending on connection volume.	N/A	Ministry of Economics, Ministry of Welfare

	P1. Energy	P1.2. Increase of energy efficiency of multi-apartment buildings	National programme for improvement of energy efficiency in multi residential buildings, part of it financed from EU funds amounting to €166 million is available to Latvian citizens in the energy efficiency programme till 31 December 2023 (closed on 18/12/2020).	After refurbishment measures, energy consumption shall reduce (less than 90 kwh/m2). Grant 50% of the eligible costs of the project. If necessary, a guarantee of up to 80% of the loan in the credit institution and loan.	N/A	Ministry of Economics
	P1. Energy	P1.3. Support for renovating a single-apartment residential house and increasing energy efficiency.	On 11/02/2021 the Cabinet of Ministers approved a new support programme designed to renovate a single-apartment residential house and improve energy efficiency. State-owned development finance institution ALTUM works on how the new aid programme will be implemented. It is planned that the application can be started in the spring of 2021.	Guarantee: if additional collateral is required for bank loan, up to 30% of the loan amount, up to EUR 20 000; Technical support for project technical documentation up to EUR 10 000; Grant: one-off payment for increasing the energy efficiency class of a private house and reducing the thermal energy consumption of 20%, up to EUR 5 000.	N/A	Ministry of Economics.
2.	P2. Social services	P2.1. Social services and social support law[94]	The objective of social assistance is to provide material support to low-income households in order to ensure income at the guaranteed minimum income threshold and to cover housing-related expenditure, as well as to provide support for individual costs and crisis situations.	The income threshold for a poor household is EUR 272 for the first or only person in the household and EUR 190 for other persons in the household. Each municipality is entitled to set the income threshold of a low-income household not higher than	N/A	Ministry of Welfare, Administrations of municipalities.

94 https://likumi.lv/ta/id/319381-grozijumi-socialo-pakalpojumu-un-socialas-palidzibas-likuma

				EUR 436 for the first or only person in the household and EUR 305 for other persons in the household, but also not lower than the threshold for income of a poor household specified, as well. In Latvia Municipalities within their limitations and capacities support poor people to cover part of their household costs including heating costs.		

Table 35 Sectoral policies analysis

1. Energy	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner ZREA)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	P1.1. No challenges P1.2. Activity of residents is one of the challenges in the case of multi residential buildings refurbishment, 2/3 of apartment owners must vote in favor of energy efficiency measures' application. Very often it is very hard, as a big part of apartment owners are residents of low income (retired persons, disabled persons). Bureaucratic

	procedures (too complicated – hinders process refurbishment of multi-residential buildings. P1.3. This is a new measure, call for participation will be announced in the forthcoming 2 months.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	P1.1. Not necessary. P1.2. Coordination authorities work sufficiently well. Perhaps some relief would be necessary in the process of preparation to refurbishment, structural changes to access funding for citizens – in this case some simplified conditions should be elaborated to replace existing rules and procedures. More informative campaigns shall be organized. P1.3. Not applicable yet.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility...) in the selected policy	P1.1. Electricity producer "Latvenergo". P1.2., P1.3. Ministry of Economics, P1.2., P1.3. Administrative national institution like ALTUM.".
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	P1. The EU funds. National, private co-financing.
Estimate of the energy poor households' rate, which will benefit by the selected policy	P1.1. Electricity consumers. Information is available and show that in 2020 the total number of beneficiaries accounted for around 31% of multi-child families last year (this category is with growing tendency, in average 2,4% per year), while the majority or 51% are poor and disadvantaged families (decreasing number). In 2020, support was provided to 10 537 people with disabilities and 3201 families with a child with disabilities. The average monthly electricity consumption varies accordingly, where multi-child families consume approximately 230 kWh, four times less than or 66 kWh for poor and disadvantaged families[95]. It is planned to reach – to allocate support to 160 000 consumers by the end of 2030. P1.2. In the multi-residential sector – at least 2000 refurbished buildings with average heat energy consumption 120 kWh/m^2/per year.[96]

95 https://latvenergo.lv/lv/jaunumi/preses-relizes/relize/elektrum-pern-atbalsts-aizsargatajiem-lietotajiem-sasniedza-gandriz-pusmiljonu-eiro-menesi
96 https://www.em.gov.lv/lv/nacionalais-energetikas-un-klimata-plans

	P1.3. In the private house sector – at least 7500 private living houses taken energy efficiency improvement measures.[97]
Monitoring procedure of the outcomes of the selected policy including indicative indicators	P1.1. Electricity supplier "Latvenergo" monitors change in their customers structure and status each year. Customers have to prove their compliance with the certain status. P1.2. In the case of multi-residential apartment buildings refurbishment – administrative institution ALTUM is monitoring fulfilment of Grant agreement, whether heat energy consumption is decreasing after renovation - it might be less or equal to 90 kWh/m^2. P1.3. In the case of private houses renovation - administrative institution ALTUM will monitor fulfilment of Grant agreement, whether as a result of applied measures energy efficiency class of private house has increased at least up to class C and heating consumption has reduced at least 20%.
2. Energy	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner ZREA)	Very high
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	P2.1. Challenges include the different levels of allocated allowances (within set diapason) among municipalities.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building,	P2.1. Perhaps mutual consultations, exchange of experience among municipalities.

97 https://www.em.gov.lv/lv/nacionalais-energetikas-un-klimata-plans

technical assistance, legal aid, tools].	
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	P2.1. Ministry of Welfare, Municipalities.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	P2. Municipal budgets.
Estimate of the energy poor households' rate, which will benefit by the selected policy	P2.1. The 2030 energy poverty target for Latvia is to ensure that the energy poverty rate in Latvia is less than 7.5%.[98]
Monitoring procedure of the outcomes of the selected policy including indicative indicators	P2.1. Municipalities can monitor income level of poor households on the basis of available data provided by State social insurance agency of Latvia.

98 https://www.em.gov.lv/lv/nacionalais-energetikas-un-klimata-plans

3.7 Portugal

3.7.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Portugal** can be found in Table 36.

Table 36 Key policies/legislation for Portugal

National key policies (strategies, action plans)	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
PNEC 2030[99]	10– July - 2020	Document which establishes the national climate and energy goals for 2030.	- Promote a long-term strategy to combat energy poverty; - Establish a national system for assessing and monitoring energy poverty, including the number of households in energy poverty; - Proceed with mechanisms to protect vulnerable consumers and study the introduction of new mechanisms; - Develop programs to promote and support energy efficiency and the integration of renewable energies to mitigate energy poverty; - Promote and support local strategies to combat energy poverty; - Disseminate information to mitigate energy poverty.	Ministry of Environment and Climate Action
Long-term Strategy for Building Renovation 2050[100]	4 – Feb- 2021	Strategy to renovate buildings, improving thermal comfort and reducing energy bills. 620 M€ for energy efficiency in buildings.	- To renovate 363 million m^2 by 2030, 635 million m^2 by 2040 and 747 million m^2 by 2050. - Regarding primary energy savings, the goal is to reach 11% in 2030, 27% in 2040, and 34% in 2050; - Reducing hours of discomfort in households, the goal is to reach 26% for 2030, 34% for 2040, and 56% for 2050.	Ministry of Environment and Climate Action

99 https://dre.pt/application/file/a/137619487
100 https://dre.pt/application/conteudo/156295372

National Strategy for Energy Poverty	Under public consultation	Strategy to define and tackle energy poverty in the national context in a shor-term period (until 2025) and also to establish the 4 pillars of action and measures for the long -term period (until 2050)	6 goals in the short-term period: - Allocate at least 300M€ of European Funds between 2021 and 2025 for energy efficiency actions in residential buildings - Assign 100 000 "Efficiency Checks" to families in energy poverty to replace equipments or adopting efficient solutions in their homes with an average value of 1300€ per family. - Allocate 135M€ to the renovation of residential buildings in the next 5 years - Implement an energy poverty monitoring system in Portugal through a centralized and easy access data colletion and processing. - Promote the development of local structures for the support and follow up of families in energy poverty. - Promote the development of self-consumption projects and renewable energy communities which envolve and integrate families in energy poverty. For the long-term period the methodology envisioned is to identify the families which suffer from energy poverty, then to implement actions and measures and mechanisms to support such families, and finnally to monitor such methodology by assessing the level of compliance with those measures and actions and by following up with the families. These measures rely upon 4 different pillars of action: 1. Energy Efficiency, 2. Reduction of prices, 3. Consumer´s protection, 4. Knowledge and education. The goals for this long-term strategy are: a) To reduce the baseline of 18,9% (1,9Mpeople) of Portuguese citizens which live without the ability to keep their homes adequately warm by 15% in 2030, 5% in 2040 and to 1% in 2050; b) To reduce the number of families which spent more than 10% of their income in their energy bills from the baseline of 1 202 567 to 700 000 in 2030, and then to 250 000 in 2040 and finally to 0 in 2050; c) To reduce the number of Portuguese citizens which live in homes with leak´s problems, mold and rotten elements from the baseline of 2,5M whom represent 24,4% of the Portuguese population to 20% in 2030, and then to 10% in 2040 and by less than 5% in 2050.	National Strategy for Energy Poverty

3.7.2 Sectoral policy tools and measures to alleviate energy poverty

Table 37 Sectoral policy tools and measures in Portugal

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Social Care in the energy market	Social Tariff	The social energy tariff is a social support to those in need to pay their energy bill.	Consists of a discount on the electricity and gas tariffs for low voltage grid and / or low-pressure natural gas networks, which makes up the final price billed to the electricity and / or natural gas customer.	Around 14% of all Portuguese households benefit from this measure: 786,000 households receive the social tariff for electricity and 34,000 receive it for natural gas.	General Directorate of Energy and Geology (DGEG)
2.	Energy Efficiency in buildings	Environmental Fund for Energy Efficiency	Provide support for citizens/ families who aim to invest in improvements for their homes regarding energy efficiency	4,5M€	4,234 applications to which is expected to exhaust the amount of 4.5 million euros, the total allocation for these supports.	Ministry of Environment and Climate Action

Table 38 Sectoral policies analysis

1. Social Tariff	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner COOPERNICO)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	This policy helps to alleviate energy poverty but does not address the root cause of the problem and can target people that might not be in energy poverty because it only measures the values of income citizens declare to social security in Portugal.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	To define, first, a strategy to identify people in energy poverty and, then, apply such policy to them.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Energy Regulator (ERSE), DGEG and the Ministry of Environment and Climate Action to define the methodology to better identify those in energy poverty
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	It is funded by the energy producers.
Estimate of the energy poor households' rate, which will benefit by the selected policy	Around 1 800 000 households
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The outcome is the families targeted get a discount of around 30% on their energy tariffs.
2. Environmental Fund for Energy Efficiency	

Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	No
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner COOPERNICO)	Low
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	This policy means families would have to invest first in the selected measures and be partly reimbursed afterwards. This means that families with very low income or means are automatically excluded from the fund.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	To allow citizens to apply without having to make an investment before the application. So, they could avoid spending money for renovation or energy efficiency upgrade, which they can indeed not afford or need to contract debt for, in case they are not selected.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Environment and Climate Action should define a better policy.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Government and EU funds.
Estimate of the energy poor households' rate, which will benefit by the selected policy	4234 in 2020.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	No monitoring strategy planned.

3.8 Spain

3.8.1 National policy framework addressing energy poverty

A detailed overview of national key policies in **Spain** can be found in Table 39.

Table 39 Key policies/legislation for Spain

National key policies (strategies, action plans)	Date of official adoption at a national level	Short description	Existing targets/goals	Coordination authority
Integrated National Energy and Climate Plan 2021-2030 (PNIEC)	31/03/2020	Spain's integrated national energy and climate plan considers the just and fair transition aspects and provides information on social, employment and skills' impacts of a transition to a climate neutral economy. It reports the number of households affected by energy poverty and provides a summary of the objectives and measures envisaged in the 2019-2024 strategy against energy poverty, adopted in April 2019.	Implementation of the National Strategy against Energy Poverty approved in 2019: design of official measurement indicators in accordance with those used by the EU Energy Poverty Observatory.	Spanish Government – Ministry for the Ecological Transition and the Demographic challenge
National Strategy against Energy Poverty 2019-2024 (ESPE)	05/04/2019	The National Strategy against Energy Poverty 2019 - 2024 approved by the Spanish Government in April 2019 includes a diagnosis of the situation and establishes the first official definition of energy poverty as well as the objectives of its reduction by 2025.	For each of the indicators (same indicators as EPOV), a reduction of at least a 25% by 2025, with the goal of achieving a 50% of reduction.	Spanish Government – Ministry for the Ecological Transition and the Demographic challenge
Royal Decree-Law 37/2020, December 22nd, on urgent measures to address situations of social and	23/12/2020	In order to guarantee the supply of water, electricity and natural gas to vulnerable consumers, the existing protection measures are reinforced and new measures are adopted to consolidate the effective way to protect	To protect vulnerable consumers against the suspension of electricity, natural gas and water while the current state of alarm due	Spanish Government

economic vulnerability in the housing and transport sectors.		vulnerable consumers, in line with the effective framework developed to identify and structurally reduce energy poverty.	to COVID-19 is in force. The prohibition of the suspension of supply is also applied to those consumers who are not officially considered as vulnerable but comply with part of the requirements to be considered as such.	
Royal Decree-Law 15/2018, October 5th, on urgent measures for the energy transition and consumer protection.	07/10/2018	Royal Decree-Law which regulates measures to protect vulnerable consumers in the energy sector, including the Social Bonus for heating, a support for the energy expenditures in heating for those consumers who receive the Social Bonus for electricity.	To ensure that consumers have information and tools to manage their demand, optimize their consumption and reduce their energy expenditures, in the context of high and sustained expected prices.	Spanish Government
Royal Decree 897/2017, October 6th, which regulates the figure of the vulnerable consumer, the social bonus and other protection measures for domestic consumers of electricity.	08/10/2017	Royal Decree which regulates the figure of the vulnerable consumer, the "Bono Social" discount rate in the electricity bill and other protection measures, substituting the previous social bonus which was implemented in 2009.	The Royal Decree establishes a definition for the vulnerable consumer as well as the conditions and procedures to request the discount on the electricity bill, and regulates the conditions in which the energy supply can be suspended to consumers.	Spanish Government – Ministry of Energy, Tourism and Digital Agenda

3.8.2 Sectoral policy tools and measures to alleviate energy poverty

Table 40 Sectoral policy tools and measures in Spain

No.	Specific policy sector	Name of policy tool or measure	Description	Financial instruments, measures, schemes	Existing targets/goals	Coordination authority
1.	Goods and services	Royal Decree-Law 1/2021, January 19th, on the protection of consumers and users against situations of social and economic vulnerability.	Regulatory framework which includes, for the first time, the figure of the vulnerable consumer in the state regulations for the defence of consumers, which should be the object of special attention both by public authorities and private companies in consumer relations.	N/A	It is foreseen that with respect to commercial practices related to energy, among other fields, legal or regulatory standards that offer greater protection to the consumer or user may be established.	Spanish Government
2.	Energy efficiency	ERESEE 2020 - Long-term strategy for energy rehabilitation in the building sector	Update of previous strategies for energy rehabilitation in the building sector.	Financial support programmes, including PREE: Financial support for energy efficiency improvements with an additional aid for consumers receiving the Social Bonus.	To improve the energy efficiency of 1.200.000 households by 2030, and 7millions of households by 2050.	Spanish Government – Ministry of Transport, Mobility and Urban Agenda
3.	Housing	State Housing Plan 2018-2021	Through a series of schemes to support rental housing and to promote urban and rural rehabilitation and regeneration, the plan seeks to reactivate	The plan is structured in several support programmes related to housing, including a support to improve the	The main objective is to persist in adapting the support system to current social needs and to the	Spanish Government – Ministry of Development

			employment in the construction sector and to facilitate access to housing, with special attention to vulnerable citizens.	energy efficiency of households or a support for citizens in situation of risk.	limitation of available resources.	

Table 41 Sectoral policies analysis

1.Royal Decree-Law 1/2021, January 19th	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	NO
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner GOIENER)	High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	Lack of concretion on how to support vulnerable consumers, related to their energy use. Energy poverty is partially addressed in other policies, and vulnerable consumers are recognized regarding the energy consumption. This policy could provide a more general framework and integrate the concept of energy poverty in the broader definition of vulnerable consumers.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building and technical assistance should be provided to better identify energy poor consumers and to address energy poverty in a more effective way.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry for the Ecological Transition and the Demographic challenge, energy agency IDAE and regional authorities.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Not any funding source has been identified.

Estimate of the energy poor households' rate, which will benefit by the selected policy	Cannot be estimated due to the lack of concretion.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Not any monitoring procedure has been identified.
2. ERESEE 2020	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	YES
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner GOIENER)	Very High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	The main barriers could be complex administrative procedures and the eligibility criteria to be beneficiary of the support.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Tools, capacity building or technical assistance could be provided to better identify energy poor households that could benefit from the support, as the PREE programme provides an additional support only to consumers that receive the social bonus.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry for the Ecological Transition and the Demographic challenge; Ministry of Transport, Mobility and Urban Agenda; energy agency IDEA; regional authorities.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	National Fund of Energy Efficiency, European Regional Development Fund (ERDF)
Estimate of the energy poor households' rate, which will benefit by the selected policy	300.000 by 2030
Monitoring procedure of the outcomes of the selected policy including indicative indicators	The general outcomes will be monitored through the following main indicators: Number of households/buildings improved, amount of reduced energy consumption, the level of efficiency obtained by the households/buildings, public finance, obtained economic savings.

	The outcomes related to energy poverty will be monitored in accordance with the indicators of the National Strategy Against Energy Poverty 2019-2024.
3.State Housing Plan 2018-2021	
Is the selected policy been incorporated into the National Energy and Climate Plan? YES/NO	Yes
Importance estimation of the selected policy for the alleviation of energy poverty until 2030, (Very Low/ Low/ Neutral /High /Very High) (The estimation presents the views of the national partner GOIENER)	Very High
Main challenges that need to be confronted for the efficient design and implementation of the selected policy including criteria, financing, guarantee administration…)	The main barriers could be complex administrative procedures and the eligibility criteria to be beneficiary of the different supports, that should be adapted to regional contexts and to the requirements of each beneficiary group.
Suggest a brief description of the support that could be provided to the coordinating body for the effective design and implementation of the selected policy [capacity building, technical assistance, legal aid, tools].	Capacity building for the identification of energy poor citizens should be provided, as well as specific measures to explicitly address energy poverty in the plan.
Identification of the potentially involved type of stakeholders (e.g. Ministry, CSO, local/regional authority, energy regulatory body, utility…) in the selected policy	Ministry of Development; Ministry of Transport, Mobility and Urban Agenda; Ministry of Health, Regional Authorities; Housing providers.
Provide Information for the potential funding sources, which will be utilised within the framework of the selected policy	Ministry of Development; Regional Administrations
Estimate of the energy poor households' rate, which will benefit by the selected policy	Cannot be estimated due to the lack of concretion.
Monitoring procedure of the outcomes of the selected policy including indicative indicators	Not specified.

4 National, regional, and local stakeholders

This chapter presents a review of stakeholders' roles in participation and support of POWERPOOR activities. Project partners from each of the 8 POWERPOOR pilot countries (**Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Portugal,** and **Spain**) mapped stakeholders and described their contribution and role in the POWERPOOR project and analysed the benefits of using the POWERPOOR toolkit for each mapped stakeholder.

The following methodology has been used in the stakeholder analysis:

- Creating a tool in the form of a template word document that contained questionnaires with clearly set guidelines for filling in with data:
  - Stakeholder organisations that would be interested to support POWERPOOR project.
  - Stakeholder organisations that would be interested to be part of the 8 national Liaison groups.
  - Stakeholder organisations that can benefit from the POWERPOOR tools.
  - Lessons learnt from engaging stakeholder organisations.

Analysis of each of the 8 POWERPOOR pilot countries is incorporated below each respective individual subchapter.[101]

Lessons learnt from the 8 POWERPOOR pilot countries can be summarized as follows:

- Previously existing or personal contacts are a key factor when engaging stakeholders.
- Having more details about the project activities could enhance the engagement process of the stakeholders.
- The expected contributions from the stakeholders should be clearly defined when contacting them whlie a thorough discussion with them can help to better define their efficient contribution.

101 Detailed description and role of stakeholders can be found in Deliverable 4.1: Stakeholder Engagement Plan and Liaison Groups

4.1 Bulgaria

In **Bulgaria**, **30** stakeholders are identified by the local partner **SOFENA** (Figure 7). **10** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 42).

Table 42 Liaison Group members in Bulgaria per target group

Liaison Group representatives per target groups	Number of representatives
National Authorities	1
Civil Society	5
Academia	2
Media	1

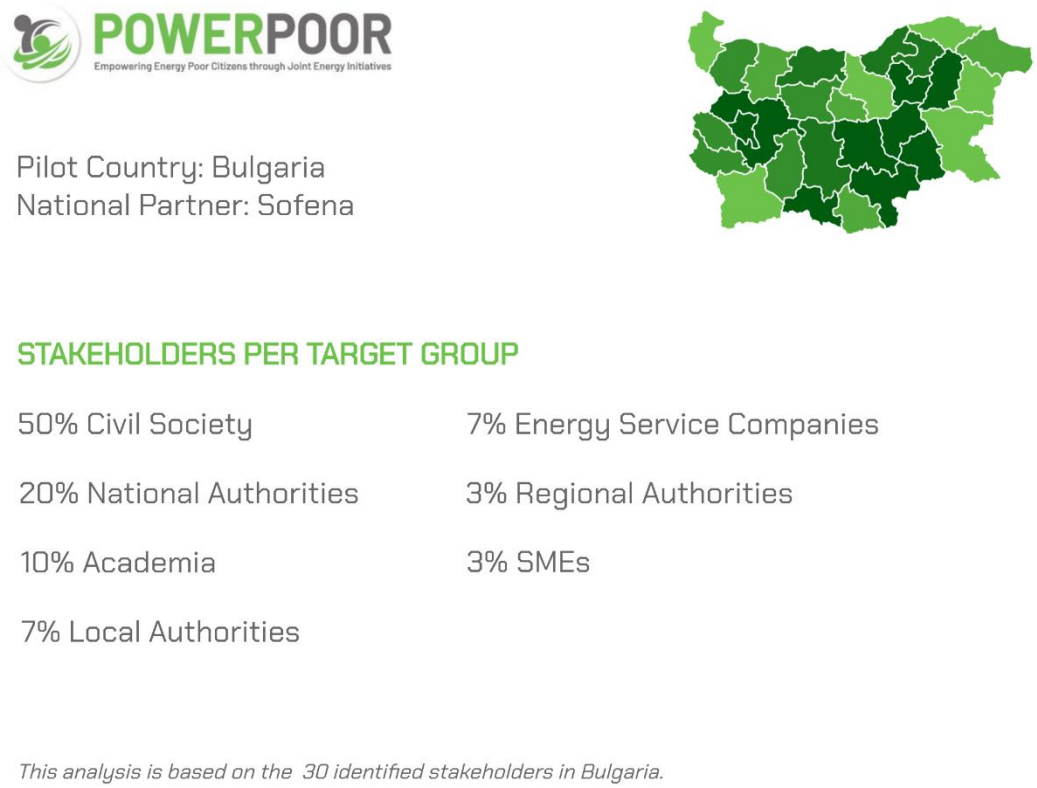

Figure 7 Stakeholders in Bulgaria per target group

Main interests of the **Bulgaria** stakeholder organisations to support the POWERPOOR activities and benefit from the tools identified by the local partner **SOFENA** are listed in Table 43.

Table 43 List of interests of the Bulgaria stakeholder organisations

No.	Main interests	Stakeholders in Bulgaria per target group
1	Interest in the innovative joint energy initiatives to be implemented and the National Roadmap to be developed by POWERPOOR	National Authorities
2	Interest in the training programs for the energy supporters/mentors	National Authorities
3	Interest in the project results and policy recommendations for mitigating energy poverty as well as the Energy Poverty Guidebook for Energy Planning	National Authorities Regional Authorities
4	Interest in the project results and policy recommendations for mitigating energy poverty	National Authorities Local Authorities Civil Society Academia
5	Interest in the design and implementation of the energy poor support programme to be developed for the Bulgarian pilot	Local Authorities
6	Interest in the replication capacity of the energy poor support programme for the Bulgarian pilot	Civil Society
7	Interest as host of one of POWERPOOR energy poverty alleviation offices.	Civil Society
8	Interest in sharing experiences of working with low-income vulnerable families and upgrade their activities with the project results	Civil Society
9	Interest in the environmental aspects of energy poverty	Civil Society
10	Interest in the project activities related to the energy efficiency of housing and the quality of the living environment for energy vulnerable households	Civil Society
11	Interest in implementation of the ICT tools for the increase of the overall uptake of energy efficiency measures	Civil Society
12	Interest in the monitoring capacities of the ICT tools developed by POWERPOOR	Civil Society
13	Interest in disseminating information about the implementation of the project and its results	National Associations Media

14	Interest in the implementation models for energy efficiency home upgrade and their impact on overcoming energy poverty	Academia

4.2 Croatia

In **Croatia**, **78** stakeholders are identified by the partner **DOOR** (Figure 8). **9** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 44).

Table 44 Liaison Group members in Croatia per target group

Liaison Group representatives per target groups	Number of representatives
Regional Authorities	1
Local Authorities	2
Civil Society	3
SMEs	2
Academia	1

Figure 8 Stakeholders in Croatia per target group

Main interests of the **Croatia** stakeholder organization to support POWERPOOR activities and benefit from the tools identified by local partner **DOOR** are listed in Table 45.

Table 45 List of interests of the Croatia stakeholder organisations

No.	Main interests	Stakeholders in Croatia per target group
1	Interest in the project results and policy recommendations for mitigating energy poverty	National Authorities
2	Interest in the project activities related to the energy efficiency of housing and the quality of the living environment for energy vulnerable households	National Authorities Regional Authorities Civil Society
3	Interest to develop a new financial solution	Alternative financing Scheme
4	Interest as host of one of POWERPOOR energy poverty alleviation offices.	Local Authorities Civil Society
5	Interest in the innovative joint energy initiatives to be implemented and the National Roadmap to be developed by POWERPOOR	Civil Society Academia
6	Interest in the training programmes for the energy supporters/mentors	Civil Society Technical Universities
7	Interest in the monitoring capacities of the ICT tools developed by POWERPOOR (all Public and Private Utilities and Energy Service Companies)	Public and Private Utilities Energy Service Companies
8	Interest to transfer their experience in founding an energy cooperative and how it functions. All positive and negative experiences and lessons learned	SMEs

4.3 Estonia

In **Estonia**, **11** stakeholders are identified by the national partner **EKYL** (Figure 9). **10** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 46).

Table 46 Liaison Group members in Estonia. per target group

Liaison Group representatives per target groups	Number of representatives
National Authorities	3
Local Authorities	4
Civil Society	1
Technical Universities	1
Media	1

Figure 9 Stakeholders in Estonia per target group

Main interests of the **Estonia** stakeholder organization to support POWERPOOR activities and benefit from the tools identified by local partner **EKYL** are listed in Table 47.

Table 47 List of interests of the Estonia stakeholder organisations

No.	Main interests	Stakeholders in Estonia per target group
1	Interest in creating synergy with the state policies, outreach to the target groups	National Authorities
2	Interest in creating synergy with local action plans for mitigating energy poverty, outreach to local target group	Local Authorities
3	Interest in benefit from tools and help for adopting energy efficiency measures and support low-income members of the apartment associations	Housing Providers
4	Interest in creating synergy with their activities at a local level to support energy efficiency in apartment buildings	Civil Society
5	Interest in the implementation models for energy efficiency home upgrade and their impact on overcoming energy poverty	Technical Universities
6	Interest in disseminating project activities related to the energy efficiency of housing and the quality of the living environment for energy vulnerable households for the general public in Estonia	Media
7	Interest in implementation of the ICT tools for the increase of the overall uptake of energy efficiency measures and monitoring capacities of the ICT tools	all Stakeholders

4.4 Greece

In **Greece**, **71** stakeholders are identified by the partners **INZEB, SUSTAINABLE CITY** and NTUA (Figure 10). **10** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 48).

Table 48 Liaison Group members in Greece per target group

Liaison Group representatives per target groups	Number of representatives
Civil Society	3
SMEs	1
Academia	2
Technical Universities	2

Figure 10 Stakeholders in Greece per target group

Main interests of the **Greece** stakeholder organizations to support POWERPOOR activities and benefit from the tools identified by the local partners **INZEB, SUSTAINABLE CITY** and **NTUA** are listed in Table 49.

Table 49 List of interests of the Greece stakeholder organisations

No.	Main interests	Stakeholders in Greece per target group
1	Interest in benefits from the tools that will help the Municipalities to better address the phenomenon, find proper solutions and alleviate energy poverty at a local level	Local Authorities
2	Interest of the Municipalities to fulfil the targets that have been (or will be) set in (the updated) SECAPs which include mitigating energy poverty measures	Regional Authorities Local Authorities
3	Interest in project's activities that have been recommended in the policy papers	Civil Society
4	Interest in active in promoting a fair energy transition	Civil Society
5	Interest in activities focused on the consumers' rights and energy poverty phenomenon	Civil Society
6	Interest to develop new financial solutions (e.g. crowdfunding…)	Civil Society
7	Interest in supporting citizens and authorities in the development of energy communities	SMEs
8	Interest to exchange of best practices and ideas and receive overall support	Technical Universities Academia
9	Interest in disseminating information about the implementation of the project and its results	Media

4.5 Hungary

In **Hungary**, **66** stakeholders are identified by the partner **Energiaklub** (Figure 11). **11** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 50).

Table 50 Liaison members in Hungary per target group

Liaison Group representatives per target groups	Number of representatives
Local Authorities	3
Civil Society	7
Academia	1

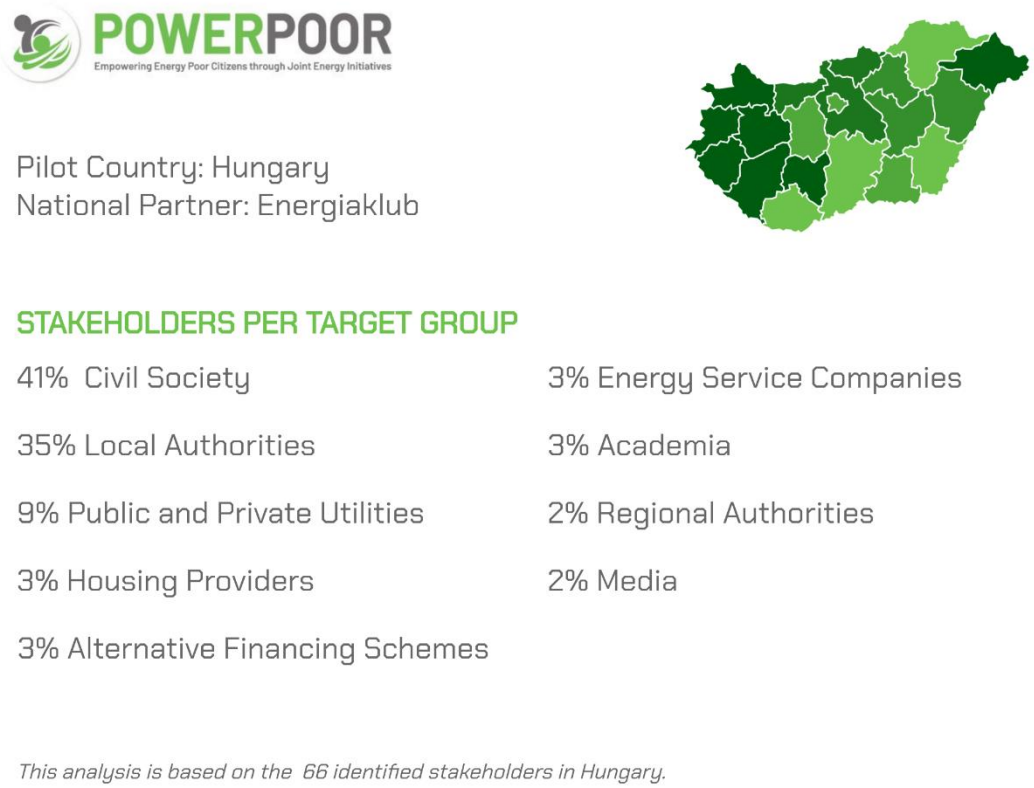

Figure 11 Stakeholders in Hungary per target group

Main interests of the **Hungary** stakeholder organizations to support the POWERPOOR activities and benefit from the tools identified by local partner **Energiaklub** are listed in Table 51.

Table 51 List of interests of the Hungary stakeholder organisations

No.	Main interests	Stakeholders in Hungary per target group
1	Interest to learn about energy poverty, reach energy poor citizens and help them, implement energy poverty measures in the city's SECAP	Regional Authorities Local Authorities
2	Interest to develop new financial solutions (e.g. crowdfunding…)	Alternative financing Scheme
3	Interest in extending its knowledge in the field of energy poverty, get a better picture about what the renovation opportunities are available for Energy Poor homes	Civil Society Housing Providers
4	Interest to exchange of best practices and ideas and receive overall support	Civil Society
5	Interest in gaining information about energy –poor citizens who heating their homes with biomass or who are supplied by district heating	Civil Society Energy Service Companies
6	Interest in the training programmes for the energy supporters/mentors	Academia
7	Interest in disseminating information about the implementation of the project and its results	Media

4.6 Latvia

In **Latvia**, **17** stakeholders are identified by the partner **ZREA** (Figure 12). **10** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 52).

Table 52 Liaison members in Latvia per target group

Liaison Group representatives per target groups	Number of representatives
Regional Authorities	1
Local Authorities	3
Housing Providers	2
Civil Society	3
Academia	1

Figure 12 Stakeholders in Litvaper target group

Main interests of the **Latvia** stakeholder organizations to support the POWERPOOR activities and benefit from the tools identified by local partner **ZREA** are listed in Table 53.

Table 53 List of interests of the Latvia stakeholder organisations

No.	Main interests	Stakeholders in Latvia per target group
1	Interest in to reach NECP 2030 targets in field of energy	National Authorities
2	Interest to raise awareness and mitigate energy poverty	National Authorities Regional Authorities
3	Interest to raise awareness on energy efficiency measures for multi-residential buildings, to change behaviour of poor households in energy consumption	Local Authorities Civil Society Housing Providers
4	Interest to invest in increase of energy efficiency measures, to invest in energy initiatives` projects	Alternative financing Scheme
5	Interest to increase energy efficiency of multi-residential buildings	Energy Service Companies
6	Interest to involve in innovative tools` elaboration and application in order to mitigate energy poverty (ICT tools developed by POWERPOOR) and interest in innovative research methods	Technical Universities Academia
7	Interest in disseminating project activities related to the energy efficiency of housing and the quality of the living environment for energy vulnerable households for the general public in Latvia	Media

4.7 Portugal

In **Portugal**, **26** stakeholders are identified by the partner **Coopernico** (Figure 13). **14** organisations were invited and accepted to join POWERPOOR Liaison Group (Table 54).

Table 54 Liaison members in Portugal per target group

Liaison Group representatives per target groups	Number of representatives
National Authorities	2
Regional Authorities	2
Local Authorities	3
Housing Providers	1
Alternative financing Scheme	1
Civil Society	2
Academia	3

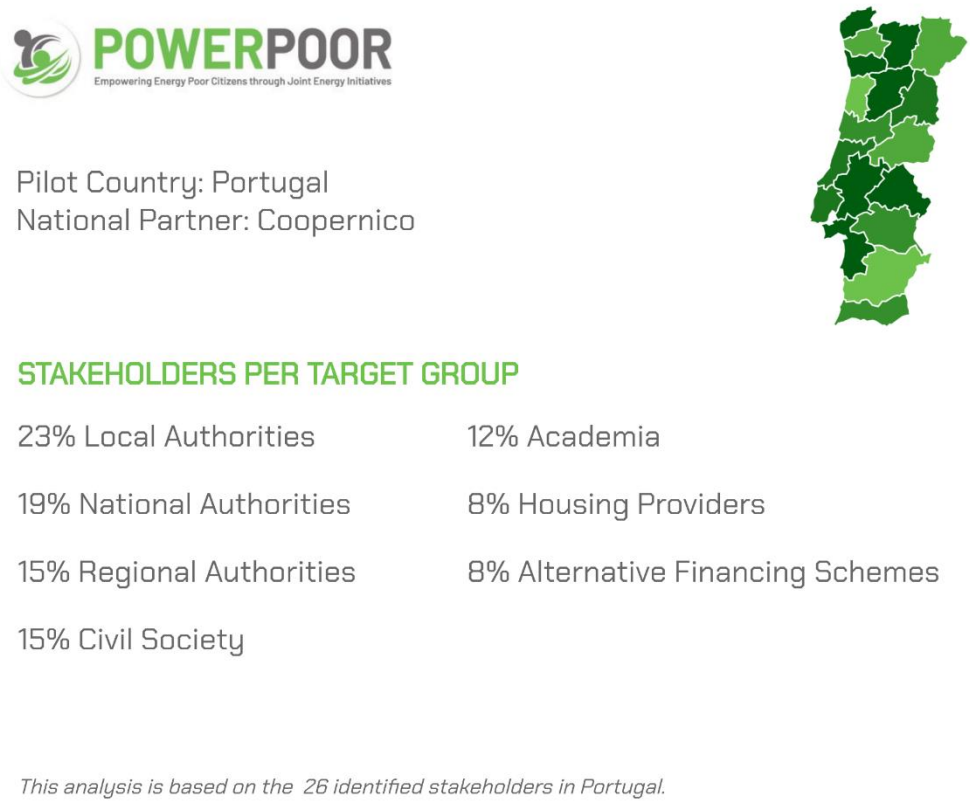

Figure 13 Stakeholders in Portugal per target group

Main interests of the **Portugal** stakeholder organizations to support the POWERPOOR activities and benefit from the tools identified by local partner **Coopernico** are listed in Table 55.

