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The Italian Energy Poverty Observatory

Annual Report

Year 2023

Edited by Marta Castellini, Ivan Faiella, Luciano Lavecchia, Raffaele Miniaci and Paola Valbonesi.

Contributors: Rossella Bardazzi, Caterina Behrens, Andrea Bonfatti, Marine Cornelis, Nives Della Valle, Aurore Dudka, Kristian Fabbri, Giuliano Ferrucci, Filippo Fortuna, Francesca Gastaldi, Elena Giarda, Francesco Giovanardi, Francesca Iafrate, Valentina Lo Passo, Demetrio Panarello, Rosaria Vega Pansini, Maria Grazia Pazienza, Corrado Pollastri, Serena Rugiero e Alessandro Rossi.

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Executive Summary

This excerpt is from the original report, initially published in Italian. In this version, we've translated the Executive Summary and the first chapter, which addresses the definition and measurement of energy poverty. Chapter 2 delves into policy measures, particularly focusing on price adjustments and means-testing in response to the spike in energy prices between 2021 and 2022, as well as the superbonus. Chapter 3 centers on the topic of Energy Communities.

Following the drastic increase in the prices of electricity and gas beginning in the second half of 2021,[1] discussions on energy poverty (EP) moved out of the sphere of specialists and became part of a public debate.[2] Greater awareness of the problem is the only positive aspect of a period that required huge sacrifices, not only from Italians. On the one hand, accurate information based on the rigorous analysis and measurement of the phenomenon, and on the other, careful assessments of what actions can be taken to reduce the problem, are the precondition for constructive debate: since its creation in 2019, the Italian Observatory of Energy Poverty (known by the Italian acronym OIPE) has sought to promote this debate in the spirit of "first know, then decide".

The 2023 Report follows previous OIPE reports, with an initial section dedicated to **measuring the phenomenon** and a second section focused on **evaluating mitigation policies**. In light of the intense interest in the topic, we decided to gather and present the little information available on energy communities in a dedicated section.

[1] Using as reference the energy components of the NIC (National Price Index) of Istat (the Italian National Statistics Institute), between 2020 and 2022, the price of electricity paid by Italian families more than doubled (+142%), as did the price of gas, although to a lesser extent (+109%).

[2] The struggle against energy poverty in Italy is one of the priorities identified by the European Commission in the Council Recommendation of 2023. See the COMMISSION STAFF WORKING DOCUMENT, 2022 Country Report - Italy, Accompanying the document Recommendation for a COUNCIL RECOMMENDATION on the 2022 National Reform Programme of Italy and delivering a Council opinion on the Stability Programme of Italy (link)

In relation to measurements, the Report includes OIPE estimates from 2022: the EP rate in 2021 reached 8.5%, half a percent up due to the increase in the end prices of electricity and gas. For the first time, OIPE is publishing an estimate of EP at the regional level, ranging from a minimum of 4.6 percent in the Marche to a maximum of 16.7 percent in Calabria. Working with public bodies and entities in the service sector is fundamental to the understanding of what stimulates change in this sector: in 2022, prompted by Save the Children Italy ETS, the OIPE investigated the spread of EP amongst minors in Italy. The result was that 10 percent of minors in the country live in unhealthy environments, with poor heating and/or insufficient fresh air, or which are badly lit, a situation that particularly affects immigrants, a phenomenon yet to be studied in depth. One investigation by the Di Vittorio Foundation, focused on residents in so-called "internal areas", broadened its scope to the energy-vulnerable, low income families that live in energy-inefficient housing but are not classified as energy-poor. The second section (available only in Italian) discusses **measures to mitigate EP** which can be divided into policies for "**protection**" and for "**promotion"**. The former include measures to overcome cyclical economic downturns such as the **electricity and gas bonus**, which has been modified continuously since 1 January 2021 and now has become two very different kinds of instrument than originally designed. In addition, the extension of its application to nearly one fifth of Italian families, as pointed out by ARERA in its recent memorandum, raises the question of the fiscal sustainability of the measure, the value of which has increased 25-fold in a little under 3 years (from 200 million to 5 billion euros). The latter, promotional policies have a broad scope aimed at the long-term improvement of the living conditions of vulnerable families. In this connection, concerning **work carried out to improve the efficiency of the housing occupied by families in EP**, the lack of data means it is impossible to assess how far existing policies (particularly the eco-bonus and super-bonus) have proved effective in supporting fragile families: given the sums involved, this represents a significant lack of accountability.

The third section (available only in Italian) of the Report is dedicated to energy communities and seeks to promote thinking about how they have transformed the Italian energy system,

partly in light of the recent debate on the transition to the green economy and on energy security. The expression “energy community” is mainly associated with two phenomena: decarbonization and the reduction in family energy costs by sharing energy generated by renewable sources. Currently, the interest is greater in the latter, due in part to the impact on energy prices of the Russia-Ukraine conflict. Although at first sight it would seem that this new form of local energy management can help to “alleviate” energy poverty, the contributions included in this section of the Report point to a number of critical aspects. Analysis indicates the fundamental role of public institutions in this phase, both to create these energy communities and in relation to the economic and social benefits they can bring. At the moment, the ability to take advantage of these opportunities depends to a large extent on establishing national regulations to govern energy communities and on the related incentives. Removing this uncertainty will help to set up the communities, but in itself will not increase the contribution of energy communities to the struggle against energy poverty, currently very limited. To make the most of the opportunities provided by energy communities in the fight against energy poverty, a great deal of work has yet to be done. The ongoing debate brings to light the need to define and share a method for measuring the social benefits of energy communities in situations of vulnerability. At the moment, the “energy-poor” are little involved in the existing communities and are not prioritized in the relevant regulations or guidelines. Finally, it is left up to the promoters and members of these communities to find ways of involving vulnerable families. It can be hoped that removing regulatory uncertainty and providing economic incentives will bring different kinds of stakeholder together in shared projects, taking greater advantage of the opportunities provided by energy communities in the struggle against energy poverty.

