

EU Energy Poverty Observatory Case Study

Energy Poverty Observatory in Greece

A tool for the effective measurement and monitoring of energy poverty

Case Studies of the EU Energy Poverty Observatory (EPOV) showcase successfully implemented energy poverty measures in the Member States. They highlight best practices that can be used as models for energy poverty action. The current case study focuses on the development of the Energy Poverty Observatory in Greece aiming at effective monitoring of the Greek energy poverty situation.

KEY RESULTS:

- Quantification current levels of energy poverty
- Monitoring energy poverty development
- Identification factors that affect energy poverty

CHALLENGE

The problem of energy poverty in Greece has intensified since 2009 due to the adverse impacts of the economic recession. The increase of energy prices and the considerably low energy efficiency of buildings in the residential sector further contribute to the problem.

The deteriorating situation increases the need for a holistic policy framework to alleviate energy poverty. Such a policy framework needs to be informed by a system to effectively and continuously monitor the evolution of energy poverty. This system would help to assess the effectiveness of implemented policy measures, but also provide further insights in the conditions and factors that shape and intensify energy poverty.

The Energy Poverty Observatory in Greece was developed for this reason. The main challenges that the observatory aims to address include:

- Lack of appropriate systems in Greece to measure and monitor energy poverty accurately
- Poor understanding of the most important factors contributing to energy poverty in Greece
- Insufficient insight into the effectiveness of implemented measures to address energy poverty
- Difficulty for Greek households and policy makers to find updated and targeted information on energy poverty

Energy Poverty Observatory in Greece AT-A-GLANCE

Type of measure: Information and awareness

Duration: 2014 - ongoing

Location: Pikermi Attica, Greece

Organisations involved: Ministry of Environment and Energy, CRES

Funding method: Public funding – National

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Additional Benefits:

- Estimate quantitatively the evolution of energy poverty and the impacts of policies
- Support the design and implementation of effective energy poverty measures
- Enhance the existing level of knowledge about the phenomenon of energy poverty

About the EU Energy Poverty Observatory

The EU Energy Poverty Observatory (EPOV) is an initiative by the European Commission to help Member States in their efforts to combat energy poverty. It exists to improve the measuring, monitoring and sharing of knowledge and best practice on energy poverty. EPOV has been developed by a consortium of 13 organisations.

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OBJECTIVES

The main objectives of the Energy Poverty Observatory in Greece are:

- ❑ **Quantification of energy poverty levels** in Greece through the calculation of representative indicators and the continuous monitoring of energy poverty over the years
- ❑ **Analysis of parameters** that influence and intensify energy poverty
- ❑ **Impact evaluation** of already designed and implemented policy measures for the alleviation of energy poverty
- ❑ **Identification of the most crucial parameters** that must be taken into account for the effective design and implementation of policy measures
- ❑ **Provision of specialised information** to households and policy makers about energy poverty in Greece, improving the current level of information and awareness

Screenshot of the Energy Poverty Observatory in Greece

DESCRIPTION

The **Energy Poverty Observatory in Greece** was developed in 2014 by the Center for Renewable Sources and Savings (CRES). The development of the observatory was financed by the project 'National Information System for Measuring Energy Efficiency according to the requirements of the Directive 2006/32' within the framework of the Operational Program Digital Convergence 2007-2013.

The structure of the Energy Poverty Observatory in Greece consists of five different pages:

The **'Home Page'** page displays introductory information about the observatory

The **'Definitions'** page provides a brief presentation of the developed definitions and the selected indicators

The **'Calculations'** page allows to quantify the available indicators and to assess the results for different parameters

The **'Useful Links'** page provides information on relevant sources and links for energy poverty issues, including guidelines for the effective use of the observatory

The **'Contact'** page gives different methods to contact representatives of the Energy Poverty Observatory and CRES

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METHODOLOGY

A specialised methodological approach was developed for the energy poverty indicators in the observatory based on literature research. The methodology is based on statistical analysis of different characteristics of a representative sample of Greek households in order to quantify the level of energy poverty. The developed methodology consists of the following steps:

Step 1: Specification of the main energy uses (heating, hot water production and cooking).