Table 55 List of interests of the Portugal stakeholder organisations

No.	Main interests	Stakeholders in Portugal per target group
1	Interest in the project's results and policy recommendations for mitigating energy poverty	National Authorities Regional Authorities
2	Interest to capacitate their technicians towards energy poverty and gain knowledge/use the tools to tackle energy poverty	National Authorities Regional Authorities Local Authorities Civil Society
3	Interest to understand how to create an energy community in order to alleviate energy poverty	Local Authorities
4	Interest to follow the project and see its results and learn how energy poverty can be tackled or help to do it in Portugal	Civil Society
5	Interest to create new pathways of collaboration by using POWERPOOR tools and results	Housing Providers
6	Interest to help find alternative financing schemes to alleviate energy poverty	Alternative financing Scheme
7	Interest to learn strategies to alleviate energy poverty in Portugal and to collect data to use in further studies such as master thesis or PhD thesis	Academia

4.8 Spain

In **Spain**, **55** stakeholders are identified by the national partner **Goiener** (Figure 14). 15 organisations were invited and accepted to join POWERPOOR Liaison Group (Table 56)

Table 56 Liaison members in Spain per target group

Liaison Group representatives per target groups	Number of representatives
Regional Authorities	3
Local Authorities	2
Housing Providers	1
Alternative financing Scheme	1
Civil Society	1
SMEs	5
Social Workers	2

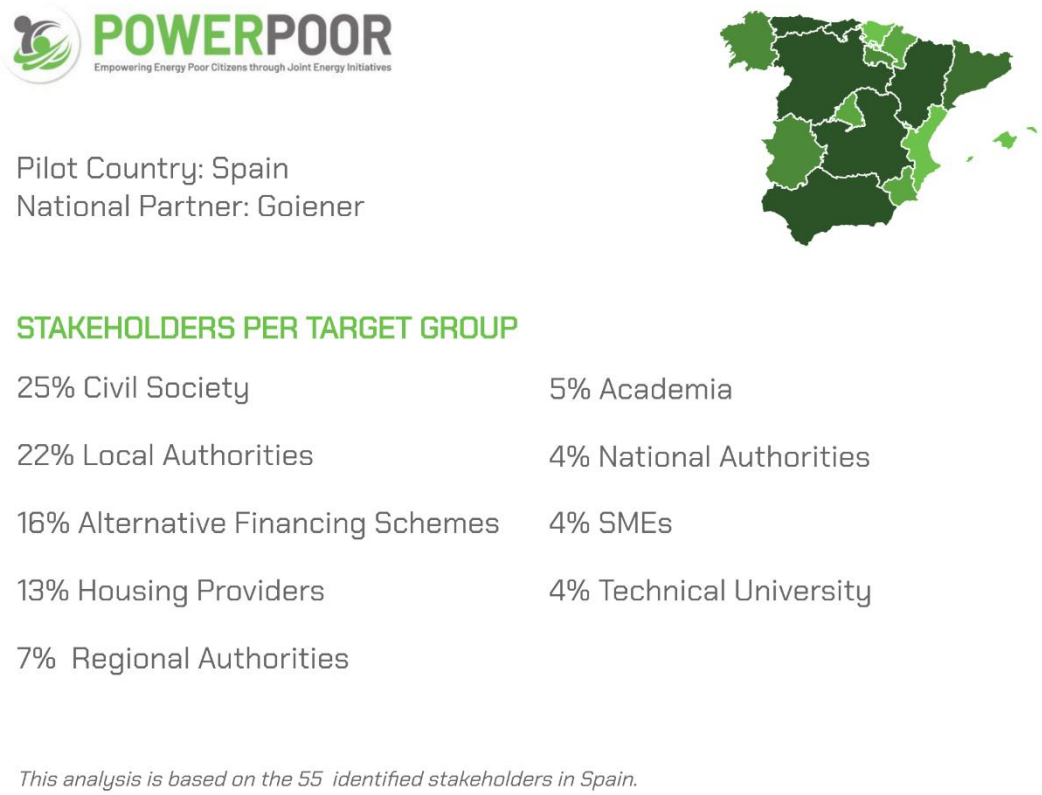

Figure 14 Stakeholders in Spain per target group

Main interests of the **Spain** stakeholder organizations to support POWERPOOR activities and benefit from the tools identified by local partner **Goiener** are listed in Table 57.

Table 57 List of interests of the Spain stakeholder organisations

No.	Main interests	Stakeholders in Spain per target group
1	Interest to develop new types of support schemes for energy poor citizens	National Authorities
2	Interest to further support energy poor citizens through the existing energy poverty observatory	Regional Authorities SMEs
3	Interest to include energy poverty alleviation schemes in their everyday activities	Local Authorities
4	Interest to obtain resources for better addressing energy poverty and improving their support programmes	Housing Providers
5	Interest to provide resources for cooperatives to address energy poverty, including alternative financing schemes	Alternative financing Scheme
6	Interest to better address energy poverty in their everyday activities	Civil Society
7	Interest to share the knowledge and experience about energy poverty alleviation	Technical Universities Academia

5 Country specific POWERPOOR toolkit topics and issues

This chapter presents the summary of all data relating to the POWERPOOR toolkit collected by a questionnaire filled in by the POWERPOOR pilot country participant organisations taking into consideration energy poor households/subgroups recognised as vulnerable groups of citizens or considered to be experiencing or facing risk of energy poverty. Identified target groups for which the data was collected were:

- Working poor with no social benefits – low incomes;
- Part-time work, limited/ temporary contracts, low / no protection against dismissal,
- Unemployed persons,
- Persons under the pension age unable to work,
- Persons over the pension age with low pensions,
- Households receiving housing benefit,
- Families who receive child benefit supplement,
- Single parent families,
- Individual circumstances - health issues or disabilities,
- Refugees,
- Other subgroups identified in your country (Specify).

Collected data for POWER TARGET tool were:

- key identification features in pilot country for each subgroup,
- key topics/issues that this tool needs to address for each identified target citizens and information about direct or indirect contacts to these target groups.

For the POWER ACT tool the participants provided data about experiences they had with engaging with these target groups, lesson learnt to inform the POWERPOOR project and expected approaches in order to ensure a high uptake and use by the identified target citizens and the information about technology adoption level of the stakeholders that participants are addressing (1 innovators - 5 laggards). Participants also provided examples of the features/functionalities that should be included in POWER FUND for each identified target citizens.

5.1 The POWER TARGET Tool

Key identification features participants provided for all targeted citizens are low comfort, eligible for social support and no capacity to invest. Also, they provided key topics/issues that the POWER TARGET tool needs to address for each identified targeted citizen, and they are the following: information, advice and consultations (also for refugees), opportunities for financial support, how to spend less on energy bills with less

investments and how to improve dwellings with more investments. They need to be targeted according to the income and energy expenses (including price) of energy poor citizens/households and according to the energy efficiency of their building/house. In case the objective is to achieve energy efficiency in the building, at first, the apartment association with all its members should be addressed. Also, other topic that participants emphasized that need to be addressed is the implication of the socio-economic situation in the level of vulnerability - the availability and priority of implication.

Participants suggested that direct or indirect contacts to targeted groups can be made through other project activities, relevant stakeholders (e.g., social offices of cities), with apartment associations who have direct contacts with low-income members (**Estonia**), through public events, some are trying to establish a partnership with CSOs which works directly with these group of citizens (**Portugal**). In **Estonia**, subgroups like: working poor with no social benefits living in apartment buildings – low incomes, persons receiving social subsidies living in apartment buildings, persons over the pension age with low pensions living in apartment buildings, families living in multi-apartment buildings rural areas in statistically low-income regions despite their specific characteristics, are members of apartment associations and all the activities for mitigating their energy poverty can be done only through apartment associations.

Working poor with no social benefits are according to the participants citizens with low incomes, normally they work long hours on small wages and, therefore, lack free time. They may reside in degraded areas of the urban fabric where rents are lower. Sometimes these citizens do not overspend in terms of energy because they need the money for other things. Based on measurments in 2017 around 30% of **Hungary**'s population lives below the subsitence level and additionally, 80% of employees earn less than the average Hungarian salary.[102] In **Spain** around 13 % of employed people have lower incomes than the minimum salary.[103] Key topics/issues according to the participants that needed to be addressed here are relative high energy prices compared with their income. For them the tool must be really user friendly and easy to comprehend.

Part-time work, limited/ temporary contracts, low/no protection against dismissal are described as citizens that are mostly of younger age and with low incomes due to their limited contracts. People with lower education, young people who find it difficult to get a permanent job, people who lose their jobs in old age and find it difficult to get a permanent job again later. They are stressed and insecure about the future that prevents them from making some financial investments and may live in sub-standard housing units. Whit them there is high probability of delays in energy bills. In **Spain** 13 % of employed workers have temporary contracts. For men, 4% of the total workers have part-time contracts, while the number increases to 11% in the case of women.

102 https://www.policyagenda.hu/wp-content/uploads/2018/05/L%C3%A9tminimum-sz%C3%A1m%C3%ADt%C3%A1sa2107.pdf
https://kozfoglalkoztatas.kormany.hu/download/5/1e/f1000/KF%20B%C3%A9rek%20%C3%A9s%20juttat%C3%A1sok%20v%C3%A1ltoz%C3%A1sa%202011-2018.pdf
103 https://www.ine.es/dynt3/inebase/index.htm?padre=2129&capsel=2129

Unemployed persons and persons under the pension age unable to work were described by participants as insecure about the future with limited resources that prevent them from making some financial investments, they may be financially supported by relatives or friends. May suffer from mental illnesses/depression. In **Hungary** unemployment rate was quite low before COVID-19 (it was 3,5% between December 2019 and February 2020[104]), but the current situation is not clear. The unemployment rate in **Spain** in the last two years has been between 14 and 16 %. It is one of the main collectives receiving the Social Bonus. Around 15% of persons under the pension age unable to work in Spain are inactive due to inability[105]. Key issue for them is very high energy prices compared with their income. There is also a chance for identification of unemployed persons who could potentially become energy Supporters/Mentors in a later stage.

Persons over the pension age with low pensions may be supported by relatives, reside to nursing homes and underspend energy in their homes due to low incomes. This problem is really common in Hungary. In 2019, 18% of pensioners were at risk of poverty or other types of exclusion. Around 22% of persons in this subgroup, including widows, receiving the pension receive the minimum amount. It is one of the main collectives receiving the Social Bonus[106]. Key issues are very high energy prices compared with their income. Winter indoor temperature in Hungary is often under the average or the suggested health threshold. Usually this identified citizens have high medicine expenses as well. Using the tool for them must be easy to comprehend.

Targeted groups households receiving housing benefits and families who receive child benefit supplement and single parent families are low-income families work and receive a salary, but that salary barely satisfies the basics and is far from meeting the needs for a better quality of life. Uncertain future prevents them from making some financial investments. Their resources are limited and there is no room for any sufficient financial interventions. Also, single parents may struggle with free time due to working. They underpent in terms of energy since they might need the money they receive for other areas of their life. Single parent family's number in **Hungary** is increasing according to the last two censuses, there are approximately 650.000 -750.000 of them[107]. Many of households who are receiving housing benefits are in old multi-family buildings. For families who receive child benefit supplement in **Hungary** there are lots of social subsidies and a low interest loan that are available for those families who have 3 or more children[108]. In **Spain** all families that are considered as "large families" are automatically eligible for the Social Bonus (discount in the electricity bill), and it is one of the main collectives receiving it. Answers from single parent families in POWER TARGET tool regarding thermal discomfort must be more considered instead of what they spend in energy. Medium class might suffer from thermal discomfort due to poor building stock.

104 KSH (Central Statistical Office) 2020; https://www.ksh.hu/docs/hun/xftp/gyor/mun/mun2002.html
105 https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976594
106 https://www.ksh.hu/docs/hun/xftp/idoszaki/hazteletszinv/2019/index.html
107 KSH, CSO Central Statistical Office 2011; http://www.ksh.hu/nepszamlalas/tablak_csaladtipusok_jellemzoi
108 ÁSZ (SOA State Audit Office) 2019: Family benefits system in Hungary
https://www.asz.hu/storage/files/files/elemzesek/2019/20190618_csaladtamogatasok_rendszere.pdf

Individual circumstances with health issues or disabilities may be supported by relatives/friends and suffer from mental illnesses/depression. According to the participants, their resources are also limited and there is no room for any sufficient financial interventions. In Hungary, their number is most being increasing because of COVID-19 many people do not have access to regular medical care. Key issues are health issues or disabilities in their case and higher indoor temperature may be required.

Also, participants emphasized that refugees may reside in a ghetto area or reception facility and they are also low-income families.

For participants other subgroups can be romani communities that usually have unique energy consumption patterns. Key issues for other subgroups are heating fuel and prepaid meters.

5.2 The POWER ACT Tool

Participant's experiences with engaging targeted citizens and lessons learnt in POWERPOOR pilot countries are: awareness raising, behaviour change, low-cost measures, energy monitoring, planning for investment, identified specific stakeholders that could support reaching out to these groups, informative campaigns on how to apply for refurbishment of multi apartment building and benefits after refurbishments. In **Croatia**, there are **DOOR**'s projects of simple energy audits and mapping of one county and projects like "Together to more comfortable housing 4". In **Estonia**, **EKYL** had experiences engaging targeted groups through the apartment associations where they are members. Working poor with no social benefits, unemployed persons and single parent families need to be targeted via social media channels.

Persons over the pension age with low pensions (including widows) have difficulty to use digital tools and need constant support. According to field trips and onsite survey experiences in **Hungary** these citizens need care, and they would like to talk about their issues therefore special patient and polite is needed to engage them to the project. They can be engaged through associations of pensioners.

Persons under the pension age unable to work could be engagement through social services and unemployed persons could be reached through unemployment offices and motivated by the possibility of becoming Supporters/Mentors.

Families who receive child benefit supplement need help therefore it is relatively easy to engage them. For single parents' measures should be very simple to execute and should not take much of their time and for medium class measures should be to improve building stock or appliance efficiency. Bigger families usually consume more energy therefore Power Tools should contain as many useful energy behaviour related tips and hints as possible (i.e. families who receive child benefit supplement).

Approaches in order to ensure a high uptake and use by the identified target citizen according to participants are: information campaigns, face to face meetings, provide information availability on-line, share information with relevant stakeholders and exploit

their interest, for the elderly population - door to door, interviews on info days, for the younger population also door to door, interviews on info days and social networks to share information, outreach through apartment associations and highlighting money saving and living comfort improvement possibilities. Energy supporters can engage subgroups in the uptake of measures or actions suggested.

Figures 7-16 show proposed technology adoption level (1 innovator - 5 laggards) of the stakeholders that participants provided for each target group.

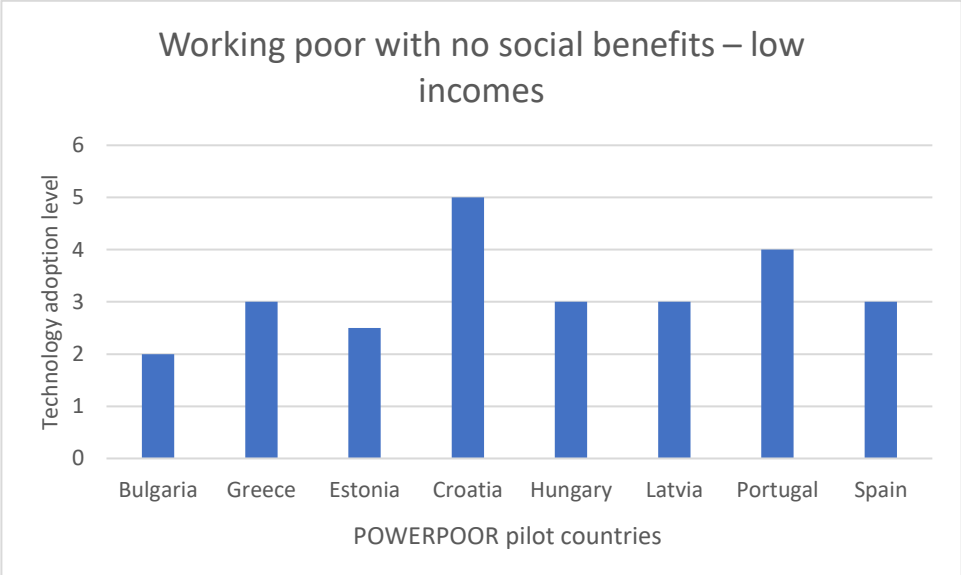

Figure 15 Technology adaptation level of working poor with no social benefits – low incomes

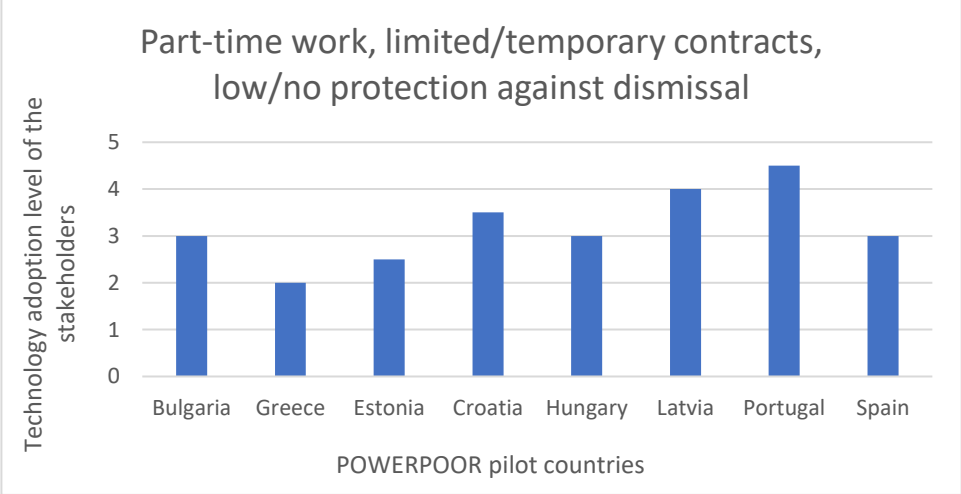

Figure 16 Technology adaptation level of part-time work, limited/temporary contracts, low/no protection against dismissal

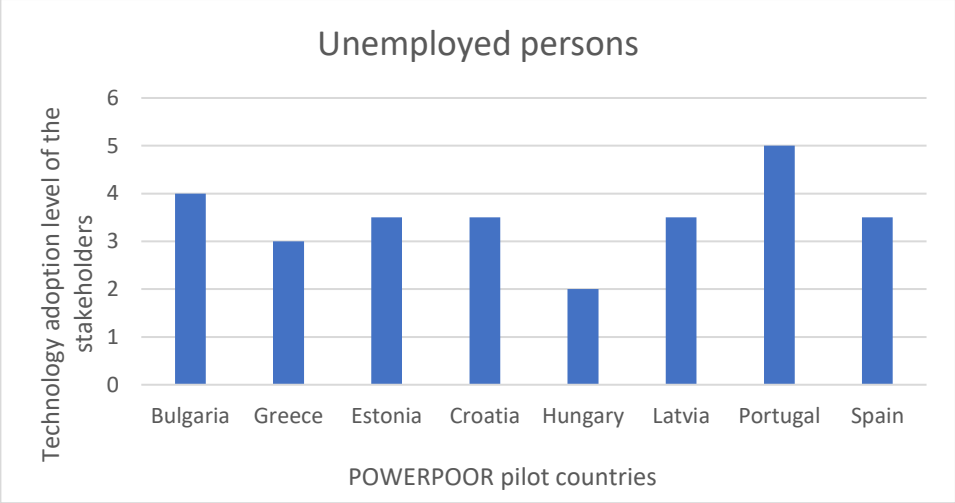

Figure 17 Technology adaptation level of unemployed persons

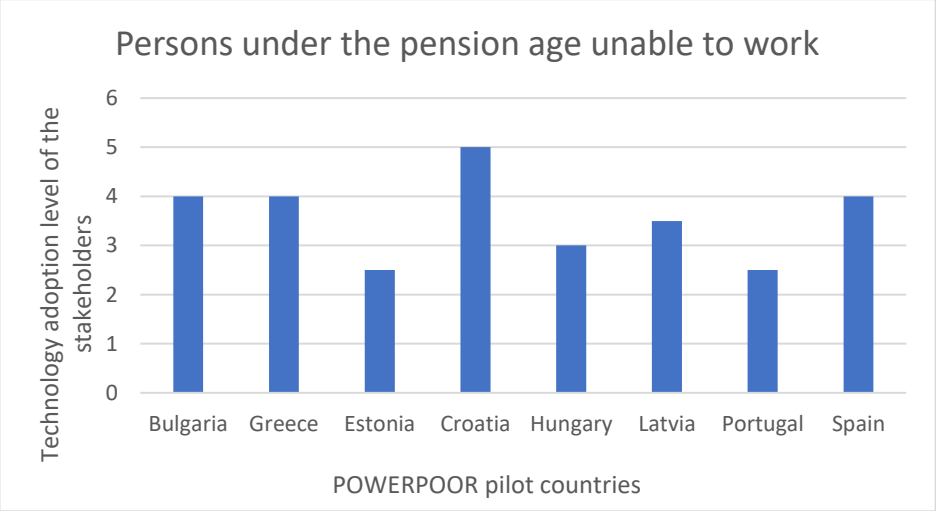

Figure 18 Technology adaptation level of persons under the pension age unable to work

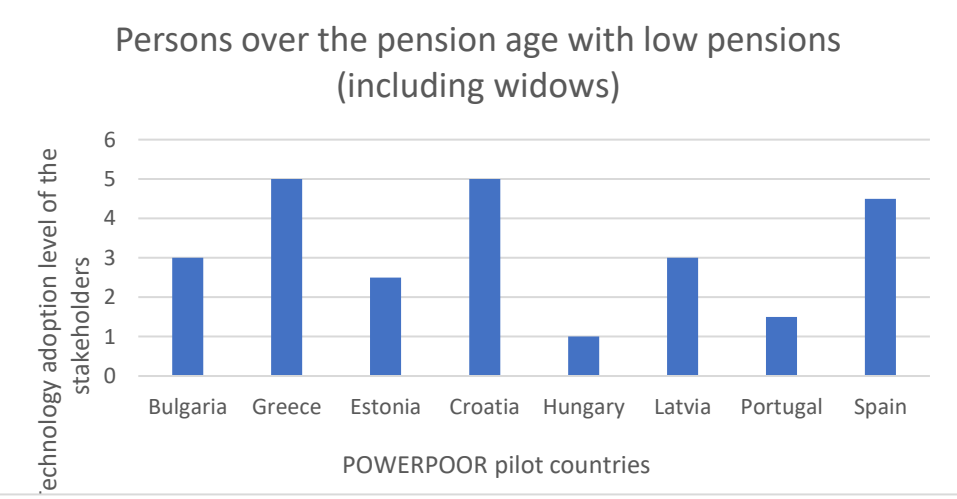

Figure 19 Technology adaptation level of persons over the pension age with low pensions (including widows)

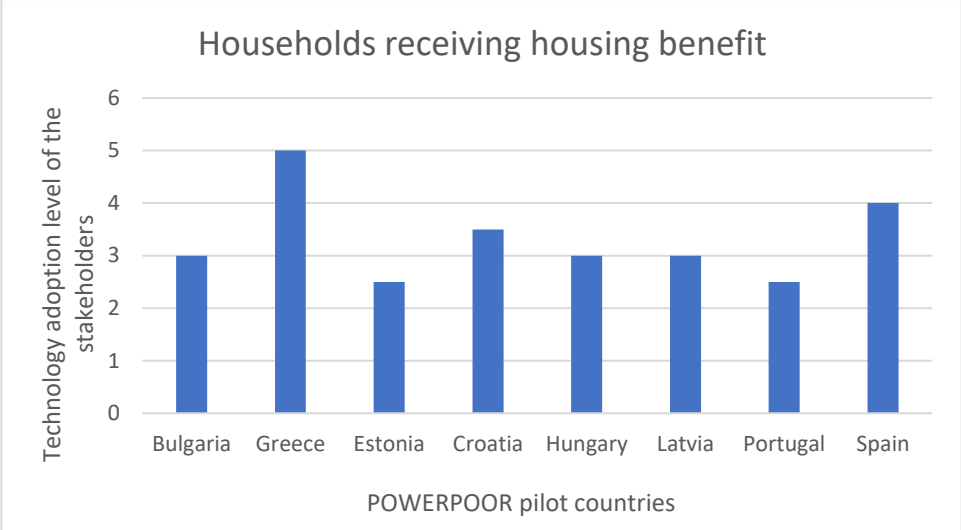

Figure 20 Technology adaptation level of households receiving housing benefit

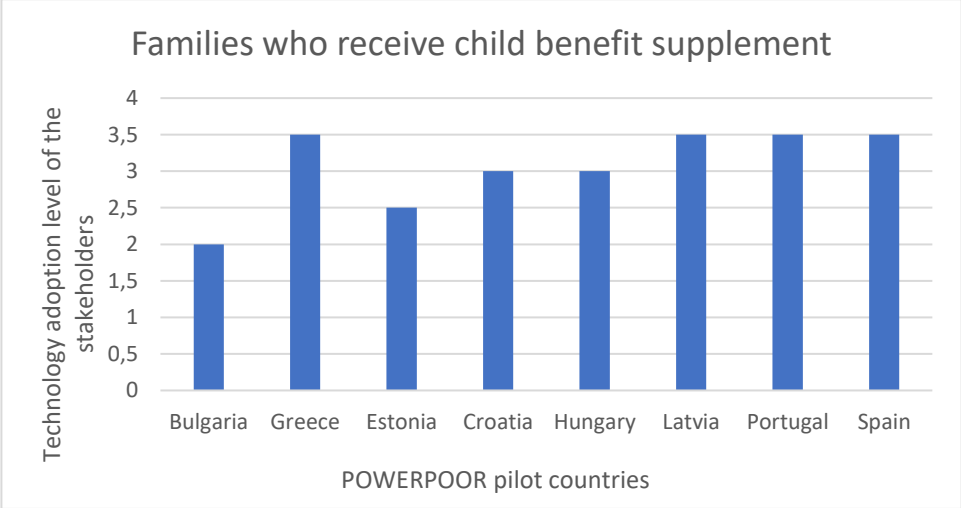

Figure 21 Technology adaptation level of families who receive child benefit supplement

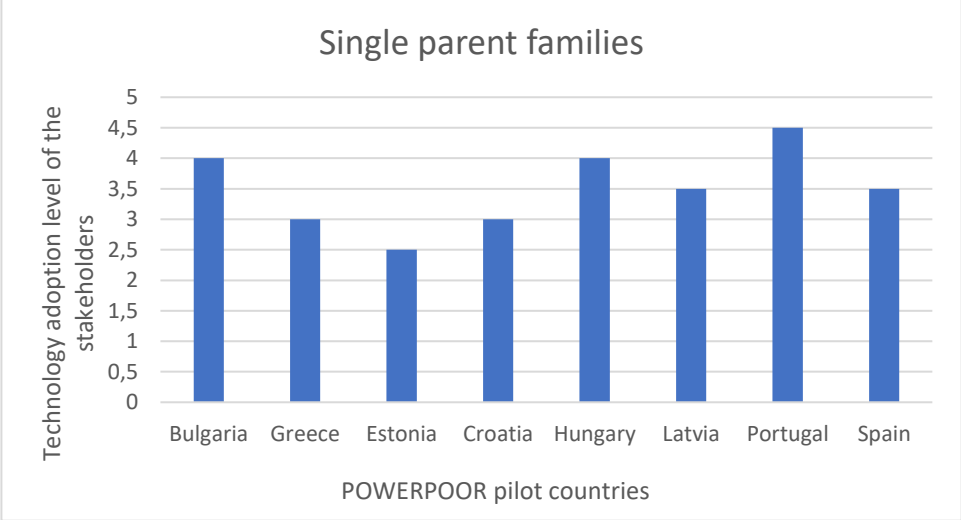

Figure 22 Technology adaptation level of single parent families

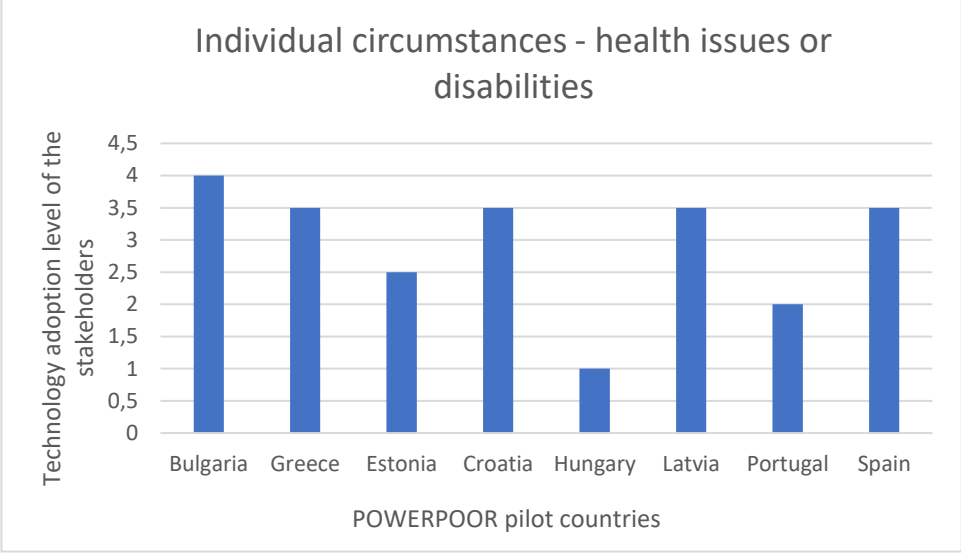

Figure 23 Technology adaptation level of individual circumstances - health issues or disabilities

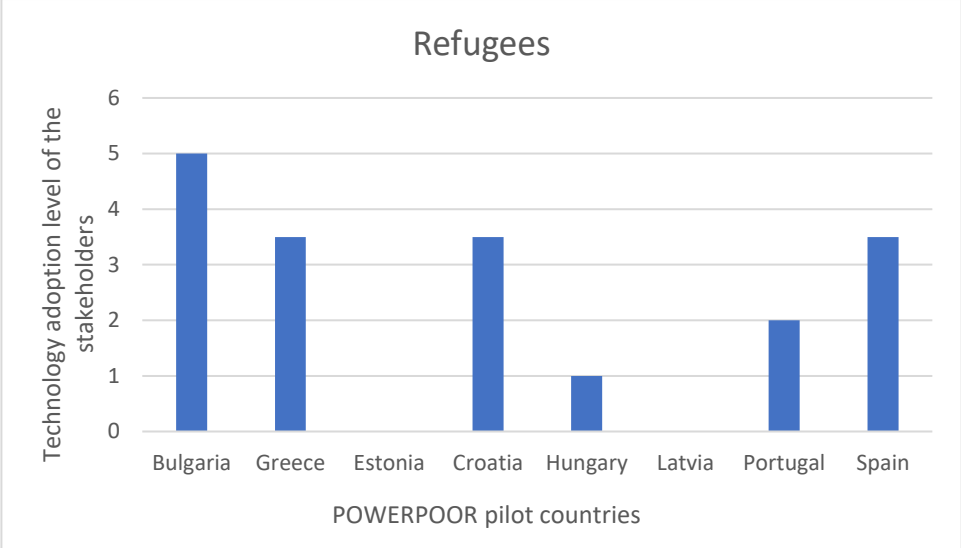

Figure 24 Technology adaptation level of refugees

5.3 The POWER FUND Tool

The POWER FUND tool's features/functionalities according to participant's suggestions should be:

- user-friendly, simple, with easy instructions and understandable from non-technical audience with schemes or actions that do not implicate to spend money upfront;
- have an updated list of financial instruments at national, regional and local levels with clearly indicated instructions on how to apply to receive funds;
- have a list about the available or upcoming subsides, loans, existing financial schemes – energy communities, present and future support programmes, credit lines, alternative financing schemes for building renovation, collection of good examples in order to encourage them to implement renovations;

- have access to social benefits, social support programmes and possibilities of obtaining a better employment through the innovative schemes, possibilities to professionalize through collective energy initiatives;
- enable networking with other people (besides Mentors) who could support them to join collective initiatives.

6 Results from the POWER-TARGET tool

This chapter presents a review of the POWER TARGET data from the time the tool was launched in March 2021 to December 2021. For now, POWER TARGET users are coming from the 8 POWERPOOR pilot countries (**Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Portugal** and **Spain**). In the following subsections an analysis of the different entries' users filled in, in the POWERPOOR pilot countries, in all the qualitative and quantitative questions that are included in the POWER TARGET tool is presented.

The POWER TARGET data-driven tool will support local and regional authorities to identify groups or communities of energy poor citizens. This tool uses qualitative and quantitative indicators, such as energy-related data, building characteristics and other sociodemographic data to identify energy poor citizens. More information on the tool i.e., the methodology employed and a guide of use, can be found in D2.2 and D2.5

The tool consists of questions that are filled in via the POVERPOOR toolkit platform. The tool consists of 18 questions listed below:

- Personal details:
  - country
  - city
  - annual income
  - age
  - number of children
  - marriage status
- Electricity consumption
  - I only use electricity for heating and cooling in the household (Yes/No)
  - Property size (in m^2) *
  - Electricity supplier
  - Annual consumption (in kWh) *
  - Annual cost of electricity *
  - I don't have air conditioning (Yes/No)
  - My air conditioning thermostat is set to Celsius
    - In winter
    - In summer
- Heat consumption
  - Heating energy
  - Annual consumption
  - Annual heat consumption
  - My thermal comfort during the winter is*

6.1 Personal details

Country

Most users who completed the questionnaire come from **Greece,** i.e., 92. Between 60 and 70 users come from **Spain** and **Hungary**, while 42 are from **Portugal.** About a dozen people who filled out the questionnaire come from **Estonia, Latvia,** and **Bulgaria**, and only three are from **Croatia**.

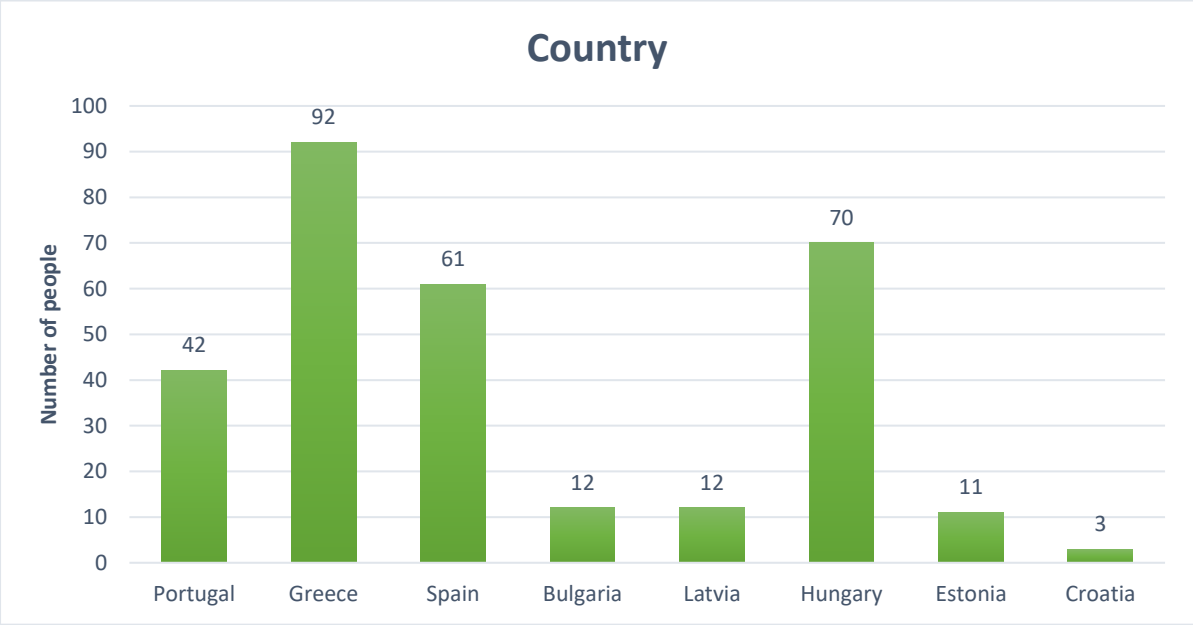

Figure 25 Countries from which users filled out Power Target

City

By cities, **Greece** leads in POWER TARGET with entries of 38 different cities. Followed by **Hungary** and **Portugal** with 24 cities. **Spain** 19 cities and **Latvia** 4, **Estonia** 3, **Bulgaria** 2 and **Croatia** 1 city.

Figure 26 Countries and cities from which users filled in the Power Target

6.2 Income information

Annual income

Most people who filled out the questionnaire have a salary between € 5,000 and € 30,000.

Figure 27 Annual income – all countries

Age

The age of the people that filled in the POWER TARGET tool is presented below. Most of them are from 20 to 50 years old.

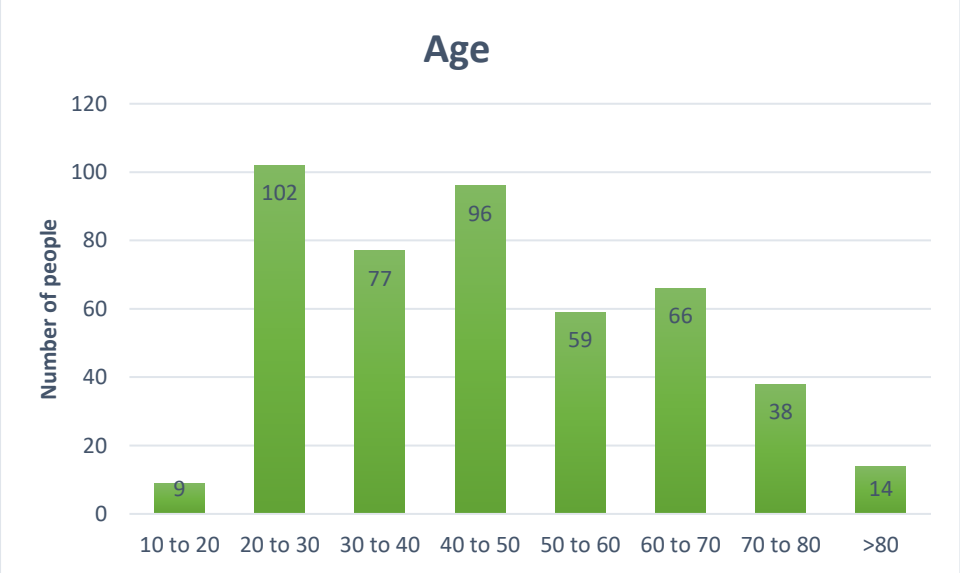

Figure 28 Age – all countries

Number of children

43% of surveyed users do not have dependent children. And 40% have one or two.