SECTION 1
Defining and measuring the phenomenon

1.1 Introduction

Energy poverty (EP) in Italy was defined for the first time in the National Energy Strategy (NES) for 2017 as "*difficulty in purchasing a basic minimum of energy goods and services, or alternatively, energy vulnerability where access to energy services means foregoing other resources (in terms of expense or income) to an abnormal extent*". The NES recommended adopting a measure, put forward in research by Faiella and Lavecchia (2015), based on "*Low income-high costs*" (LIHC), suitably modified.[3] This measure was subsequently adopted in all government documents dealing with EP, including the Integrated National Energy and Climate Plan (NECP) in 2020 and the Ecological Transition Plan (ETP) in 2022. Every year, the OIPE publishes an update of this parameter, on publication of the microdata from the survey of family expenses carried out by Istat (generally about 10-11 months after the year surveyed). At the end of 2022, the OIPE published its estimate of the rate of the phenomenon in 2021 (8.5 percent, up half a percent on the previous year) together, for the first time, with its estimate of EP at the regional level, ranging from a minimum of 4.6 percent in the Marche region to a maximum of 16.7 percent in Calabria. In addition, prompted by Save the Children Italy ETS, the OIPE investigated the spread of EP amongst minors in Italy. The result was that 10 percent of minors in the country live in unhealthy environments, with poor heating and/or insufficient fresh air, or homes that are badly lit. The investigation showed that this situation particularly affects immigrant families, a phenomenon yet to be studied in depth. One investigation by the Di Vittorio Foundation (FDV), focused on residents in so-called "internal areas", broadened its scope to the energy-vulnerable, low income families that live in energy-inefficient housing but are not classified as energy-poor. The section concludes with thoughts about the concept of "energy citizenship", i.e. the proactive role of citizens rather than their conventional role as

[3] For additional information, see the first OIPE Report on the state of energy poverty in Italy (link).

passive consumers. Measuring the phenomenon is fundamental for the proper assessment of the problem and the implementation of adequate policies to combat EP. The results of the OIPE data collected over the years suggest that existing policies need to be changed and an instrument adopted to improve the energy efficiency of the homes of energy-poor families. As W. E. Deming puts it, "without data, you're just another person with an opinion[4]."

[4] For additional information, see the website of the W. Edwards Deming Institute (link).

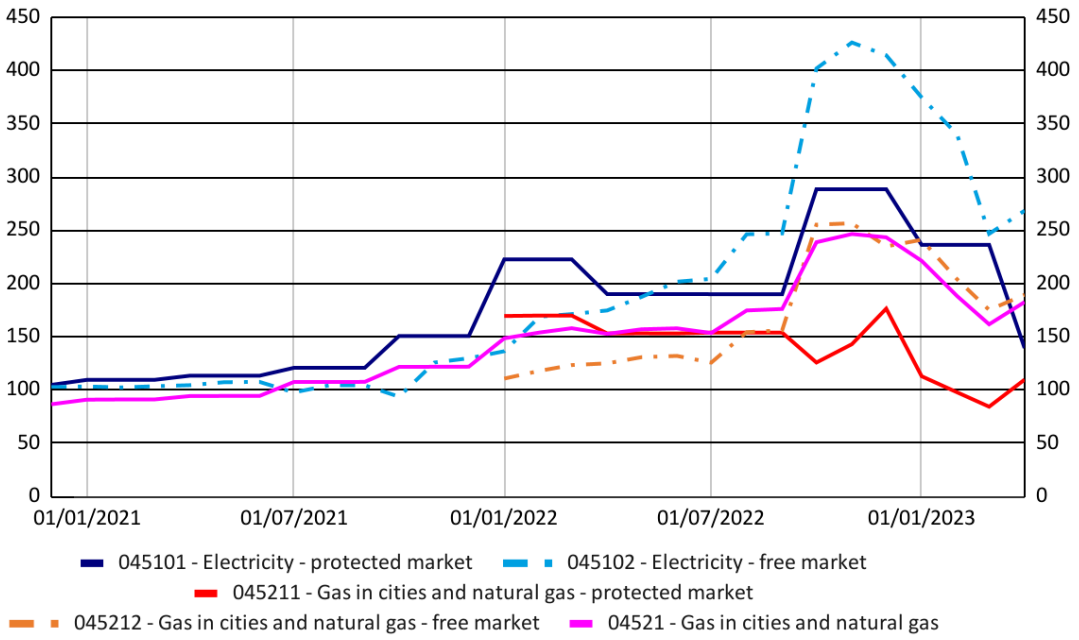
1.2 Energy poverty in Italy in 2021[5]

Contextual analysis - In 2021 energy costs for Italian families increased by 20 percent on the previous year,[6] mainly due to the sharp rise in the prices of gas and electricity starting from the second quarter of the year. At the end of 2021, the final price of electricity paid on average by families increased by 35 percent on 2020 (+44 percent for families under what is called "increased protection", + 26 percent for families subject to free market conditions), and the price of gas was up by 41 percent[7] (Figure 1.1).

Figure 1.1

Trend in the consumer prices of electricity and gas

(2015 = 100)



[5] This paragraph is from the following OIPE communique: "Energy poverty in Italy in 2021" dated 2 December 2022 (link); "Energy poverty in Italian regions in 2021" dated 22 December 2022 (link); "Minors and energy poverty" dated 10 February 2023 (link).