Step 2: Identification of the main data sources and establishment of the data collection procedure

Step 3: Estimation of the theoretically required energy consumption to achieve a minimum level of comfort

Step 4: Calculation of the expenditure for the theoretically required energy consumption

Step 5: Estimation of the actual energy consumption and the corresponding expenditures

Step 6: Comparison of the actual with the theoretical required energy consumption and expenditures

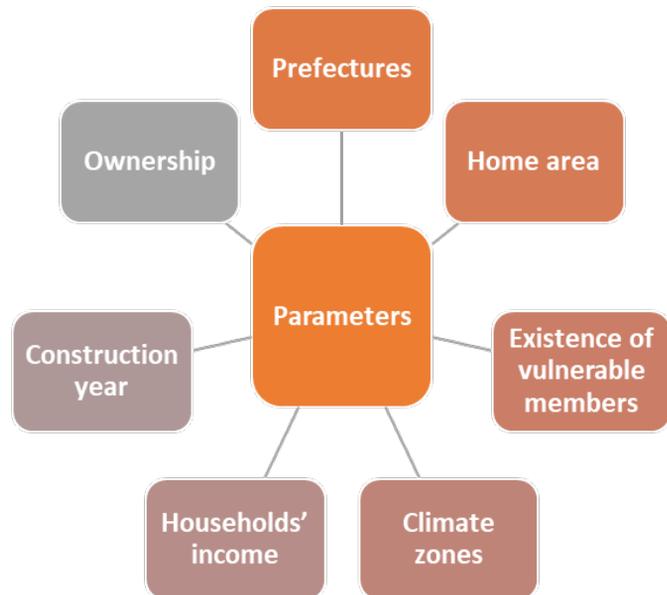
Step 7: Calculation of the indicators for different parameters that affect energy poverty

Based on this procedure, two indicators are developed:

1. Dividing the actual energy consumption with the theoretically required energy consumption (*Coverage of the main energy needs*)
2. Dividing the real energy expenditure with the household income (*Energy costs*)

Households are characterised as energy poor if the value of the first indicator is less than 80% and the second indicator is higher than 10%.

The energy poverty level can then be analysed along different parameters. This helps to understand in what regions and socio-economic groups energy poverty is particularly an issue. The Greek observatory allows to disaggregate across the parameters shown in the figure on the right.



Available parameters for measuring energy poverty in the Energy Poverty Observatory in Greece.

The methodology was first developed based on the household energy consumption survey conducted from October 2011 to September 2012. This survey contained information on energy consumption by end-use (space heating – cooling, domestic hot water production, lighting, etc.) in the residential sector, as well as the quantity and type of fuels used. However, in order to ensure the continued relevance of the observatory it was ensured that the data can be revised based on updates of the annual Household Budget Surveys conducted by the Hellenic Statistical Authority. Moreover, various provisions of the Regulation on Energy Efficiency in Buildings have been taken into consideration during the development of the methodology such as the calculation requirements for heating, cooling and hot water, the determination of the climatic zones and the selection of specific default values.

To further inform the analysis, specific data was collected concerning the energy consumption trends of household members, the type and number of devices and systems used and the penetration of energy efficiency technologies in the residential sector. Moreover, additional data about energy prices and heating degree days were gathered from available databases.

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SUCCESS FACTORS

Factor 1: Identify and efficiently coordinate appropriate resources combining specialised skills and technical infrastructure

Factor 2: Facilitate and standardise smooth collection of the required data

Factor 3: Improve on a regular basis the developed methodological approach incorporating new elements derived from the assessment of implemented policy measures to alleviate energy poverty

Factor 4: Organise public consultations with all the involved stakeholders in order to validate and improve the various facets of the proposed methodology

LESSONS LEARNED

Expertise: The continuous update of the Energy Poverty Observatory requires specialised technical staff to validate and improve the methodology.

Additional parameters: available data limits the potential analysis. It might be interesting to incorporate other energy uses (e.g. cooling) and other parameters (e.g. household size and occupancy level). Moreover, emphasis could be placed on additional socio-economic parameters (e.g. the amount of social support received).

Additional indicators: energy poverty is hard to quantify and the developed indicator might not fully capture the energy poverty situation. It might be complemented with additional subjective indicators, such as the level of satisfaction about existing comfort levels, and the potentially human health problems triggered by energy poverty.

Consultation: it is essential to organise specific consultation rounds with relevant stakeholders about the proposed methodological approach on specific elements, such as the selected minimum comfort levels. This will significantly improve the developed methodology.

Alignment with the national policy context: it is important to embed the observatory as a real monitoring tool for the effectiveness of policies. Moreover, potential design elements of planned measures should be added into the methodology facilitating the fulfilment of the established targets.

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TRANSFERABILITY & SCALABILITY

The potential replication of the Greek Energy Poverty Observatory to other countries is feasible taking into consideration the following elements:

- ❑ Achieve consensus on minimum comfort levels and other crucial elements of the proposed methodology, possibly using organised consultation rounds
- ❑ Exploit both the Household Budget Survey, conducted in all Member States, and the available databases and market data at national, regional and local level in order to identify the most appropriate and representative data in the residential sector

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