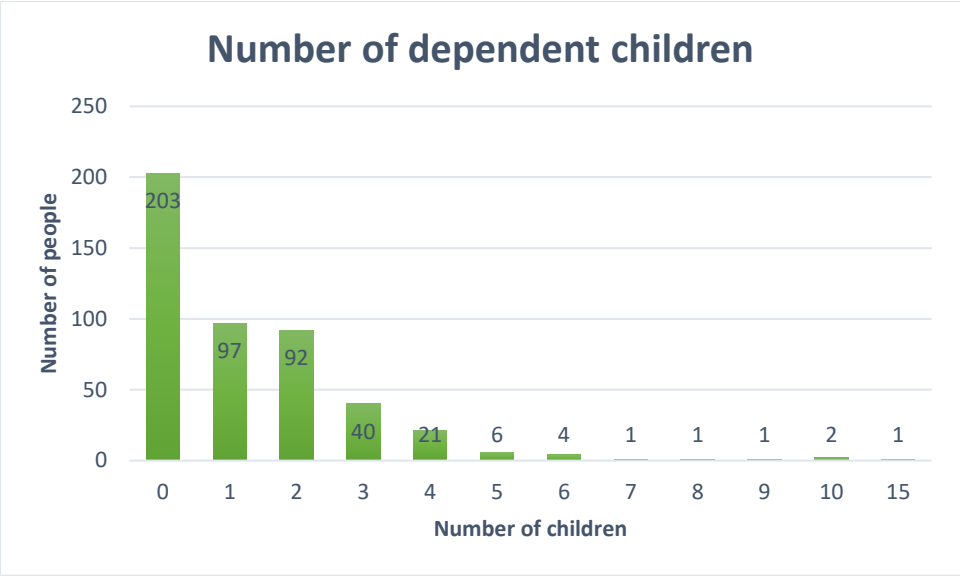

Figure 29 Number of dependent children – all countries

Marriage status

Figure 6 shows the marital status of all users across the eight countries. A detailed overview for each country is below the document

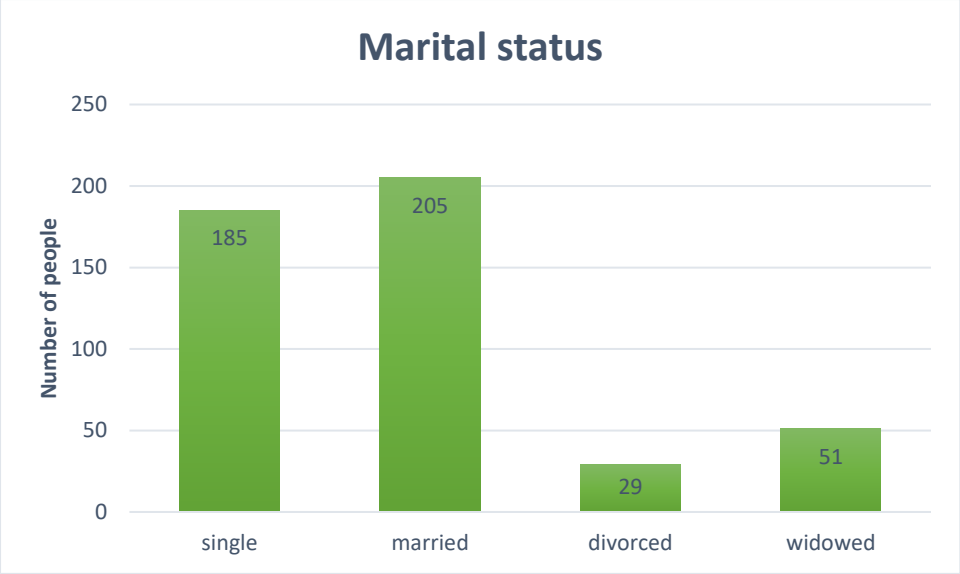

Figure 30 Marital status – all countries

6.3 Electricity Consumption

Property size

A quarter of respondents live in a home ranging in size from 50 to 70 m^2. About 20% of them are in a home from 70 to 90 m^2. There are 30% living in home from 90 to 130 m^2.

Figure 31 Property size – all countries

Annual consumption (kWh)

Portugal has the highest electricity consumption - an average of 5,000 kWh per year per household. **Portugal** is followed by **Bulgaria** and **Hungary** with 4,000 kWh per year. **Croatia** has the lowest consumption with 1,700 kWh per year, but it must be taken into account that in **Croatia** only three people completed the POWER TARGET tool.

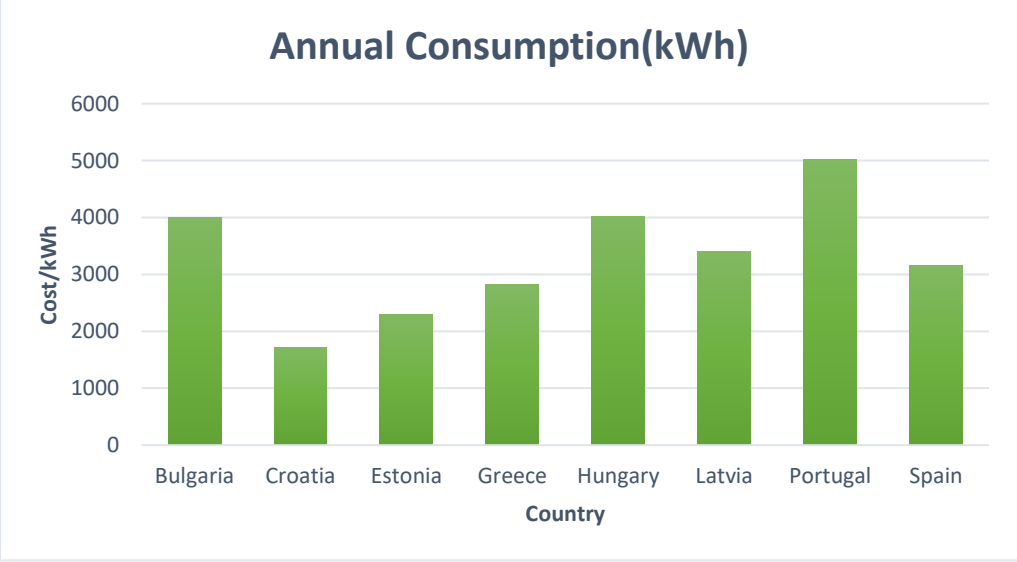

Figure 32 Annual Conusmption – all countries

Annual cost of electricity

The most expensive electricity bills are paid by **Spanish, Greeks,** and **Portuguese**. **Croats, Estonians,** and **Bulgarians** have the cheapest bills.

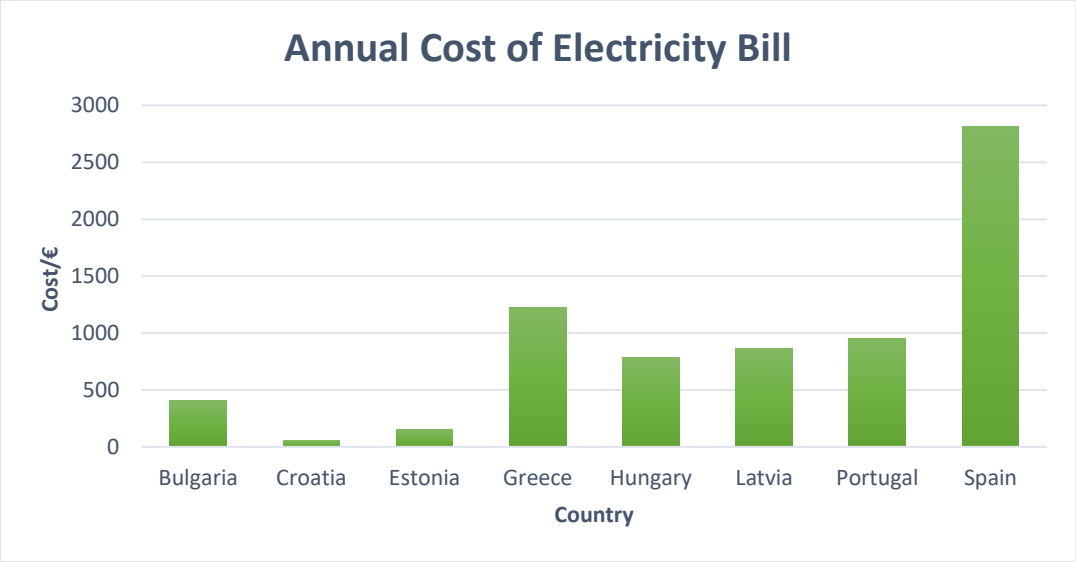

Figure 33 Annual Cost of Electricity Bill

My air conditioning thermostat is set to Celsius

Most households (64%) set the thermostat to 21°C in winter.

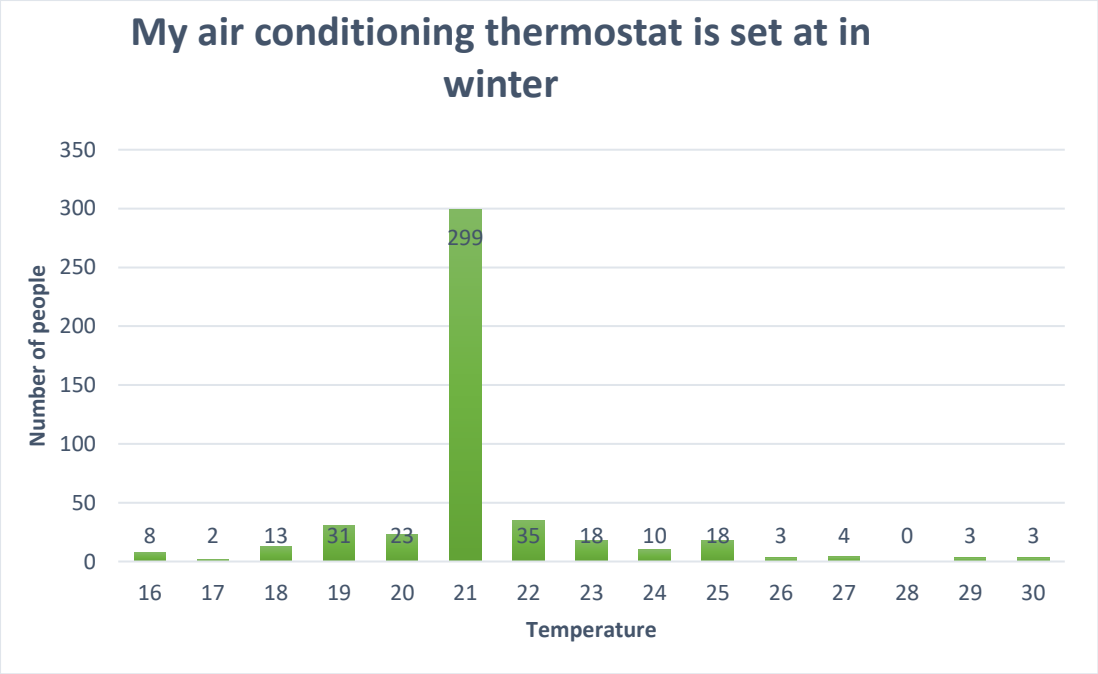

Figure 34 Home temperature in winter

During the summer, most people set the temperature at 22°C. Due to the lack of air conditioning, a number of people have high temperatures in their homes. Furthermore, those living in colder regions do not need cooling systems because their temperatures are low enough.

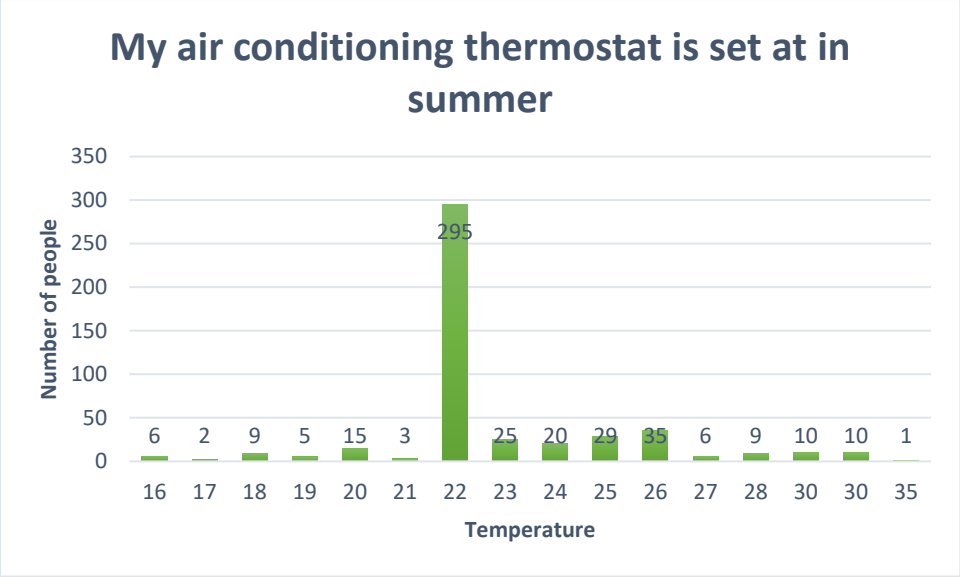

Figure 35 Home temperature in summer

6.4 Heat Consumption

Heating energy

Natural gas (31%) and wood (27%) are the most common heating fuels in the 8 POWERPOOR pilot countries.

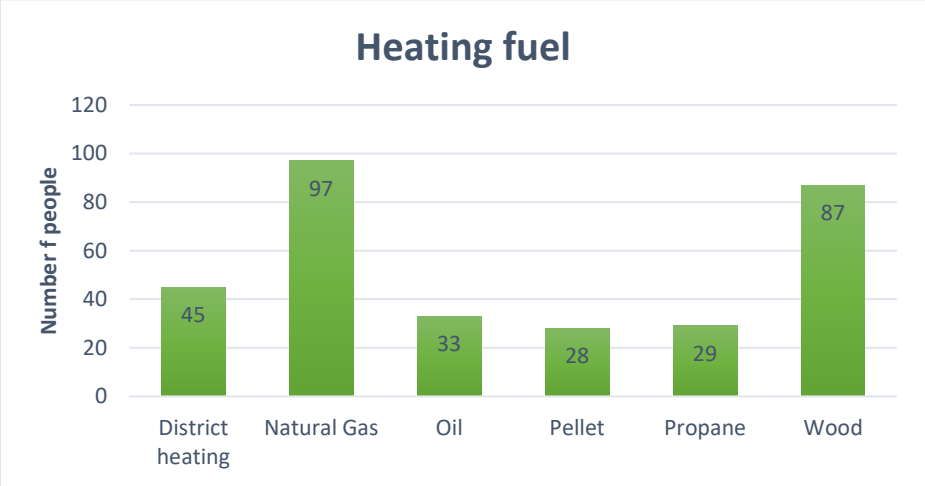

Figure 36 Heating fuel

Annual consumption

Bulgarians spend the most kWh on heating, which is an indication that they probably do not have thermal insulation, unlike **Estonians** who spend the least.

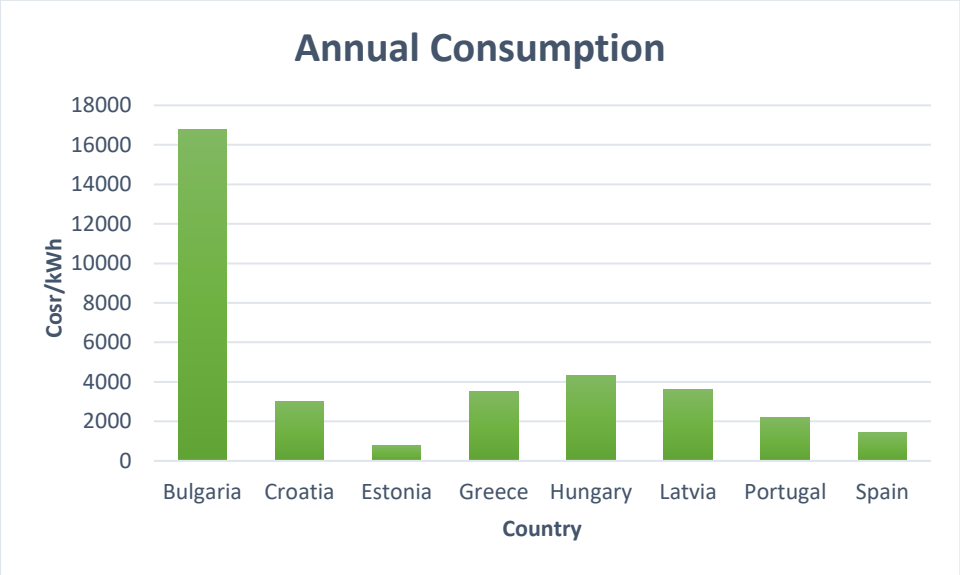

Figure 37 Annual Heat Consumption

Annual heat consumption

As they spend the most kWh on heating, **Bulgarians** pay the most. **Latvians** have high prices for heating - although they do not consume much kWh, the heating is expensive.

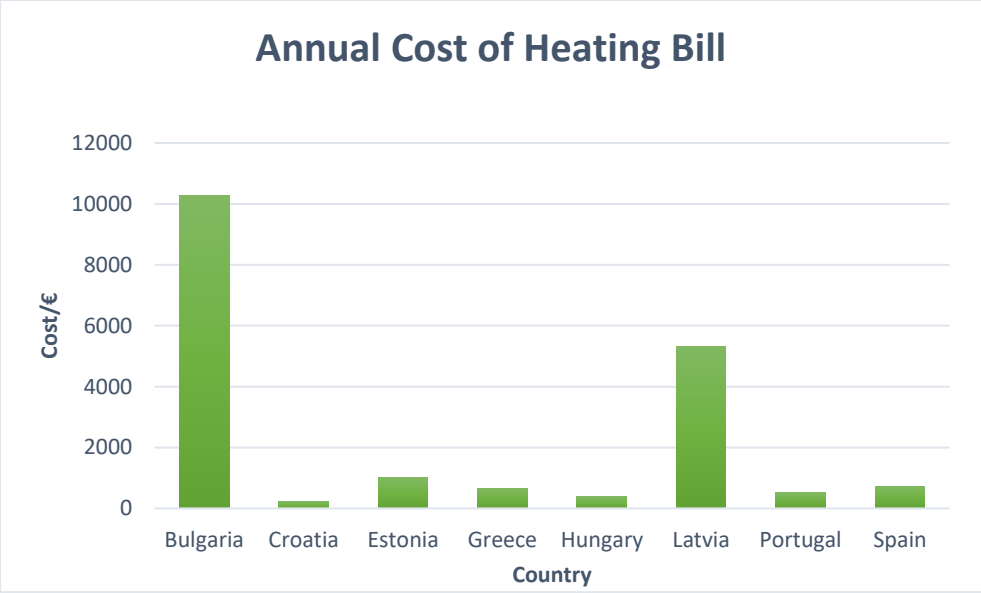

Figure 38 Annual Cost of Heating Bill

My thermal comfort during the winter is

It is worrying that as many as 62% of respondents do not feel warm during the winter.

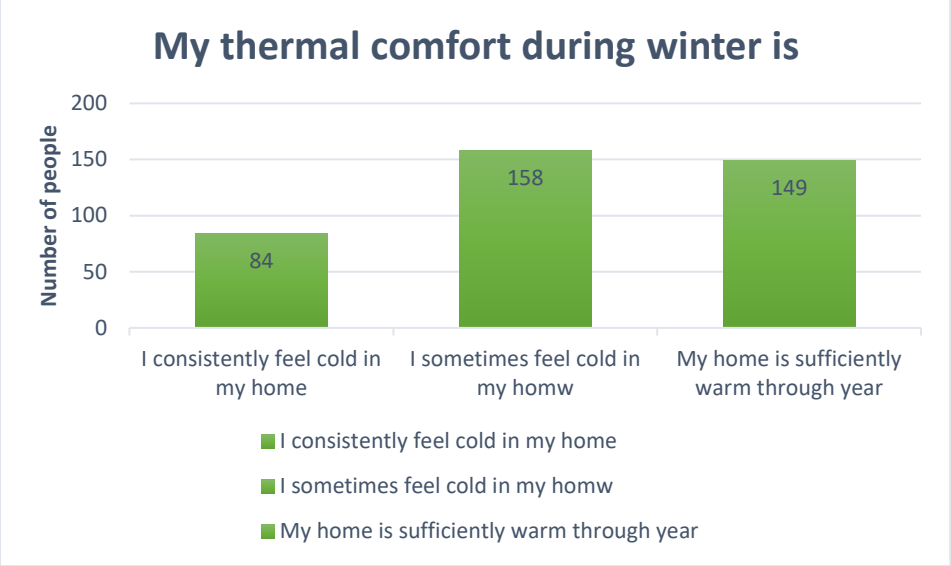

Figure 39 Comfort during winter

6.5 Bulgaria

6.5.1 Personal details

City

Most of the users are from Sofia and only two are from Plodliv.

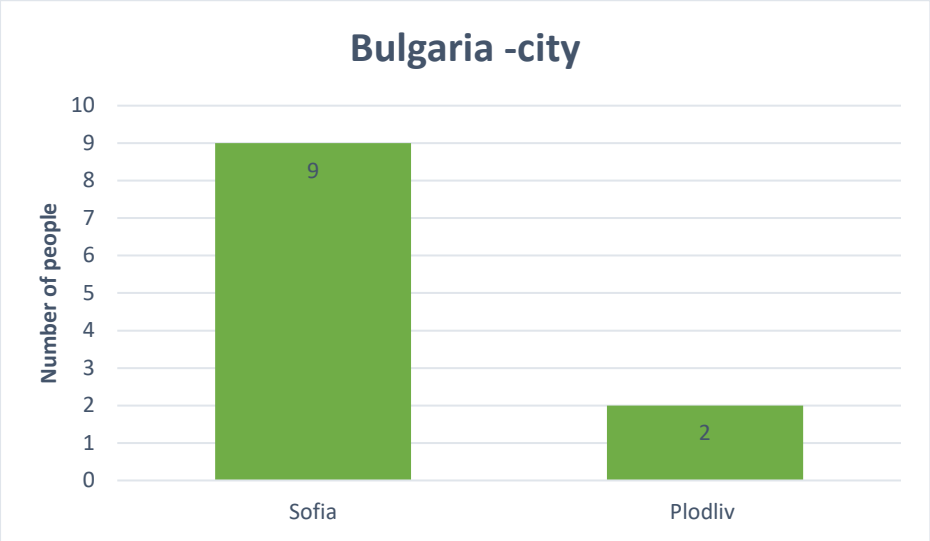

Figure 40 Review location of users who have completed PowerTarget in Bulgaria

6.5.2 Income information

Annual income

On average, Bulgarians who completed the questionnaire have a salary of € 5,000 to € 1,000.

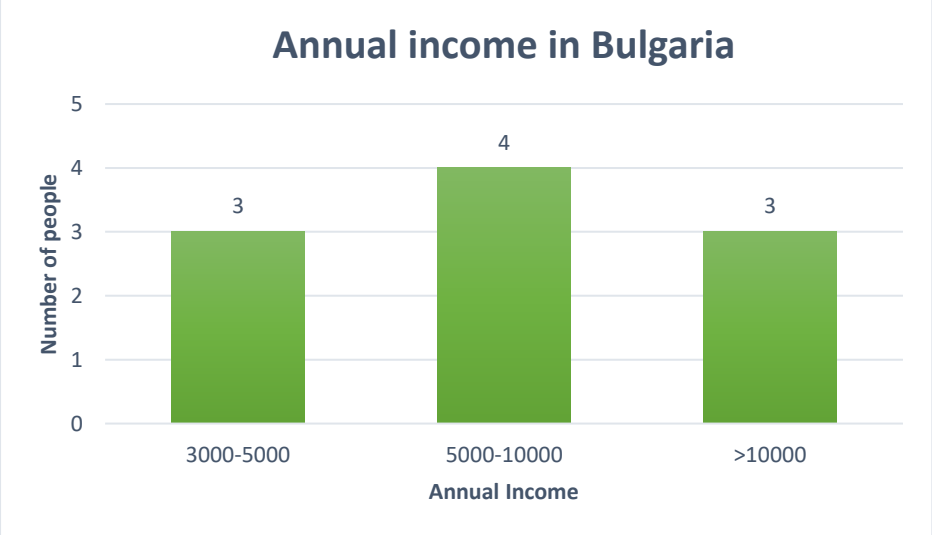

Figure 41 Annual income in Bulgaria

Age

Most respondents are between 30 and 50 years old and between 60 and 70 years old.

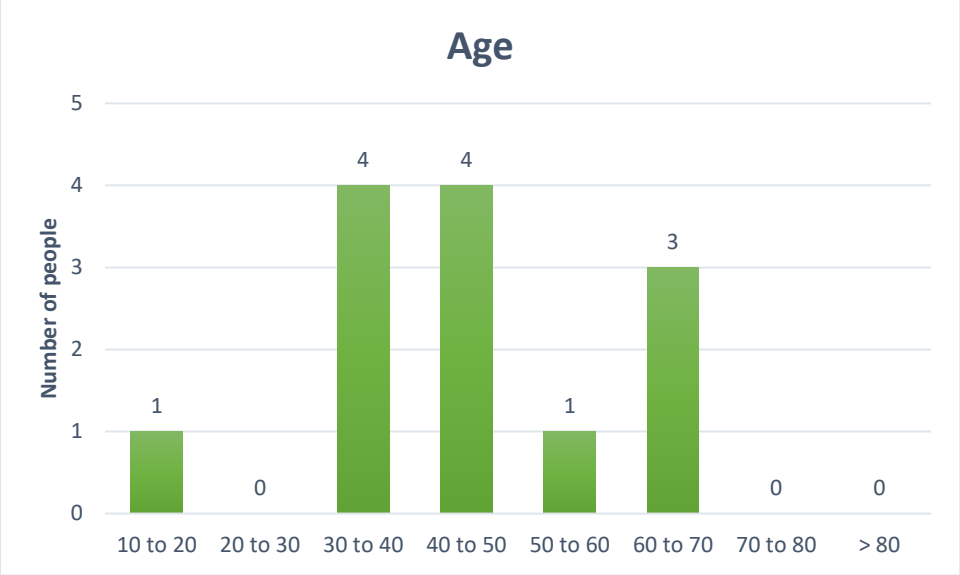

Figure 42 Age in Bulgaria

Number of children

Most respondents don't have children. The same percentage (15%) of respondents has one or two children, three users have four children, and two users have six children.

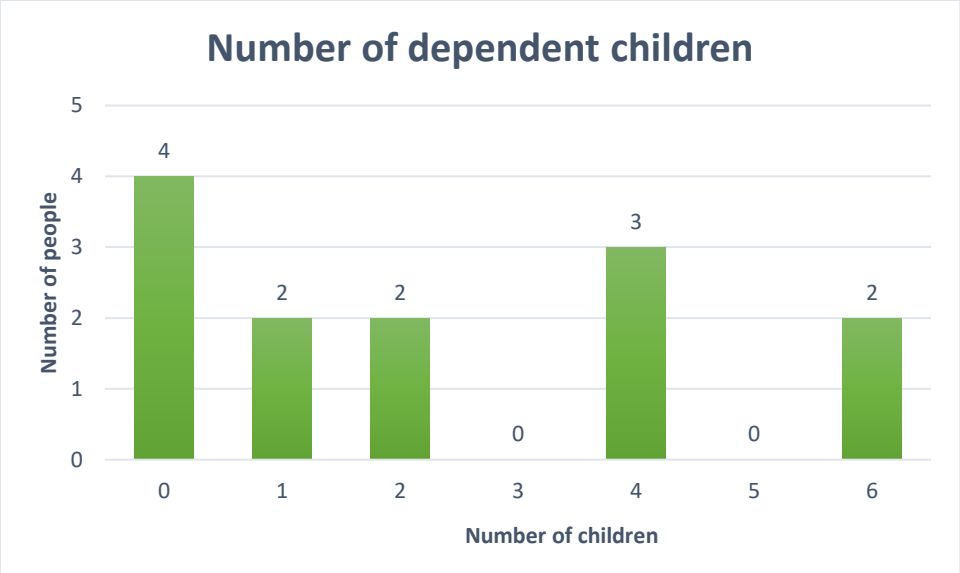

Figure 43 Number of dependent children in Bulgaria

Marriage status

Most respondents are married i.e., 42%. 25% are either widowed or single, and the fewest are divorced - 8%.

Figure 44 Merital status in Bulgaria

6.5.3 Electricity Consumption

Property size (m^2)

69% of respondents live in a home ranging in size from 50 to 100 m^2. About 15% of them are in a home from 100 to 200 m^2. One person lives in a home with a size less than 50 or bigger than 200 m^2.

Figure 45 Property size in Bulgaria

Annual consumption (kWh)

Most Bulgarians consume between 4,000 and 6,000 kWh of electricity.

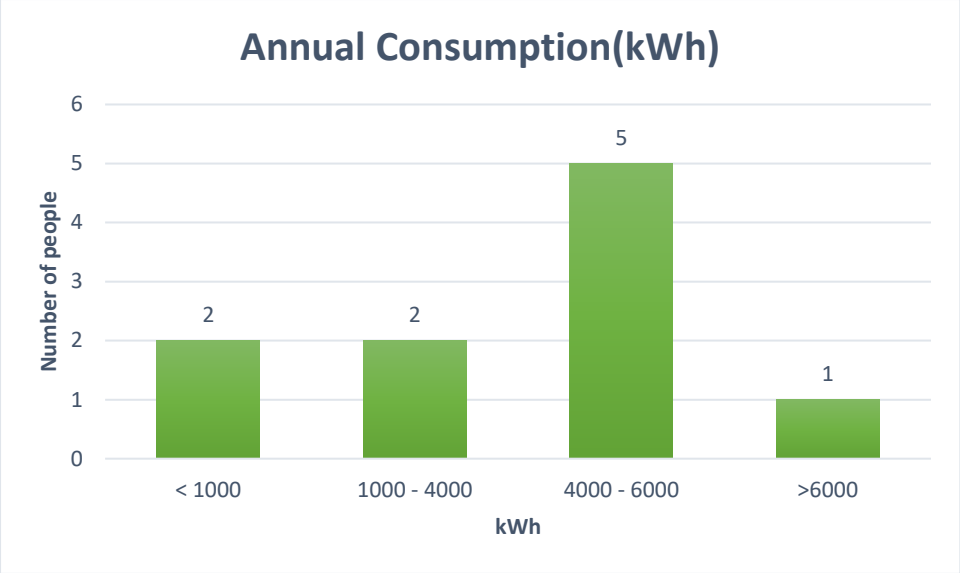

Figure 46 Annual Consumption in Bulgaria

Annual cost of electricity

Electricity consumption in most cases costs from € 200 to € 400.

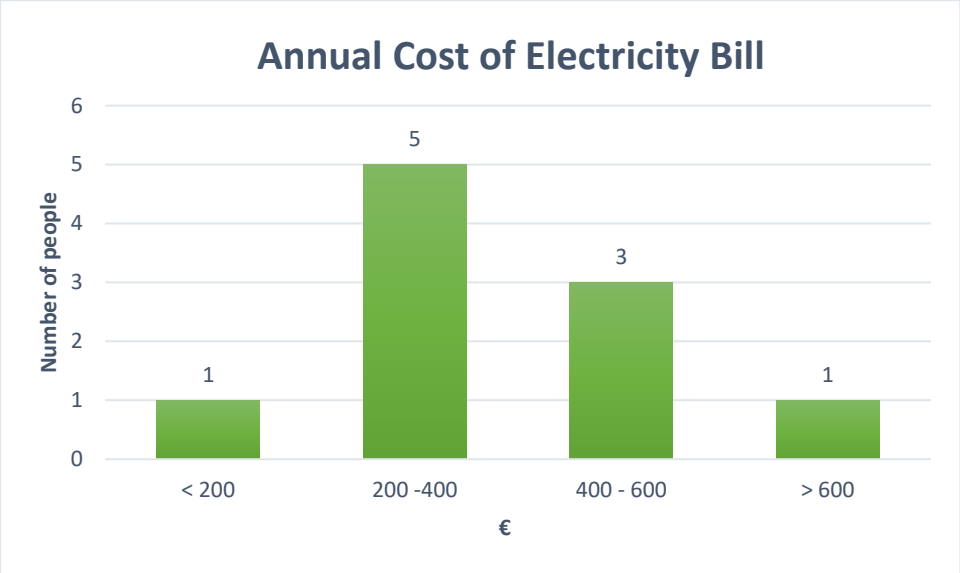

Figure 47 Annual Cost of Electricity Bill in Bulgaria

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

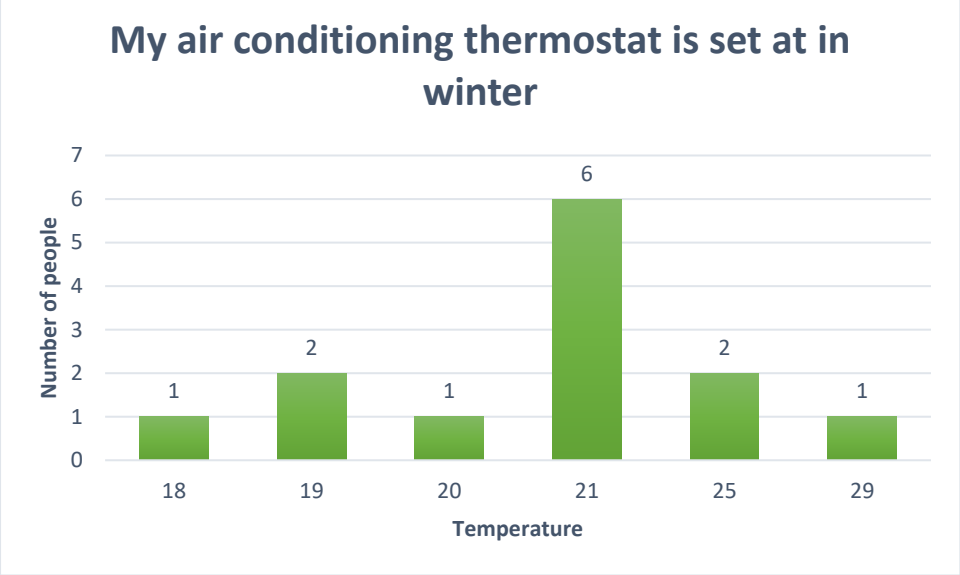

Figure 48 Home temperature in winter

The most common temperature in homes during the summer is 22°C.

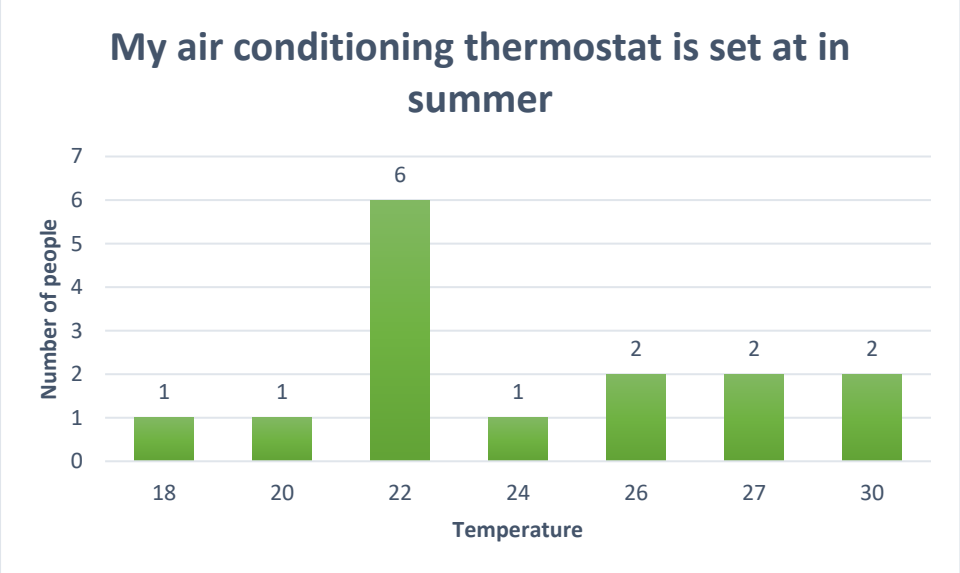

Figure 49 Home temperature in summer

6.5.4 Heat Consumption

Heating energy

Most common heating fuels in Bulgaria are oil and district heating.

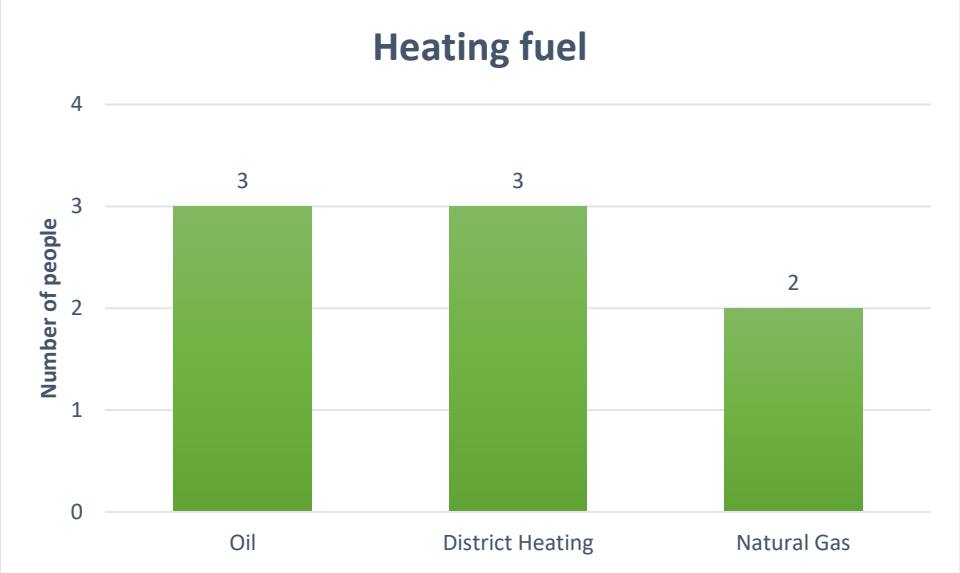

Figure 50 Heating fuel in Bulgaria

Annual consumption

Annual consumption for heating is on average 16,800 kWh.

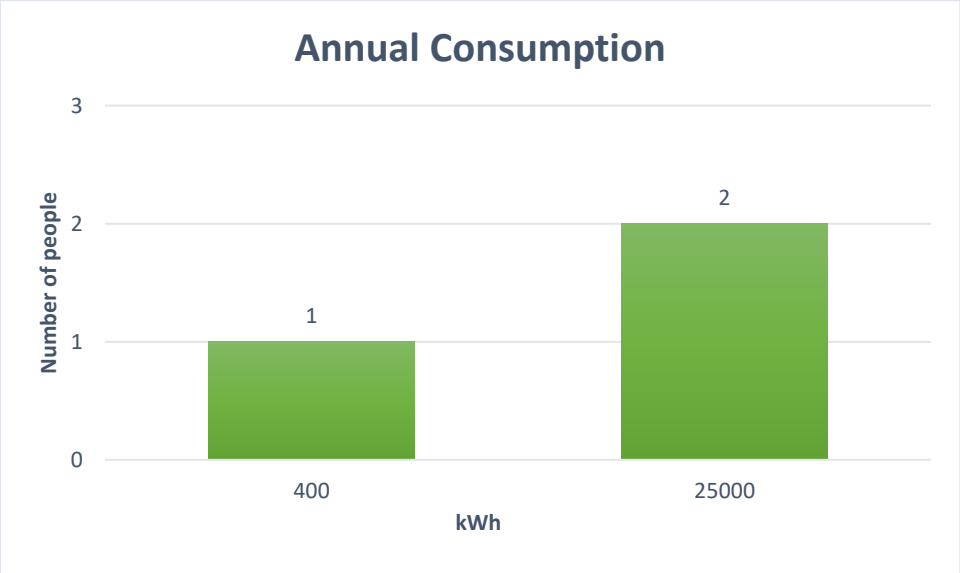

Figure 51 Annual heating consumption in Bulgaria

Annual heat consumption

Heating prices in Bulgaria are high.