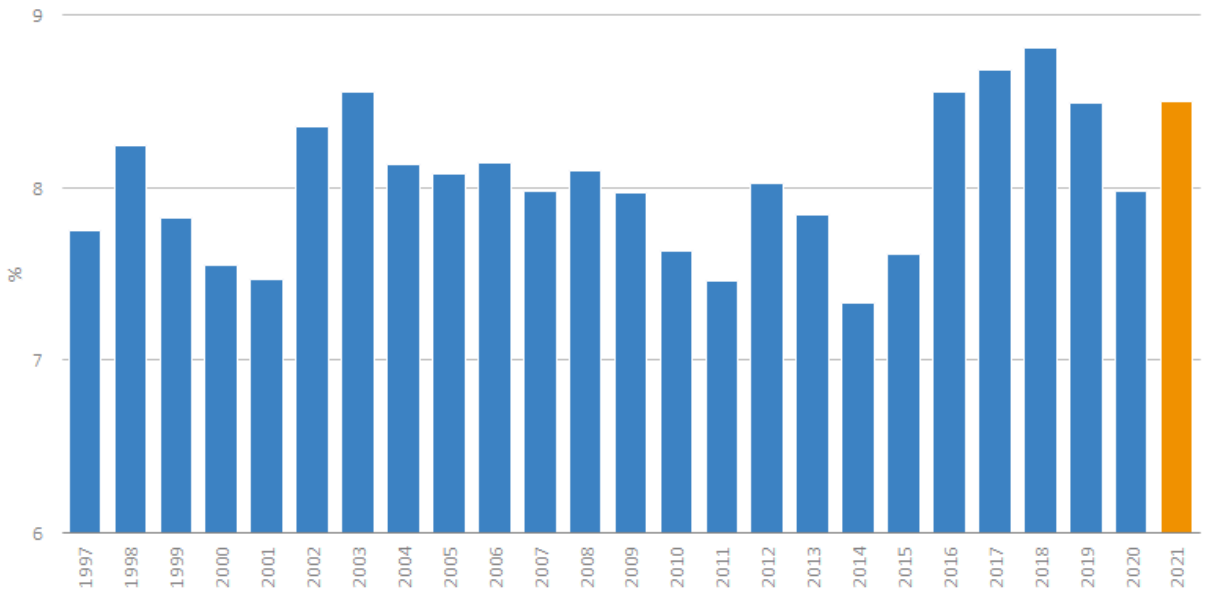
[6] Ministry of the Ecological Transition (MITE), "La situazione energetica nazionale nel 2021" [The national energy situation in 2021]

[7] Processing of Istat data, consumer prices for the entire collectivity (national price index, monthly data from 2016, base 2015)

In 2022 the prices of electricity and gas again rose sharply, more than doubling during the year. The significant increase in prices (and expenses) led to a half percent increase in energy poverty (PE) in Italy.[8] According to this parameter, at the end of 2021, 2.2 million families were in EP, up 125 thousand on 2020; in percentage terms this was 8.5 percent of Italian families, an increase that completely offset the decrease in 2020 (Figure 1.2).

Figure 1.2

Energy poverty in Italy (1997 - 2021)



In relation to geographical areas, there was a considerable reduction in the percentage of families in EP in the islands, partly due to the comparatively mild winter compared to the past 30 years;[9] however, the percentage increased in the other macro-areas, particularly in the south and north- east (Figure 1.3.a). EP mainly affects families in small municipalities

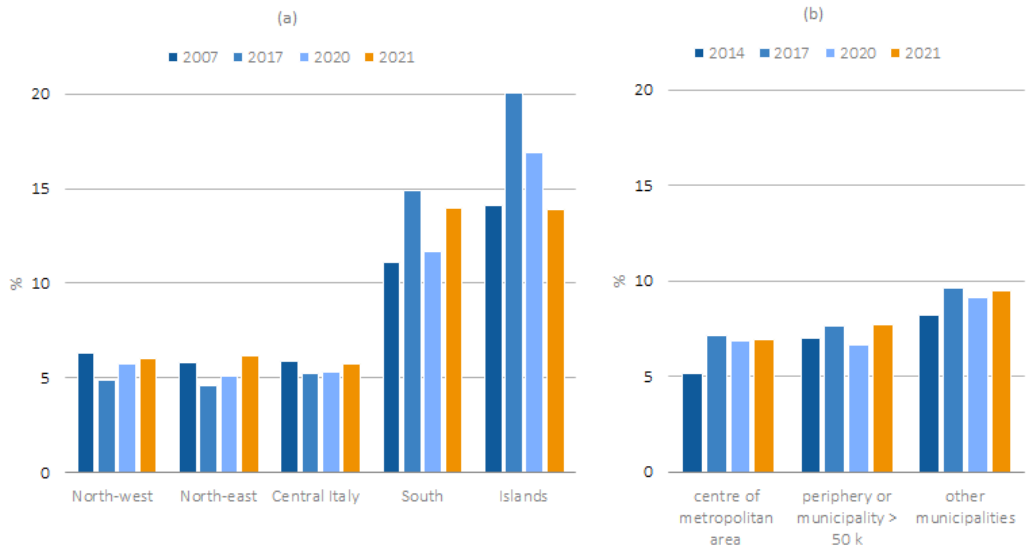
[8] In Italy EP is measured in government documents including the National Energy Strategy dated 2017, the Integrated National Energy and Climate Plan (INECP) dated 2019 and the Ecological Transition Plan (ETP) with parameters recommended by Faiella and Lavecchia (2015).

[9] Analysis on the "Climate monitoring for Italy" dashboard of the Institute for the Sciences of the Atmosphere and Climate, National Research Council (ISAC-CNR).

(fewer than 50 thousand inhabitants) and suburban areas, where EP is increasing. In large cities, EP was substantially unchanged (fig. 1.3.b).

Figure 1.3

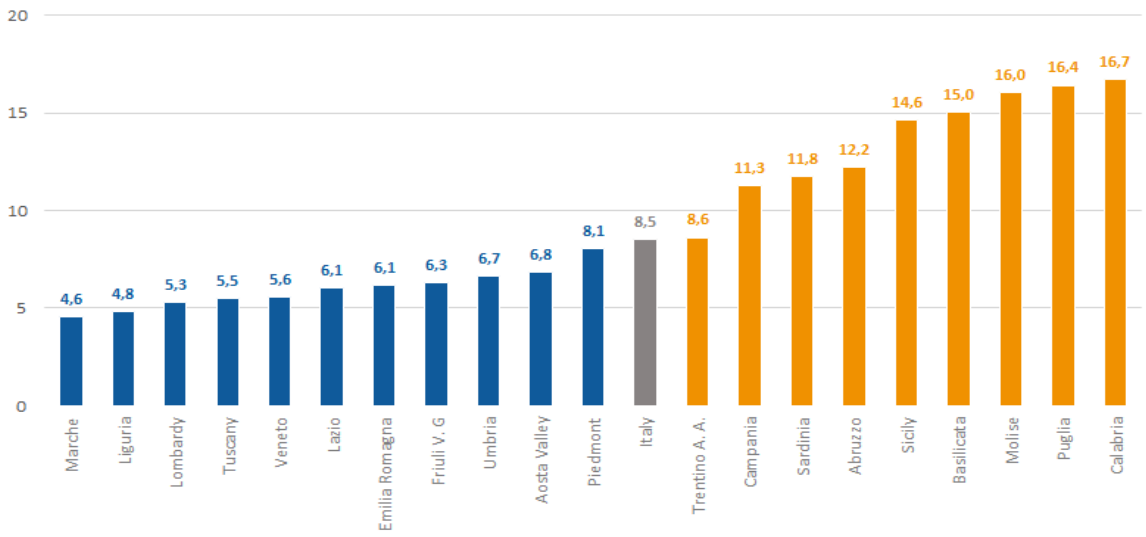
Energy poverty in Italy by area (a) and by type of municipality (b)



At the regional level, EP in 2021 ranged from 4.6 percent in the Marche and 16.7 percent in Calabria (Fig. 1.4 and Table. 1.1).

Figure 1.4

Energy poverty in Italian regions in 2021



The region with the greatest increase on 2020 was Puglia (+5,5 percent), followed by Molise (+4.3 p.p.). After a particularly mild winter, the islands recorded the sharpest decrease (Sicily: -3.5 p.p.; Sardinia: -1.8 p.p.).

Table 1.1

Energy poverty by region in 2021

(percentages)

	average	standard error	95% interval	% variation on 2020
01 Piedmont	8.1	0.9	[6.5-9.6]	2.0
02 Aosta Valley	6.8	1.4	[4.1-9.5]	-0.5
03 Lombardy	5.3	0.5	[4.5-6.2]	-0.5
04 Trentino A. A.	8.6	1.4	[6.3-11]	1.8
05 Veneto	5.6	0.8	[4.3-6.8]	1.0
06 Friuli V. G	6.3	1	[4.3-8.3]	0.5
07 Liguria	4.8	0.8	[3.1-6.5]	0.0
08 Emilia Romagna	6.1	1.1	[4.9-7.4]	1.0
09 Tuscany	5.5	0.7	[4.2-6.7]	0.0
10 Umbria	6.7	1.6	[3.9-9.4]	0.1
11 Marche	4.6	0.8	[2.9-6.2]	-0.1
12 Lazio	6.1	1	[5-7.2]	0.9
13 Abruzzo	12.2	1.8	[8.8-15.7]	2.1
14 Molise	16.0	3.3	[9.5-22.6]	4.3
15 Campania	11.3	1.4	[9.2-13.4]	0.5
16 Puglia	16.4	2.6	[13.8-19]	5.5
17 Basilicata	15.0	3.4	[8.4-21.7]	-1.3
18 Calabria	16.7	3.3	[11.4-22.1]	1.1
19 Sicily	14.6	1.8	[11.7-17.5]	-3.5
20 Sardinia	11.8	2.4	[8.1-15.4]	-1.8
Italy	**8.5**	**0.3**	**[8-9]**	**0.5**

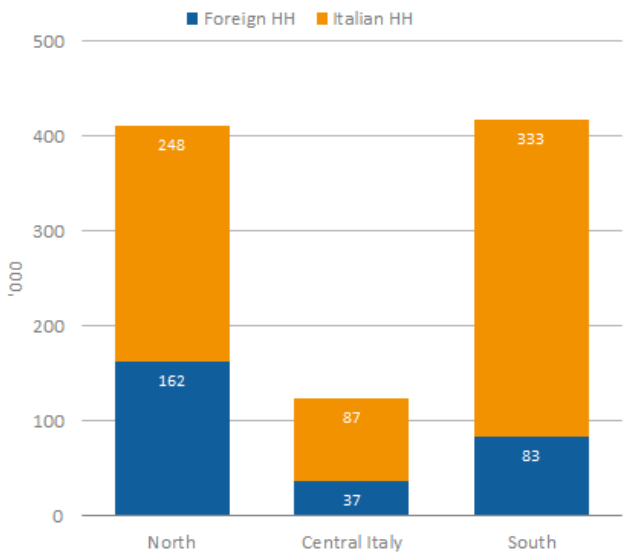
To take account of the fact that the estimate is based on a sample that is smaller than the total for the nation and therefore increases the variability of the estimators, the standard error and 95% confidence interval for the EP indicator are also included (Table 1.1). As far

as possible, the assessment of variability takes account of the sample design for the survey.[10]

More in depth: minors and EP – Prompted by Save the Children Italy ETS, an in-depth investigation was carried out into EP and minors in Italy. At the end of 2021 just over a quarter of families in EP[11] had at least one minor. Numerically, EP affected about 583 thousand families and 950 thousand minors (10 percent of the total) who live in unhealthy environments, with poor heating and/or insufficient fresh air, or homes that are poorly lit (Fig. 1.5).

Figure 1.5

Number of minors in energy poverty by citizenship of the head of the household (HH) and by area of residence