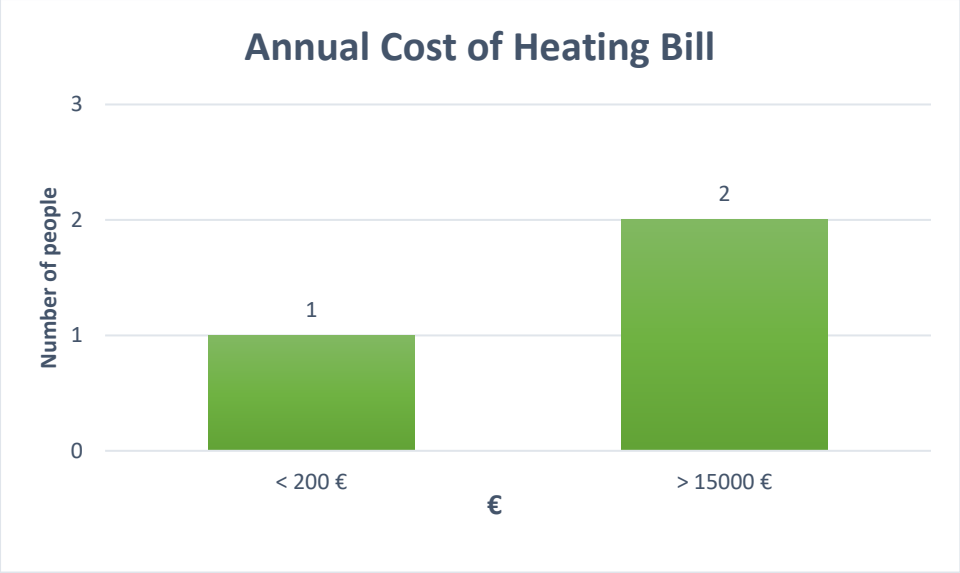

Figure 52 Annual Cost of Heating Bill in Bulgaria

My thermal comfort during the winter is

It is worrying that only 8% of respondents have a fully warm home during the winter.

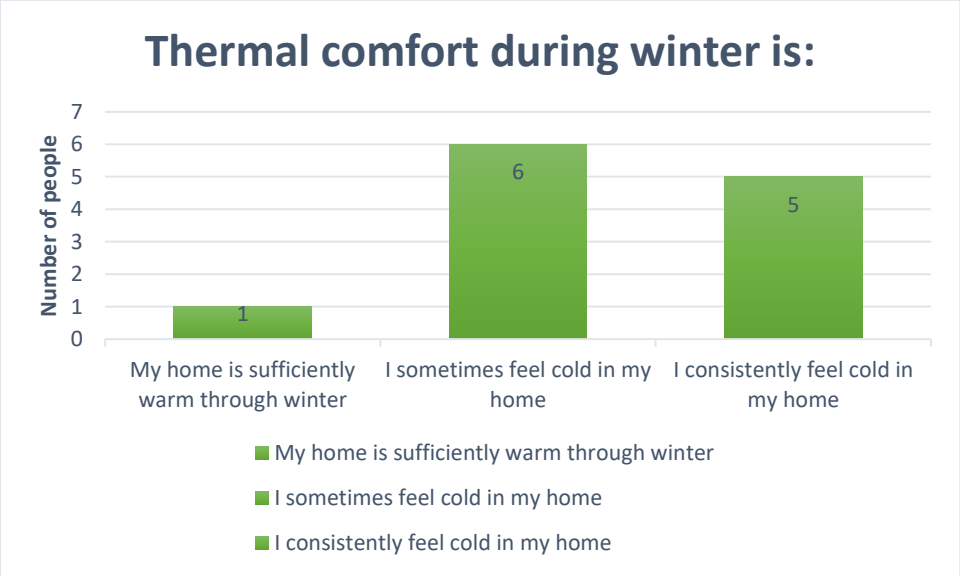

Figure 53 Thermal comfort during winter in Bulgaria

6.6 Croatia

6.6.1 Personal details

City

All three users who filled out the questionnaire come from Zagreb.

Figure 54 Review location of users who have completed PowerTarget in Croatia

6.6.2 Income information

Annual income

The average salary of respondents in Croatia was between €2,000 and €3,000 per year.

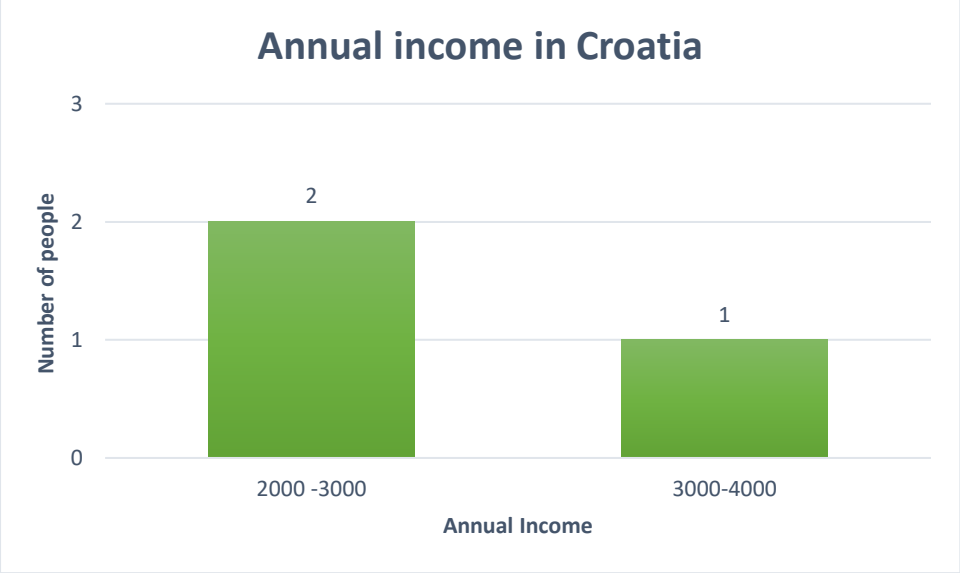

Figure 55 Annual income in Croatia

Age

In Croatia, the questionnaire was filled out by the population in the working-age.

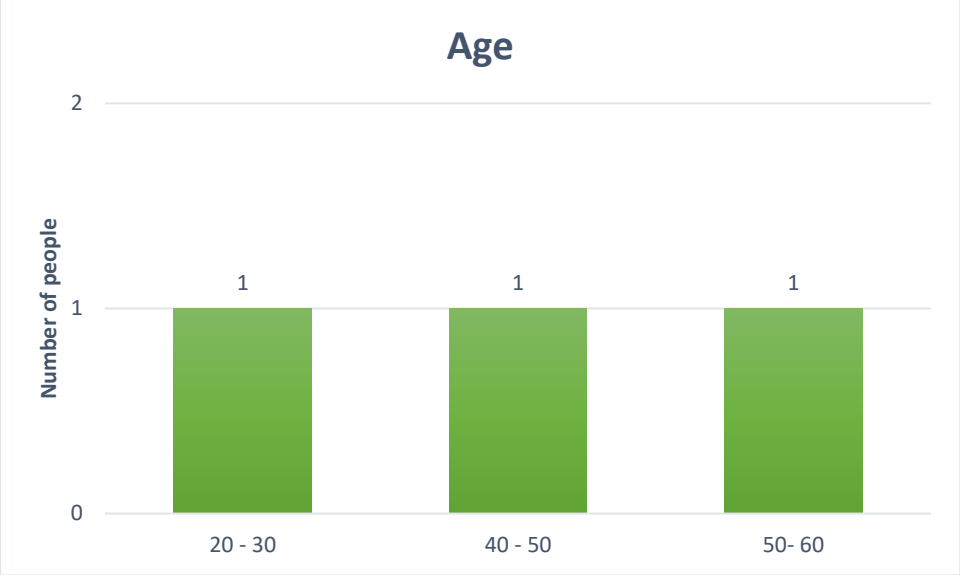

Figure 56 Age in Croatia

Number of children

The same percentage (33%) has 0, 1 or 2 children.

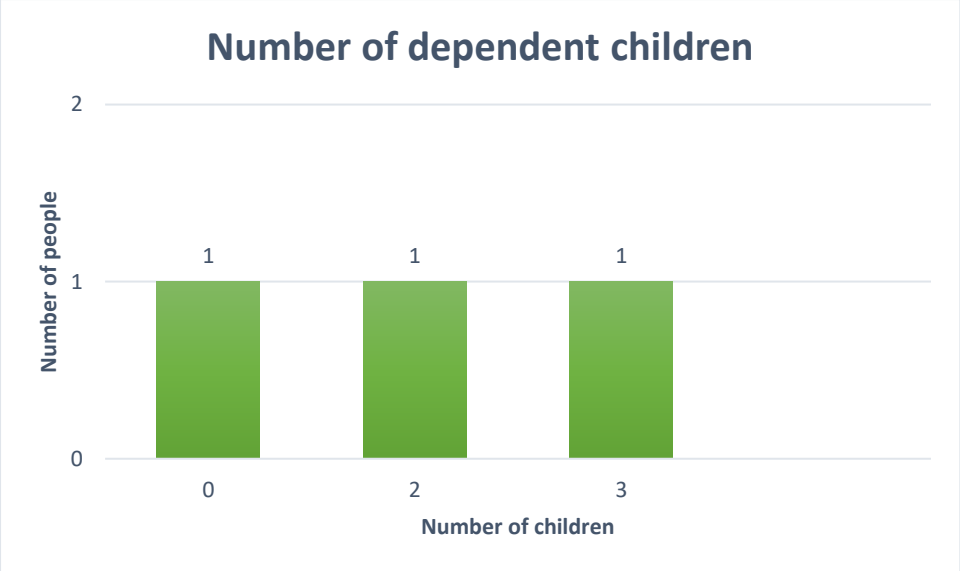

Figure 57 Number of dependent children in Craotia

Marriage status

The same percentage (33%) is single, married or widowed.

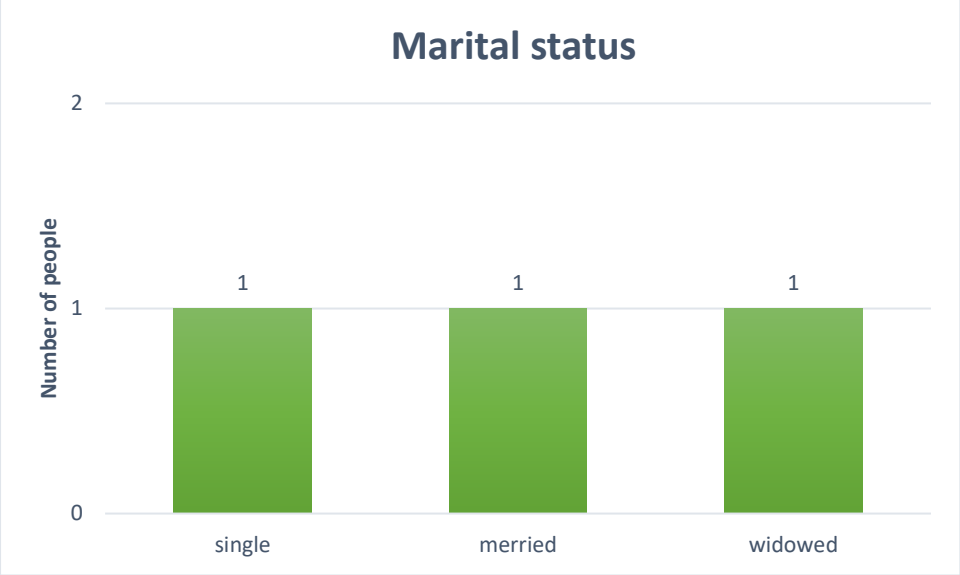

Figure 58 Merital status in Croatia

6.6.3 Electricity Consumption

Property size (m^2)

The data show that the apartments are mostly spacious - more than 100 m^2.

Figure 59 Property size in Croatia

Annual consumption (kWh)

All three households have a different consumption depending on the number of households, appliances and time spent in the home.

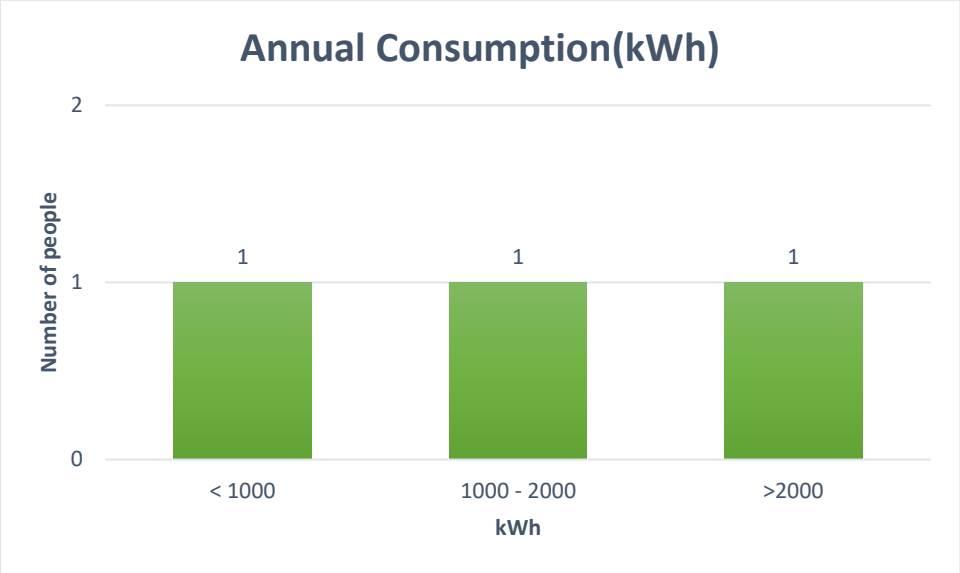

Figure 60 Annual Consumption in Croatia

Annual cost of electricity

Electricity prices in Croatia, compared to Portugal, for example, are not that high.

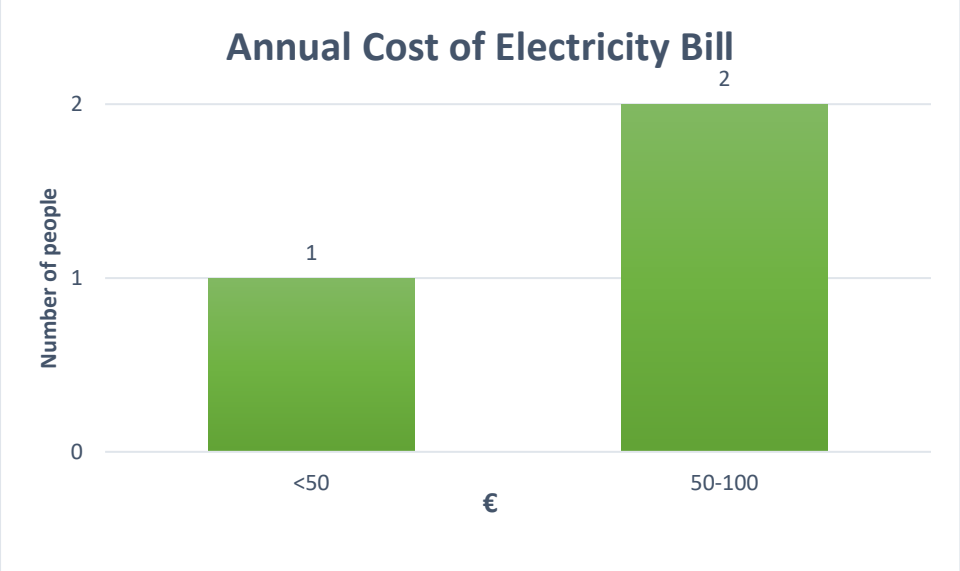

Figure 61 Annual Cost of Electricity Bill in Croatia

My air conditioning thermostat is set to Celsius

Temperatures are similar in all households.

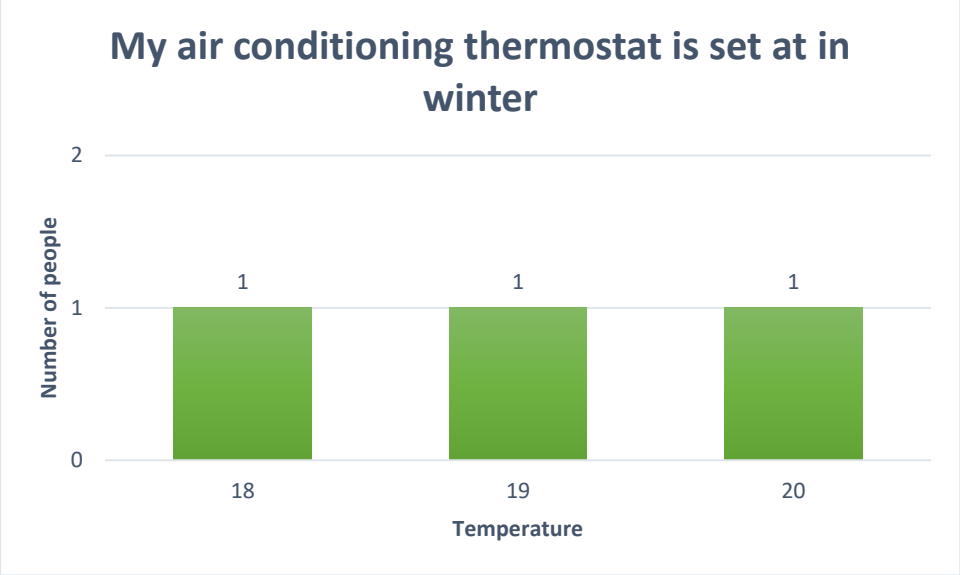

Figure 62 Home temperature in winter

Households that have air conditioning have pleasant temperatures during the summer, while those without have temperatures up to 30°C.

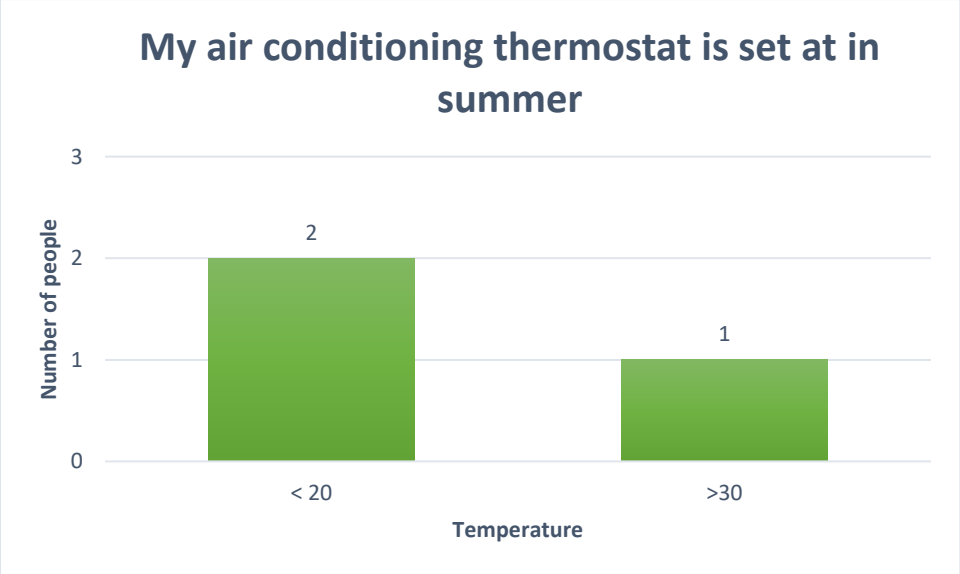

Figure 63 Home temperature in summer

6.6.4 Heat Consumption

Heating energy

Natural gas is a frequently used heating fuel in Croatian homes.

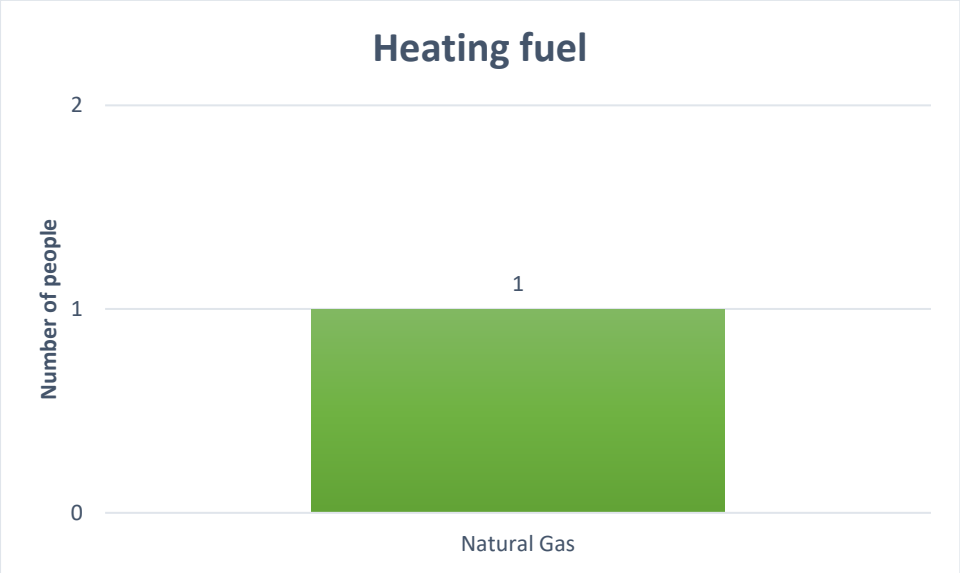

Figure 64 Heating fuel in Croatia

Annual consumption

Annual consumption for heating is on average 3,000 kWh.

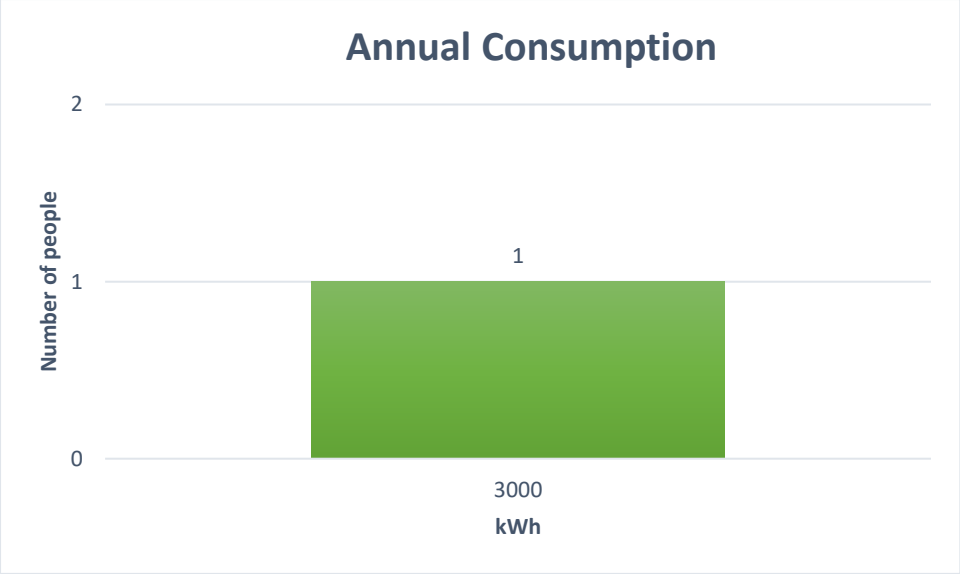

Figure 65 Annual heating consumption in Croatia

Annual heat consumption

Annual cost of heating bill is on average € 234.

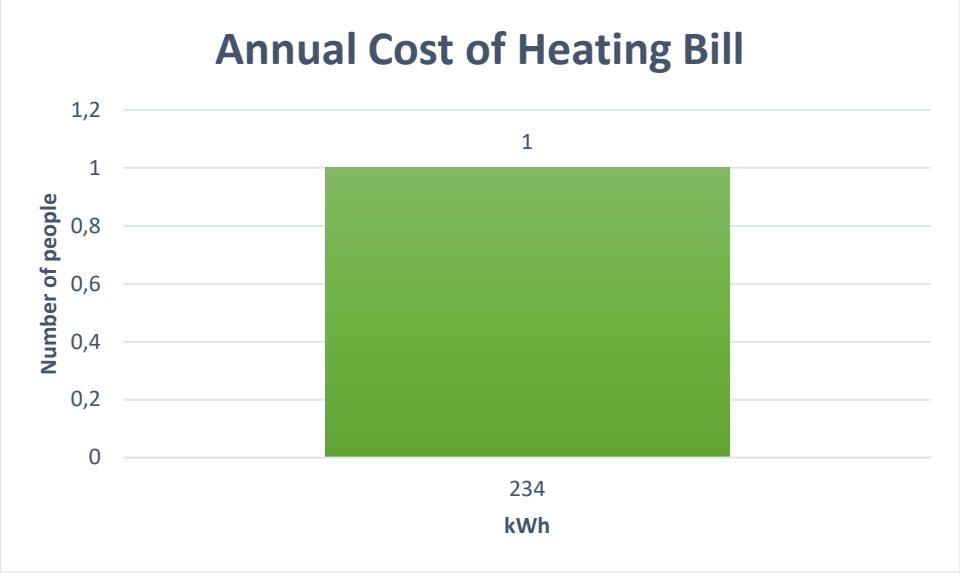

Figure 66 Annual Cost of Heating Bill in Croatia

My thermal comfort during the winter is

One user feels cold at home.

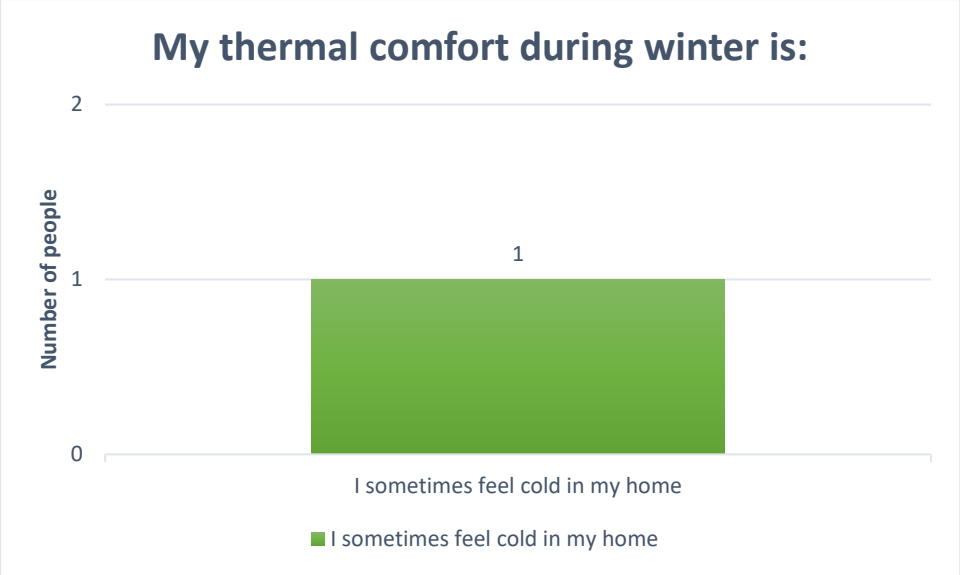

Figure 67 Thermal comfort during winter in Croatia

6.7 Estonia

6.7.1 Personal details

City

From Estonia most users (82%) come from the capital Tallinn, one user from Rakvere and one from Jõhvi.

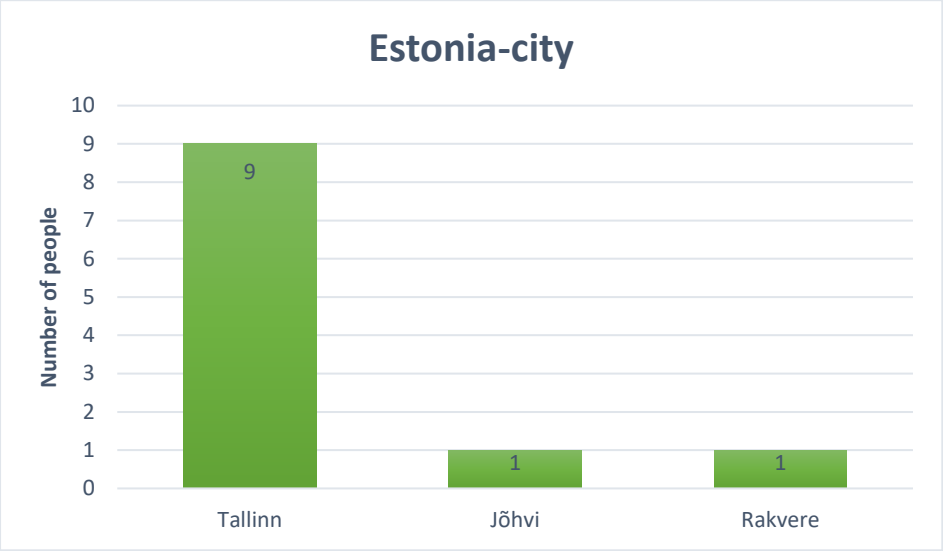

Figure 68 Review location of users who have completed PowerTarget in Estonia

6.7.2 Income information

Annual income

The largest percentage of Estonian customers who have completed Power Target has an annual salary between € 5,000 € and € 15,000.

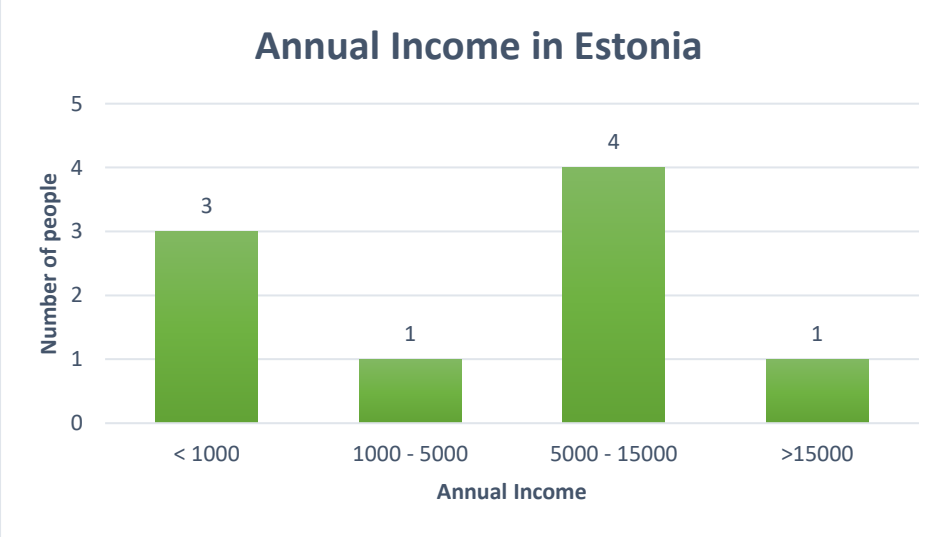

Figure 69 Annual income in Estonia

Age

Most respondents are between 50 and 60 years old.

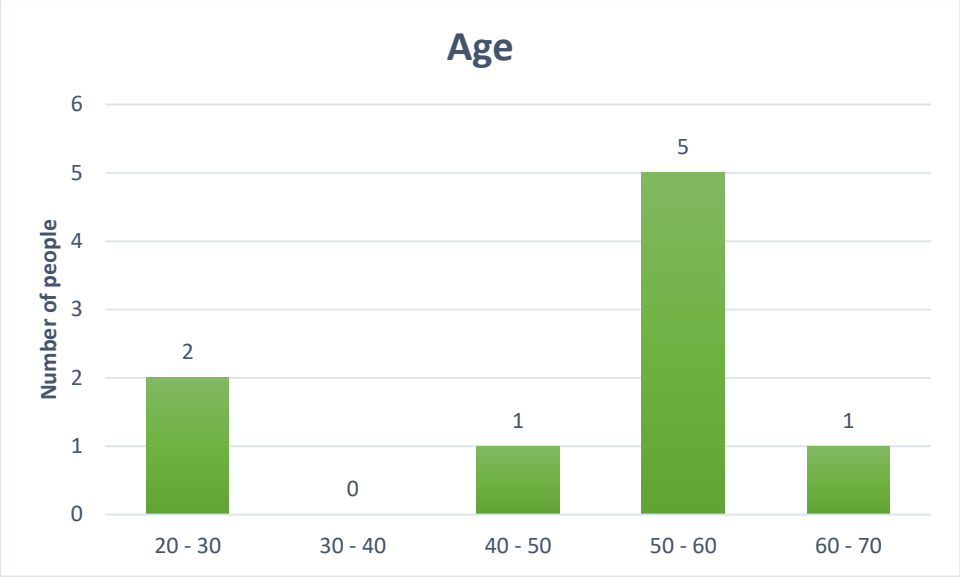

Figure 70 Age in Estonia

Number of children

3% of them have one child. The same percentage of people have three children or no children.

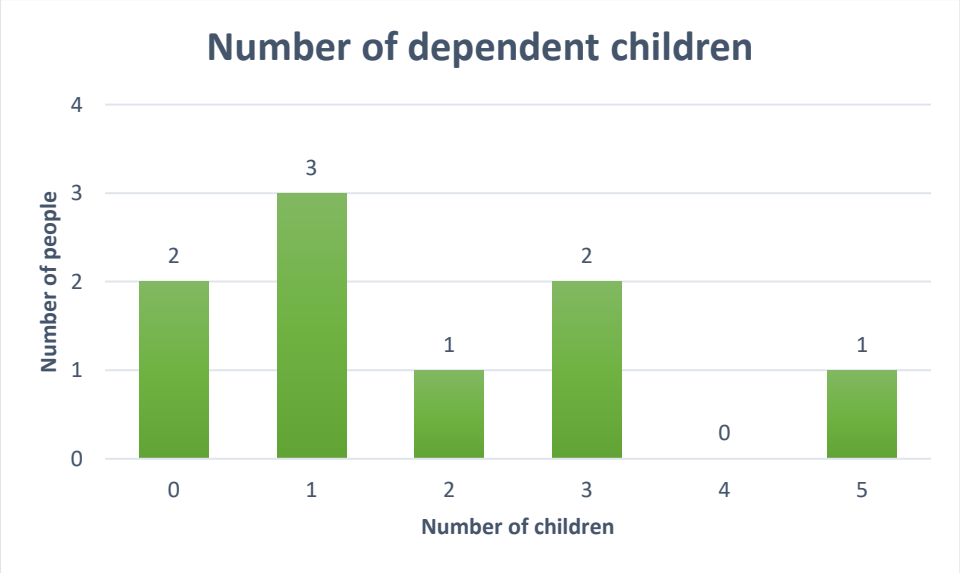

Figure 71 Number of dependent children in Estonia

Marriage status

Almost 50% of the respondents are single and one person is either a widower or a divorcee.

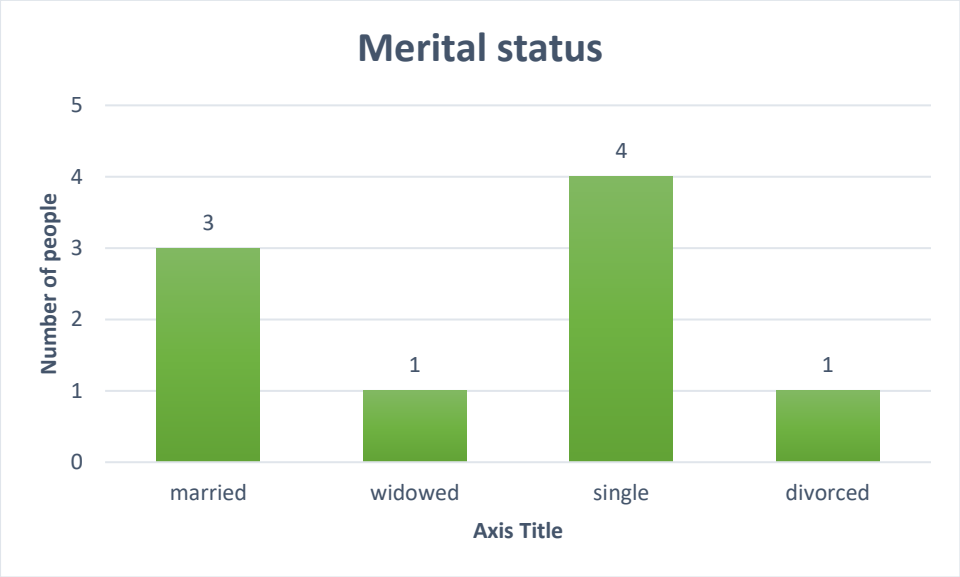

Figure 72 Merital status in Estonia

6.7.3 Electricity Consumption

Property size (m^2)

Most homes are up to 100 m^2 in size.

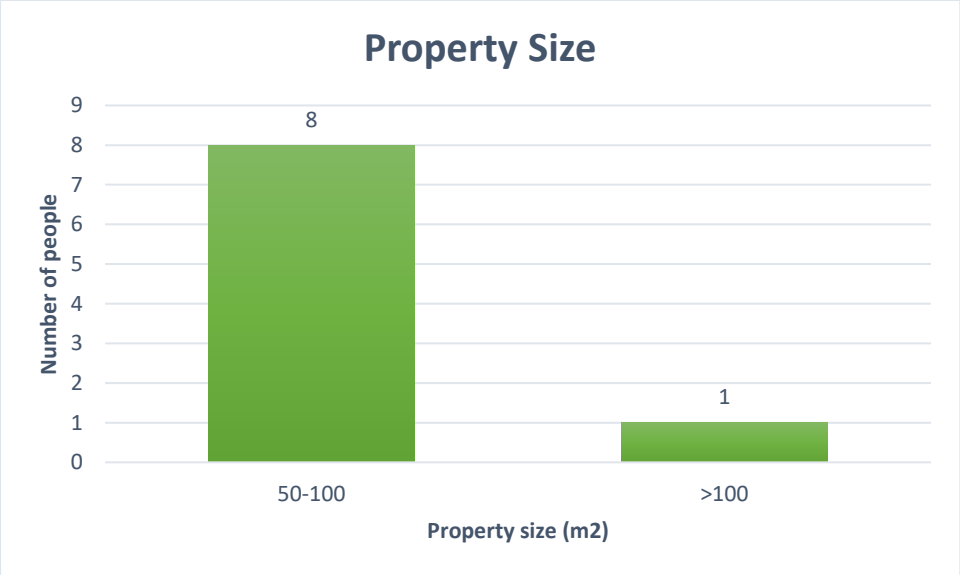

Figure 73 Property size in Estonia

Annual consumption (kWh)

Estonians consume between 100 and 10,000 kWh of electricity per year.

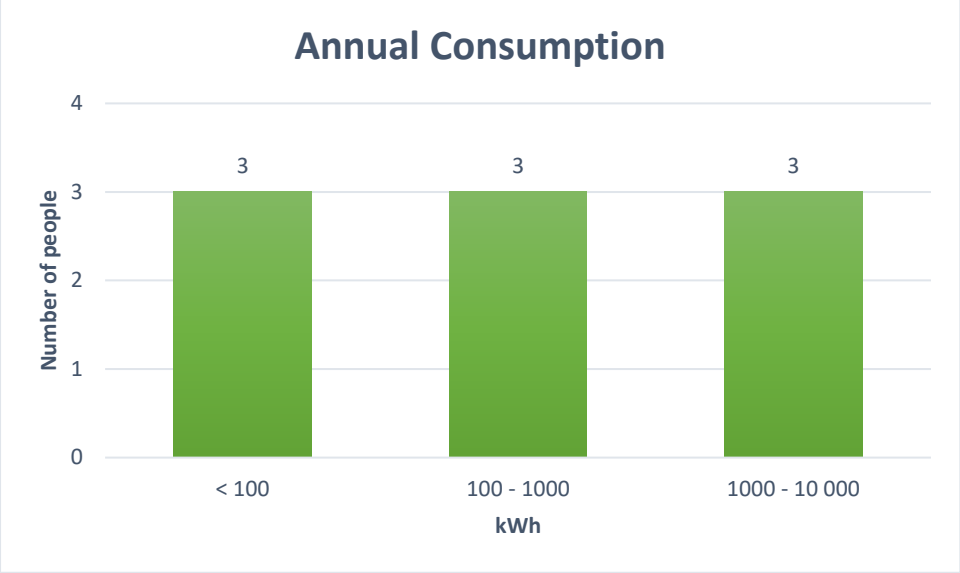

Figure 74 Annual Consumption in Estonia

Annual cost of electricity

Electricity prices in Estonia, compared to Portugal or Greece, for example, are not that high.