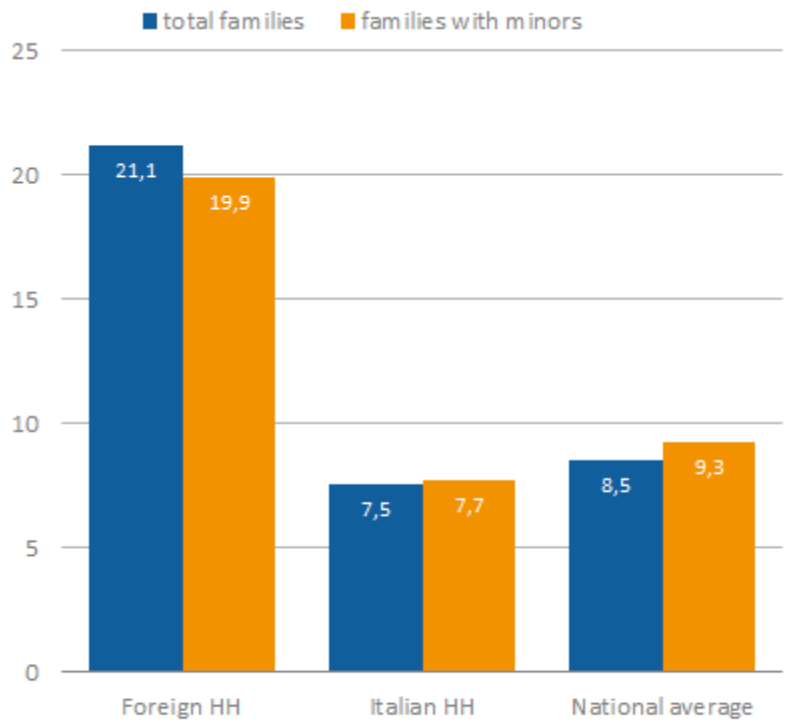
[10] In the absence of all the necessary information, the estimate of the variability only approximately takes into account the survey sample design. Specifically, the assessment provided is a linear approximation of variance in a two-phase study assuming that all municipalities with a population above 50,000 are self-representative (i.e. always included in the sample). This method does not consider the variability in the reference thresholds; similar assessments of the variability of poverty parameters indicate that this approximation is also acceptable for regional domains.

[11] Overall, 2,2 million families were in EP at the end of 2021, equal to 8.5 percent of the total number of families resident in Italy (see. "Energy poverty in Italy in 2021" published by the OIPE).

This exposes minors, especially the youngest, to increased risks, for example of respiratory diseases, and lowers the quality of life at home, impacting in the final analysis on social mobility. The number of minors in EP is particularly significant in families with a head of household[12] who is not an Italian citizen ("foreign families" - about 1.9 million). In 2021, the EP rate in families with minors was 2.5 times higher in foreign families (about 162 thousand families) due to the far higher number of foreign families in the lowest deciles for household expenditure and the larger number of minors in these families[13] (Fig. 1.6).

Figure 1.6

Families in energy poverty according to citizenship of the head of the household (HH)
(percentage of families)



[12] The head of the household is the person who answered the interviewer's questions for all members of the family (generally in whose name the family data sheet is registered with the relevant Civil Records Department and to whom the letter from Istat was sent).

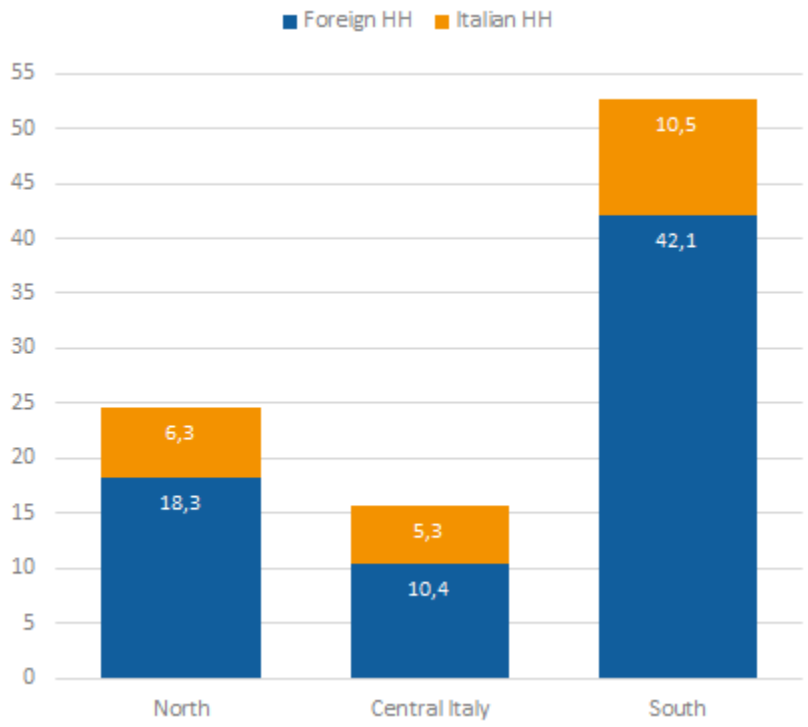
[13] The average number of minors in foreign families with children was only slightly higher than in Italian families (1.6 minors per family vs. 1.5).

Families with minors in EP accounted for 9.3% of all families with minors resident in Italy. This result reflects the larger number of foreign families in EP: in 2021 - against an average of 8.5 percent - with one fifth of these families were in EP (Fig. 1.6). The rate of EP in families with minors and a foreign head of household is over 4 times higher in the south (Fig. 1.7)

Figure 1.7

Families with minors in energy poverty by citizenship of the head of the household (HH) and by area of residence

(percentage of families with minors in EP)



1.3 Energy poverty in peripheral urban (aka internal) areas[14]

This Report presents the main results of research/intervention by the Giuseppe Di Vittorio Foundation (FDV) regarding energy poverty in and beyond peripheral urban areas,[15] these being emblematic of territorial disparities in relation to access to basic goods and services, including the vital supply of energy.[16] The study includes not only primary data on the phenomenon of energy poverty in the most fragile areas, but also makes recommendations and policy suggestions for the development of suitable strategies to combat EP. Peripheral urban areas, aka "internal areas" are ideal locations for the implementation of innovative practices such as place-based social investments to foster an equitable ecological transition in full compliance with the rights of citizens.

The study **highlights the phenomenon of housing hardship in relation to energy consumption in the most marginal areas of the country, today about 1,900 towns,**[17] and its effects on the most fragile residents, including the elderly, in terms of health and the ability to satisfy basic needs in a situation of ongoing urban decay and the ageing of the population.

[14] Edited by Serena Rugiero and Giuliano Ferrucci (Di Vittorio Foundation).

[15] Municipalities identified based on the distance (in minutes) from the main basic service centres, subject to widespread depopulation and, in many cases, the impoverishment and marginalization of economic systems and power structures.

[16] For the complete research Report from which the topics and results were obtained for this article see: Rugiero S., Ferrucci G., Salvati L., Carrosio G., 2022, "Democrazia energetica e inclusione sociale nelle aree interne. Il ruolo della contrattazione sociale e territoriale nel contrasto alla povertà energetica" [Energy democracy and social inclusion in internal areas. The role of social and territorial bargaining in fighting energy povertyl no.5/2022, ISSN: 2724 1882, FDV Working paper (we are grateful to Salvati and Carrosio for their cooperation with this FDV research).

[17] In the new Istat map for the programme cycle for 2021- 2027, the number of municipalities with "service poles" fell considerably compared to the previous version, with an increase in the number of peripheral and ultra-peripheral municipalities (Istat, July 2022)

The topic of access to energy has been studied not only in relation to variables of an economic nature – the classic parameters of income and family expenditure – but also in relation to the "social" dimension, capturing multi-dimensional hardship including social exclusion and the risk of poverty, no longer identifiable today by material deprivation alone. In addition to studying the factors that contribute to energy poverty, attention has been paid to territorial variables, particularly to those involving geographical isolation as it impacts on self-care and social relations.

In addition to the survey by questionnaire, an investigation was carried out into local development practices and social/territorial bargaining in relation to energy poverty, the construction of local supply chains for renewable energy and, more generally, the upgrading of peripheral areas by the sustainable use of environmental resources in those areas.

Research results – The research is based on a series of structured interviews with a **sample of 824 people aged ≥ 65, resident in 86 peripheral and ultra-peripheral municipalities-in all Italian Regions:**[18] the analysis of the profiles of interviewees was based on ad hoc socio-economic classification, subsequently validated by multivariate analysis.

First, people in poverty were identified, corresponding to those in at least one of the following conditions:

- beneficiary of electricity and/or gas bonus;
- annual income of up to 10 thousand euros or an income between 10,001 and 20 thousand euros but living with at least two other people;
- unable to satisfy the basic needs of the family;
- beneficiary of economic benefits destined for people in difficulties;

and people with inefficient housing, in terms of heat retention, i.e.:

- built not after 1970, never renovated or renovated more than 10 years before, without double glazing and no expenses made to improve energy efficiency

[18] The municipalities were chosen randomly from the list of peripheral and ultra-peripheral municipalities mapped in 2014

and/or

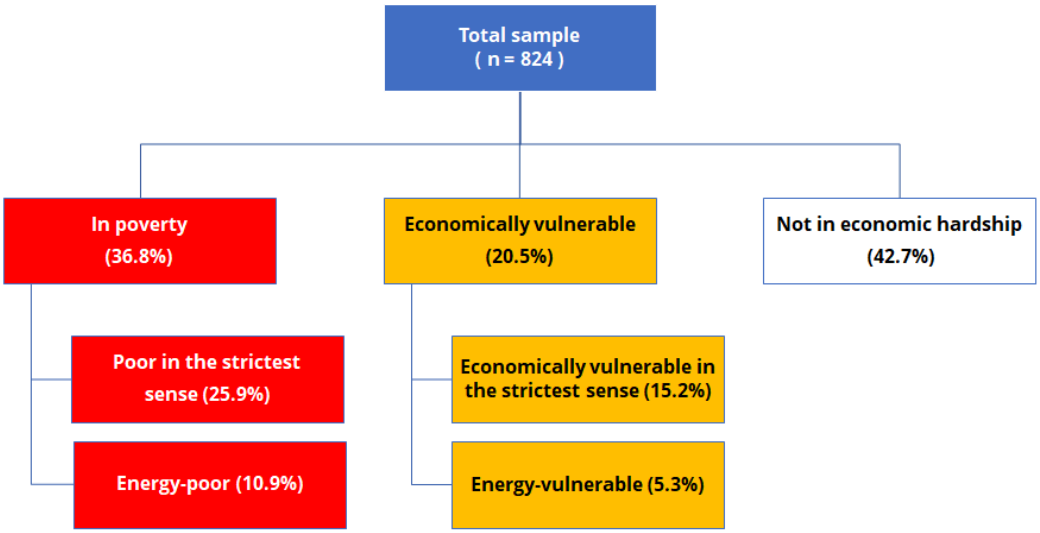
- without heating plant

From the combination of economic condition and the state of housing we obtained the following classification of interviewees: the poor in the strictest sense and the "energy-poor" (poor but also in a critical situation regarding energy due to the energy inefficiency of the home); vulnerable with low income, further divided into solely economically vulnerable and the "energy-vulnerable" (people with economic difficulties and inefficient homes); people not in economic hardship (see Box 1).

This classification shows a sharp gradient of critical issues from the energy-poor to interviewees not in economic hardship. In the sample, thirty-seven interviewees out of one hundred were poor and eleven energy-poor (Fig. 1.8).

Figure 1.8

Breakdown of interviewees by social condition



The analysis of the data reveals a particularly interesting relationship with educational background: about 2 out of 3 elderly people in energy poverty had only a primary school

diploma, as did just under 60% of the poor/vulnerable but only 28% of interviewees who were not in economic difficulties.

The elderly in energy poverty are more fragile both in terms of material conditions and the state of their homes and, more generally, due to lifestyle; they are fairly immobile and have poor social relations. It is therefore unsurprising that they lack information about the opportunities to save and are scarcely aware of the debate on energy topics; indeed, ecologically unsustainable/uninformed practices and lack of awareness are among the consequences of low spending power.

Finally, the breakdown of energy poverty/vulnerability in the territory shows that the phenomenon also pervades the richest regions in the country: territorial disparities are quite slender in relation to energy poverty (which stands at around 12-13% of the sample in the centre/south and islands, about 10% in the north-west, falling to 2% in the north-east) and are absent in relation to energy vulnerability which affects the economically better-off and is no less present in internal areas in the north-east.