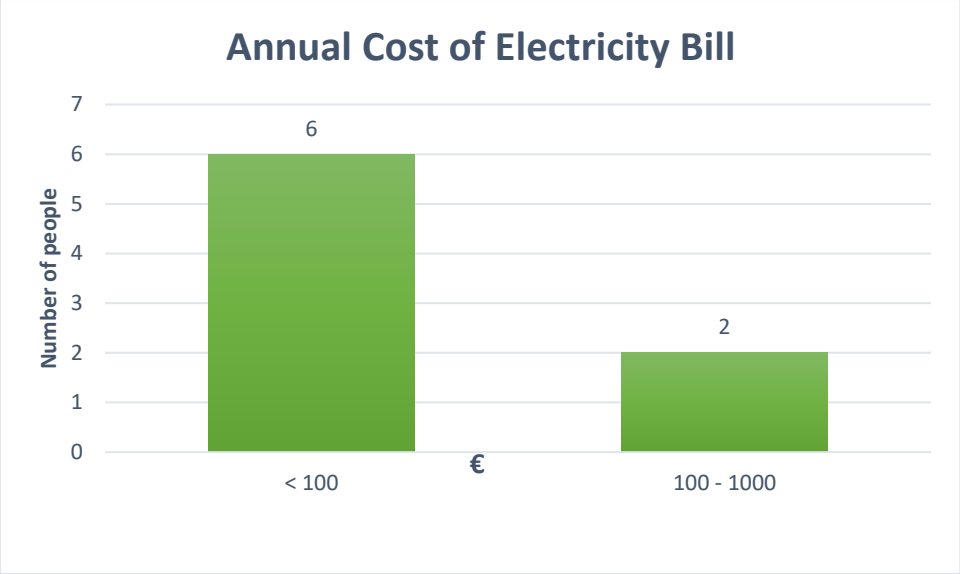

Figure 75 Annual Cost of Electricity Bill in Estonia

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

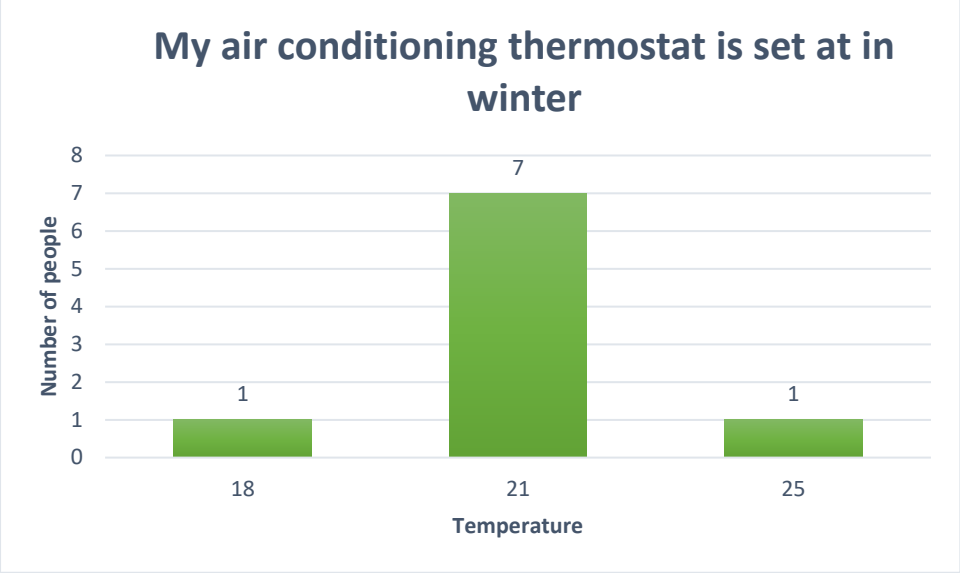

Figure 76 Home temperature in winter

The most common temperature in homes during the summer is 22°C.

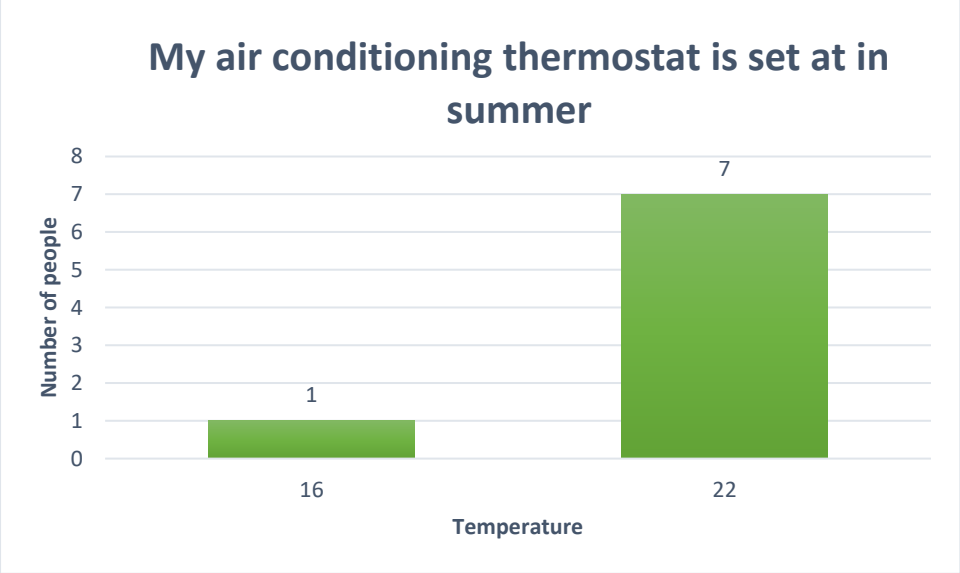

Figure 77 Home temperature in summer

6.7.4 Heat Consumption

Heating energy

Propane is the most common heating fuel.

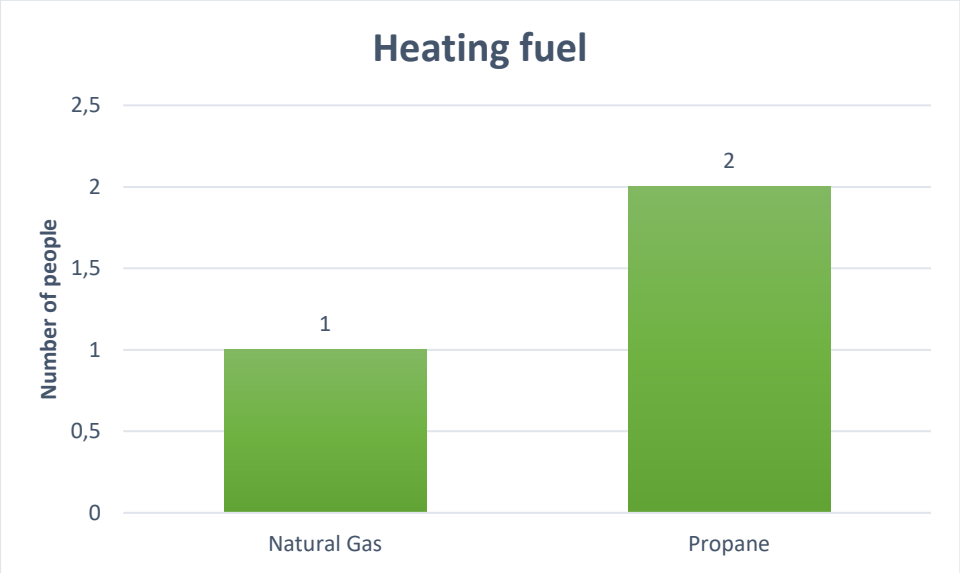

Figure 78 Heating fuel in Estonia

Annual consumption

Annual consumption for heating is on average 800kWh.

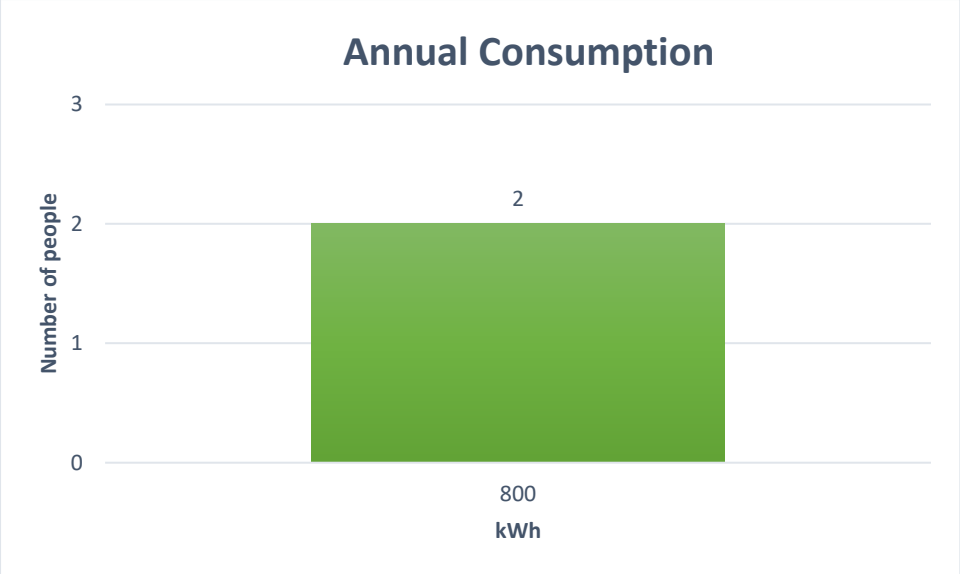

Figure 79 Annual heating consumption in Estonia

Annual heat consumption

Heating costs in Estonia are not that high.

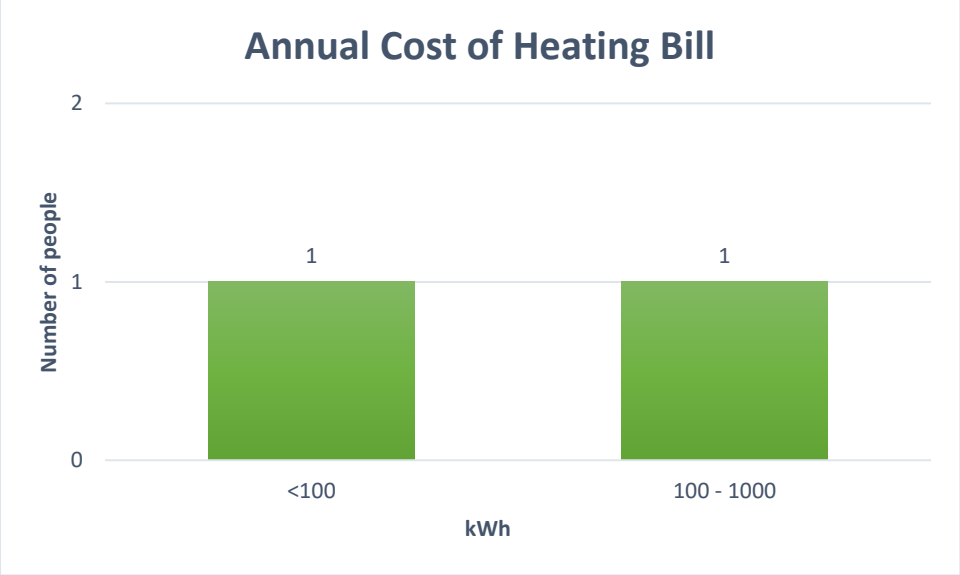

Figure 80 Annual Cost of Heating Bill in Estonia

My thermal comfort during the winter is

Thermal comfort is important to Estonians. 75% of them do not feel cold at home throughout the winter.

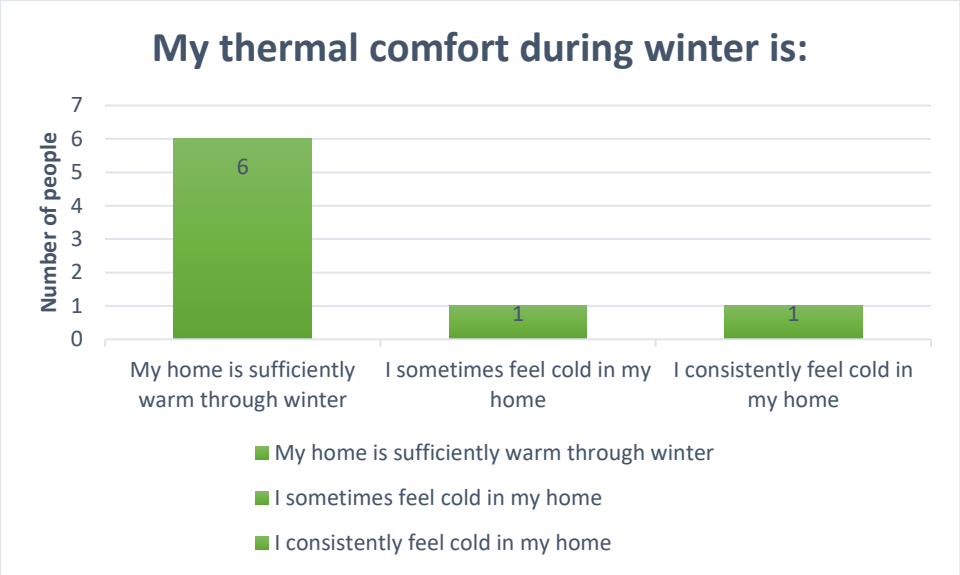

Figure 81 Thermal comfort during winter in Estonia

6.8 Greece

6.8.1 Personal details

City

Most users come from Athens (43%) and from Thessaloniki (10%). Other users come from 36 cities across Greece.

Figure 82 Review location of users who have completed PowerTarget in Greece

6.8.2 Income information

Annual income

The largest percentage of Greek customers who have completed Power Target has an annual salary between € 10,000 and € 50,000.

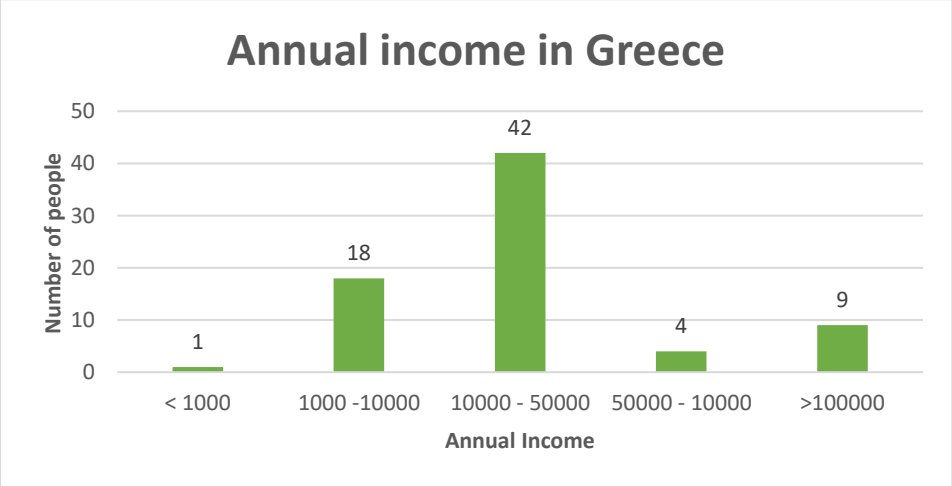

Figure 83 Annual income in Greece

Age

Most people who have completed Power Target are middle-aged.

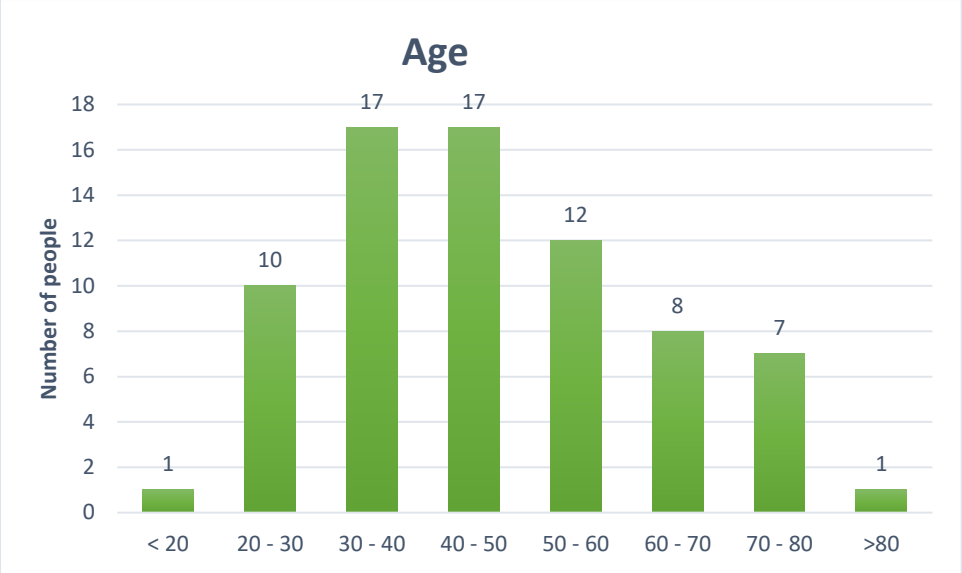

Figure 84 Age in Greece

Number of children

Most respondents (29%) don't have children. 24% have one child and 22% have two children.

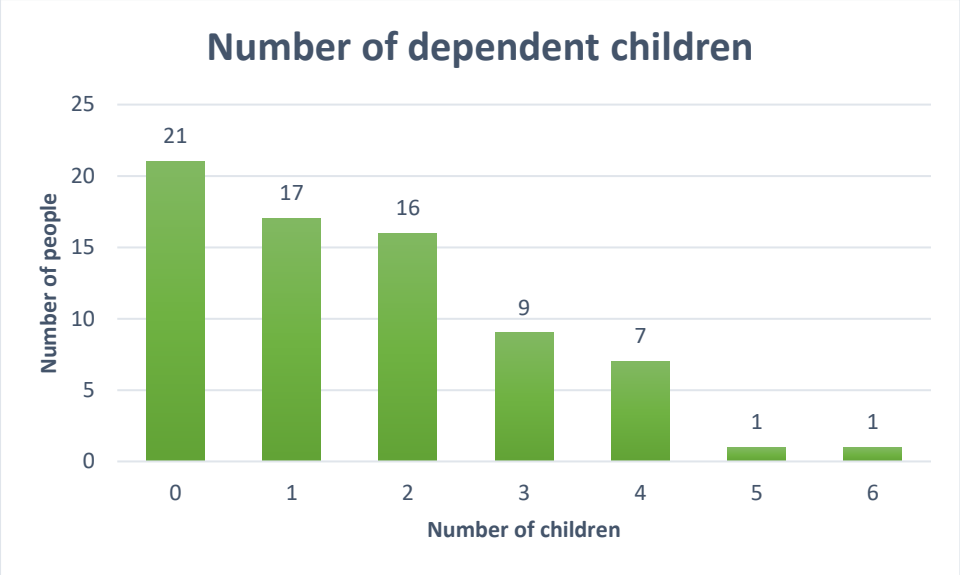

Figure 85 Number of dependent children in Greece

Marriage status

Most people are married (53%).

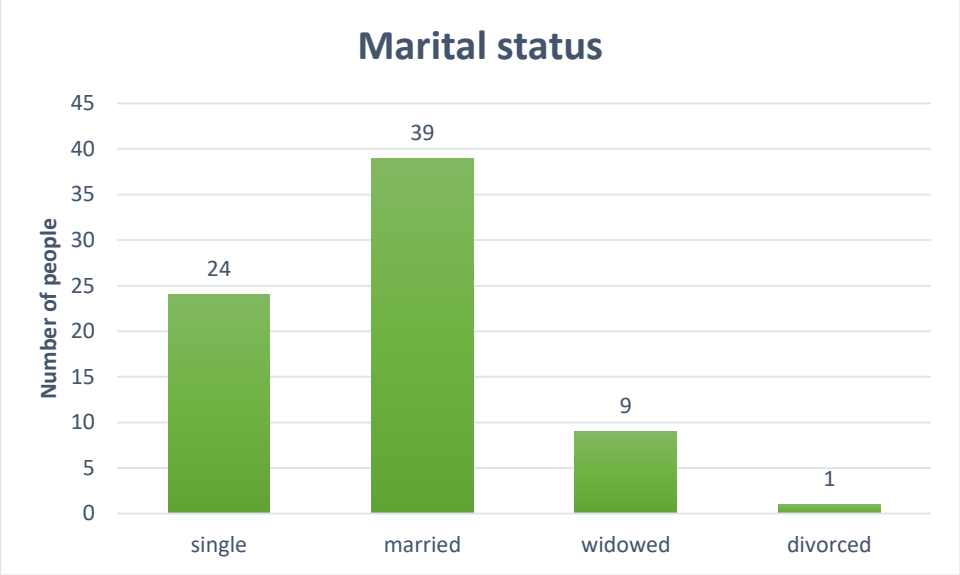

Figure 86 Merital status in Greece

6.8.3 Electricity Consumption

Property size (m^2)

The data show that the apartments or houses of Greek respondents are mostly between 50 and 100 m^2.

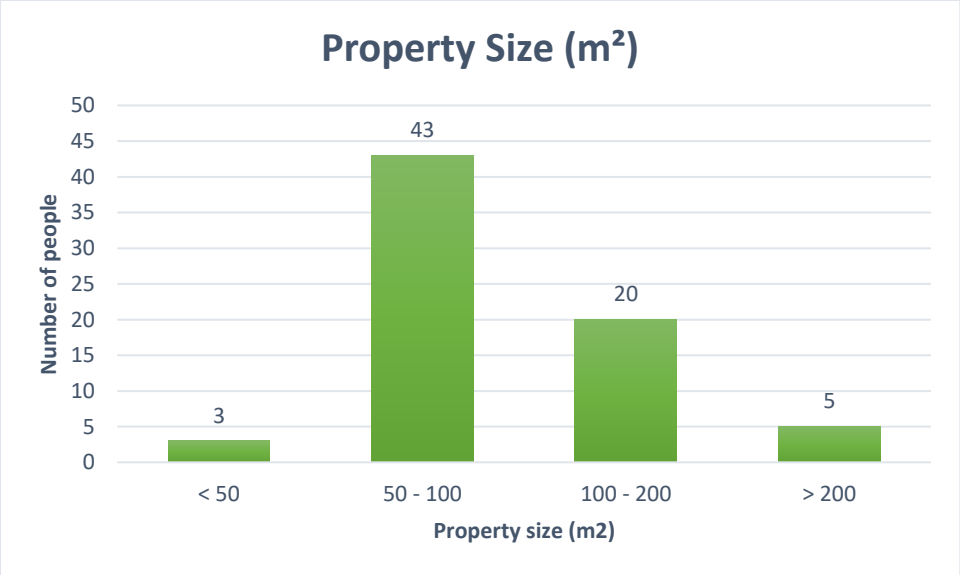

Figure 87 Property size in Greece

Annual consumption (kWh)

Greeks consume between 1,000 and 10,000 kWh of electricity per year.

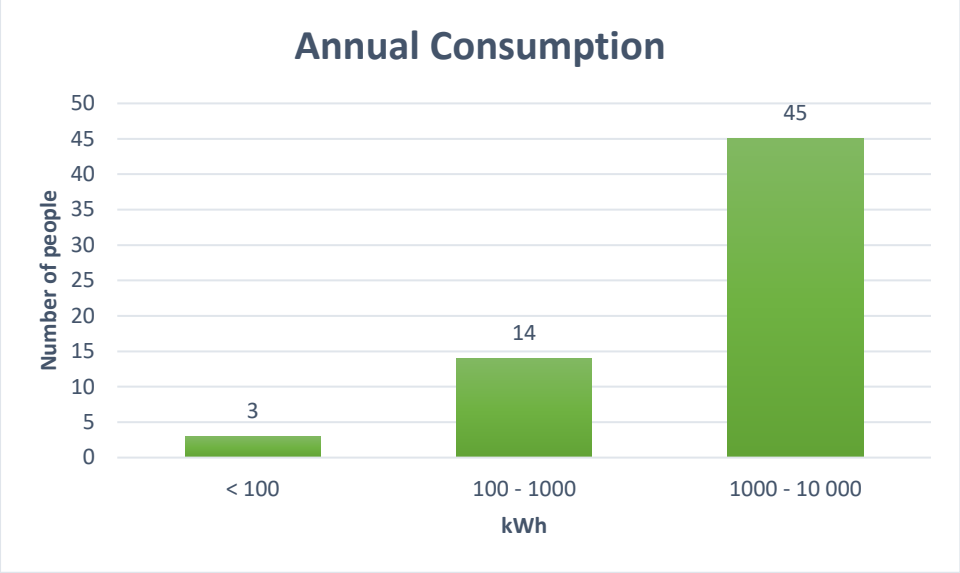

Figure 88 Annual Consumption in Greece

Annual cost of electricity

Electricity consumption in most cases costs from €1 00 to € 1000.

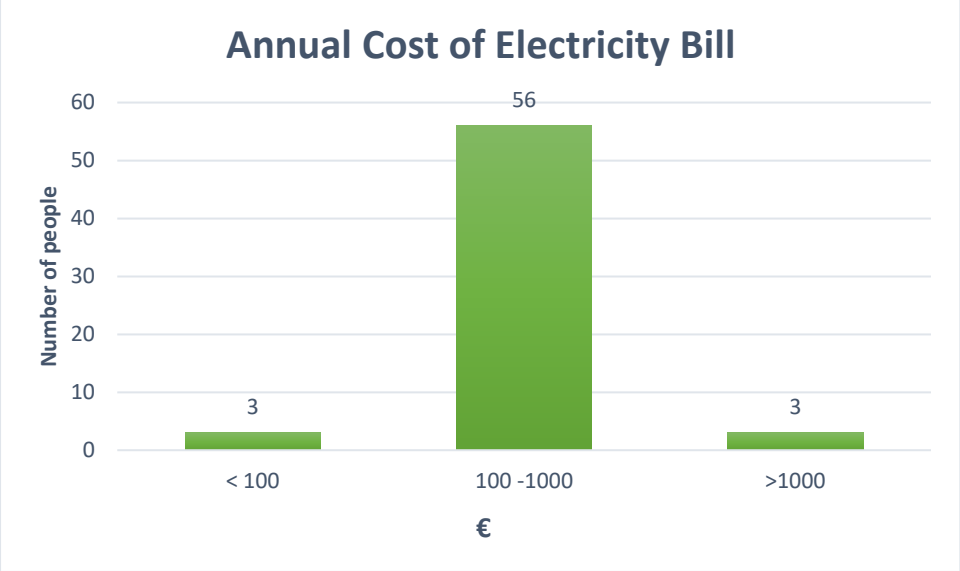

Figure 89 Annual Cost of Electricity Bill in Greece

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

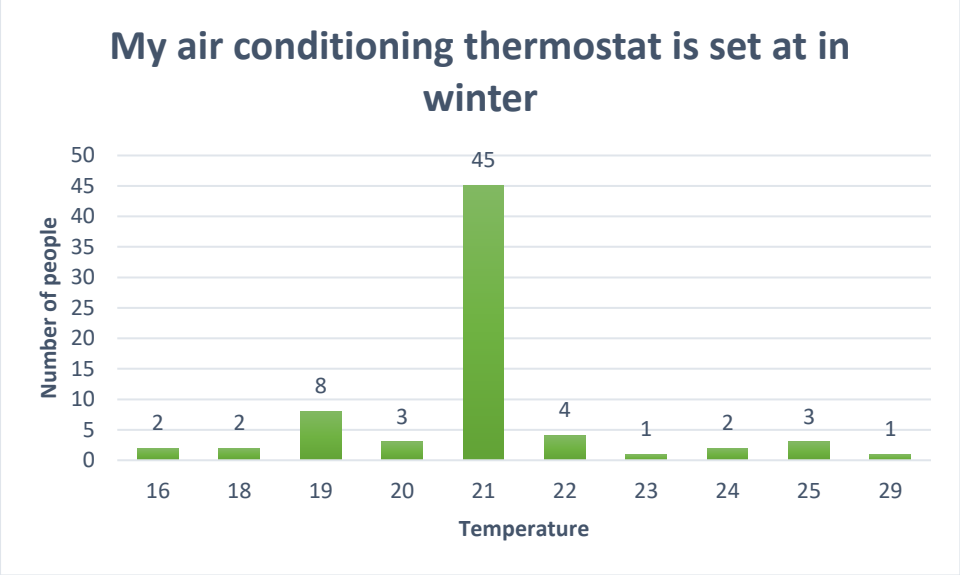

Figure 90 Home temperature in winter

Most users have a home temperature in the summer set at a comfortable 22°C.

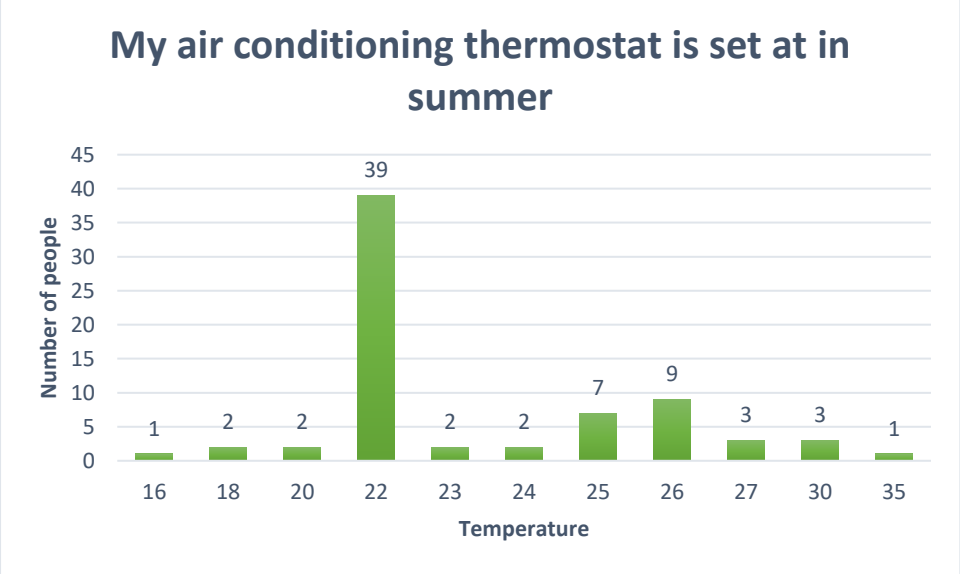

Figure 91 Home temperature in summer

6.8.4 Heat Consumption

Heating energy

Natural Gas (58%) is the most common heating fuel of Power Target users in Greece.

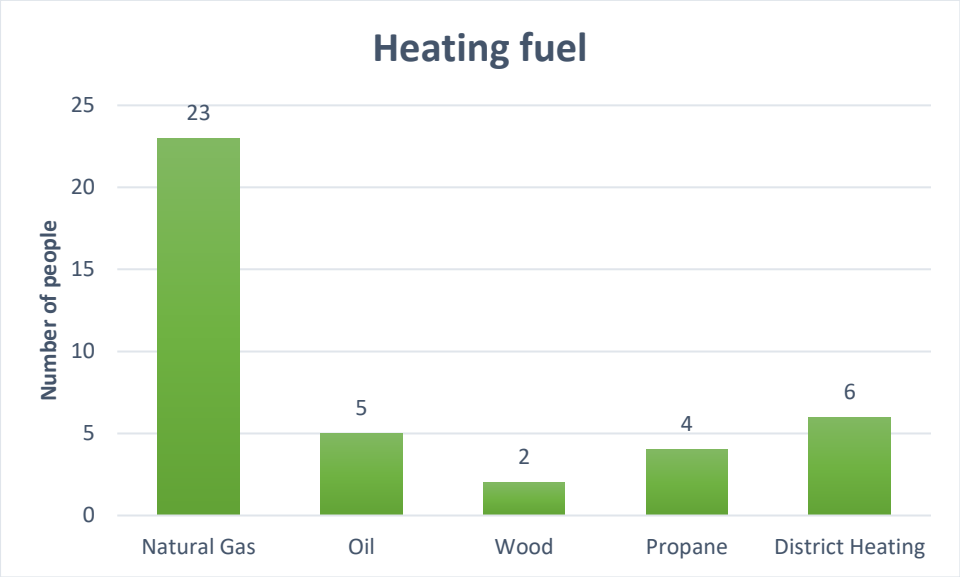

Figure 92 Heating fuel in Greece

Annual consumption

Greeks consume an average of 3,600 kWh per year on electricity.

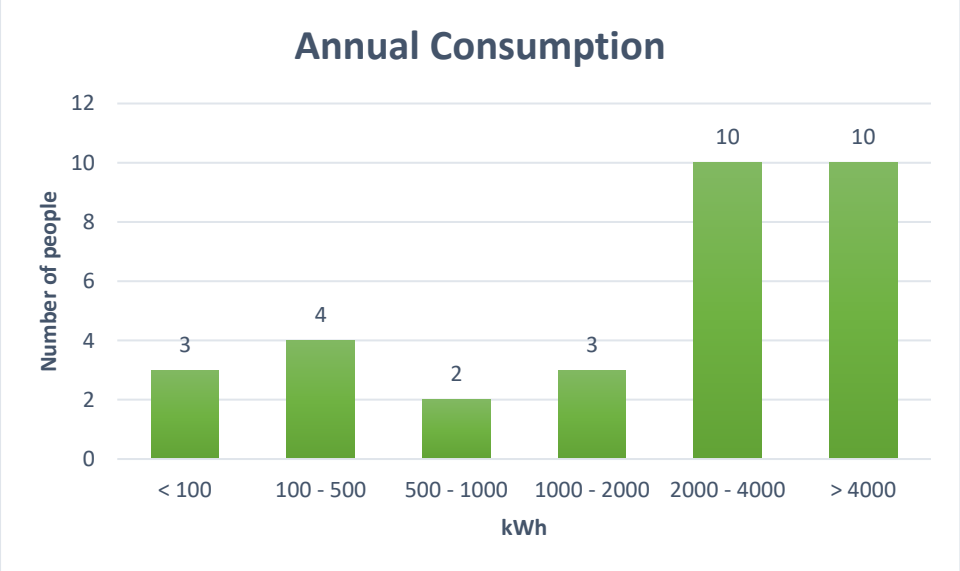

Figure 93 Annual heating consumption in Greece

Annual heat consumption

Heating in Greece usually costs from € 100 to € 1,000 per year.

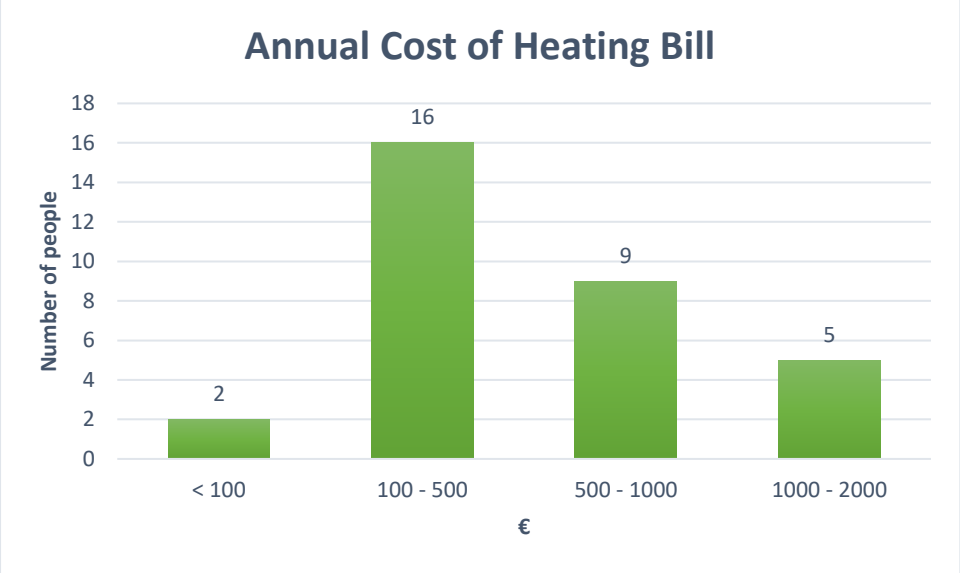

Figure 94 Annual Cost of Heating Bill in Greece

My thermal comfort during the winter is

It is worrying that only 22% of respondents have a fully warm home during the winter.

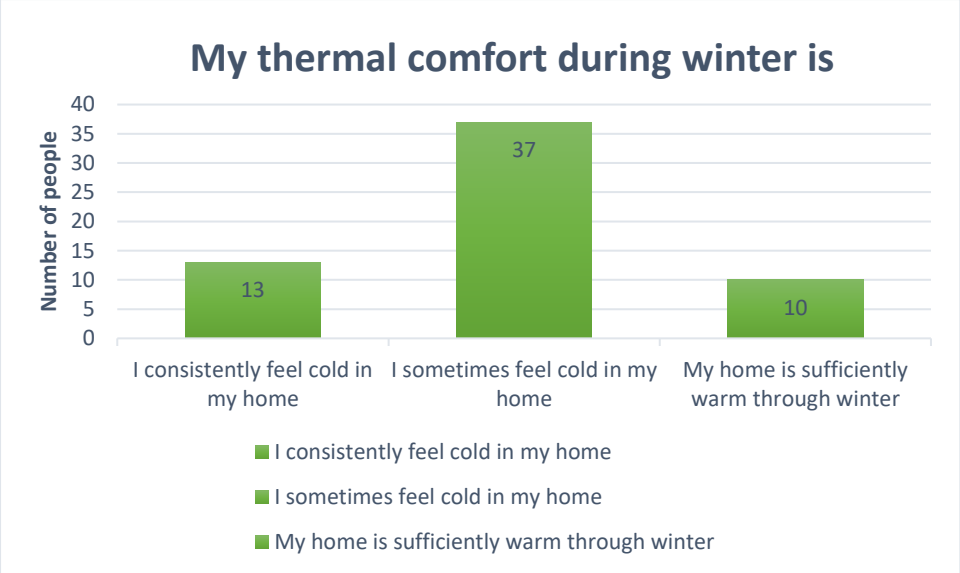

Figure 95 Thermal comfort during winter in Greece

6.9 Hungary

6.9.1 Personal details

City

59% of the people who filled out the questionnaire are from Budapest and the rest are located throughout Hungary.

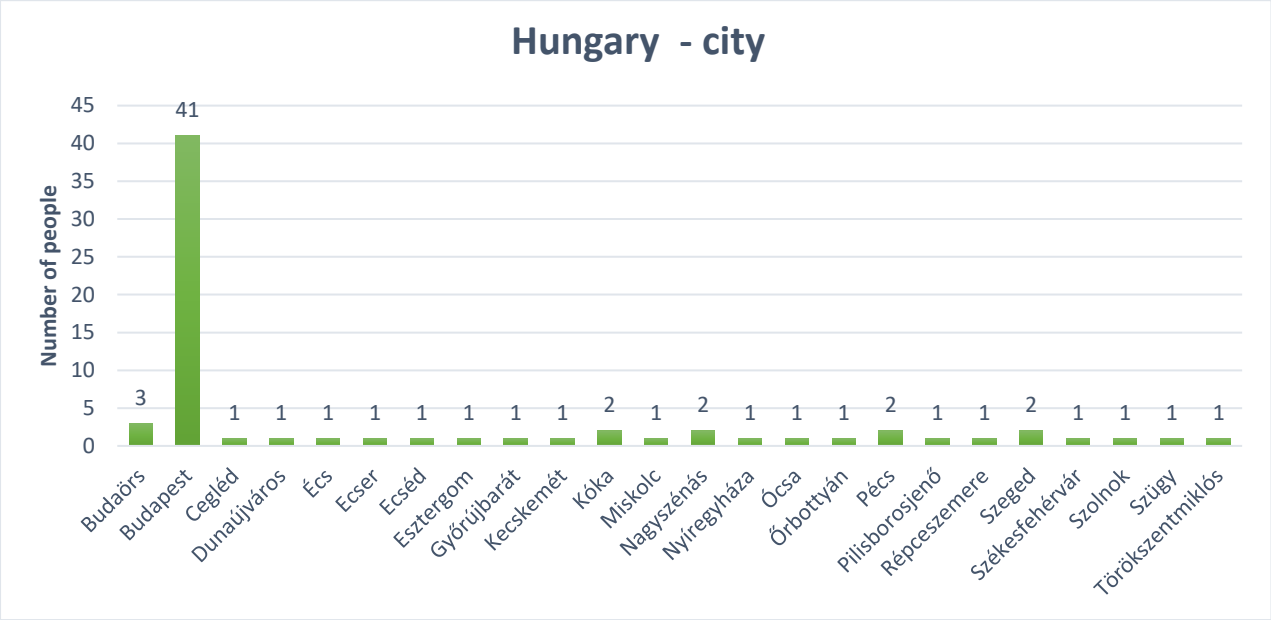

Figure 96 Review location of users who have completed PowerTarget in Hungary

6.9.2 Income information

Annual income

Annual income in Hungary is less than 1,000 € per year.

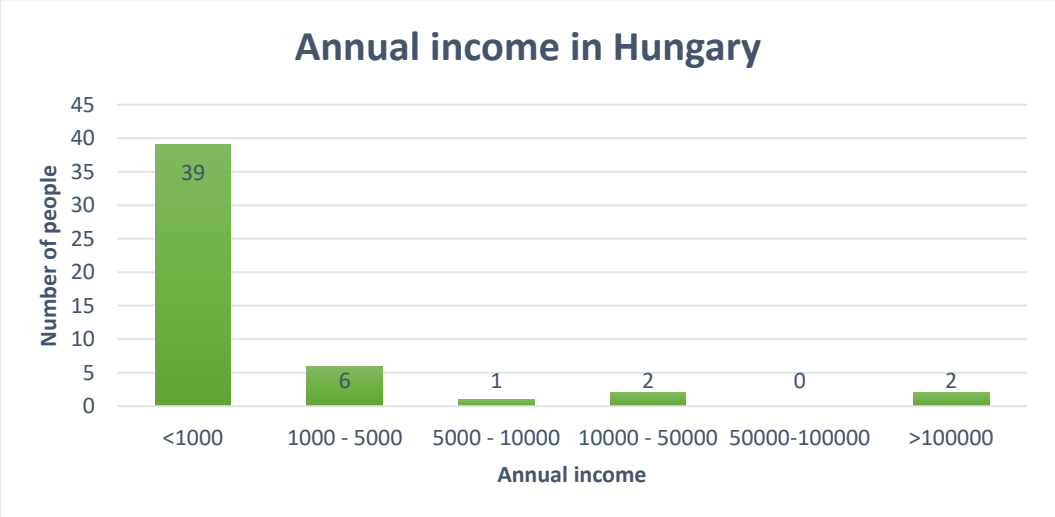

Figure 97 Annual income in Hungary

Age

Most of the users are in the working age.

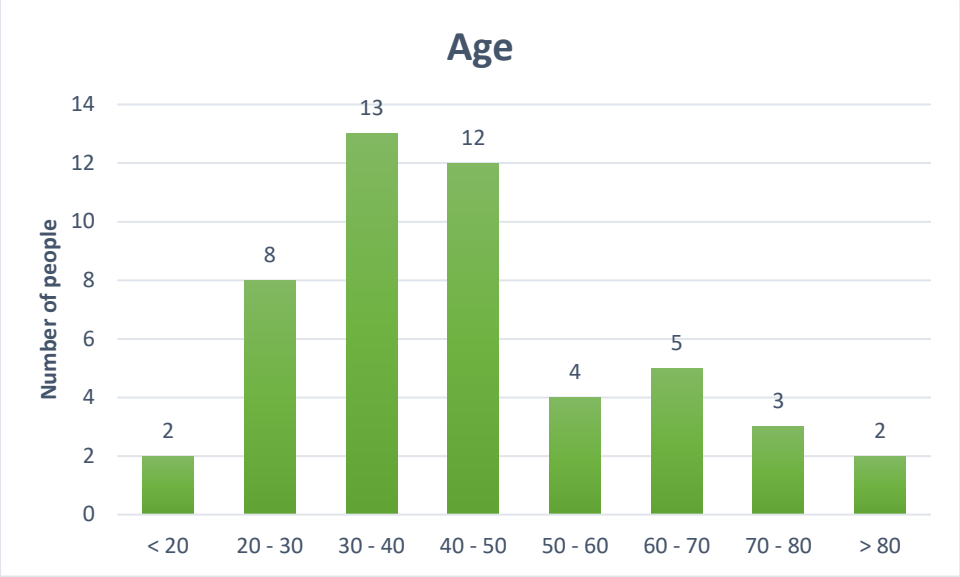

Figure 98 Age in Hungary

Number of children

Most respondents have one or two children.

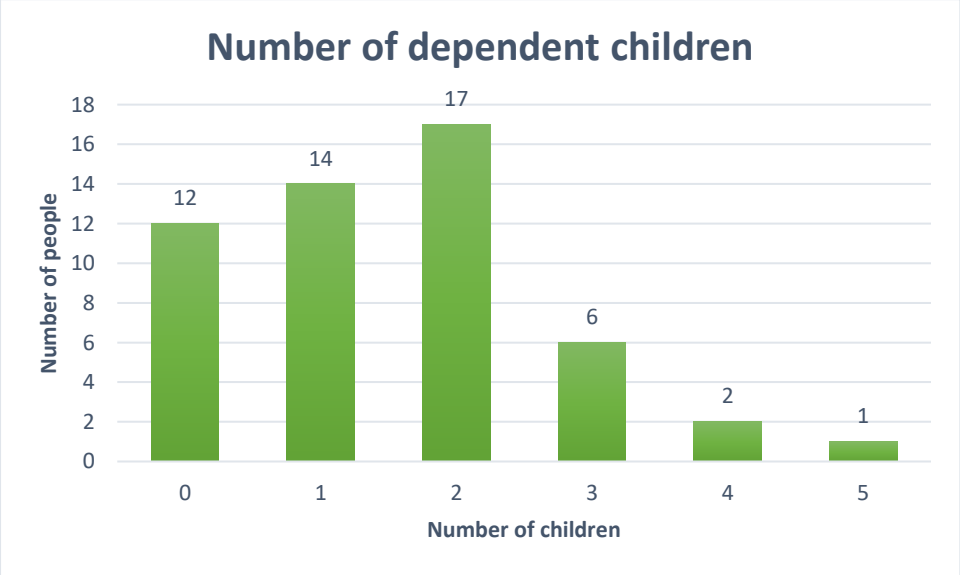

Figure 99 Number of dependent children in Hungary

Marriage status

Most people are single (50%) or married (46%).

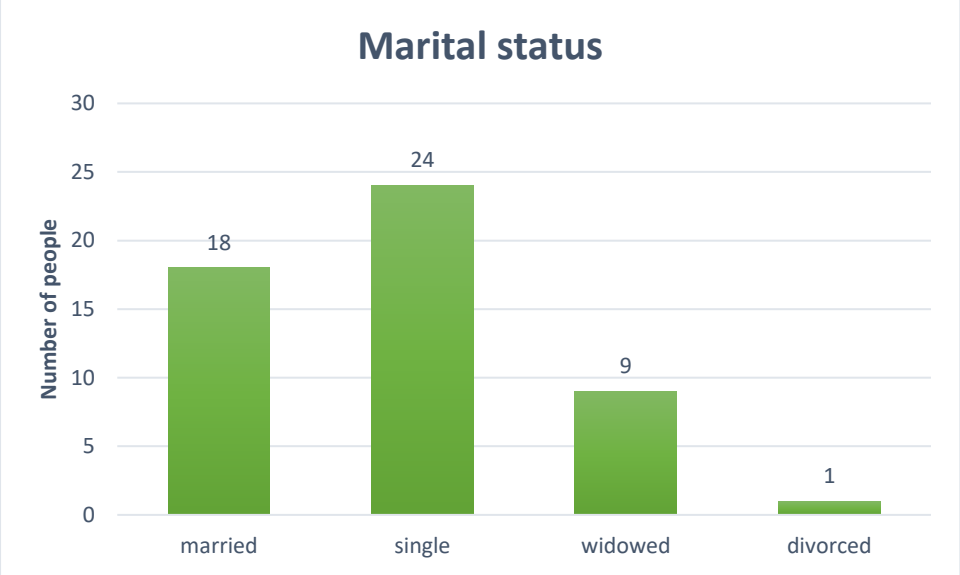

Figure 100 Merital status in Hungary

6.9.3 Electricity Consumption

Property size (m^2)

The data show that the apartments or houses are mostly between 50 and 100 m^2

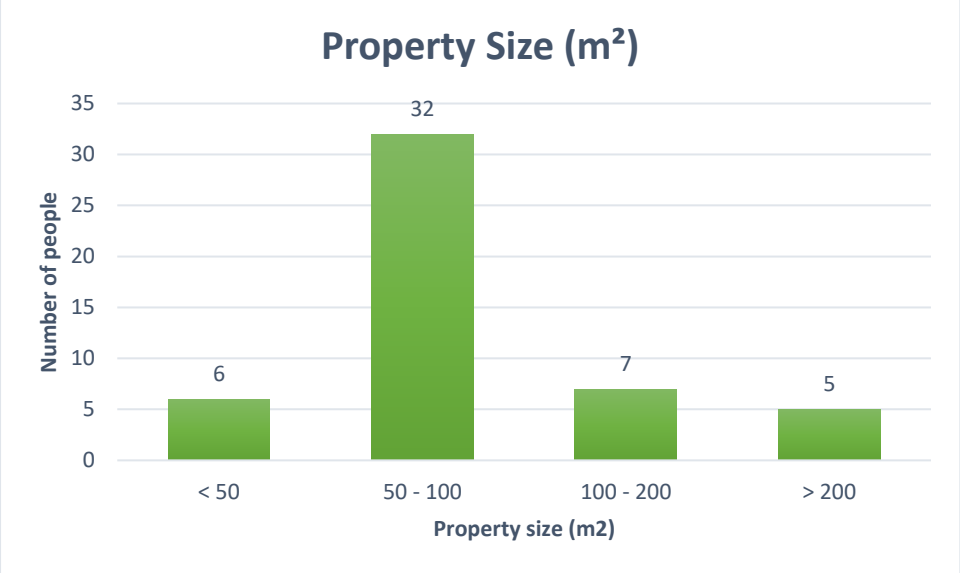

Figure 101 Property size in Hungary

Annual consumption (kWh)

Hungarians consume between 1,000 and 10,000 kWh of electricity per year.

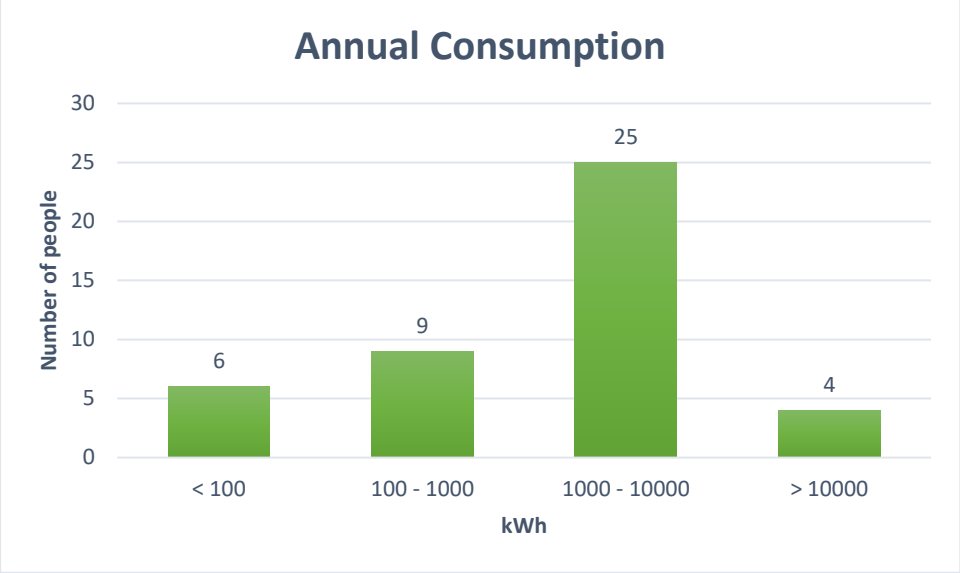

Figure 102 Annual Consumption in Hungary

Annual cost of electricity

Electricity consumption in most cases costs from € 50 to € 100.

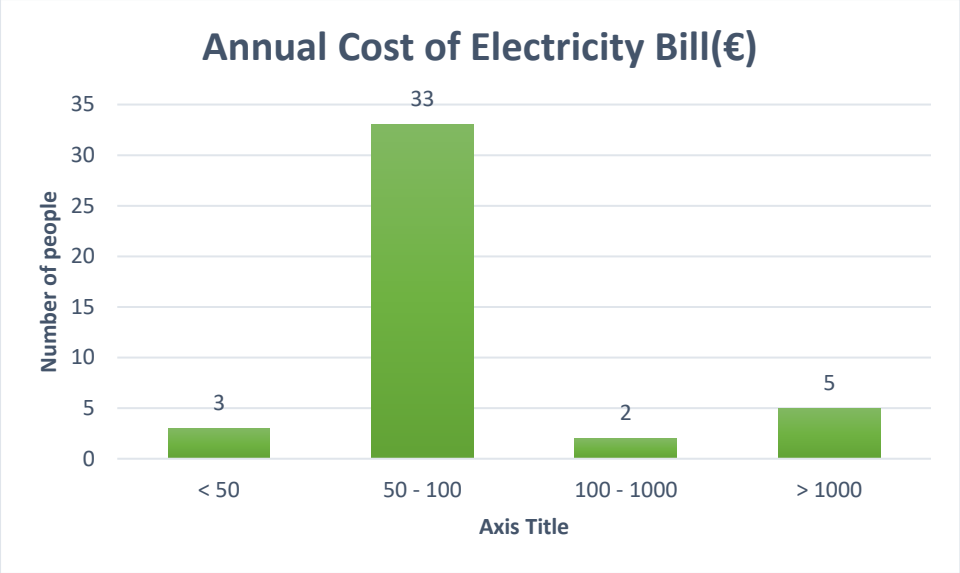

Figure 103 Annual Cost of Electricity Bill in Hungary

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

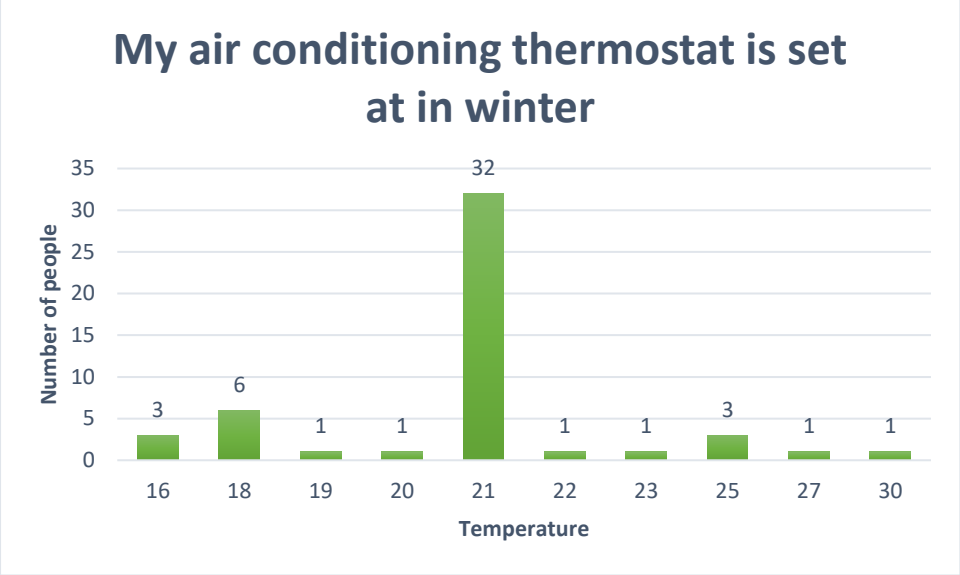

Figure 104 Home temperature in winter

Most users have a home temperature in the summer set at a comfortable 22°C

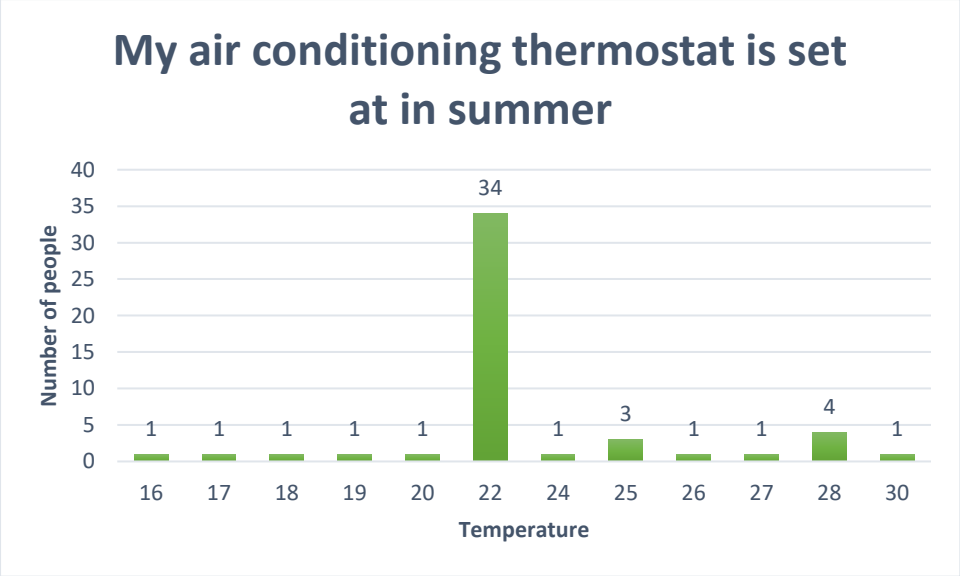

Figure 105 Home temperature in summer

6.9.4 Heat Consumption

Heating energy

Natural Gas (54%) is the most common heating fuel in Hungary.

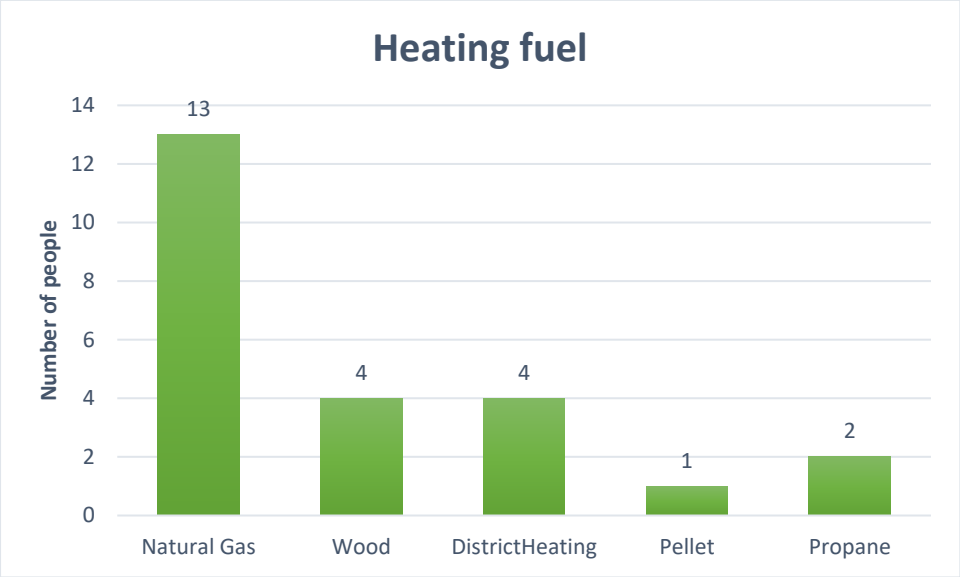

Figure 106 Heating fuel in Hungary

Annual consumption

Hungarians spend an average of 4,340 kWh per year on electricity.

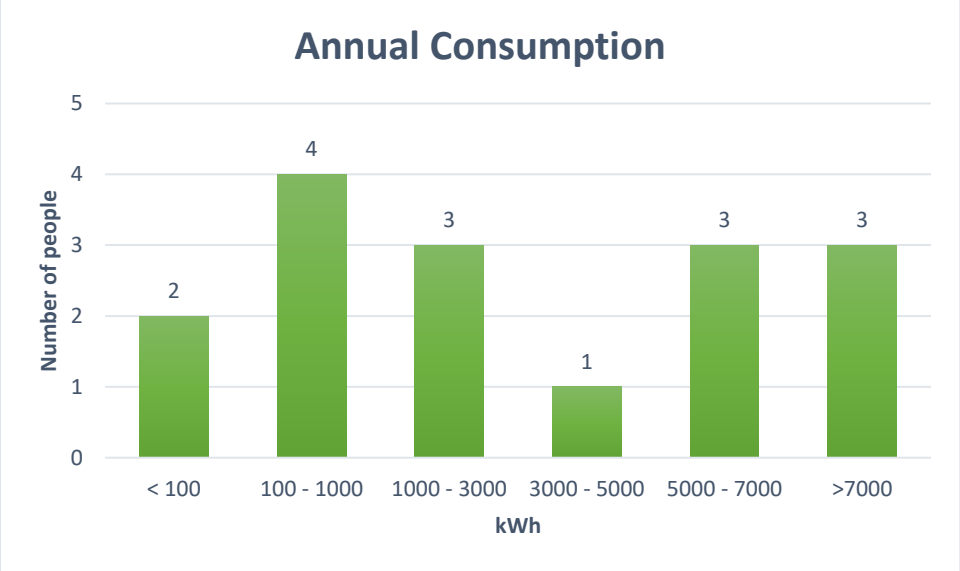

Figure 107 Annual heating consumption in Hungary

Annual heat consumption

Mostly heating in Hungary costs from € 100 to € 500 per year.

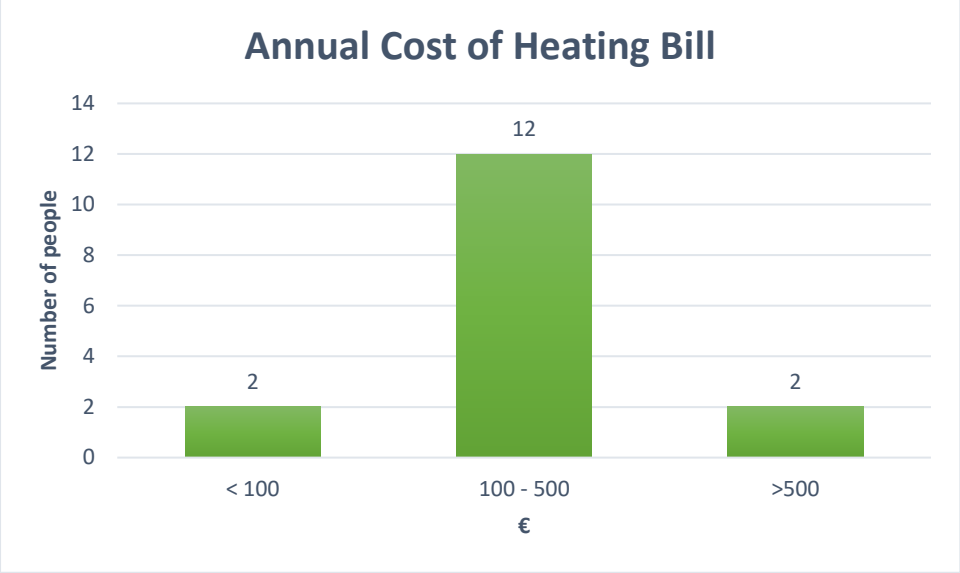

Figure 108 Annual Cost of Heating Bill in Hungary

My thermal comfort during the winter is

It is worrying that only 21% of respondents have a fully warm home during the winter

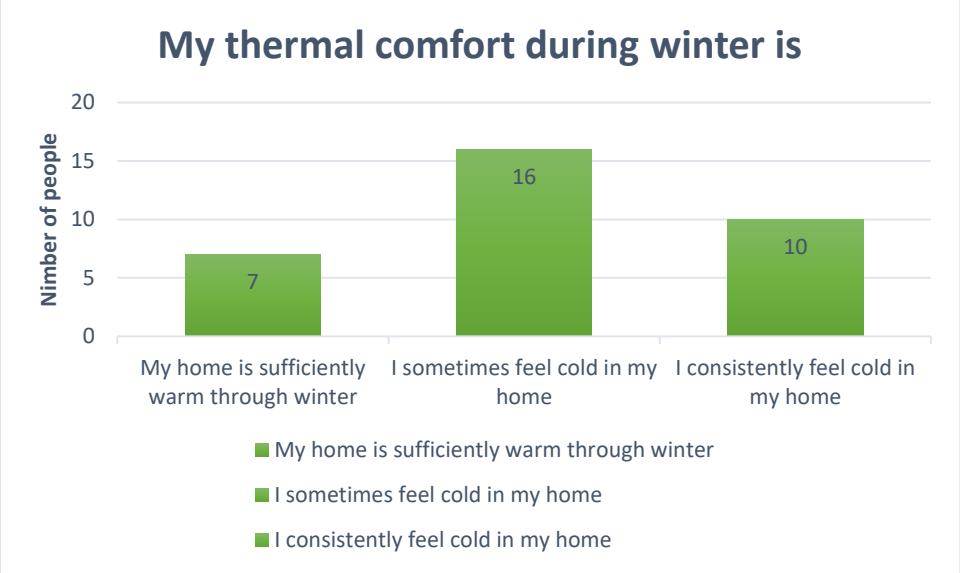

Figure 109 Thermal comfort during winter in Hungary

6.10 Latvia

6.10.1 Personal details

City

9 of the 12 people who completed the POWER TARGET questionnaire come from Jelgava, a city 41 km from the capital Riga.

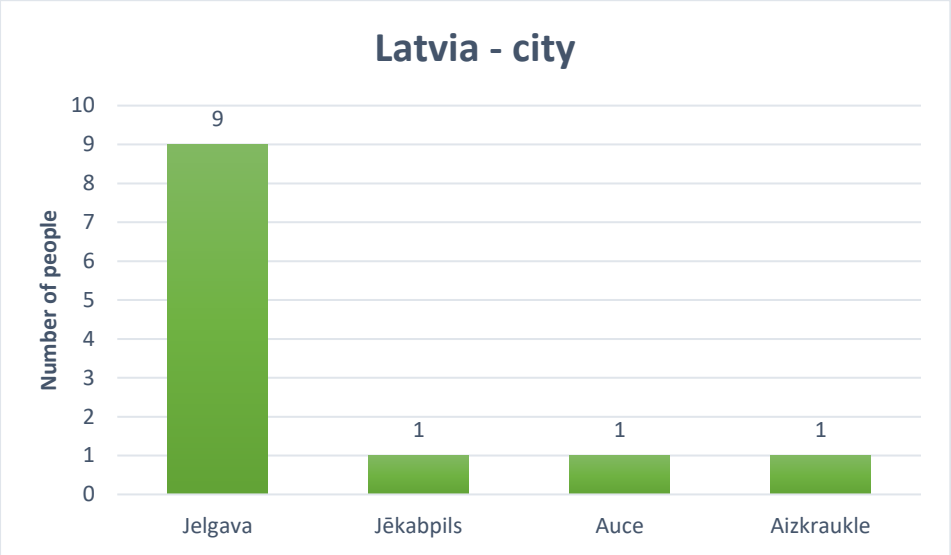

Figure 110 Review location of users who have completed PowerTarget in Latvia

6.10.2 Income information

Annual income

Most Latvians who completed the questionnaire have a salary of 50,000 to 10,000 euros per year.

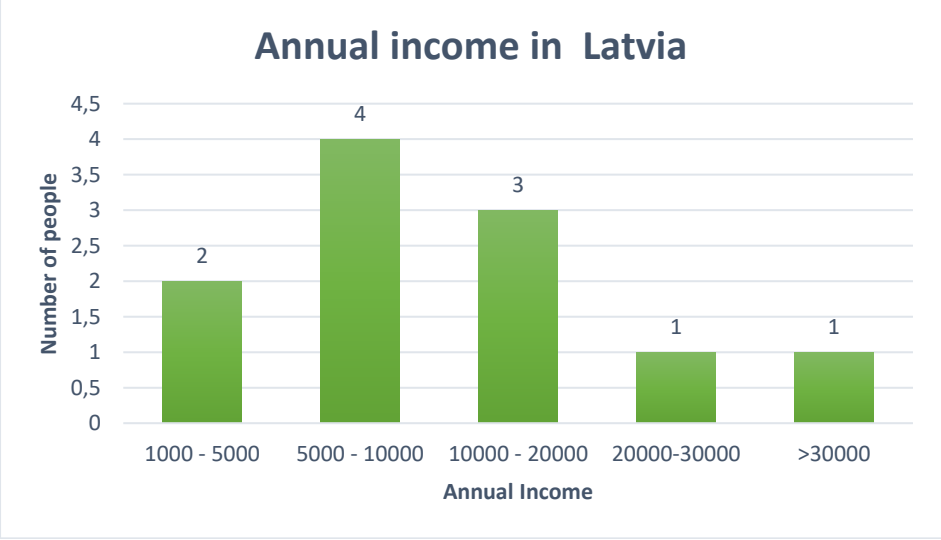

Figure 111 Annual income in Latvia

Age

The same percentage (33%) of respondents are between 40 and 50 or 60 and 70 years old.

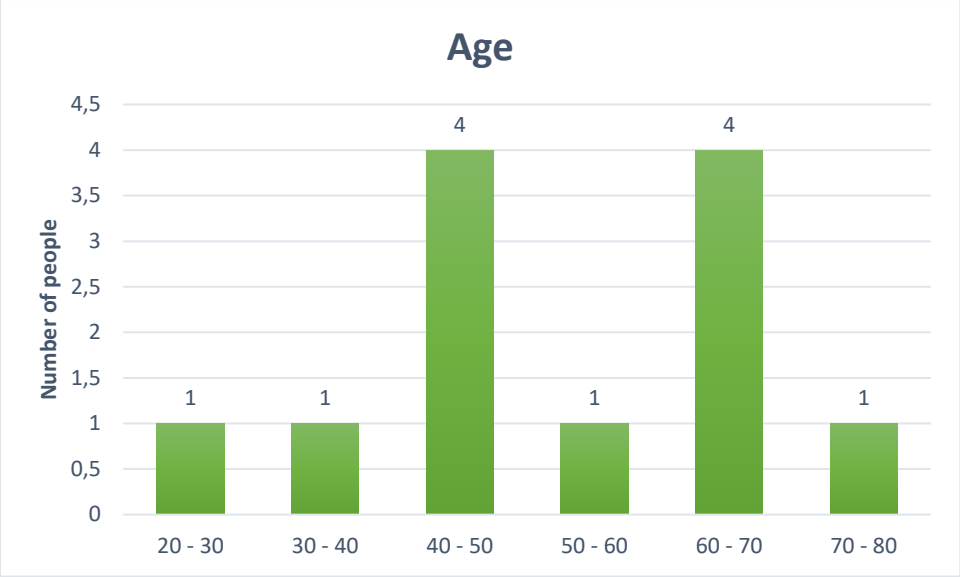

Figure 112 Age in Latvia

Number of children

Most respondents don't have children. The same percentage (25%) of respondents have one or two children.

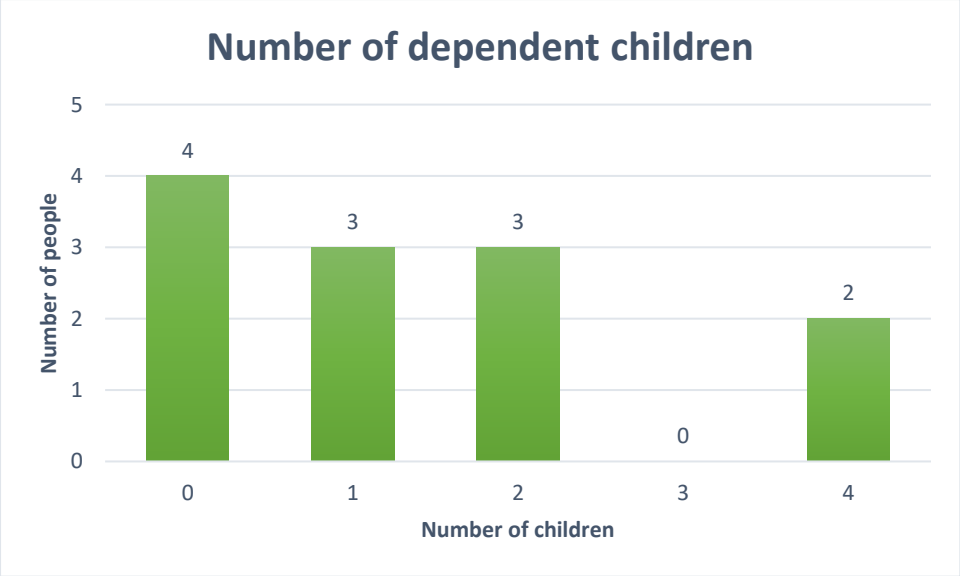

Figure 113 Number of dependent children in Latvia

Marriage status

Most people are single (50%) or married (42%).

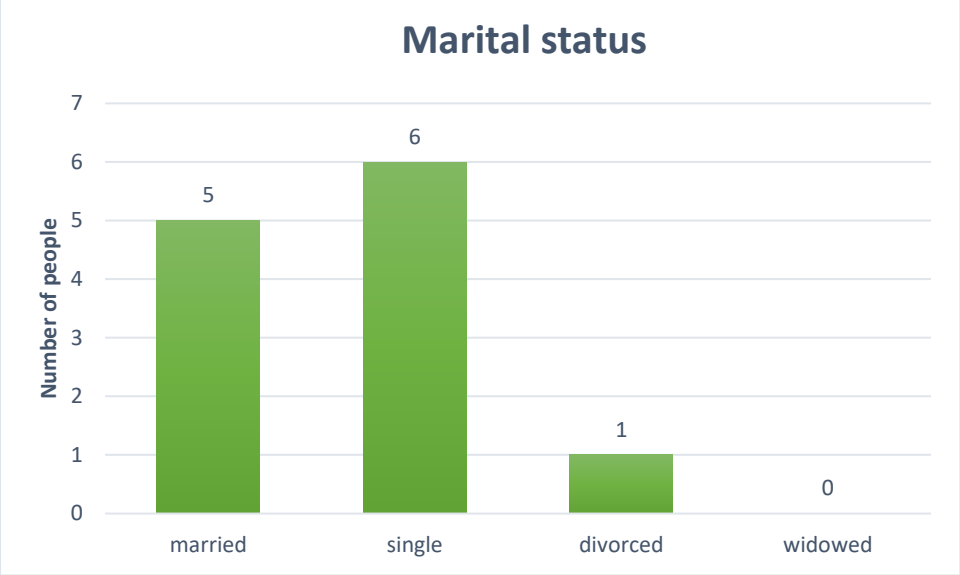

Figure 114 Merital status in Latvia

6.10.3 Electricity Consumption

Property size (m^2)

The data show that the apartments or houses are mostly between 50 and 100 m^2.

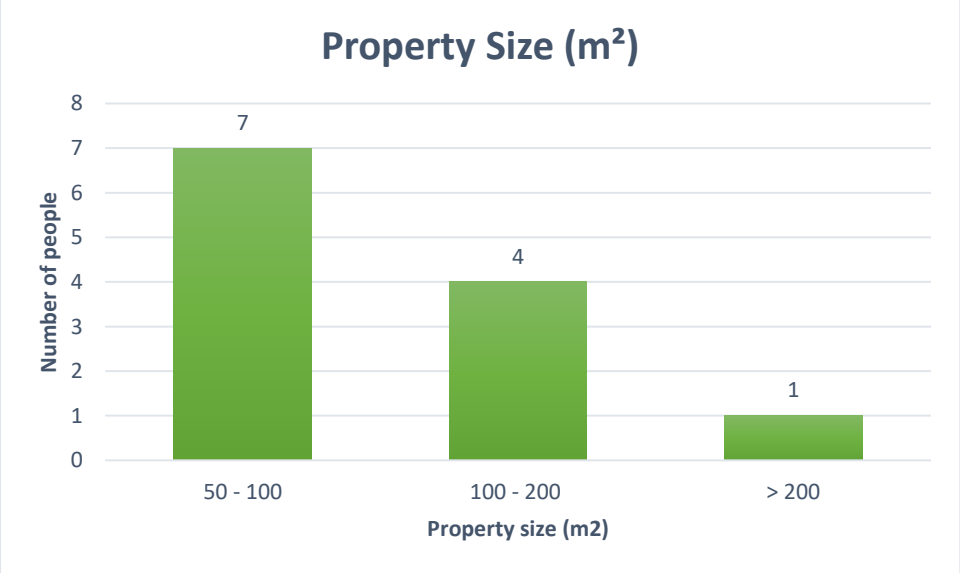

Figure 115 Property size in Latvia

Annual consumption (kWh)

Latvians consume between 1,000 and 10,000 kWh of electricity per year.