Box 1. Types of interviewee according to economic condition and state of the home

1. economically poor but not in an inefficient home
   ("economically poor in the strictest sense")
2. economically poor and with an inefficient home ("energy-poor")
3. low income but not in an inefficient home
   ("economically vulnerable in the strictest sense")
4. low income with an inefficient home ("energy-vulnerable")
5. others ("not in economic hardship")

Table 1.2

Breakdown of interviewees by socio-economic class, geographical area and type of municipality - percentages and numbers (in brackets)

	Energy-poor	Energy-vulnerable	Poor in strictest sense	Economically vulnerable in strictest sense	Not in economic hardship	Total
Geographical area						
North-west	10.1	7.6	12.7	12.7	57.0	100
	(8)	(6)	(10)	(10)	(45)	(79)
North-east	2.1	7.4	16.8	22.1	51.6	100
	(2)	(7)	(16)	(21)	(49)	(95)
Centre	12.3	2.7	17.8	15.1	52.1	100
	(9)	(2)	(13)	(11)	(38)	(73)
South	12.1	4.8	31.8	12.7	38.5	100
	(38)	(15)	(100)	(40)	(121)	(314)
Islands	13.2	5.1	28.9	16.8	36.0	100
	(26)	(10)	(57)	(33)	(71)	(197)
Italy	**10.9**	**5.3**	**25.9**	**15.2**	**42.7**	**100**
	(83)	**(40)**	**(196)**	**(115)**	**(324)**	**(758)***
Type of municipality						
Peripheral	11.0	5.1	24.6	14.8	44.5	100
	(63)	(29)	(141)	(85)	(255)	(573)
Ultra-peripheral	10,8	5,9	29,7	16,2	37,3	100
	(20)	(11)	(55)	(30)	(69)	(185)

(*) 66 observations (8.0% of 824) could not be classified due to the lack of data on income and/or housing.

Source: FDV processing of SPI CGIL survey data

Hence, overall, the energy-poor are more fragile than people in economic poverty in the strictest sense, both in terms of material conditions and the state of their homes as well as general living conditions (isolated, with few social relations). In other words, the lack of energy efficiency in housing aggravates the state of deprivation, creating critical social conditions impacting on behaviour.

The 'energy-poor', about 11 interviewees out of 100, are the ideal target for measures aimed at combating EP, making housing more energy-efficient and economically supporting the most disadvantaged families in peripheral areas of the country.

The distinction between the energy-poor and economically poor in the strictest sense is repeated in the vulnerable group, for low-income families (close to poverty) and those with energy-efficient homes as well as those living in energy-guzzling homes: although the economic element is fundamental, other factors are significant in terms of the potential to protect against the risk of energy poverty such as individual and collective knowledge/awareness and the need to create networks and share information under the control of local authorities and in relation to the resources available.

In this connection, Social and Territorial Bargaining has become increasingly important. The dedicated CGIL Observatory[19] has found increased bargaining in favour of improving efficiency/energy savings, upgrading housing and publicly-owned buildings and in terms of processes of energy democratization, particularly the negotiation with local authorities regarding sustainable development and negotiations with companies aimed at increasing the spread of renewable energy communities (REC.)[20]

[19] XIII Report on Social and Territorial Bargaining. From crisis to Opportunities for Change: Union activities in the territory, 2023, FDV, SPI, CGIL, Rome, Futura Editrice.

[20] Renewable energy communities (REC) are a model for the production di distributed energy as set out in European Directive 2018/2001. In Italy they are subject to Legislative Decree 199/2021, pending implementation decrees, providing end-clients with the right to form renewable energy communities. Renewable energy communities are legal entities authorized to produce, consume, accumulate and sell renewable energy and to exchange it within the community itself.

1.4 Boosting energy citizenship among the energy-poor[21]

The ongoing energy transition is "something more than a simple technological and political change, (...) and involves significant social and behavioural changes that upset traditional narratives and the accepted ideas about the workings of democracy and the economy" (Lennon et al., 2019).

These profound changes will be accompanied by the emergence of new social roles and responsibilities, which citizens may not automatically support (Ryghaug et al., 2018). In this context, **recent academic studies have introduced the concept of "energy citizenship",** highlighting that **citizens should be involved in the energy transition not merely in the role of passive consumers.** Energy poverty is part of the broad discussion about energy justice, a concept that prompts those responsible for establishing energy policies and citizens (Sovacool et al., 2017) to make choices that are able to mitigate not only climate change but also social inequalities (McCauley, 2014). Energy poverty can be understood as "an essentially complex problem of unequal distribution" (p. 69, Walker & Day, 2012), in terms of income, energy prices and the energy efficiency of equipment and homes. Consequently, only a limited number of decisions concerning energy consumption and investment are available. This form of unequal energy distribution is further reinforced by the lack of recognition and procedural justice. First, some citizens do not have access to energy services because the different energy needs present in society as a whole are not recognized. For example, elderly citizens, the disabled, the sick and the many families with children need more energy to meet their specific needs but are usually socially and politically marginalized and hence find it difficult to have these different needs recognized. Second, distributive inequality is also the result of the inability to include the interests of the energy-poor in the whole range of decision-making, from the policies applied to local