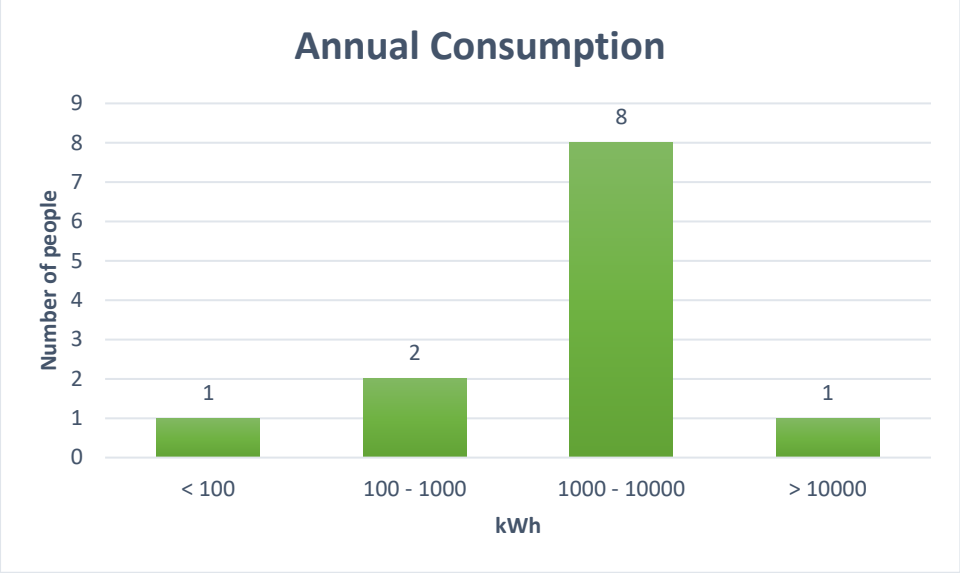

Figure 116 Annual Consumption in Latvia

Annual cost of electricity

Electricity consumption in most cases costs from € 500 to € 1,000.

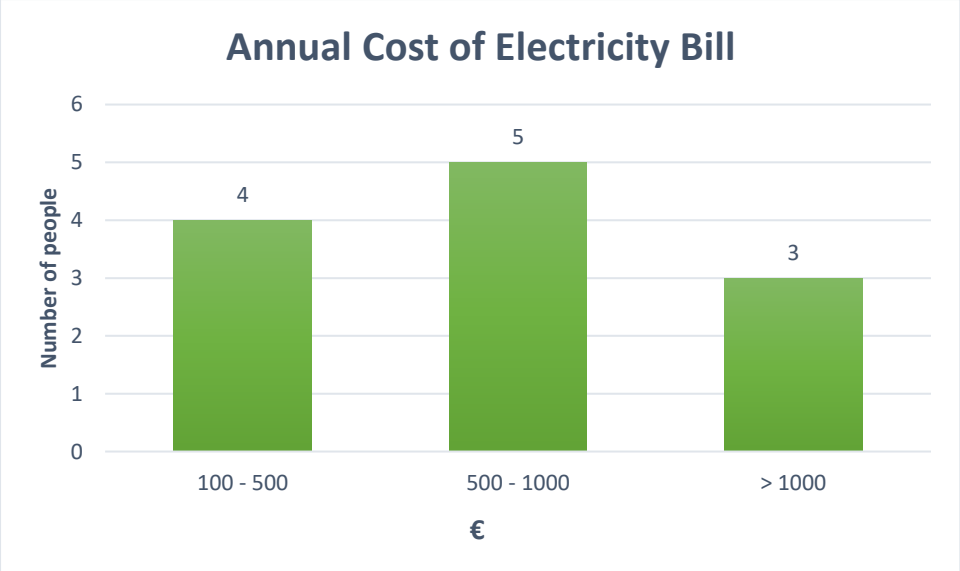

Figure 117 Annual Cost of Electricity Bill in Latvia

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

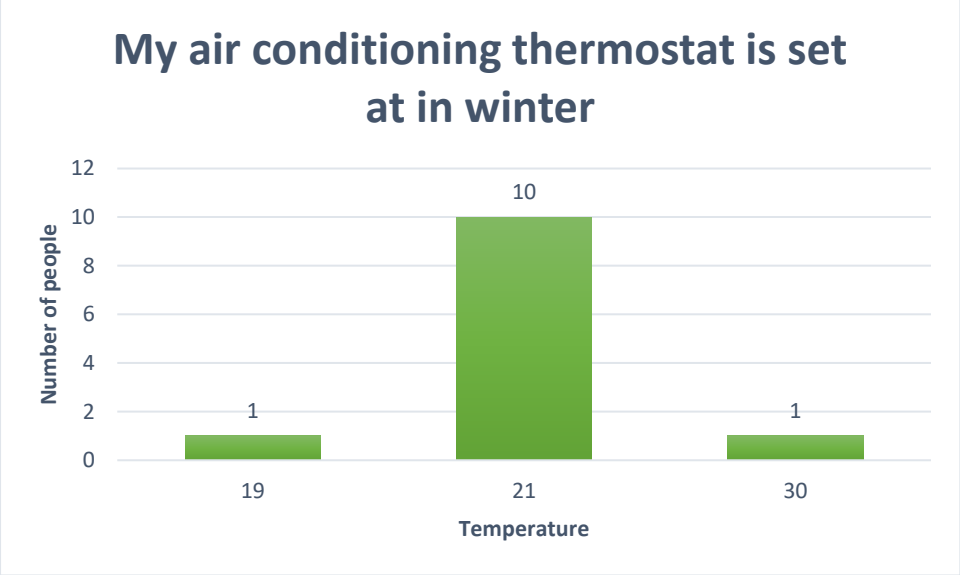

Figure 118 Home temperature in winter

Most users (58%) have a home temperature in the summer set at a comfortable 22°C.

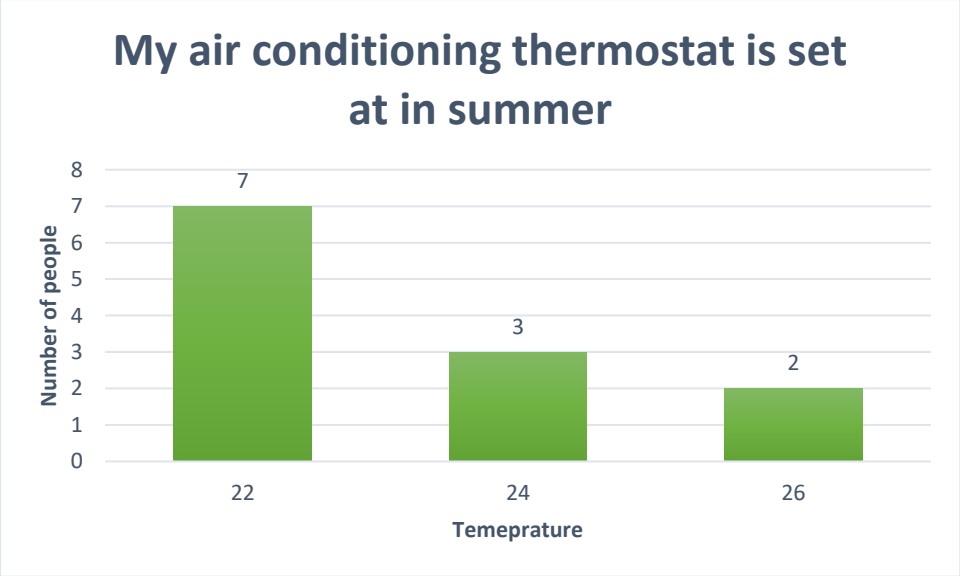

Figure 119 Home temperature in summer

6.10.4 Heat Consumption

Heating energy

Natural Gas (67%) is the most common heating fuel in Latvia.

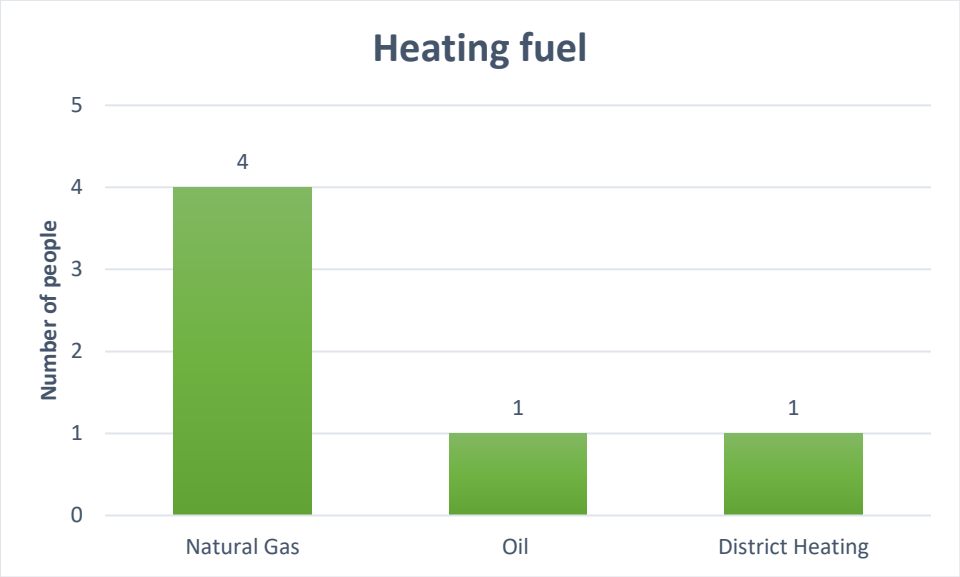

Figure 120 Heating fuel in Latvia

Annual consumption

Latvians consume between 1,000 and 5,000 kWh of heating energy per year.

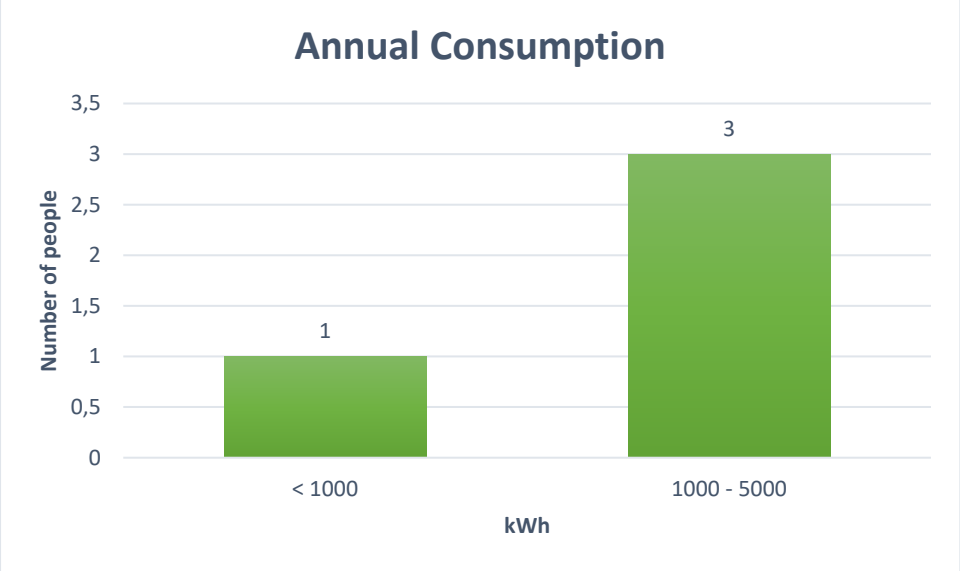

Figure 121 Annual heating consumption in Latvia

Annual heat consumption

According to data collected through POWER TARGET users it seems that heating in Latvia mainly costs from € 3,000 to € 5,000 per year.

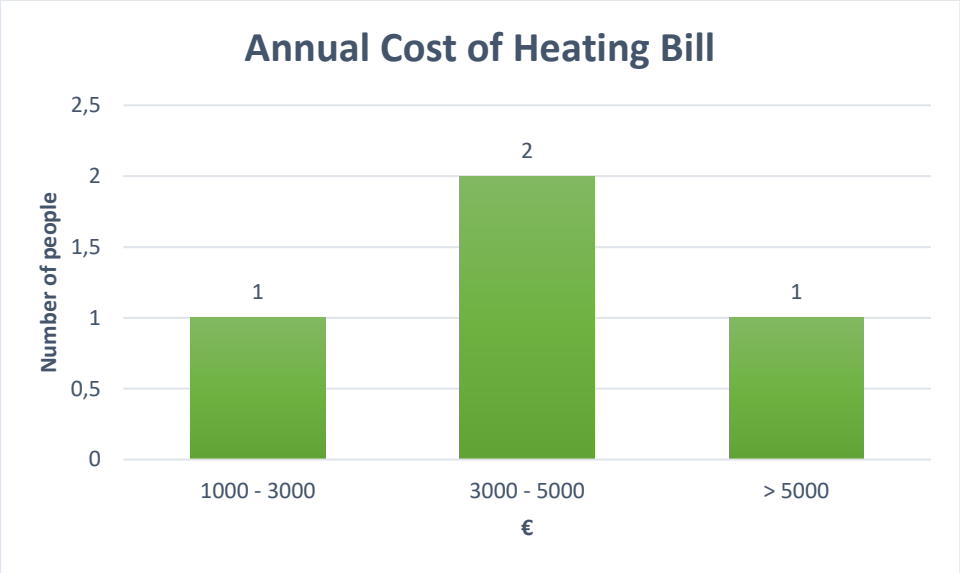

Figure 122 Annual Cost of Heating Bill in Latvia

My thermal comfort during the winter is

It is worrying that only 36% of respondents have a fully warm home during the winter.

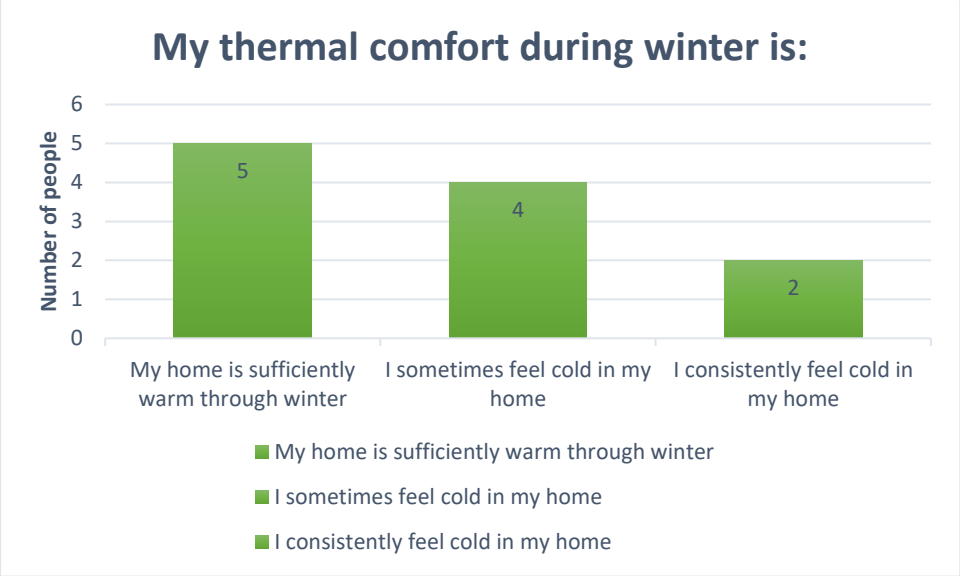

Figure 123 Thermal comfort during winter in Latvia

6.11 Portugal

6.11.1 Personal details

City

15 out of 42 users who completed the POWER TARGET questionnaire live in Lisbon, while the other 27 live throughout Portugal.

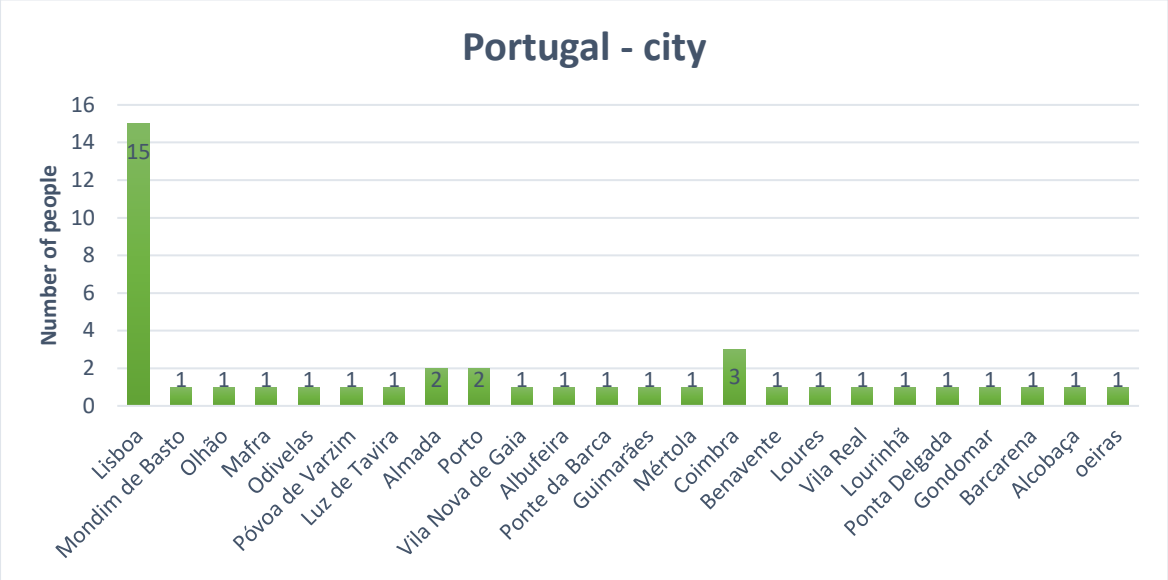

Figure 124 Review location of users who have completed PowerTarget in Portugal

6.11.2 Income information

Annual income

Most Portuguese who completed the questionnaire have a salary of €5,000 to € 10,000 per year.

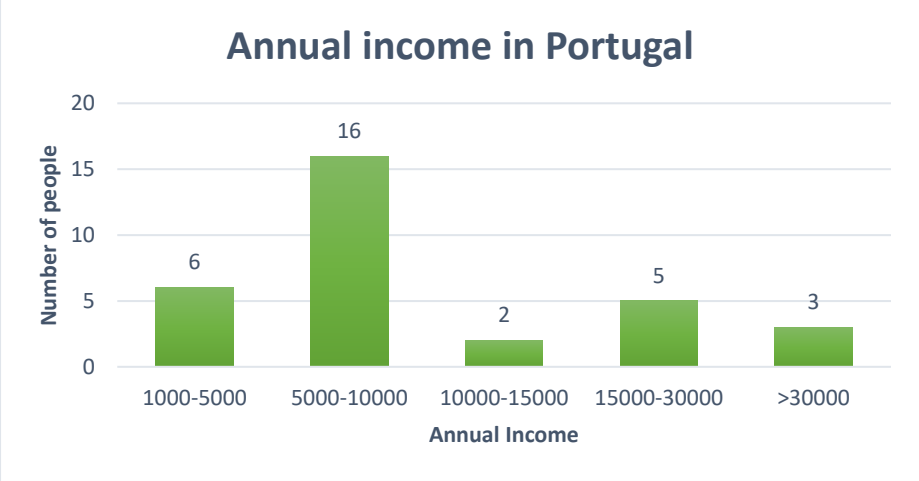

Figure 125 Annual income in Portugal

Age

Most people who have completed Power Target are middle-aged.

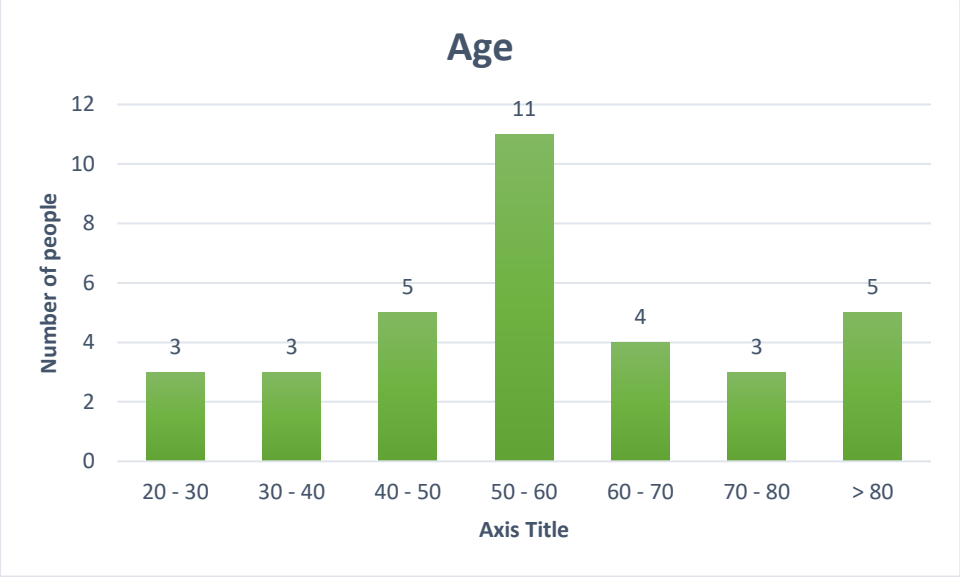

Figure 126 Age in Portugal

Number of children

Most respondents (50%) have one child.

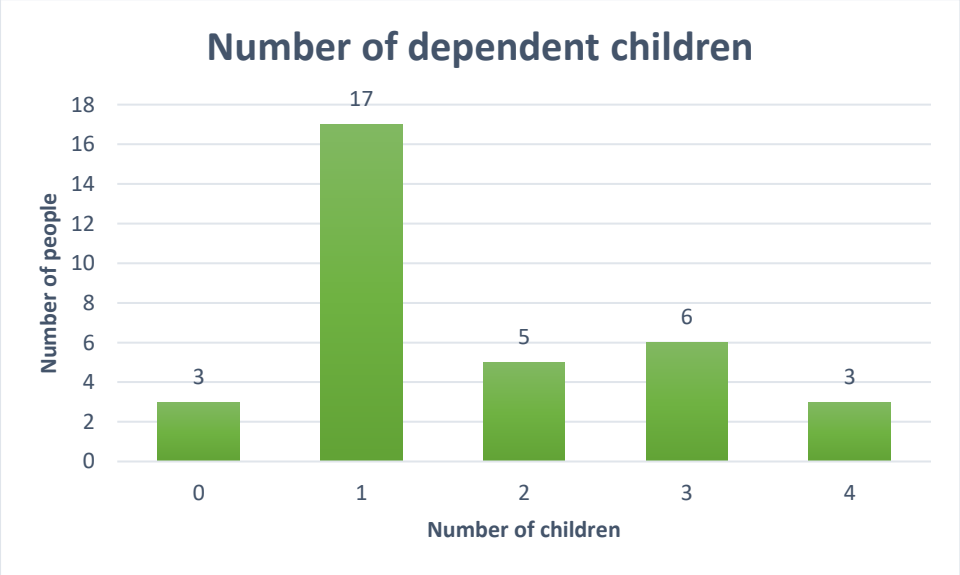

Figure 127 Number of dependent children in Portugal

Marriage status

Data show that about half of the respondents are married - about 44%.

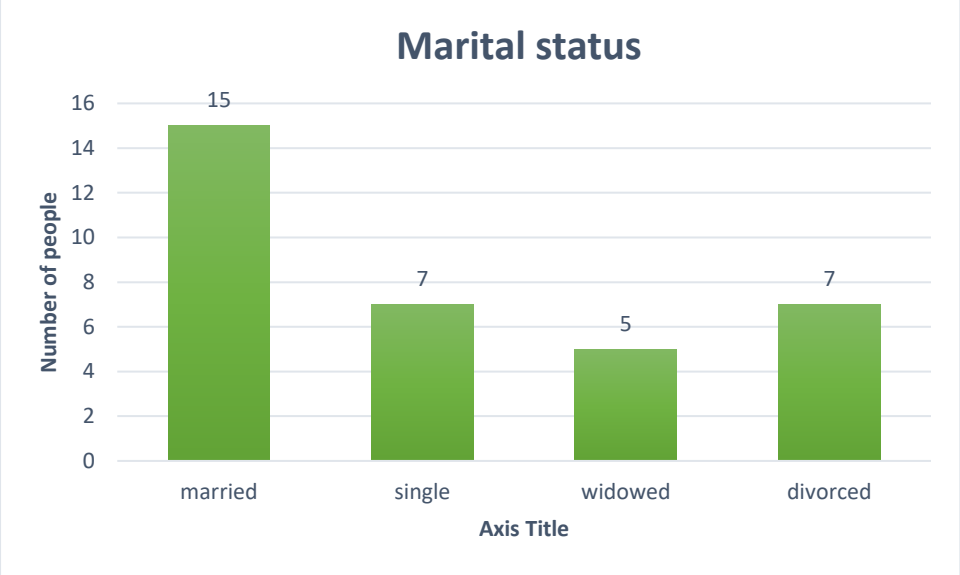

Figure 128 Merital status in Portugal

6.11.3 Electricity Consumption

Property size (m^2)

The data show that the apartments or houses are mostly between 50 and 100 m^2.

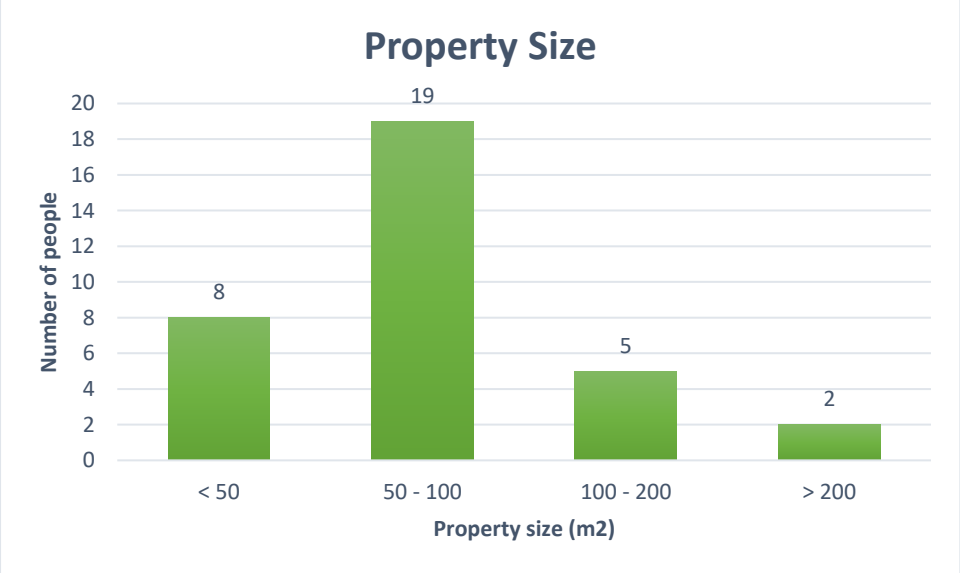

Figure 129 Property size in Portugal

Annual consumption (kWh)

Electricity consumption is mostly between 100 and 1,000 kWh per year.

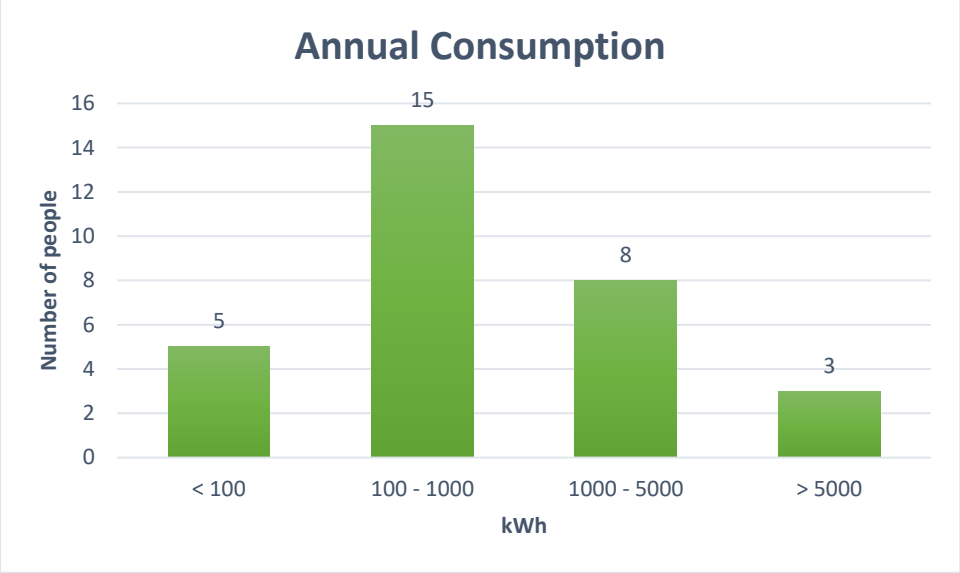

Figure 130 Annual Consumption in Portugal

Annual cost of electricity

Electricity consumption in most cases costs from € 500 to € 1,000.

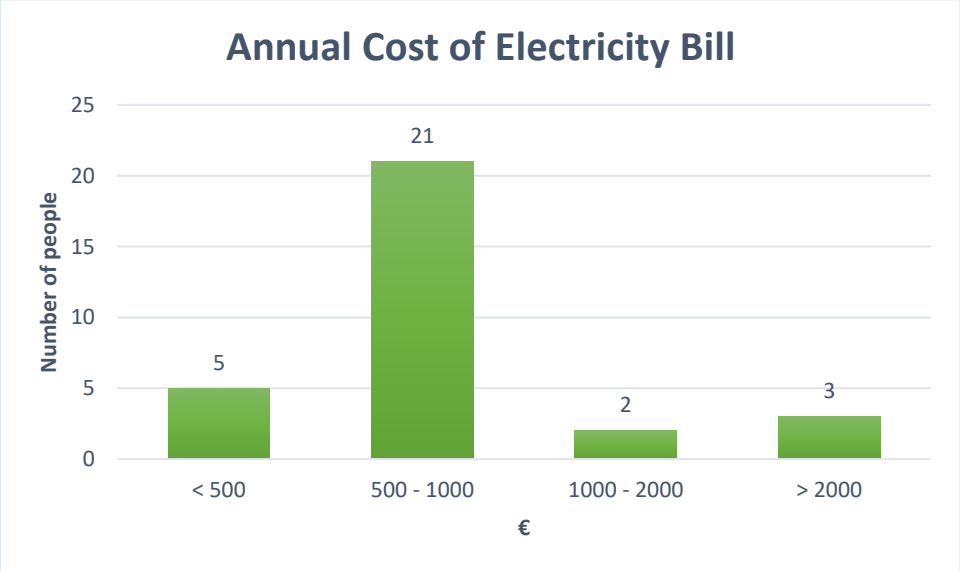

Figure 131 Annual Cost of Electricity Bill in Portugal

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

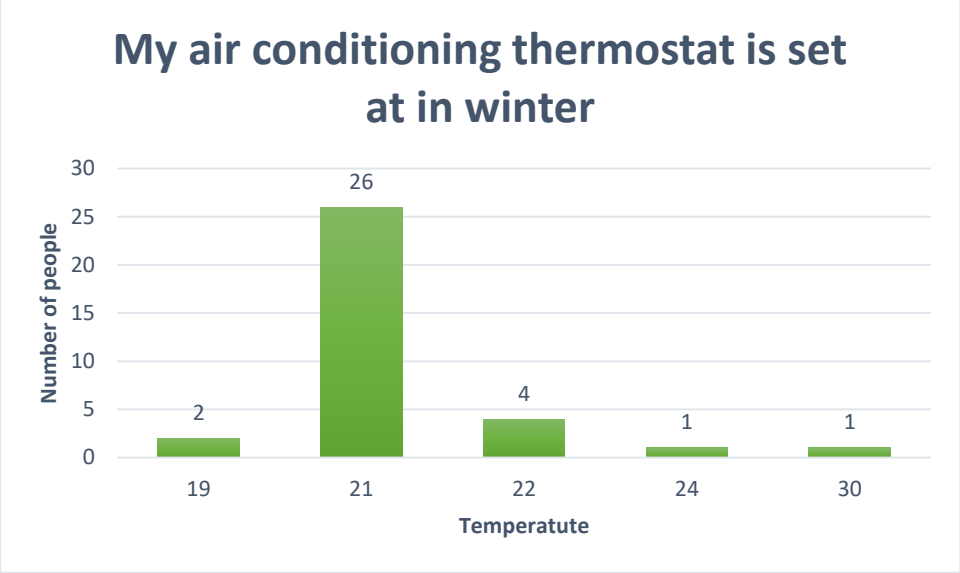

Figure 132 Home temperature in winter

Most users (70%) have a home temperature in the summer set at a comfortable 22°C.

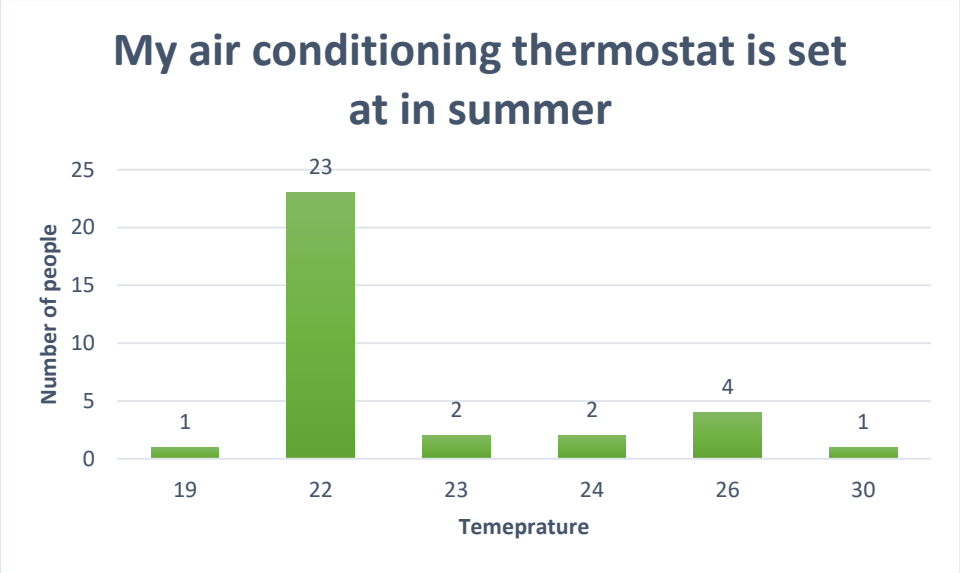

Figure 133 Home temperature in summer

6.11.4 Heat Consumption

Heating energy

In 42% of cases propane is used as heating fuel.

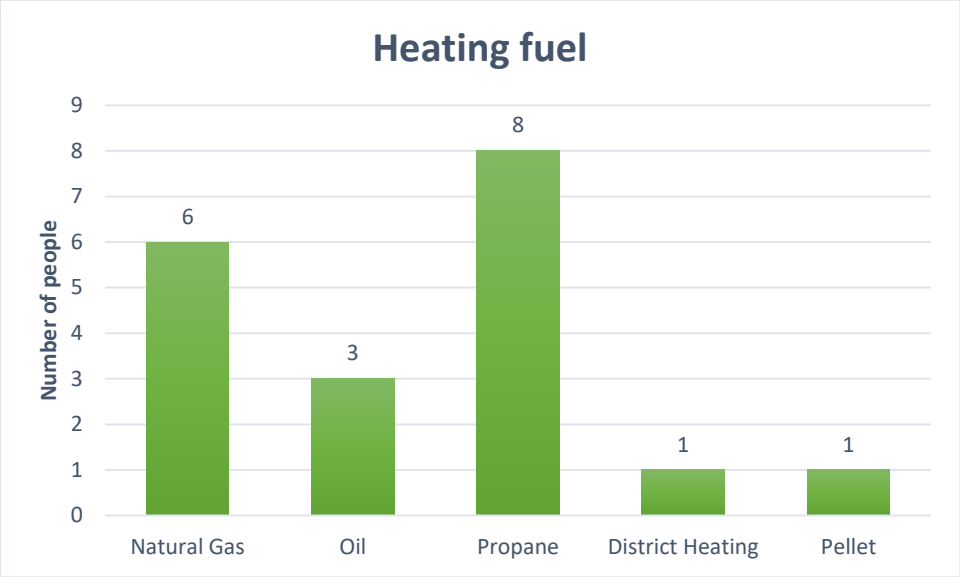

Figure 134 Heating fuel in Portugal

Annual consumption

For most respondents, more than 1,000 kWh is consumed per year for heating.

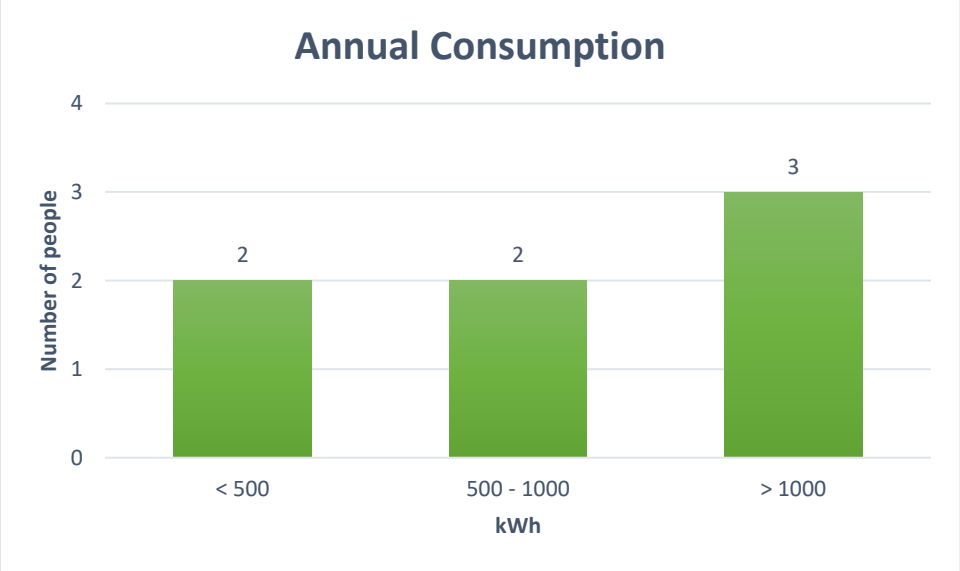

Figure 135 Annual heating consumption in Portugal

Annual heat consumption

Mostly heating in Portugal costs less than € 500 per year.

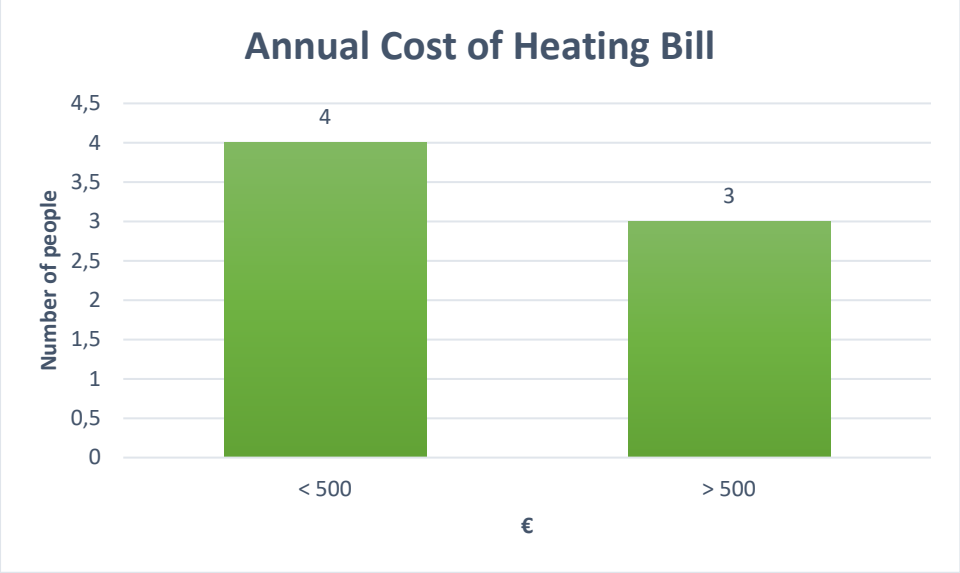

Figure 136 Annual Cost of Heating Bill in Portugal

My thermal comfort during the winter is

Thermal comfort is important to Portuguese. 60% of them do not feel cold at home throughout the winter.

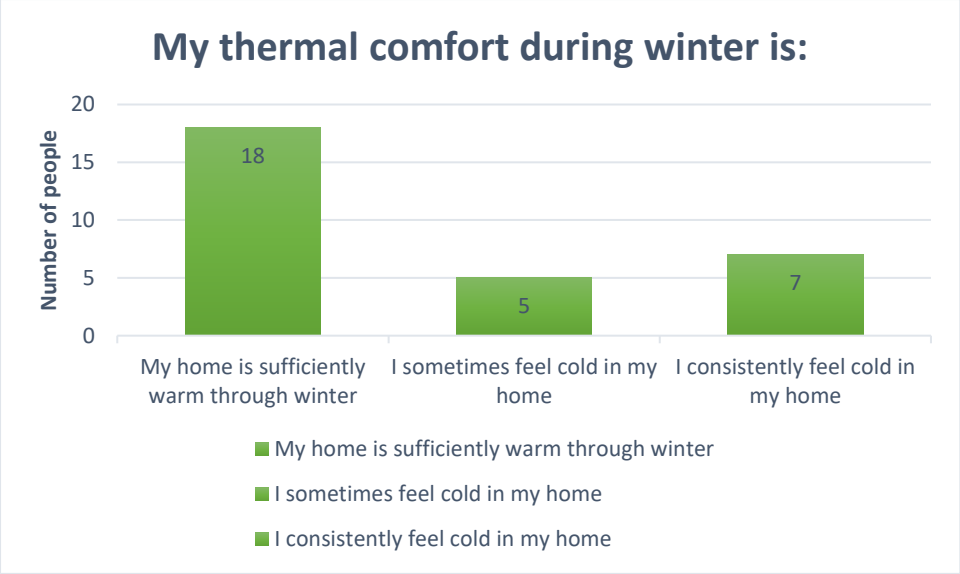

Figure 137 Thermal comfort during winter in Portugal

6.12 Spain

6.12.1 Personal details

City

Most Spanish who filled out the questionnaire are from Bilbao (18%) and Pamplona (11%).

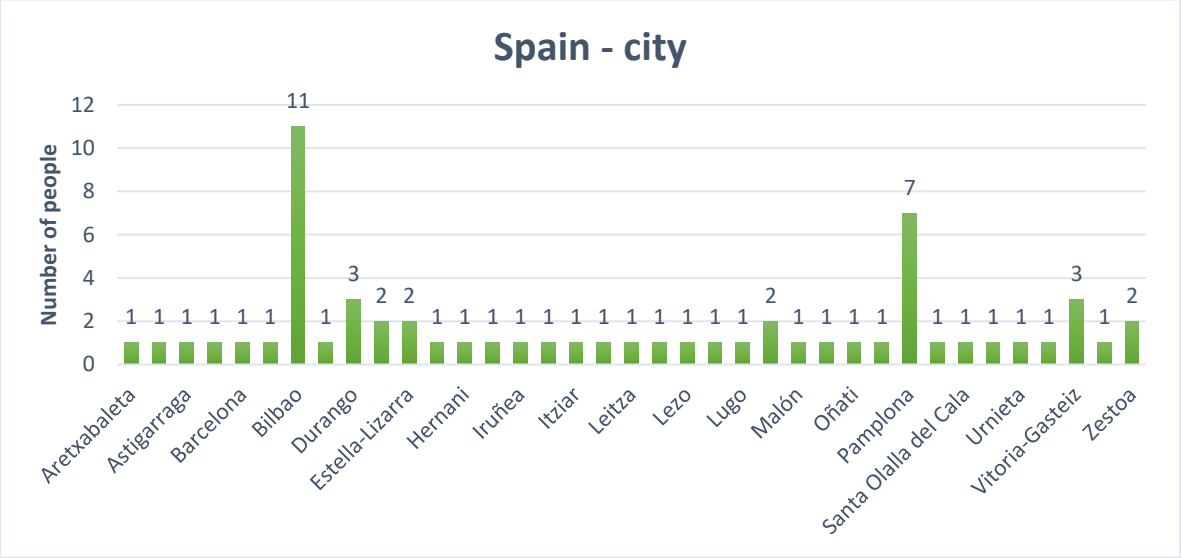

Figure 138 Review location of users who have completed PowerTarget in Spain

6.12.2 Income information

Annual income

On average, Spanish who completed the questionnaire have a salary of 10,000 to 20,000 euros per year.

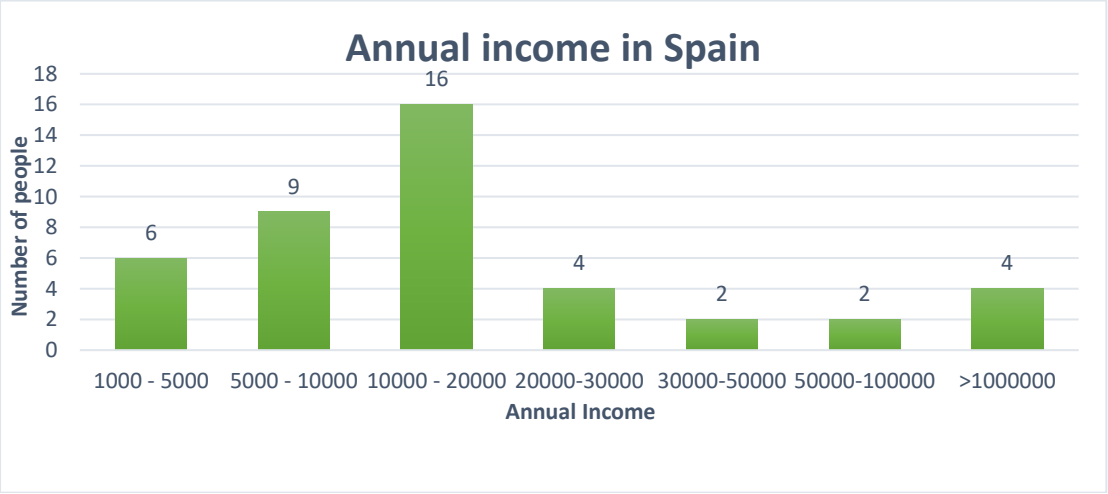

Figure 139 Annual income in Spain

Age

Most people who have completed POWER TARGET are from 20 to 50 years old.

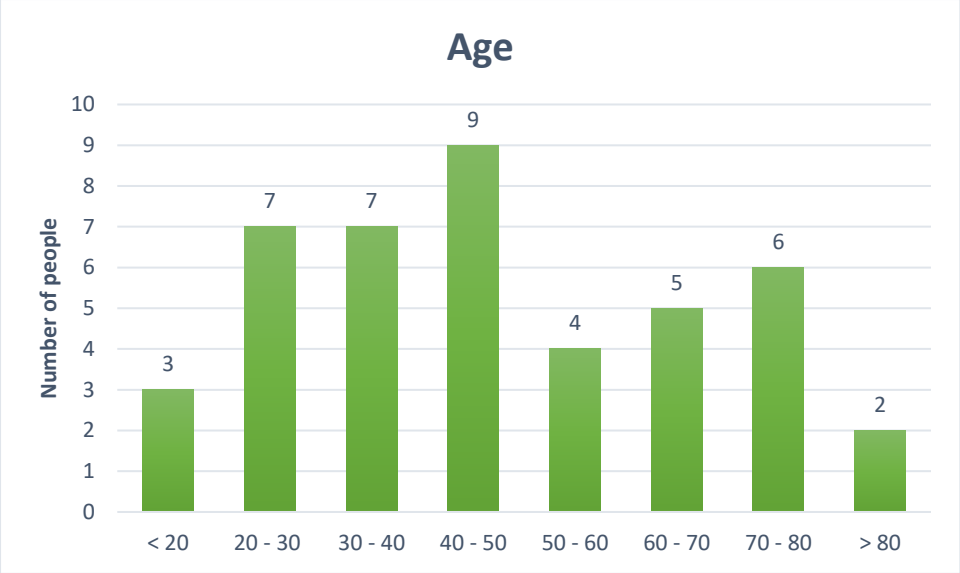

Figure 140 Age in Spain

Number of children

Most respondents don't have dependent children. Others usually have one or two.

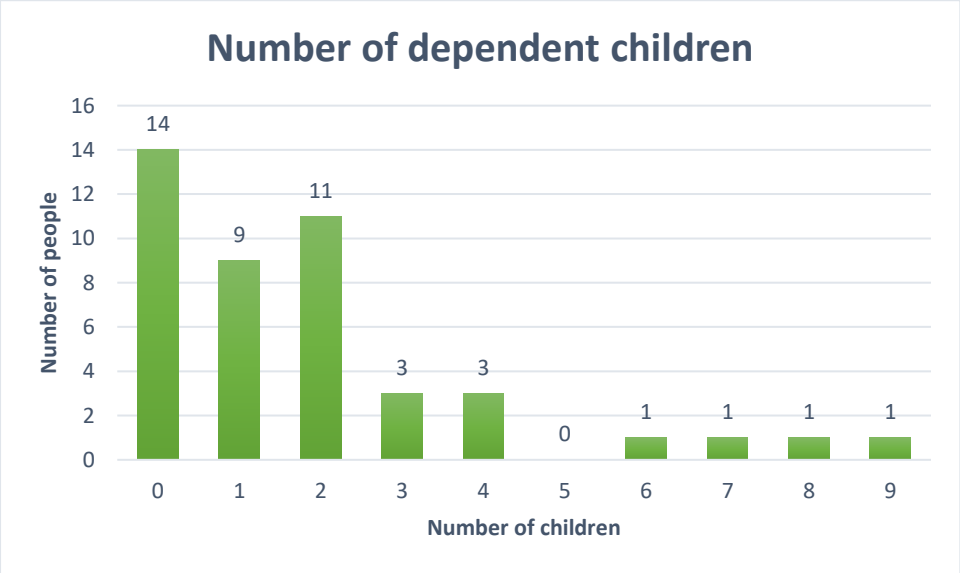

Figure 141 Number of dependent children in Spain

Marriage status

Most people are single (40%) or married (47%).

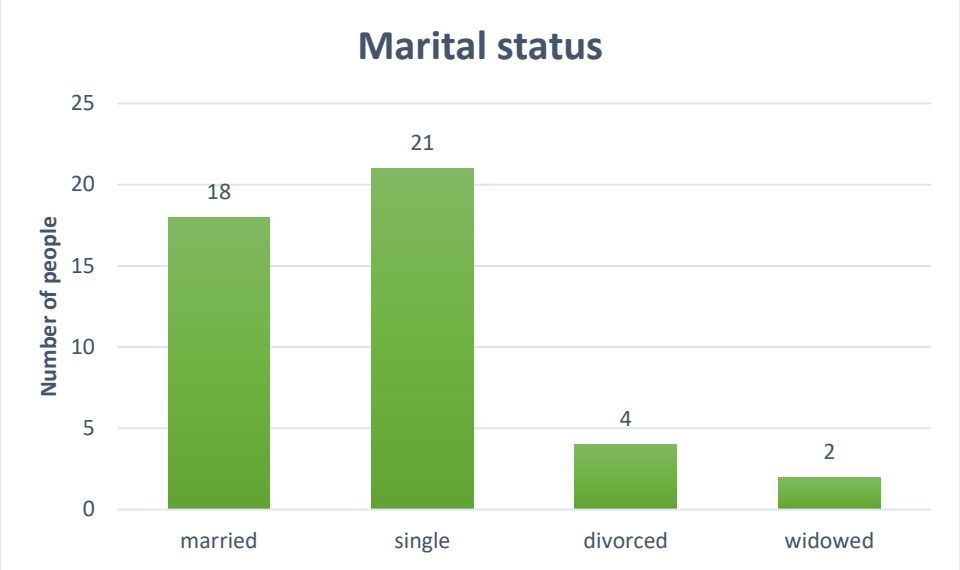

Figure 142 Merital status in Spain

6.12.3 Electricity Consumption

Property size (m^2)

The data shows that the apartments or houses are mostly between 50 and 100 m^2.

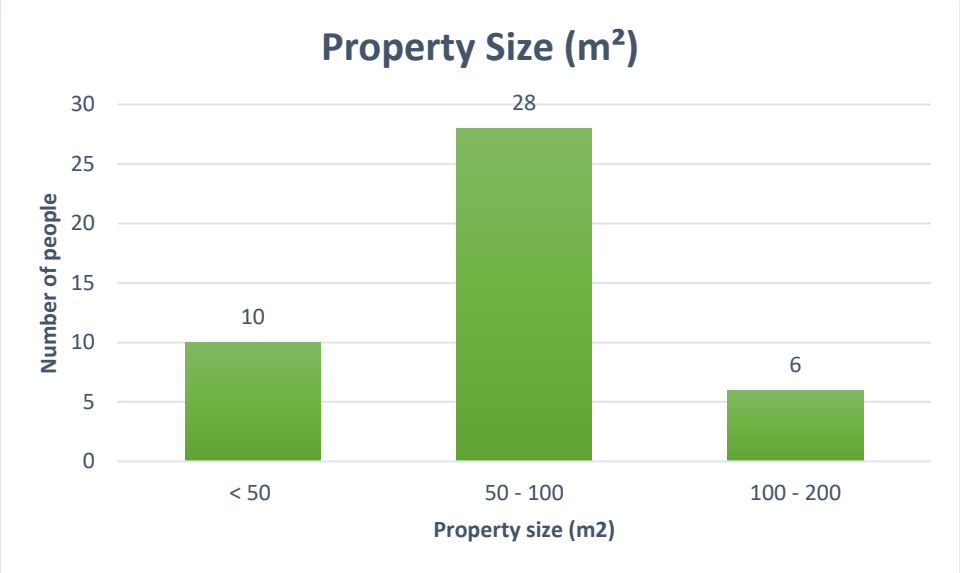

Figure 143 Property size in Spain

Annual consumption (kWh)

Most Spanish consume between 100 and 1,000 kWh of electricity.

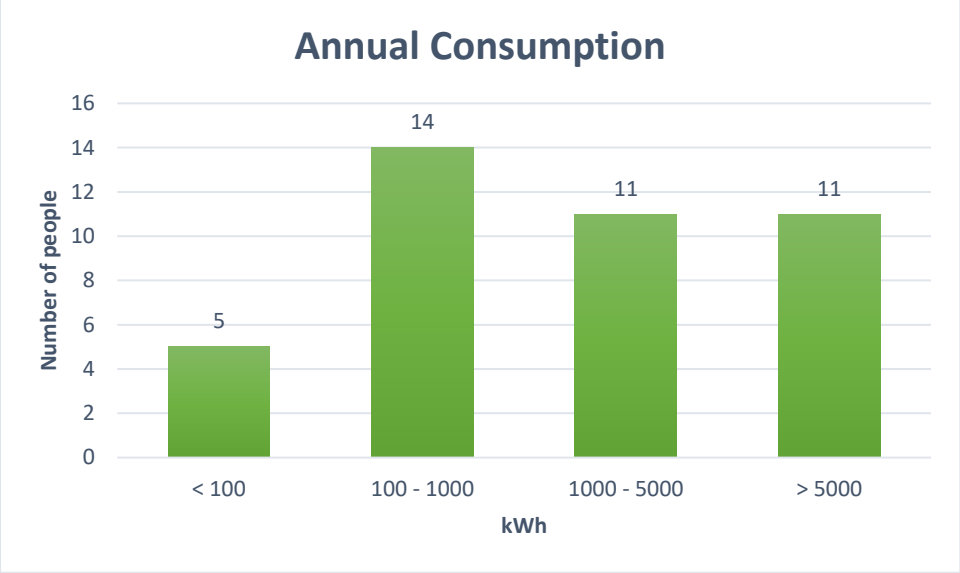

Figure 144 Annual Consumption in Spain

Annual cost of electricity

Electricity consumption in most cases costs from € 500 to € 1,000.

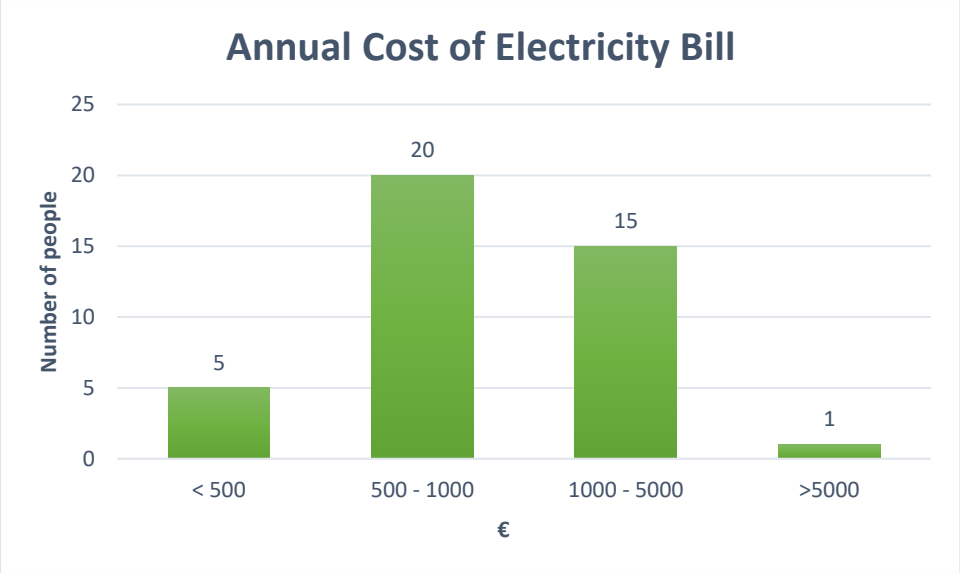

Figure 145 Annual Cost of Electricity Bill in Spain

My air conditioning thermostat is set to Celsius

The most common temperature in homes during the winter is 21°C.

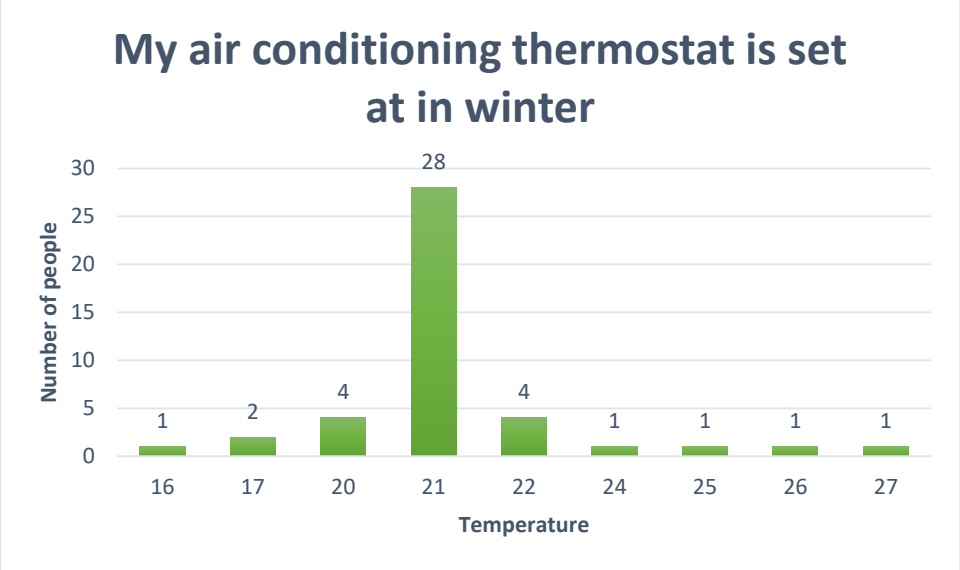

Figure 146 Home temperature in winter

Most users (75%) have a home temperature in the summer set at a comfortable 22°C.

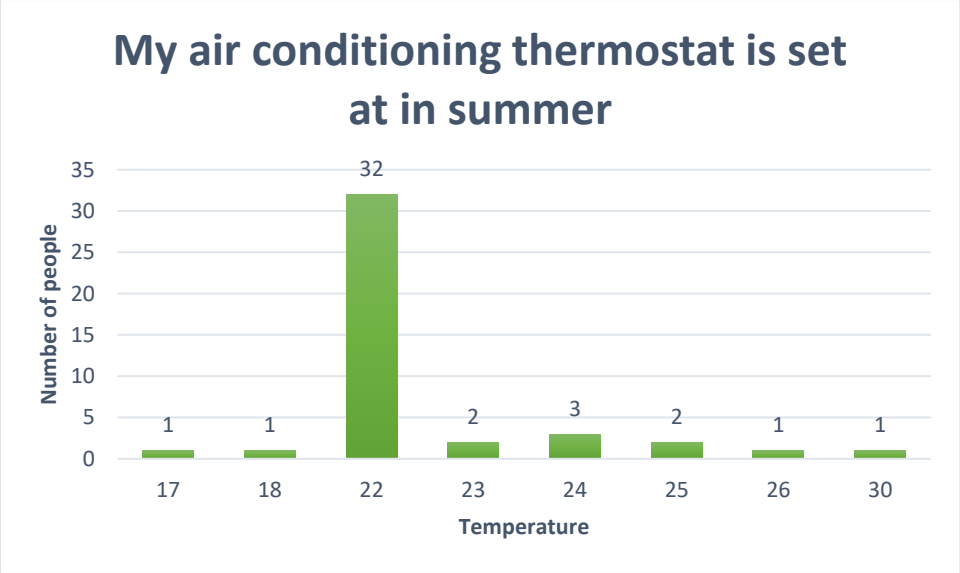

Figure 147 Home temperature in summer

6.12.4 Heat Consumption

Heating energy

Natural Gas is the most common heating fuel in Spain - 46%.

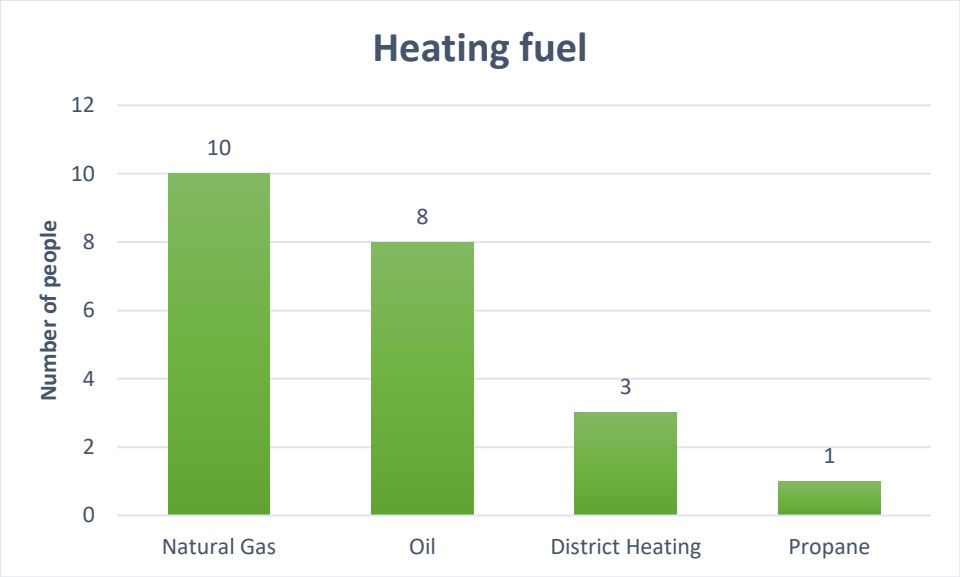

Figure 148 Heating fuel in Spain

Annual consumption

Most Spanish consume between 1,000 and 5,000 kWh per year for heating.

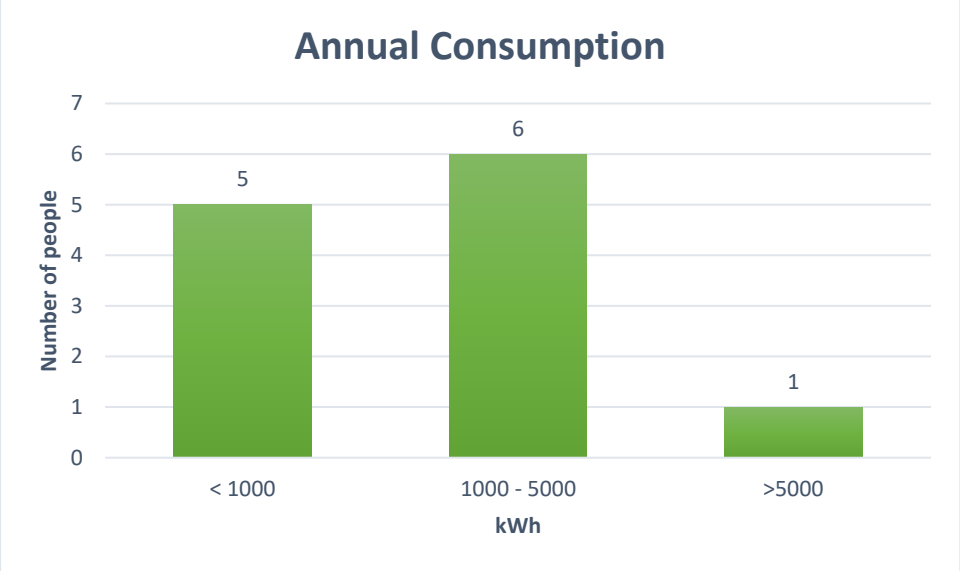

Figure 149 Annual heating consumption in Spain

Annual heat consumption

On average, € 730 per year is spent on heating.

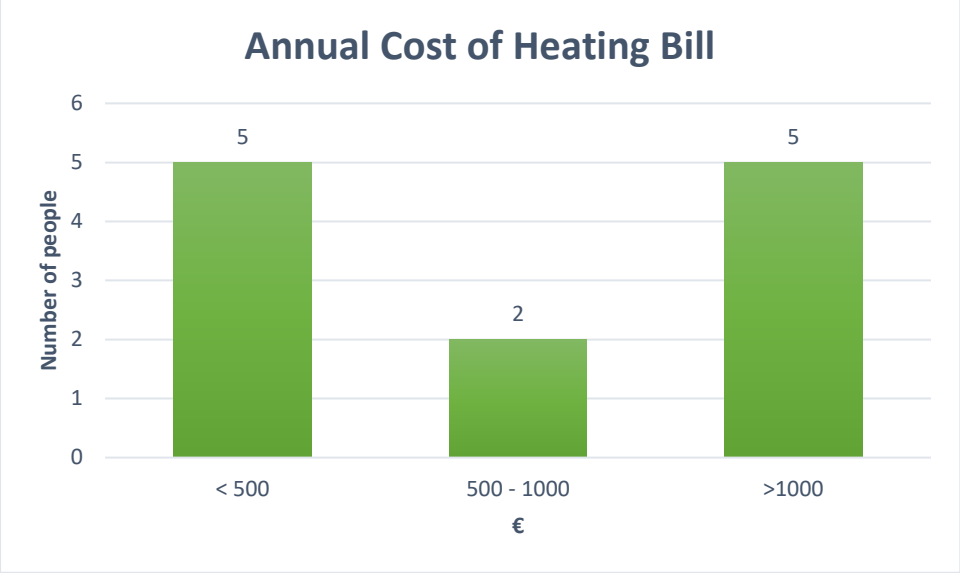

Figure 150 Annual Cost of Heating Bill in Spain

My thermal comfort during the winter is

Only 38% feel complete thermal comfort during the winter.

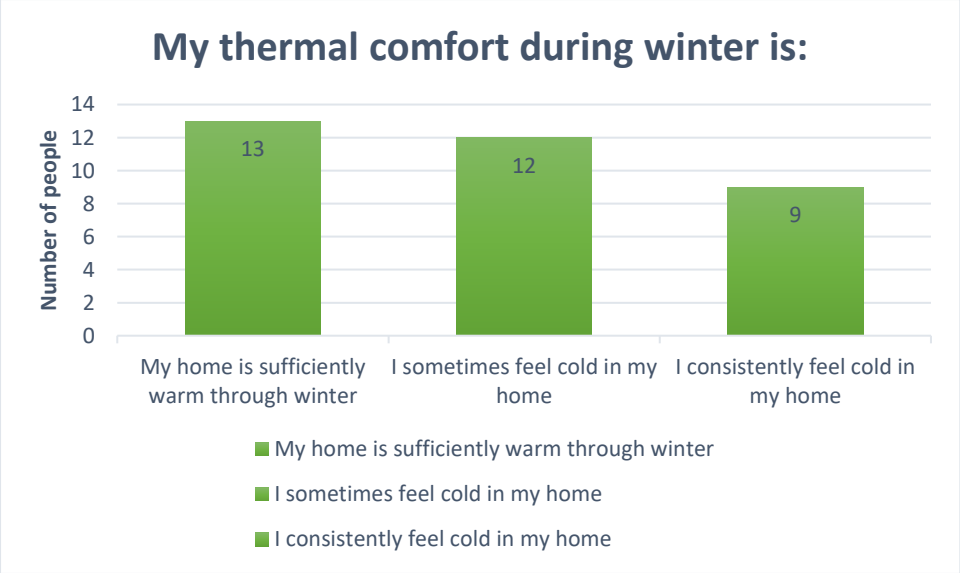

Figure 151 Thermal comfort during winter in Spain

7 Conclusion

This report elaborated on the different status of energy poverty, current legal framework, ongoing alleviation measures and stakeholders identified in the 8 pilot EU countries participating in the POWERPOOR project. From the differences in all of mentioned aspects, it is clear that actual energy poverty measures on a national level will also be different when approaching energy poor households. Energy poverty is a complex issue, which cannot be alleviated solely using a uniform approach on an EU level, although common issues are detected in respective countries.

First, common European definition for energy poverty does not exist, and only in **Latvia** and **Spain**, out of 8 pilot countries there is an official definition for the term "energy poverty".

In the tables shown below enegy poverty indicators identified and quantified in chapter 2 of the document at hand are summarised and presented compared to the EU average for the same indicator.

The emoticons will indicate if the indicator for a specific country is above, below or same as the EU average.

	Above average
	Below average
	EU average

Concerning the ability to keep home warm adequately – as an important indicator of energy poverty, households in **Croatia, Estonia** and **Hungary** are below EU average, while others are above. This does not mean that energy poverty is not present in these countries, but it may be slightly less “visible” if compared to other countries.

Table 58 Comparison of keeping home adequately warm and arrears on utility bills in 8 EU countires

	Bulgaria	Croatia	Estonia	Greece	Hungary	Latvia	Portugal	Spain
Unable to keep home adequately warm in 2019								

Arrears on utility bills in 2019								

Energy prices comparison shows that most of the countries have prices of electricity and gas below the EU average, except higher electricity price in Greece and higher gas price in **Portugal** and **Spain**.

Table 59 Comparison of electricity and gas prices in 8 EU countires

	Bulgaria	Croatia	Estonia	Greece	Hungary	Latvia	Portugal	Spain
Electricity prices in the 2020								
Gas prices in the 2020								

In addition, housing indicators are showing that **Bulgaria** and **Greece** have somewhat higher housing costs, and overburden rate in both urban and rural areas. The housing cost overburden rate is the percentage of the population living in households where the total housing costs ('net' of housing allowances) represent more than 40 % of disposable income ('net' of housing allowances). Although energy costs are not the only housing costs, they are dependent, so we can conclude that higher housing costs share is an indicator of energy poverty.

Table 60 Comparison of housing indicators in 8 EU countires

	Bulgaria	Croatia	Estonia	Greece	Hungary	Latvia	Portugal	Spain
Average number of persons per households in 2019								
Total Housing costs in disposable income 2019								

Housing cost overburden rate in cities 2018	☹	☺	☺	☹	☺	☺	☺	☺
Housing cost overburden rate in rural area 2018	☹	☺	☺	☹	☺	☺	☺	☺

Energy indicators collected in this report are uniform and show that energy intensity - being the ratio between gross inland energy consumption (GIEC) and gross domestic product (GDP) is above the EU average in 7 of 8 respective countries. Also, more important average energy consumption per dwelling is higher than EU average in all 8 countries. This indicates lower energy efficiency since average households in these countries are consuming more energy for the same purpose compared to average EU household.

Table 61 Comparison of energy indicators in 8 EU countires

	Bulgaria	Croatia	Estonia	Greece	Hungary	Latvia	Portugal	Spain
Energy intensity in 2020	☹	☹	☹	☹	☹	☹	☹	☺
Average energy consumption per dwelling	☹	☹	☹	☹	☹	☹	☹	☹

On a policy level, it can be observed that all countries have incorporated some form of energy poverty alleviation measures in the adopted National Energy and Climate Plans (NECP). The measures are described as “just and fair transition aspects”, “mitigation of energy poverty”, “social and welfare considerations”, “acquiring the status of vulnerable energy customers”, “protection of energy vulnerable customers in the process of liberalisation of the electricity market” etc.

Sectoral policy tools are describing in more details what are actual opportunities, targets, and implementation of national policies.

According to the stakeholders analisys in chapter 4 local, national and regional authorities and civil society are the key stakeholders to be included in the processes of energy poverty alleviation.
In addition, key lessons learnt are:

- Previously existing or personal contacts are a key factor when engaging stakeholders.
- Having more details about the project activities could enhance the

engagement process of the stakeholders.

- The expected contributions from the stakeholders should be clearly defined when contacting them while a thorough discussion with them can help to better define their efficient contribution.

The findings of this report are that energy poverty alleviation tools such as energy cooperatives or similar forms of energy communities and energy information service for the energy poor households are not developed enough in respective countries.
Therefore, following POWERPOOR activities will give significant accent on information and education measures and also encouraging the establishment of energy communities and cooperatives and involving energy poor households in their activities such as making use of alternative financing schemes.

Annex

D4.2 Pilot Country template that was filled in by the national partners

Task: Baseline Assessment report (D4.2) to be prepared by partners in each pilot country.

Goal: To map out the local and national framework conditions for the successful development and adoption of the POWERPOOR tools.

Who: PP with the Stakeholders Liaison Group will steer the process and facilitate the collection of data, including data required by the POWER-TARGET tool

Country reports deadline: 26 February 2021.

Report deadline: April 2021 (M8)

The reports will present and assess following data for each country:

1. **INTRODUCTION:**

Short description of present situation in each country including:

- Statistics on energy poor households (percent, regional distribution) or statistics on potentially vulnerable groups based on EUSILC indicators if there is no available data on energy poor households per country
- Energy prices (last 5 years)
- Building stock efficiency
- Economic/energy indicators: energy intensity, heating fuel shares
- Specific issues (environmental, social, economic, health…)
- Existing schemes, programs or tools addressing energy poverty (just short, to be described in 2. Policy level)

2. **POLICY LEVEL**

Please fill the existing adopted national policies, plans and strategies (NECP, Energy Strategies, etc.) that include energy poverty targets and serve as general frameworks.

Add rows if needed.

Table 1. Key policies/legislation.

National key policies (strategies, action plans)	Date of official adoption on a national level	Short description	Existing targets/goals	Coordination authority

Please fill in specific sectoral policies with appropriate data.

Add rows for each item if you need to.

Table 2 Sectoral policy tools/measures and keep

No.	Specific policy sector (e.g. buildings and construction, energy market, energy efficiency, social care, etc...)	Name of policy affecting energy poverty	Short description	Financial instruments, measures, schemes (if any)	Existing targets/goals	Coordination authority
Policy 1.						
Policy 2.						
Policy 3.						
Policy 4.						
Policy 5.						
Policy 6.						

Copy the policies listed in Table 2 and answer the questions for each policy.

Copy-paste the table template for each policy.

Table 3 Sectoral policies analysis

[Name of policy 1]	
Has the selected policy been incorporated into the draft National Energy and Climate Plan? YES/NO	
Could you estimate the importance of the selected policy for the alleviation of energy poverty until 2030? Use the following rate that (Very Low/ Low/ Neutral /High /Very High)	
Could you analyze briefly the main challenges, which must be confronted for the efficient design and implementation of the selected policy? (Criteria, Financing, Guarantee Administration...)	
Could you propose what kind of support should be provided to the coordination authority for the efficient design and implementation of the selected policy? [Capacity building, Technical assistance, Legal assistance, Tools]. Describe briefly.	
Could you identify the potentially involved type of stakeholders (eg. Ministry, CSO, local/regional authority, energy regulatory body,utility...) in the selected policy?	
Could you provide information about the potential funding sources, which will be utilized within the framework of the selected policy?	
Could you estimate the number of the energy poor households, which will benefit finally by the selected policy?	
Could you describe the procedure for monitoring the outcomes of the selected policy including indicative indicators?	

3. NATIONAL, REGIONAL AND LOCAL STAKEHOLDERS

In the table 3 please fill in the stakeholder organizations, not individuals, their PARTICIPATION and how they can SUPPORT POWERPOOR activities (**including liaison group members, energy mentors and energy supporters)** and benefit from the tools developed;

Table 4 Stakeholder participation and support

Stakeholder groups	Name stakeholder organizations in your country that would be interested to support POWERPOOR activities	Have you contacted the stakeholder(s) organization regarding their participation in the Liaision group? If yes, have they agreed to join?	What do you think is the main interest of the stakeholder(s) organization to support POWERPOOR activities and benefit from the tools?	Name stakeholder organizations that can benefit from the POWERPOOR tools	Which experiences have you made with engaging these stakeholder organization? Is there any lessons learnt to inform the POWERPOOR project?
National Authorities					
Regional Authorities					
Local Authorities					
Housing Providers					
Alternative financing Scheme					
Civil Society					

Covenant coordinators					
Public and Private Utilities					
Energy Service Companies					
Start-ups					
SMEs					
Academia					
Technical Uni					
Media					

4. POWERPOOR tool kit

Please fill in the key topics and issues that the POWERPOOR toolkit needs to address in order to ensure a high uptake and use by the identified target citizens distributed in subgroups. Add or change Energy poor household groups according to national context.

Table 5 POWERPOOR toolkit key topics and issues

POWER TARGET				POWER ACT			POWER FUND
Energy poor households subgroups recognized as vulnerable groups of citizens or considered to be experiencing or facing risk of energy poverty	Key identification features in your country for each subgroup (e.g. presence in your country, specific issues…)?	Key topics/issues that the POWER TARGET tool needs to address for each identified target citizens.	Do you have any direct or indirect contacts to these target groups?	Which experiences have you made with engaging these target groups? Is there any lesson learnt to inform the POWERPOOR project?	What approach do you expect to choose in order to ensure a high uptake and use by the identified target citizen?	Which is the technology adoption level of the stakeholders we are addressing? (1 innovators - 5 laggards)	What are the features/functionalities that should be included in POWER FUND for each identified target citizens?
Working poor with no social benefits – low incomes							
Part-time work, limited/ temporary contracts, low / no protection against dismissal							
Unemployed persons							
Persons under the pension age unable to work							
Persons over the pension age with low pensions							
Households receiving housing benefit							
Families who receive child benefit supplement							
Single parent families							
Individual circumstances - health issues or disabilities							
Refugees							
Others subgroups identified in your country (Specify)							