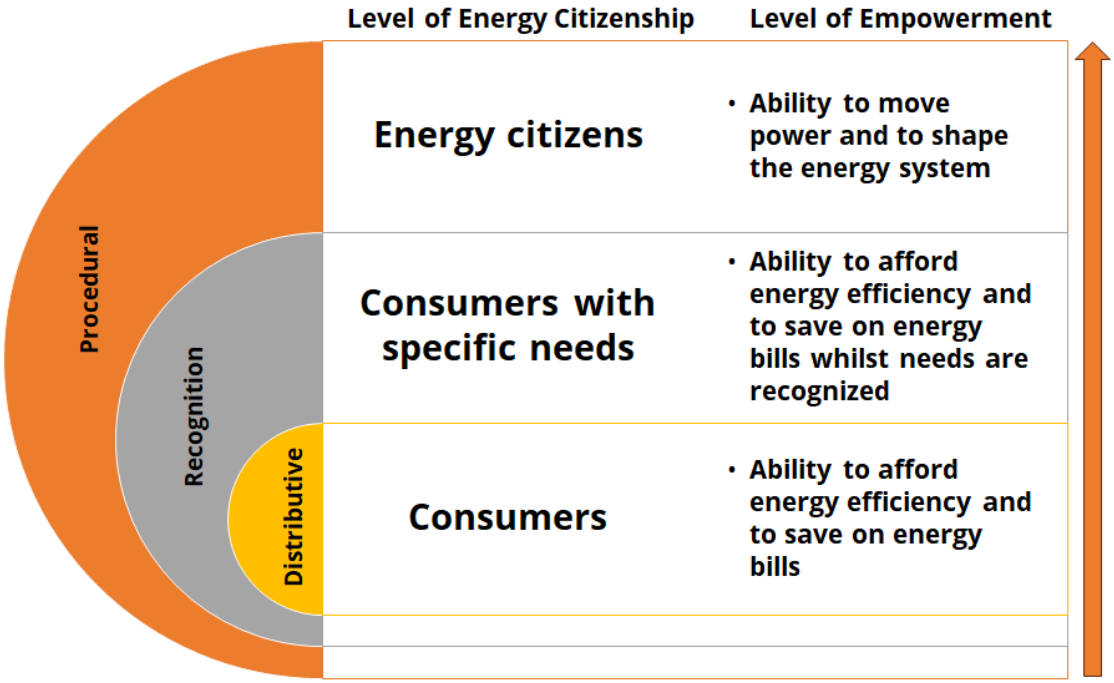
[21] Edited by Nives Della Valle (European Commission, Joint Research Centre, Ispra, Italy, nives.della-valle@ec.europa.eu).

communities to international energy policies (Walker & Day, 2012). The energy-poor systematically find themselves unable to i) take part in energy policies relating to housing, the climate and taxation, ii) know or enforce their legal rights, iii) access information on energy poverty, energy prices and the related solutions (Jenkins et al., 2017; Walker & Day, 2012). Therefore, in relation to energy poverty, energy citizenship needs to be rethought beyond the role of merely passive consumers, placing it in the context of a collective commitment, in which the process of collective participation in the energy transition forms the basis for combatting energy inequality. This approach is in line with the broadest definition of a just energy transition, seen as a process that must “seek equity" (McCauley & Heffron, 2018). **Boosting the participation of the energy-poor as social and political actors may be interpreted as a way of fighting against energy inequality, which is the basis of energy poverty**, because it can promote the recognition and representation of their interests in decision-making regarding energy. It will therefore be necessary to include energy-poor citizens in a process that "increases their ability to act and their power in these circumstances in order to achieve their objectives" (Coy et al., 2021). In Della Valle & Czako (2022) **we set out a conceptual framework identifying the mechanisms able to boost the ability of, and empower, the energy-poor** (summarized in Figure 1.9). The framework draws from the three principles of energy justice (Walker & Day, 2012) and the concept of empowering (Coy et al., 2021).

The **first level** of the process involves the participation of citizens in the energy transition as "**consumers**" who interact with and pay for energy passively (Devine-wright & Devine-wright, 2005). The **second level** is guided by mechanisms that **facilitate participation** by citizens in the energy transformation by the inclusion of their needs in the energy system. The **final level** of the process is linked to the greater ability of citizens to combat structural inequalities, an increased ability to act and a change in the balance of power (Coy et al., 2022).

Figure 1.9

The process of creating responsibility by energy citizenship among the energy-poor



Source: Della Valle and Czako, 2022

Research shows that three types of parameter are able to promote the first level of energy citizenship among the energy-poor,[22] and four to boost the second level;[23] finally, four mechanisms are able to boost the third and top level of energy citizenship.[24]

When citizens **take an active part in the energy transition as prosumers** they take control of energy resources, actively participating in the production and consumption of renewable energy and/or taking part in energy markets providing services including the

[22] Consulting on energy, distribution and smart-meters to foster more efficient energy consumption and the creation of living labs, innovative projects to motivate members of the local community.

[23] Dedicated consulting and training on the causes and dimensions of energy poverty, new models to finance interventions to improve energy efficiency, boosting the use of trusted intermediaries (including charities, fitters, consultants, suppliers of grants, family members and friends).

[24] Spreading news and information via social and digital media, the role of the energy ombudsman, fostering the role of "energy cafes", social protection, often managed by volunteers who consult on energy and enable vulnerable groups to become involved in the energy sector more politically than is normal in everyday life, the self-production of energy, the principal mechanism for reinforcing the role of energy citizens (prosumers).

aggregation or support for energy efficiency. Some prosumers may also act as “collectives”, where becoming a prosumer requires participation in collective projects aimed at providing social, environmental and economic benefits to society as a whole. This may involve taking part in a cooperative for renewable energy sources, starting a regimen for local collective self-consumption or acting as market aggregators as well as selling the excess energy produced by energy communities. Collectives act as agents of change towards a decentralized energy model which is democratic and aware of the need for energy justice, managing its benefits and not only promoting energy citizenship, but also alleviating energy poverty. Therefore, these mechanisms have a greater potential to wholly improve the role of the energy-poor as active citizens in the energy sector. However, the results set out in the scientific literature and of the projects investigated indicate that only a minority of these initiatives tackle energy poverty or actively involve the energy-poor. This is due to numerous financial and legal obstacles as well as to commonly held but mistaken perceptions. For example, some collective initiatives by prosumers share the commonly held conviction that energy-poor citizens and citizens who are vulnerable are not generally interested in this type of initiative or should be involved only via social policy. Even though the current political framework has introduced effective change enabling the spread of initiatives able to transfer power from a centralized energy system to a system led by citizens, further changes to facilitate active commitment and the inclusion of the energy-poor are required. For example, the current legal framework could be simplified providing greater access to material, human and financial resources for actors willing to start up projects. Overall, the empowerment process enabling the energy-poor to become emancipated active citizens in the energy sector is only just beginning. The process is generally driven by political bodies, including local authorities, intermediaries and ground-level initiatives. These actors may not have the financial resources, knowledge and time required. Consequently, they need to be helped to facilitate the spread of the mechanisms that foster the transition of the energy-poor from mere consumers to active citizens in the energy sector.

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